

City of Wooster, Ohio



Sustainability Roadmap

March 2017



An **AEP** Company

BOUNDLESS ENERGYSM



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A Letter from AEP Ohio



AEP Ohio is proud to partner with the City of Wooster on the development of its Sustainability Roadmap. This document will serve as the framework for the City's ongoing commitment to energy efficiency and sustainability.

You, the residents of City of Wooster, can be proud of the work you have done to embrace and adopt energy efficiency measures in your homes and businesses. Not only are you saving money and energy, you have also helped your community earn awards that have resulted in:

- \$25,000 for energy efficiency upgrades to the City's park facilities and downtown lighting, and;
- The development of this Sustainability Roadmap.

On behalf of AEP Ohio and our 1,300 employees, I would like to congratulate the City of Wooster on its leadership and dedication in creating a more sustainable and engaged community.

A handwritten signature in black ink, appearing to read 'Julie Sloat'.

Julie Sloat
AEP Ohio President and Chief Operating Officer

Since 2009, AEP Ohio energy efficiency programs have delivered the following benefits:

- Saved customers over \$1 billion in lifetime energy savings
- Created more than 100 jobs
- Reduced emissions of carbon dioxide by 1.5 million tons, sulfur dioxide by more than 4,200 tons and mercury by more than 46 pounds

Sixteen different energy efficiency programs make it possible for every customer to participate and receive technical assistance and/or financial incentives or rebates to reduce barriers to implementing energy efficient practices and equipment in their home and business. Program details can be found at AEPOhio.com/ItsYourPower for residents or AEPOhio.com/Solutions for businesses.

Executive Summary

The City of Wooster's Sustainability Roadmap is a three-year plan that defines the integration of sustainability throughout city operations, develops committed teams, and establishes creative solutions, strategies, and measurable goals along the way. Designed to serve as a communication tool for stakeholders, the roadmap enables the City to link strategic initiatives with business plans, while demonstrating environmental stewardship and social responsibility.

City employees, with support from AEP Ohio's Community Energy Savers pilot program representatives, led the City of Wooster Sustainability Roadmap efforts. The roadmap leverages existing energy and sustainability initiatives already in the planning or completion phase. The result is an actionable plan that targets environmental, economic and social priorities to achieve the City's goal of creating a more sustainable and engaged community. Additionally, the plan offers various tips for residents and businesses to reduce energy consumption and adopt sustainable practices at home or in the business place.

The roadmap is organized into three sections, each section highlighting established goals and action steps for achieving those goals, along with targeted timelines and responsible parties. The Key Performance Indicators (KPIs) identified throughout the Roadmap serve to provide measurable value to demonstrate the City's effectiveness at achieving key sustainability objectives over a 3-year period.

AEP Ohio would like to thank Mayor Bob Breneman, Andrew Guidetti, Ashley Brillhart, Curt Denning, Dave Wooldridge of Buckeye Energy Solutions, Bryan Plotkin, and their partners for being the leading team for the Community Energy Savers Program and making the development of this document possible.

STRATEGIES FOR IMPLEMENTATION

The City of Wooster will engage in the activities identified in the roadmap through strategies, including:

- Developing lasting partnerships with local and regional organizations that are committed to promoting energy efficiency and sustainability;
- Maintaining strong working relationships between Wooster and AEP Ohio, and;
- Creating a channel of communication to increase participation and knowledge about energy efficiency practices and programs among residents and businesses in the community.



Introduction



The scenic natural beauty of the region, along with the variety of historical and recreational opportunities, make Wooster both a desirable place to live and visit.

Founded in 1808 by John Bever, William Henry, and Joseph Larwill, the City of Wooster was named after David Wooster, a General in the American Revolutionary War.

The City is located in the county seat of Wayne County, Ohio. In 2013, Foreign Direct Investment magazine ranked Wooster amongst North America's Top 10 Micro Cities 2013/2014 for business friendliness and strategy. According to the 2010 U.S. Census Bureau, the City's population is 26,119.

Wooster is home to several industrial enterprises, including Buehler Food Markets Inc., Wooster Brush, Seaman Corp., Tricor Industrial, Wooster Motor Ways, and Certified Angus Beef. North American headquarters of the German maker of dual clutch transmissions, LuK, is also located in Wooster. Other companies with commercial operations in Wooster include Frito-Lay, Akron Brass, United Titanium, and Bogner Construction Company. Wooster is also the world headquarters of the Prentke Romich Company (PRC), which is a member of a consortium of companies that produce assistive technology and augmentative communication devices.

The City is home to the College of Wooster and two subsidiaries of The Ohio State University: the Agricultural Technical Institute (ATI); and the Ohio Agricultural Research and Development Center (OARDC), a teaching and research facility dedicated to agricultural science.

Wooster remains an agricultural center for Ohio. As the City moves forward, sustainability has increasingly become an area of focus for many members of the community. Over the past few years, the City and other local institutions have engaged in several sustainability commitments, including energy efficiency, recycling, and infrastructure for active transportation initiatives. Many of the local residents, businesses, and institutions also have started to work on making their own properties and organizations more sustainable. For more information on City initiatives, visit the City of Wooster website at Woosteroh.com.

AEP OHIO ENERGY SAVERS PROGRAM

AEP Ohio's Community Energy Savers (CES) program was first launched in 2014. The City of Wooster CES program officially launched on August 1, 2016 and ended on November 30, 2016.

The City participated in the AEP Ohio's CES pilot to help promote energy efficiency activities among residents and businesses while earning funds to assist with energy efficiency upgrades throughout City facilities and downtown lighting.

Through the CES program, AEP Ohio provided tools, training and resources to Wooster to assist in educating the community on energy efficiency and sustainability, while also engaging community residents and businesses to participate in AEP Ohio's energy efficiency programs. To support Wooster in accumulating participation points, AEP Ohio offered a menu of services including marketing, operations, and technical assistance.

Each time a local resident or business participated in one of the pre-selected energy efficiency programs (Community Assistance Program, Rebates for Your Home, online Home Energy Profile, Multifamily Direct Install, Express, and Efficient Products programs) the City received points toward its total goal of 665 points.

After the four-month participation period, the City exceeded its goal by 32%, with a high success in the Multifamily, Prescriptive and Community Assistance programs.

SUSTAINABILITY ROADMAP

Upon successful completion of the program, the City became eligible to receive two significant awards from AEP Ohio, including:

1. A financial award in the amount of \$25,000 to use toward energy efficiency projects throughout the City, and;
2. Technical assistance toward the development of the City's Sustainability Roadmap.

Sustainability planning is a growing trend globally, nationally, and regionally. Numerous cities and towns in Ohio have created sustainability plans and roadmaps, including Akron, Athens/Ohio University, Cincinnati, Cleveland, Columbus, and Dayton.

Because of AEP Ohio's CES program, seven other communities within Ohio developed Sustainability Roadmaps between 2014 and 2016: Amesville, Athens County, Discovery District in Columbus, Lima, Louisville, Rio Grande, and Somerset.

The many benefits to developing a sustainability roadmap and plan include:

- Developing priorities in an efficient manner;
- Fostering accountability—what gets measured gets managed;
- Galvanizing the entire community around common goals, and;
- Communicating to prospective residents and businesses that Wooster is a dynamic community, while engaging and retaining existing members.



This Sustainability Roadmap is an actionable plan that targets 15 environmental, economic and social priorities to achieve the City of Wooster's goal of creating a more sustainable community.



The Wooster team:

*ASHLEY BRILLHART
Recreation & Community Center Supervisor*

*ANDREW GUIDETTI
PPM Traffic Supervisor*

*CURT DENNING
PPM Manager*

*JONATHAN MILLEA
Economic Development Coordinator*

*JEFF BATTIG
Recreation & Community Center Manager*

*ANDREW DUTTON
City Planner*

*TIM MONEA
Building Standards Manager*

*KEVIN GIVINS
Utilities Manager*

*STEVE CARATHERS
Utilities Supervisor*

*BRYAN PLOTKIN
Aep Ohio Customer
Service Account Representative*

The roadmap is organized into three sections, each section highlighting established goals that are specific, measurable, attainable, realistic, and time-bound (SMART), and respective action steps for achieving those goals.

Key Performance Indicators identified throughout the Roadmap serve to provide measurable value to demonstrate the City’s effectiveness at achieving key sustainability objectives over a 3-year period.

THE WORKSHOP

The project began with a workshop hosted by the City of Wooster on January 17, 2017. The workshop included a facilitated discussion in which the group identified the City’s ongoing and planned priority areas and initiatives. The workshop team identified specific goals and activities that would become part of the City’s Sustainability Roadmap.

This actionable plan builds upon work that the City has already accomplished or is planning to achieve. AEP Ohio would like to thank the team for their invaluable contributions in the development and execution of this roadmap.

City of Wooster Roadmap

Priority Areas

1

Environmental Responsibility

Energy Efficiency

Water & Wastewater Management

Waste Management & Recycling

2

Economic Enhancement

Economic Development

Mobility

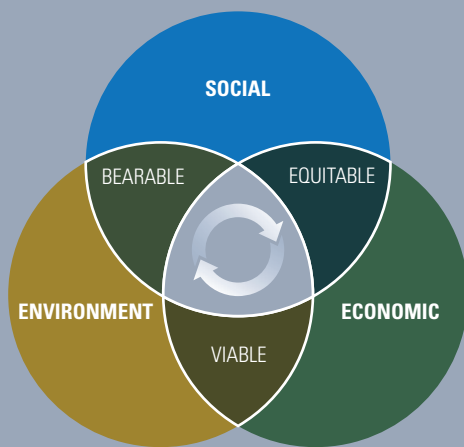
3

Empowered People

Parks & Recreation

Community Engagement

Sustainability Defined



Sustainable development can be defined as an evolving process that improves the economy, environment, and society for the benefit of current and future generations. A sustainable community adopts a strategic plan that is built on the interactions of three pillars: environmental, social and economic.

The environmental pillar addresses issues such as material usage, energy, water, biodiversity, emissions, effluents, natural resource use, and waste. Health and safety, education, recreation, arts and culture, and fair access to resources increase the sustainability of communities and make up the social pillar. Workforce development, fair and equitable wages, and stable, non-transient, local jobs comprise the economic pillar.

Making sure that the adopted activities positively affect all three pillars is critical for a sustainable community.

The City of Wooster is committed to continuing and expanding its initiatives and efforts that will affect the community members and businesses in a positive manner, while attracting new residents and businesses. The following sections provide an overview of the City's planned and ongoing initiatives, combined with additional recommendations for strengthening sustainability throughout the community.

With the right combination of effective governance, innovation and public/private collaborations, many of the City's economic, environmental and social challenges can be minimized and overcome.

Environmental Responsibility

Energy Efficiency

Energy conservation and energy efficiency are fundamental to a sustainable economy because, in addition to saving energy, their benefits ripple throughout the economy, helping to address inequality, build a stronger middle class, and improve economic competitiveness. With the support of committed leaders, the City of Wooster is working to make its community more energy efficient. Numerous initiatives are underway to educate the City’s residents and organizations about the environmental and economic benefits of energy conservation and energy efficiency. Through these engagement initiatives and active community participation in energy efficiency programs, the City aims to increase the municipal operations as well as community as a whole energy efficiency and conservation efforts.

Goal 1: Determine the baseline energy consumption for local government operations (LGO) by 2018 through tracking, reporting, and online tools.

The absence of federal greenhouse gas (GHG) regulations in the United States has not diminished the importance and desire of municipalities and businesses all over the country to assess their impact on the environment. Therefore, in order for the City to understand their impact ultimately, as well as tracking improvements over time, a baseline for energy consumption must be established.

ACTIONS

1. Determine the baseline for energy consumption of local government operations (LGO), such as the City Hall, police department, water and wastewater buildings, pavilions and other municipal facilities. This can be achieved by using the Environmental Protection Agency (EPA) Online Tool, ENERGY STAR® Portfolio Manager (ESPM). The baseline shall be defined by entering the monthly energy and water consumption for the year 2016 in ESPM.
2. Continue to track the LGO energy, water and waste consumption using ESPM. In order to get accurate insight on the benefits of the implemented projects, the City shall continue to track and input energy, water and waste consumption in the ESPM. This update shall be done at the City’s discretion, at least on a quarterly basis.

TIMELINE 2018

KEY LEAD Ashley Brillhart



AEP OHIO CAN HELP

Accessing Energy Savings for Residential Customers

Residential customers of AEP Ohio can conduct a free, online energy assessment and receive energy efficient items by participating in the Home Energy Profile program.

Residents may also take advantage of the Rebates for Your Home program when they purchase an ENERGY STAR® labeled appliance and receive up to \$500 back in rebates. Eligible appliances include electric heat pump water heaters, air purifiers, clothes washers, refrigerators and smart thermostats.

Owners or managers of multifamily properties may be eligible for free energy efficiency measures for their tenants whose residences are individually metered by AEP Ohio.

Details for these and all AEP Ohio energy efficiency programs can be found at AEPOhio.com/ItsYourPower for residents or AEPOhio.com/Solutions for businesses.

Please note that offerings and requirements are subject to change.

AEP OHIO CAN HELP

Accessing Energy Savings for Commercial Customers

AEP Ohio offers businesses set financial incentives for the implementation of energy-efficient improvements and technologies that reduce energy consumption through the Efficient Products for Business, Process Efficiency and Self Direct program.

The program is a simple and easy-to-use way to receive funding for common energy efficiency projects. Some eligible businesses include agriculture, construction and major renovation, data centers, government and non-profit, grocery and convenience stores, hospitals, manufacturing and warehousing, office buildings, retails, schools and small business.

All business customers in AEP Ohio's service territory in the state of Ohio are eligible to apply, and can choose from a predefined incentive menu based on a fixed-cost per unit. Some of the categories include:

- Heating and Cooling (HVAC)
- Lighting
- Motors and Drives
- Refrigeration
- Compressed Air
- Miscellaneous Food Preparation & Storage Equipment

For more information, visit AEPOhio.com/Solutions.

Please note that offering and requirements are subject to change.

KPI(s) Report the amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives.

- Report the types of energy included in the reductions: fuel, electricity, heating, cooling, and steam.
- Report the basis for calculating reductions in energy consumption such as base year or baseline, and the rationale for choosing it.
- Report standards, methodologies, and assumptions used.

Goal 2: Reduce LGO energy consumption by 3% by 2018 from 2016 baseline.

As a progressive community, the City of Wooster has already achieved its objective of reducing LGO GHG emissions by continuously improving operations and equipment, and reducing energy consumption. The City will continue these efforts by focusing on improvements at municipal owned buildings, facilities, and fleet. The City will lead by example and engage and encourage residents and businesses to follow suit.

ACTIONS

1. Upgrade existing lighting in city owned buildings and facilities with light emitting diode (LED) lamps:
 - a. Replace all pavilions lighting with LEDs. Currently, approximately 15 pavilions are served by a variety of light fixtures that use lamps rated from 150 watts to 400 watts. The replacement process has already started, and as existing lamps burn out, LED bulbs will take their place. Municipal funds combined with utility incentives, enable the replacement to be done preemptively. LEDs not only reduce the electricity consumption by up to 80%, but they also generate significant savings on maintenance costs.
 - b. Replace 1,000+ lighting fixtures that use fluorescent lamps with LEDs in the Parks and Recreation facilities. Currently, the pools, community center, maintenance buildings, concessions, bathhouses, and many other locations still require upgrades to energy efficient lighting.
 - c. Replace all holidays lights with LED ones. As the City pays for all the holiday decorative lighting electricity consumption, it is in its favor to educate its partners and community members and businesses about the benefits of energy efficiency and conservation. The goal is to eliminate any non-LED holiday lamps within three years.
 - d. Upgrade lighting with LED lamps in the water and wastewater facilities. Fifteen City buildings and nine substations continue to use a variety of fluorescent and incandescent lighting. As LED technology becomes less expensive, upgrading the lighting in these spaces will significantly decrease the City's carbon footprint.
2. Replace all six (6) circulation pumps that serve the three pools with variable-frequency drives (VFD). VFD's help pools maximize energy efficiency by running the pumps at a slower speed, without any downside effects on the pools' filtration systems. This can save between 15-20% of the pumps' electricity consumption.

3. Reassess or conduct a street lighting inventory with the goal of replacing streetlights with LED fixtures. The City of Wooster, in partnership with AEP Ohio, conducted a street lighting inventory several years ago and the information from this assessment can be used in the City’s analysis to upgrade the street lighting. The City shall identify appropriate utility contacts to discuss the opportunity further and work together toward achieving this goal.

TIMELINE 2020

KEY LEAD Andrew Guidetti, Curt Denning, Jeff Battig

KPI(s) Track the reduction of energy consumption.

- Report the amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives, in joules or multiples.
- Report the types of energy included in the reductions: fuel, electricity, heating, cooling, and steam.
- Report the basis for calculating reductions in energy consumption such as base year or baseline, and the rationale for choosing it.
- Report standards, methodologies, and assumptions used.

Goal 3: Complete a cost benefit analysis for converting the City’s vehicle fleet to compressed natural gas (CNG) by 2020.

CNG is a cleaner burning transportation fuel due to its lower carbon content when compared to traditional fuels and, therefore, emits less GHG emissions. Upon completion of the analysis, the City will have better insight regarding cost, benefits and available resources needed for implementation.

ACTIONS

1. Establish partnerships with municipalities/cities that have already taken steps to convert their fleet vehicles to CNG.
2. Perform a cost benefit analysis based on current and future gas prices to determine if converting to CNG is a viable and cost-effective option for the City of Wooster.
3. Prioritize which city vehicle should be converted first: police vehicles, city fleet, garbage trucks, etc.
4. Convert two vehicles to CNG.

TIMELINE 2020

KEY LEAD Steve Carathers

KPI(s) Report the percentage of project profitability of converting the City’s vehicle fleet to compressed natural gas, as determined by the cost benefit analysis.

AEP OHIO CAN HELP

Accessing Energy Savings for Government Agencies

For any local government looking to reduce greenhouse gas emissions within its jurisdiction, it is imperative that officials pay special attention to the buildings in the community.

Opportunities to reduce the emissions in buildings are significant, since as much as 30 percent of the energy consumed in commercial buildings is often used unnecessarily or inefficiently. Specific savings ideas include:

Lighting

- Efficient fluorescent (T5/T8) or LED
- LED Exit signs
- Occupancy sensors/lighting controls
- LED exterior lighting with controls

Space cooling

- High efficiency HVAC
- Building EMS

Ventilation

- VFD’s for fans
- CO₂ sensors

Office Equipment

- Plug load control
- Power management software
- Server virtualization

Data Rooms

- Power management software
- Server virtualization

Other

- Vending machine controls
- High efficiency hot water heater

For more information, visit AEPOhio.com/Solutions.

Please note that offering and requirements are subject to change.

Tips to Save Energy

Oftentimes people associate energy efficiency with discomfort. Many energy efficiency and energy conservation measures provide residents and business owners the opportunity to save on their utility bills without compromising the comfort of their homes or employees. Small behavioral and operational changes can have a significant impact on the overall performance of a home or building.

AT HOME

- Unplug electronics and unused appliances to reduce 'vampire energy'
- Take advantage of your computer's energy-saving features
- Replace incandescent light bulbs with ENERGY STAR® certified CFLs or LEDs. Get special discounts on CFL bulbs through AEPOhio.com/ItsYourPower
- Install programmable thermostats
- Turn off lights when not in use
- Weatherize your home
- Change filters on your furnace and air conditioning regularly
- Install low-flow plumbing fixtures

AT WORK

- Conduct an energy audit/assessment
- Calculate a baseline for energy usage
- Adjust lighting levels for different uses and times of day
- Install lighting controls such as dimmers, timers, motion sensors and photocells
- Install LED exit signs
- Use LED lighting for outdoor security and decoration

Environmental Responsibility

Water & Wastewater Management

City of Wooster is committed to conserving water and improving efficiency and performance of its water system. While Wooster is always looking to continuously improve its water and wastewater systems, as demonstrated by the Water Pollution Control Plant team's significant improvements throughout operations over the last 10 years. Wooster has the only water/wastewater facility in the country that is energy self-sufficient.

Goal 4: Maintain the Combined Heat & Power (CHP) System Operational

CHP is one of the most cost-efficient methods of reducing carbon emissions from heating systems in cold climates. To prolong the life of the CHP system serving the Wooster water facility, the city staff recognizes its invaluable benefits and continue their efforts to maintain the system in operational condition. Failure to do so would result in increased energy costs for the City that would ultimately affect the community members.

ACTIONS

1. Perform no-cost/low-cost maintenance on the CHP system to keep it operating efficiently, and prolong its life expectancy.
2. Perform a cost benefit analysis to determine annual budget needs for capital upgrades to the CHP system.

TIMELINE 2019

KEY LEAD Steve Carathers

KPI(s)

- Report number and type of monthly/routine maintenance activities on the CHP systems.
- Report budget requirements for capital upgrades to the CHP system, as a result of the cost benefit analysis performed.





Goal 5: Improve Municipal Sludge Management by conducting a feasibility study, cost benefit analysis, and identification of sludge recycling.

Sludge is mostly water with lesser amounts of solid material removed from liquid sewage and takes up volume in wastewater treatment systems. Sludge periodically needs to be removed, resulting in increased operating costs and complexity. Currently, the City staff trucks the sludge to a landfill, which is very costly to the City, as the sludge contains a significant amount of water, therefore the removing process requires increased fuel consumption and extensive labor demands. The City is actively working to identify ways for which to improve the existing system in order to reduce the water in the sludge and the overall amount of sludge.

ACTIONS

1. Investigate options for improved sludge management, including anaerobic systems, sludge dewatering equipment, waste lagoons, etc.
2. Complete a feasibility study and cost benefit analysis for the identified option.
3. Identify options for sludge recycling.
4. Organize three meetings with city key-decision makers with the goal of implementing an improved sludge management process.

TIMELINE 2018

KEY LEAD Steve Carathers

KPI(s) Report on number and type of identified opportunities for sludge recycling as a result of the feasibility study, cost benefit analysis, and meetings with City leadership.

Goal 6: Convert all water-pumping stations to virtual net metering by 2020.

Net metering is an arrangement wherein customers who produce their own electricity can receive a credit on their electric utility bills for extra electricity produced by the customer, which then flows back to the utility's distribution system. When the generating equipment produces more electricity than needed, the extra electricity flows backward through the utility meter, making it turn in reverse. This reverse metering may result in a lower monthly meter reading by the electric utility, thus lowering the electric bill. Virtual net metering, also referred to as virtual meter aggregation, is a billing mechanism that allows a customer to credit kWh's (kilowatt-hours) from one meter to another.

ACTIONS

1. Arrange a meeting with AEP Ohio decision-makers to discuss the opportunity of virtual net metering in Wooster.
2. Perform feasibility study on converting water pump stations to virtual net metering.

3. Identify five water pump stations to convert to virtual net metering.

TIMELINE 2018

KEY LEAD Steve Carathers

KPI(s) Report on citywide options for converting water pump stations to virtual net metering, as identified through the feasibility study and City/AEP Ohio meeting.

Goal 7: Conduct feasibility study for eliminating Friendsville Road pumping station by 2019.

The Friendsville Road pump station may not be needed to serve the overall water and wastewater system serving Wooster as the already remaining pumping stations can meet the demand. Further investigation regarding the possible elimination of this pumping station must be conducted. If it is determined that eliminating the station is feasible, the water pumps must be bypassed, resulting in pump energy consumption reduction.

ACTIONS

1. Meet with key decision-makers to discuss the viability of eliminating the water station.
2. Perform feasibility study on cost and operational effectiveness of eliminating the pump station.
3. If approved, complete the necessary work to by-pass the existing water station.

TIMELINE 2019

KEY LEAD Steve Carathers

KPI(s) Report findings of feasibility study, including the percentage of project profitability for eliminating pump stations.



Tips to Conserve Water

The average American household uses 320 gallons of water per day, about 30 percent of which is devoted to outdoor uses. More than half of that water is used for watering lawns and gardens. When it comes to conserving irrigation water, small adjustments can have a significant impact. Here are some ideas on how to use water in the house and at work more efficiently:

AT HOME

- When hand washing dishes fill one sink with wash water instead of letting water run
- Purchase ENERGY STAR® certified dish washers
- Wash fruits and vegetables in a container filled with water instead of letting water run
- Don't use running water to thaw food. Defrost food in refrigerator or in a container with lukewarm water
- Use a reusable water bottle for your daily drinking needs
- Don't water your lawn during summer peak hours or on windy days when most of the water would evaporate or be blown away
- Use drip irrigation for shrubs and trees to apply water directly to the roots
- Monitor your bill for unusually high water use to detect leaks
- Test your toilet for leaks at least once a year by adding food coloring or a colored toilet cleaner in the tank to see if it seeps into the bowl
- Use rain barrels to harvest rainwater from gutters and watering gardens and landscapes

AT WORK

- If not already present, install water meters and sub-meters to measure water consumption Assess your water use to identify opportunities for savings and track results
- Check regularly for leaks and, when found, repair them promptly
- Consider and compare water use when purchasing ice makers, dishwashers, coolers and cleaning equipment
- Install WaterSense® labeled shower-heads, toilets and flushing urinals
- Use sprinklers that deliver big drops of water closer to the ground. Smaller drops and mist will often evaporate before hitting the ground
- Water lawn and wash other outdoor surfaces only when necessary
- Plant native landscaping and lawns that thrive with less water
- For extended lawn areas needing irrigation, install control devices such as moisture sensors to match the water needs of the landscaping

Environmental Responsibility

Waste Management & Recycling

Reducing waste and increasing recycling efforts work hand-in-hand with protecting natural resources while saving residents money. An increasing number of residents and businesses are participating in waste reduction and recycling programs, and the City of Wooster already leads by example through waste reduction strategies in municipal buildings. Wooster currently has a successful weekly residential recycling pickup program that reaches over 4,800 households. The program has resulted in a 30% increase in tonnage recycled over the past three years. The City aims to promote these efforts by continuing to identify new ways of increasing participation in waste reduction and diversion opportunities.

Goal 8: Reduce waste to landfill by 10% by 2020 by increasing recycling and composting.

ACTIONS

1. Increase participation in the Wooster curbside recycling program by educating residents about the benefits of recycling.
2. Add two recycling dumpsters for the local restaurants and businesses to use. Currently, businesses and restaurants in downtown Wooster have the option to obtain a 'prescription' to use one of the three recycling dumpsters located in the downtown area. The City will work to increase the usage of these dumpsters by informing the public through social media, newsletters, and other communication mediums frequently used by City staff members.
3. Ensure all events hosted by or in the City will have sufficient access to recycling bins. The City shall complete an inventory of the existing recycling bins, and identify the need for purchasing additional ones.
4. Each year the City of Wooster publishes a basic guide to recycling, which provides information and tips for residents and local businesses. Wooster will work to increase the availability of this pamphlet to better educate its residents about best practices of recycling.
5. Increase the residential recycling canisters in the downtown area.
6. The City of Wooster will explore the possibility of hosting a City sponsored E-Waste in the fall to provide increased opportunities for residents to properly dispose of E-Waste.





TIMELINE 2020

KEY LEAD Andrew Dutton

KPI(s) Report the total weight of hazardous and non-hazardous waste, by the following disposal methods:

- Reuse;
- Recycling;
- (Municipal) Composting;
- Recovery, including energy recovery;
- Incineration;
- Deep well injection;
- Landfill;
- On-site storage, and;
- Other (to be specified by the City).

Interesting Facts About Recycling

Many studies provide information on the benefits of recycling. When community members are informed about these issues, the chance of changing their habits is increased significantly. Waste reduction measures can help protect the environment by slowing the depletion of natural resources and reduce pollution associated with the extraction of raw materials and overcrowded landfills. Three main ways to reduce waste include waste reduction, recycling and composting. Many measures can be taken among these three categories, both at home and in the workplace.

ALUMINUM

According to the U.S. Environmental Protection Agency, recycling an aluminum can requires less than 5 percent of the energy that would be expended in creating a similar can out of fresh bauxite ore. The Aluminum Association estimates that the energy saved in recycling a single aluminum can could power a television for 3 hours.

PAPER

Recycling paper not only saves energy but also saves trees, reducing the amount of carbon dioxide present in the atmosphere. The EPA estimates that producing a recycled paper product requires only 60% of the energy required to create one from fresh wood pulp, and the Energy Administration Information reports that recycling a ton of paper can save 17 trees. Recycling paper also requires about half the water normally used in processing paper from virgin wood.

PLASTIC

Recycling plastic requires only a tenth of the energy needed to create new plastic from raw materials, according to Mike Biddle, president of MBA Polymers.

GLASS

Glass recycling is less efficient than many other forms of recycling, due to the processing required to return glass to a usable, raw state. According to the EPA, recycling glass only saves about 30% of the energy cost of producing new glass, and the raw materials required are in abundant supply. Reusing glass bottles and jars requires no energy, so you can reduce energy costs by finding new uses for these containers instead of simply throwing them out. Once you throw glass out, it can take up to 1 million years before it breaks down in the landfill.

Tips to Reduce Waste

AT HOME

- Purchase items that are recyclable or compostable
- Recycle an old refrigerator or freezer and get cash back
- Use reusable bags when shopping for groceries
- Learn what items are recyclable (not all plastic is recyclable)
- Start a home composting bin for your landscape
- Bring recyclables and yard waste to the drop-off locations
- Eliminate unnecessary items, such as paper and plastic cups used at home. Use durable, reusable products rather than single-use
- Take only what you need (e.g. bags, flyers, napkins, etc.)
- Make smaller-sized portions to reduce food waste

AT WORK

- Minimize office waste and use Forest Stewardship Council (FSC)-certified recycled paper
- Reduce printing paper and ink usage by setting double-sided printing as default
- Use rechargeable batteries
- Bring your own mug for coffee and other liquid use when plastic or paper cups are the alternative
- Purchase energy efficient lighting fixtures, and ENERGY STAR® certified office equipment and appliances
- Participate in donation programs, giving away items such as office equipment and building supplies
- Consider composting and 'grass cycling'
- Eliminate bottled-water and use pitchers and reusable cups at meetings and events

AEP OHIO CAN HELP

Appliance Recycling Program

Customers of AEP Ohio can call 866-899-9862 to schedule free pick-up of their old, working refrigerator or freezer. AEP Ohio will pay the customer \$35 and recycle the appliance, thus keeping it out of the landfill and off the grid. **[AEPOhio.com/Recycle](https://www.aepohio.com/Recycle)**

Please note that offering and requirements are subject to change.

Economic Enhancement

Economic Development

Through a sustainable development approach, the City of Wooster's economic initiatives attempt to foster economic growth, while preserving the quality of the environment and increasing social equity. The City is committed to using sustainability as a platform for fueling economic development by expanding its local food, transportation, and educational initiatives, enabling improvements to quality of life and retention of residents, along with attracting new residents, businesses and visitors.

Goal 9: Work with City partners to increase economic vitality and quality of life within Wooster

ACTIONS

1. Continue to work with key community partners, such as AEP Ohio, to attract new businesses to relocate to Wooster. The City will also continue dialogue with these partners to ensure that Wooster is prepared and has capacity to attract new businesses.
2. Collaborate with Community Action to increase access to public transportation for residents without access to a personal vehicle.
3. Work with the Main St. Wooster Organization and their 'Economic Development' committee to develop a strategy to increase development opportunities throughout the community.
4. Partner with the United Way to increase awareness and availability of community assistance resources for housing, jobs, mental health etc.
5. Increase low-income housing throughout the city by 2020.
6. Continue to promote the City's 2015 Market Analysis to developers to encourage the creation of new housing to attract highly qualified individuals to work in Wooster. Attracting a young and qualified labor force is essential for sustained economic growth.
7. Develop an education curriculum that addresses the economic and health benefits of local food. Wooster already has an extremely impressive ongoing local food initiative that is supported by restaurants and local businesses in the community. Through this curriculum, Wooster will increase community's awareness and involvement in the local food efforts.
8. Support the expansion of Wooster's Farmer's Markets to increase the number of local farmers.





According to the U.S. Department of Labor, green jobs are either:

1. Jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources, or;

2. Jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources¹.

Examples of green jobs can include Water Quality Technicians, Energy Specialists, Recyclers, Green Builders, Solar Technicians, Green Design Professionals, Wind Energy Workers, Nature Scientists, and Biofuels jobs.

TIMELINE 2020

KEY LEAD Andrew Dutton, Johnathan Millea, Tim Monea

KPI(s)

- Report on number of new low-income housing opportunities created;
- Report on number of residents reached through the local food curriculum;
- Report on number of residents who attend Farmer's Market in a year.

Goal 10: Increase green job growth in the City of Wooster by 3% by 2020 through partnerships, awareness campaigns, and incentives.

ACTION

- 1.** Foster partnerships with local businesses to create green jobs throughout City of Wooster.
- 2.** Continue to promote awareness of the green-energy technology advancements enabled by the City of Wooster's Waste Water Treatment Plant facility.
- 3.** Continue to collaborate with the Ohio State University in marketing of the BioHio Research Park as a center for mentored green-energy and agriculture-based business development.
- 4.** Continue to make small-scale economic development incentives available, such as the Wooster Opportunity Loan Fund, to foster a friendly business start-up climate in the community and encourage innovation and new technologies.
- 5.** Determine feasibility of establishing incentives and/or awards program for businesses that create sustainability related jobs and foster sustainable innovation program.

TIMELINE 2020

KEY LEAD City of Wooster/All

KPI(s)

- Report on number of green jobs created.
- Report on number of newly established partnerships that aim to create green jobs.
- Report on number and type of incentives that are made available to encourage innovation and new technologies.
- Report the awards program for businesses and the number of awards given to businesses that create sustainability related jobs and foster sustainable innovation.

¹ <http://www.bls.gov/green/>

Economic Enhancement

Mobility

Sidewalks, bike trails, mass transit, and transit services are essential to providing the connectivity to support Wooster's growing community and economy. A total of 12.1% of all working Wooster City residents 16 years of age or older use alternative transportation to commute on a daily basis, with 10.3% walking, and 1.8% using a means other than a vehicle or public transit, such as bicycling. (U.S. Census Bureau, 2014 American Community Survey, 5-Year Estimates, Table DP03 for City of Wooster, Wayne County, Ohio). However, many areas of our compact community lack adequate infrastructure and services to connect residents to employment, recreation, education, healthcare, and civic destinations. Transit services provide a vital means of access particularly to those in need, while public infrastructure investment in bike trails and sidewalks provide a form of alternative transportation benefiting all residents with increased mobility while also encouraging healthy lifestyles.

Goal 11: Expand mobility programs and public transportation options to residents by 25% by 2020

ACTIONS

- 1.** Build additional sections of bike path to improve the citywide connectivity. The City has already built five sections of bike path, representing approximately 50% of the project. The City's goal is to complete 75% of the project by the end of 2020.
- 2.** In partnership with the Wooster Bike Trail Committee, continue identifying gaps in sidewalk and trail coverage within the community to increase connectivity that promotes alternative transportation, safe routes to schools, and healthy lifestyles.
- 3.** Collaborate with the College of Wooster and other community stakeholders to identify potential volunteers from the faculty and/or student body to aid in conducting a bikeshare program feasibility study. The analysis shall include a map with optimal locations for bike stops/racks, cost benefit analysis and potential opportunities for implementation, such as available funds or private companies interested in such venture.
- 4.** Continue collaborating with the Community Action of Wayne and Medina and other area providers to create better transportation opportunities for residents. The partnership shall aim for an ongoing assessment of transportation options and improvement, attaining grant funding for vulnerable residents, and recruiting more businesses to incentivize carpooling.





5. Promote and inform the public on the existing transportation options available to them.
6. Inform residents and businesses about available tax credits and other incentives for carpooling.

TIMELINE 2020

KEY LEAD Ashley Brillhart

KPI(s)

- Report on percentage of completion of bike path project.
- Report on gaps identified in sidewalk and trail coverage, through partnership with Wooster Bike Trail Committee.
- Report number of volunteers engaged in conducting the bikeshare program feasibility study
- Report number and type of opportunities identified for improving transportation opportunities, as part of the collaboration with Community Action and other area providers.

Empowered People

Parks & Recreation

City of Wooster recognizes that a strong commitment to social equity is key to moving closer to achieving sustainability goals. Community programs comprised of protecting the natural environment, achieving resource conservation, and addressing other aspects of environmental sustainability, and promoting social equity, only strengthen the City's social foundation for long-term viability. City of Wooster's community wellness initiatives aim to establish a comprehensive, integrated approach to sustainability, resulting in inclusive engagement, equal access to services, and livable neighborhoods.

Goal 12: Expand and diversify 'healthy living' opportunities for residents by 10% by 2020 through education and increasing access to parks and recreational space.

ACTIONS

1. Purchase more than 60 acres of land for conservation easement through the Clean Ohio grant. The land shall be utilized to expand the already existing park system, by adding walking trails and bike paths to ensure connectivity to the Wooster Memorial Park. The City's goal is to conclude the negotiating activities and purchase the land by the end of 2017. By 2020, the City's goal is to complete 25% of the trails and park design.
2. Collaborate with the National Parks and Recreation Association to design and implement an educational program at the Wilderness Center. The program shall identify key champions for implementation, a strategy to attract volunteers if necessary, and the frequency or a schedule for the educational activities. Partnership with local schools and parents is crucial as well in delivering the program. The goal of the City is to have a firm program in place by the end of 2018 and a full year of implementation by the end of 2020.
3. Convert spare tennis courts to pickleball courts, which has become very popular over the last few years. By diversifying the public courts, more residents will engage in active and healthy activities.
4. Continue using cyanuric acid (CYA) for the pools to keep chlorine usage low. CYA is needed to protect chlorine from sunlight degradation and prevents exposure to high levels of chlorine, acting as a buffer to prevent pH from drifting lower. Using CYA keeps the chlorine in the water eight times longer. With no CYA the loss of chlorine to sunlight is 75% in two hours.





TIMELINE 2020

KEY LEAD Andrew Guidetti, Ashley Brillhart, Jeff Battig

KPI(s)

- Report on the number of acres purchased by the City for conservation easement through the Clean Ohio grant.
- Identify the type of educational program designed and implemented at the wilderness center, including target audience and number of residents reached through the program.
- Report the percentage of project completion of converting tennis courts to pickleball courts.



Empowered People

Community Engagement

Goal 13: Appoint 3-5 volunteer Sustainability Ambassadors by 2018 to increase awareness and community participation in the City of Wooster's Sustainability efforts.

ACTIONS

1. Appoint three to five volunteers to become 'Sustainability Roadmap Ambassadors' who will support various initiatives and provide workshops and community updates on the Sustainability Roadmap priorities.
2. Create a City of Wooster Sustainability Roadmap e-blast list to provide updates on Sustainability Roadmap and promote AEP Ohio energy efficiency programs and other opportunities deemed beneficial for community members.
3. Work with the mobility manager, local nonprofits, and human service agencies to educate the public on public transportation options.
4. Educate the public about the work done with the Tree City USA, healthy management of human forestry.

TIMELINE 2018

KEY LEAD Ashley Brillhart

KPI(s)

- Report number of sustainability workshops and e-blasts offered annually.
- Report number of volunteer sustainability ambassadors appointed to increase awareness and community participation.

Goal 14: Educate at total of 100 residents and business owners on the importance of water conservation and responsible consumption by 2019 through workshops, bill stuffers, and consumer reports.

ACTIONS

1. Partner with local industry and community groups (e.g.: Leadership Wooster) and new companies (e.g. Daisy Dairy, GoJo) to provide educational workshops to residents and businesses about the benefits of water conservation.
2. Send and/or provide monthly and/or quarterly bill stuffers and consumer confidence reports.





TIMELINE 2019

KEY LEAD Steve Carathers

KPI(s)

- Report on the number of bill stuffers or e-blasts per year that are sent to residents and businesses to educate them on water conservation.
- Report on the number of educational workshops provided to residents and business owners about the benefits of water conservation.

Goal 15: Employ three new methods for increasing sustainable waste management awareness to residents and local businesses by 2018 through partnerships, communication, and education.

ACTIONS

- 1.** Collaborate with Buehler’s grocery store on future E-waste events; communicate event details via newsletters, city web, and social media pages to increase resident and businesses participation.
- 2.** Increase communication and education of the existing prescription drug disposal program. The Wooster Prescription Drug Disposal program, hosted at the City hall, provides residents the opportunity to properly dispose of expired or unwanted prescription drugs.
- 3.** Educate the public regarding appropriate disposal of lawn waste. Leverage Paradise Lawn Care’s existing waste program to increase appropriate disposal of lawn waste among city’s residents. In addition, the City shall educate residents about the benefits of composting.

TIMELINE 2018

KEY LEAD Tim Monea, Jonathan Millea

KPI(s)

- Number of waste management events held annually.
- Number and type of communications sent to residents and businesses about prescription drug disposal program.
- Number of educational workshops or outreach activities about lawn waste disposal and/or composting.

TIPS FOR A HEALTHIER LIFESTYLE: DIET AND EXERCISE

The local food system is the production and distribution of food that is geographically localized. Labeling the food as sustainable involves a great number of factors such as the way the food is grown or raised, the way the food is harvested or slaughtered, processed, packaged and distributed. Benefits of consuming locally grown food include reduced fuel consumption associated with long range transportation of goods. Additionally, small-scale local production is typically healthier and offers opportunities to grow the local economy. Community gardens, for instance, allow families and individuals without land of their own the opportunity to produce food, resulting in families eating healthier diets, while improving the air quality and filter rainwater.

AT HOME

- Choose walking or biking over driving when possible and safe
- Participate in community meetings that discuss infrastructure needs
- Start a walking and/or running group
- Grow your own herbs and produce
- Make an effort to eat locally grown and/or organic produce to support the local economy
- Share produce with your neighbors
- Shop at farmers' markets or stores that sell local products
- Pick healthy recipes over fast food

AT WORK

- Join a Community Supported Agriculture program(CSA) with your co-workers
- Organize a food drive
- Promote vegetables 'show and tell' at local schools
- Organize a healthy recipe exchange with your co-workers
- Develop a community garden
- Share the drive – check with your co-workers on carpooling opportunities



Appendix A: Sustainability Roadmap

Key Leads

The following individuals are Key Leads in the execution of the City of Wooster Sustainability Roadmap initiatives:

Key Lead	Contact	
Bob Breneman	330-263-5245	bbreneman@woosteroh.com
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AEP OHIO Contact		
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Appendix B: Energy and Sustainability Goals - Summary Sheet

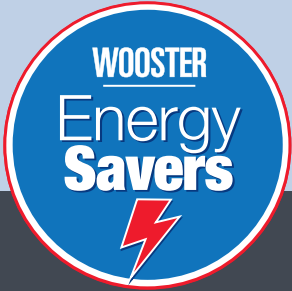
Pillar	Goal	Timeline
Environmental Responsibility	Energy Efficiency	
	Goal 1: Determine the baseline energy consumption for local government operations (LGO) by 2018 through tracking, reporting, and online tools.	2018
	1. Determine the baseline for energy consumption of local government operations (LGO)	
	2. Continue to track the LGO energy consumption using ENERGY STAR® Portfolio Manager	
	Goal 2: Reduce LGO energy consumption by 3% from 2016 baseline.	2020
	1. Upgrade existing lighting in city owned buildings and facilities with light emitting diode (LED) lamps	
	2. Replace all (6) circulation pumps that serve the three pools with variable-frequency drives (VFD)	
	3. Re-assess or conduct a street lighting inventory with the goal of replacing streetlights with LED fixtures	
	Goal 3: Complete a cost benefit analysis for converting the City's vehicle fleet to compressed natural gas (CNG)	2020
	1. Establish partnerships with municipalities/cities that have already taken steps to convert their fleet vehicles to CNG	
	2. Perform a cost benefit analysis	
	3. Prioritize city vehicles to be converted first	
	Goal 4: Maintain the Combined Heat & Power (CHP) System Operational	2019
	1. Perform no-cost/low-cost maintenance	
	2. Determine annual budget needs for capital upgrades	
	Water & Wastewater Management	
	Goal 5: Improve Municipal Sludge Management	2018
	1. Investigate options for improved sludge management	
	2. Complete a cost benefit analysis for the identified option	
	3. Identify options for sludge recycling	
	4. Organize three meetings with city key-decision makers with the goal of implementing an improved sludge management process	
	Goal 6: Convert water-pumping stations to virtual net metering	2018
	1. Arrange a meeting with AEP Ohio decision-makers about virtual net meeting in Wooster	
	2. Perform feasibility study on converting water pump stations to virtual net metering	
	3. Identify five water pump stations to convert to virtual net metering	
	Goal 7: Eliminate Friendsville Road pumping station	2019
	1. Meet with key decision-makers	
	2. Perform feasibility study on cost and operational effectiveness of eliminating the pump station	
3. Complete the necessary work to by-pass the existing water station		
Waste Management & Recycling		
Goal 8: Reduce waste to landfill by 10% by increasing recycling and composting	2020	
1. Promote the curbside recycling program		
2. Add two recycling dumpsters for the local restaurants and businesses		
3. Investigate the need for purchasing additional recycling bins for events		
4. Continue to promote and increase audience of the recycling pamphlet		
5. Increase the residential recycling canisters in the downtown area		
6. Host an E-Waste in the fall		

Appendix B: Energy and Sustainability Goals - Summary Sheet Continued

Pillar	Goal	Timeline
Economic Enhancement	Economic Development	
	Goal 9: Work with City partners to increase economic vitality and quality of life within Wooster	2020
	1. Identify strategies to attract new businesses	
	2. Increase access to public transportation	
	3. Partner with Main St Wooster to increase community development	
	4. Increase the awareness and availability of community assistance resources	
	5. Conduct a feasibility analysis for developing luxury apartments	
	6. Increasing low-income housing opportunities	
	7. Develop an education curriculum that addresses the economic and health benefits of local food	
	8. Increase local farmers' participation in the Farmer's Market	
	Goal 10: Increase green job growth in the City of Wooster by 3%	2020
	1. Foster partnerships to create green jobs throughout City of Wooster	
	2. Continue to promote awareness of the green-energy technology advancements enabled by the City of Wooster's Waste Water Treatment Plant facility	
	3. Continue to collaborate with the Ohio State University in marketing of the BioHio Research Park as a center for mentored green-energy and agriculture-based business development	
	4. Continue to make small-scale economic development incentives available, such as the Wooster Opportunity Loan Fund	
	5. Determine feasibility of establishing incentives and/or awards program for businesses that create sustainability related jobs and foster sustainable innovation program	
	Mobility	
	Goal 11: Expand mobility programs and public transportation options to residents by 25% residents by 25%	2020
	1. Build additional sections of bike path meant to improve the citywide connectivity	
2. Conduct a bikeshare program feasibility study		
3. Collaborate with the Community Action of Wayne and Medina to create better transportation opportunities for residents		
4. Continue collaborating with the Community Action of Wayne and Medina and other area providers to create better transportation opportunities for residents.		
5. Promote and inform the public on the existing transportation options available		
6. Inform residents and businesses about available tax credits and other incentives for carpooling		

Appendix B: Energy and Sustainability Goals - Summary Sheet Continued

Pillar	Goal	Timeline
Empowered People	Recreation	
	Goal 12: Expand and diversify 'healthy living' opportunities for residents	2020
	1. Complete the purchasing of 60 acres of land for conservation easement through the Clean Ohio grant	
	2. Design and implement an educational program at the wilderness center	
	3. Convert spare tennis courts to pickleball courts	
	4. Continue using cyanuric acid (CYA) for the pools to keep chlorine usage low	
	Community Engagement	
	Goal 13: Appoint 3-5 volunteer Sustainability Ambassadors	2018
	1. Appoint three to five volunteers to become 'Sustainability Roadmap Ambassadors'	
	2. Create a City of Wooster Sustainability Roadmap e-blast list	
	3. Educate the public on public transportation options	
	4. Educate the public about the work done with the Tree city USA	
	Goal 14: Educate at total of 100 residents and business owners on the importance of water conservation and responsible consumption	2019
	1. Partner with local industry and community groups to educate the public about the benefits of water conservation	
	2. monthly and/or quarterly bill stuffers and consumer confidence reports	
Goal 15: Employ three new methods for increasing sustainable waste management awareness to residents and local businesses	2018	
1. Communicate local E-waste event details via newsletters, city web and social media pages		
2. Increase communication and education of the existing prescription drug disposal program		
3. Educate the public regarding the appropriate disposal of lawn		
Notes		



Sustainability Plan

2017-2020

City of Wooster, Ohio