



Strategy for a Sustainable Dayton

Endorsed by the Dayton City Commission at its August 26, 2020
Meeting With Strong Support and Contributions by the Dayton City
Department Heads, the Environmental Advisory Board, and the
Internal City Green Team

Letter to Residents

This document has been a long time coming for Dayton. It presents a strong and thoughtful blueprint that will move the City in a green and resilient direction. It ensures that Dayton always strikes the proper balance among a wide variety of factors that should be applied to any significant City decision: environmental protection, natural resource preservation, efficient energy consumption, wise land use, community engagement and involvement, and responsible economic development.

This document charts a more sustainable way forward, ensuring a high quality of life and a prosperous future for all Daytonians, including our residents, businesses, educational institutions, and nonprofits. With everyone's help, this initiative will vault our community into a sustainability and resiliency leadership role in the region, the State of Ohio, and the nation. We support its implementation.

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Strategy for a Sustainable Dayton



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STRATEGY FOR A SUSTAINABLE DAYTON

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Background

SUSTAINABILITY IN THE TIME OF COVID-19

This strategy was largely drafted before the Covid-19 virus took hold of the world. Since then, many people wonder what impact the public health/economic slowdown has had on the goals and objectives of sustainability and climate actions. In other words, has the virus and subsequent economic slowdown superseded concerns over climate issues and actions?

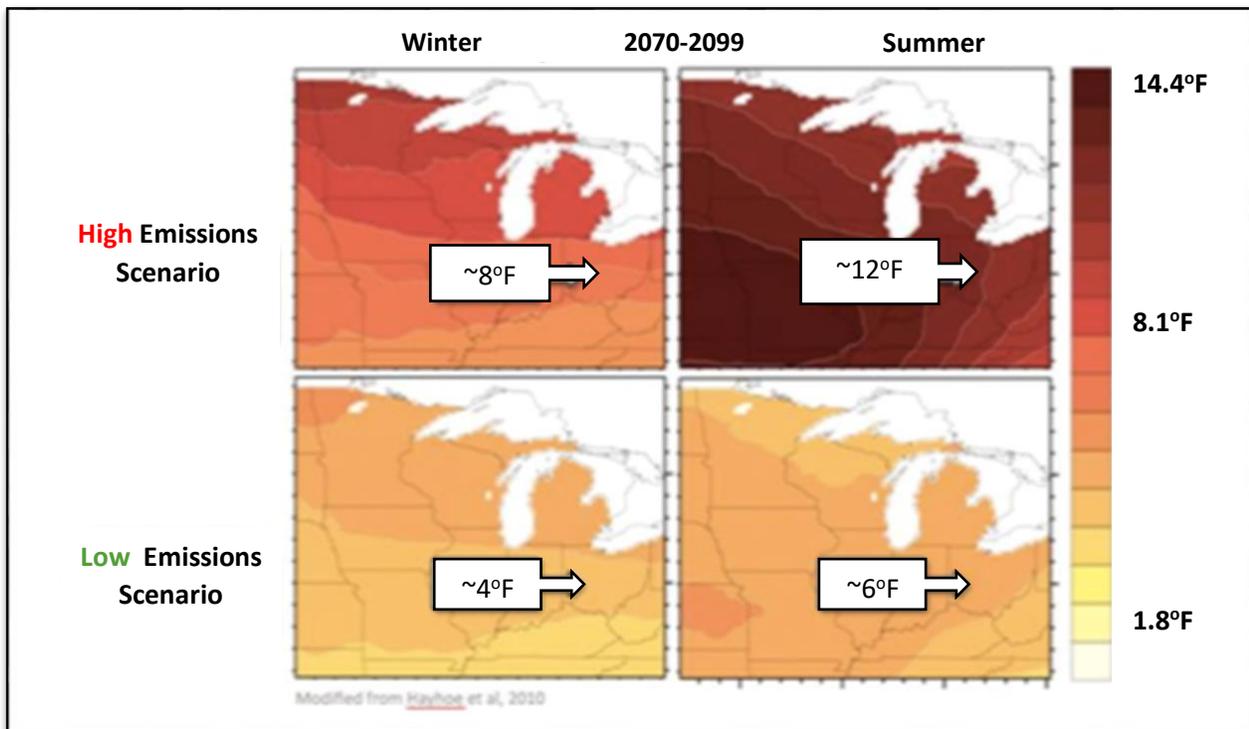
The answer is clearly no. While the world-wide lockdown resulted in short-term reductions (calculated at approximately 17%) of carbon emissions, the lockdown is not expected to have any long-term effect on the threats posed by climate change. There is already enough carbon in the atmosphere to warm the planet. While the lockdowns may have beneficial short-term effects on visibility and air quality, the lockdowns alone will not significantly reduce the amount of carbon surrounding the Earth.

Unfortunately, as the lockdowns are relaxed world-wide, carbon emissions will start to return to their previous levels. Consequently, nations, States, and communities must integrate sustainability and climate actions into plans to rebuild employment and the economies of the world adversely impacted by Covid-19.

Anyone familiar with Dayton's history knows the City has historically rallied and even thrived after being faced with turbulent and disruptive circumstances. Since before incorporation in 1805, the City has earned a well-deserved reputation for innovation and entrepreneurship. In fact, Dayton always rolls up its collective sleeves and embraces challenges posed by difficult circumstances. Whether the circumstances have involved cholera, significant job loss, severe drug addiction, devastating floods, extreme tornados, or mass shootings, Dayton's resilience is clearly a key point of civic pride among residents and businesses. Moreover, new residents are quickly acquainted with this ethic soon after relocation here. That said, the impacts of climate change may prove to be the City's toughest challenge yet.

As even casual observers have noticed, the weather implications of climate change are already upon us. A 2019 national poll revealed that 6 in 10 Americans were either alarmed, or very concerned with the climate crisis¹. The frequency and severity of floods, prolonged droughts, powerful tornados, coastal hurricanes, massive wildfires, dust storms, and significant crop failures have been occurring for nearly a decade. Similarly, as the severity of these events continues to escalate, they are expected to take a substantial toll on our infrastructure and food distribution systems; and make unprecedented demands on emergency preparedness, response and recovery. In turn, these disasters are expected to also place an increased need for

City services like drinking water, sewage disposal, temporary electrical power, debris management and resident relocations.



Temperature projections for high emission (top) and low emissions (bottom) scenarios in Southwest Ohio. Map provided by the *Great Lakes Integrated Sciences and Assessment*.

The carbon gas in the atmosphere acts like a blanket around the planet and is warming global temperatures. The greater the presence of carbon the thicker the blanket becomes and the greater the warming effect. Scientists predict dire (catastrophic) consequences if the climate warms more than another 1.5 degrees Celsius. It is estimated that if we fail to make dramatic, long-term changes to our fossil fuel combustion, we will experience this additional warmth in only 10-12 years (2032)².

In fact, when the 2019 carbon emission data are fully analyzed, it is expected that the level in the Earth's atmosphere will be approximately 4% higher than the levels observed in 2015 (the time of the International Paris Climate Accords), and 61% higher than they were in 1990. To avoid this catastrophe, scientists calculate that carbon emissions must *decline by at least half* of their current levels. All the world's nations must change their behavior immediately to not only prevent this additional warming, but to lower emissions from their current levels. Clearly, an incremental approach is no longer sufficient. **It is time for bold action.**

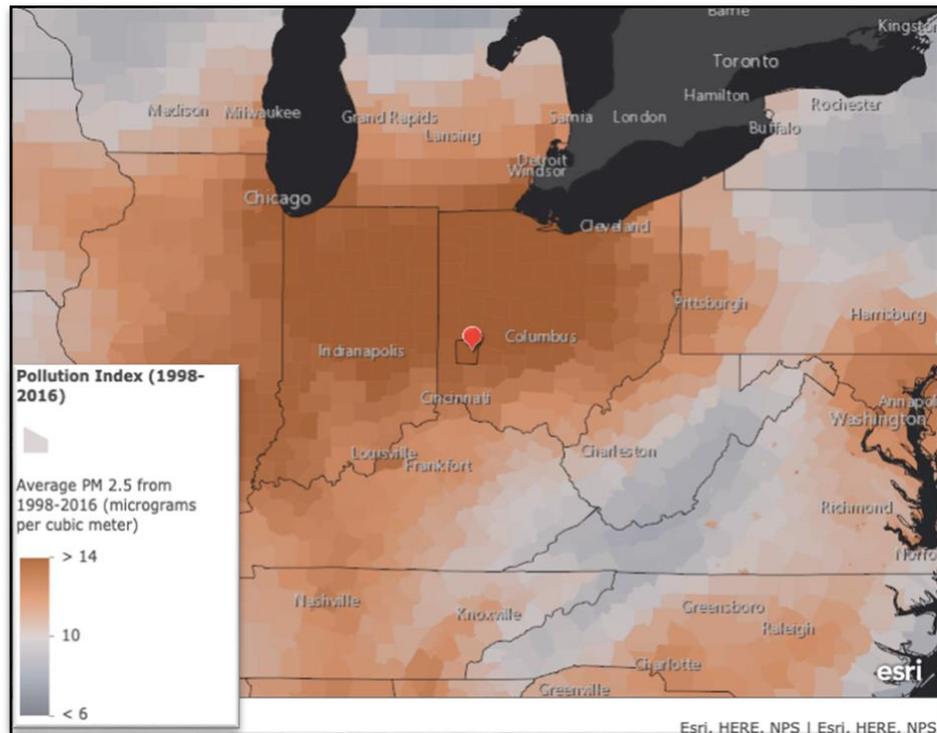
In response, Dayton believes this situation begets two compelling concerns which led to the preparation of this strategy: First, we need to become as sustainable (efficient) as possible. This

is no longer a nice-to-do option that can be pursued on a relaxed schedule. Second, we must begin planning for the more frequent, severe storms and extreme weather events to come, and ensure that the community and our most vulnerable population are as resilient as possible in recovering from these events. For example, Dayton may wish to invest in mobile solar panels that can be deployed at the parking areas of emergency shelters to provide power for the displaced.

Even if one doubts the accuracy of these dire predictions, there are compelling economic reasons to turn away from fossil fuel consumption. There are approximately 114,000 *green* jobs in Ohio alone, over 8,700 of these are in the solar energy business³. Moreover, there are over 3.3 million green jobs nation-wide. This fast-growing job field will revitalize employment opportunities in Dayton. Aside from the economic gain of sustainability, it is nearly certain that both Ohio and the Federal government will shortly enact incentives for people, businesses, and communities to move towards alternative electrical power sources which existing technology already allows us to accomplish.

This process has already begun. For example, British Columbia, Canada already levies a \$35-per-ton tax on carbon emissions. By 2022, all of Canada is expected to impose a nation-wide assessment of \$50-per-ton⁴. In the U.S., Congress is considering a similar approach. Bipartisan support is gaining for HR 763 (The Energy Innovation and Carbon Dividend Act) to impose a carbon fee that will increase the cost of using fossil fuels over time.

Moreover, the Union of Concerned Scientists has summarized studies looking at the health effects and costs of the primary pollutants emitted from burning fossil fuels: sulfur dioxide, nitrogen oxides, particulates, and mercury (from coal). These emissions exacerbate health conditions such as asthma, bronchitis, pulmonary inflammation, and heart disease, with estimated health costs ranging from \$62 billion to \$187 billion per year⁵.



Particulate Matter (PM) in the atmosphere from 1998 to 2016. Data was compiled with ArcGIS online.

Communities wishing to avoid or minimize these carbon expenses must act now to reduce or eliminate their consumption of gasoline and diesel fuels, and electrical energy derived from fossil fuels (e.g., coal, oil, and natural gas). Moreover, moving toward greener technologies can, in many cases, lead to greater efficiencies and cost savings for Dayton taxpayers. Consequently, Dayton has many reasons to embrace the promises of sustainability and resiliency.

Even given its “can do” history, Dayton acknowledges that its actions alone will not solve the difficult issues posed by climate change and environmental degradation. We live in a complex society populated by a diverse set of people governed by separate cultural norms, laws, and traditions. That said, we believe that if each jurisdiction takes action to address its share of these issues, these challenges will be successfully met and overcome.

As this strategy briefly describes (see Appendix B), becoming greener and more sustainable is not an entirely new direction for Dayton. This strategy presents a five (5) year plan to move the City in a more sustainable, resilient, and environmentally sensitive direction. While the Strategy is primarily directed at the City’s own behaviors and activities, we intend to promote and encourage similar actions by neighboring jurisdictions and the area business community.

Dayton’s “point of departure” for this strategy are areas ravaged by past storm damage or deterioration brought about by the COVID-19 economic downturn. When reinventing and rebuilding these jobs, buildings and neighborhoods, the City can do so in a manner that makes it smarter, greener, and more sustainable.

We intend to now “step up our sustainability game” by adopting a comprehensive approach that is expected to again take the community to the forefront of urban places across Ohio and the nation. Further, once adopted, this strategy will be a living document and be updated and improved over time, particularly as the articulated goals and projects below are completed.

What does Sustainability and Resilience Mean?

Sustainability can be succinctly defined as:

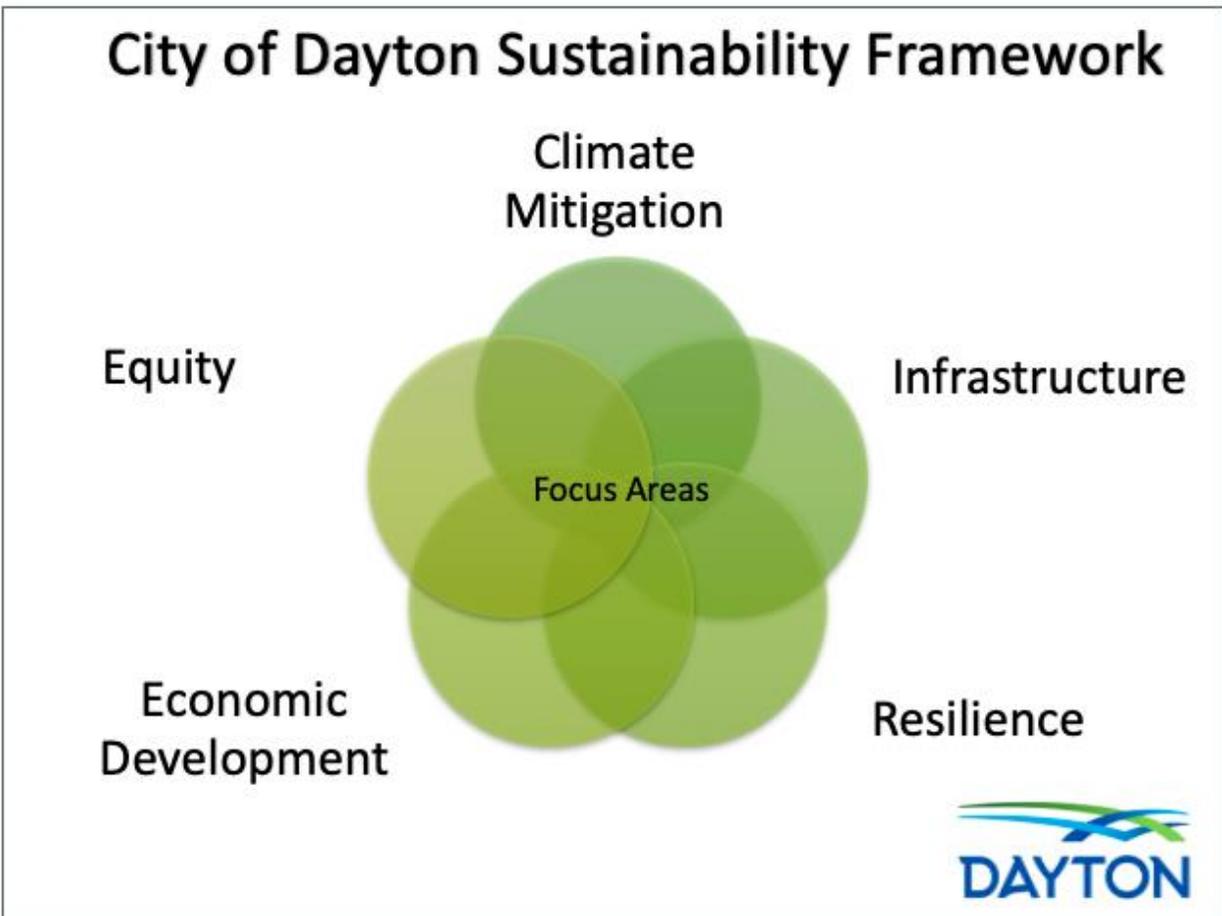
Setting resource consumption at levels that allow current residents and businesses to satisfy today's needs without compromising the ability of future generations to meet their own needs.

Resilience means:

The capacities of individuals, neighborhoods, institutions, businesses, and infrastructure systems within the City to survive, adapt, and grow no matter what kind or frequency of chronic stressors (e.g., poverty) and acute shocks (e.g., tornados) these systems experience. Moreover, future resilience plans must anticipate multiple and overlapping stressors and shocks.

Sustainability Guiding Principles and Focus Areas

When developing this strategy, the Sustainability Office came up with a framework that guided our work in developing goals for each focus area. This framework focuses on 5 key principles that can be seen in every focus area. These guiding principles are essential for creating a pathway forward to a sustainable city.



The five principles were selected based on areas that stakeholders and citizens within the Dayton community felt were essential to create a sustainable direction for the City.

- **Climate Mitigation:** The protection of natural resources and limiting harmful greenhouse gas emissions are vital to the health and wellbeing of citizens within the Dayton region. The City can only be as strong as the health of our water and air. This strategy supports current and future projects that ensure our natural resources are protected and carbon emissions limited for a more sustainable future.
- **Infrastructure:** For this strategy, all existing or installation of new structural elements must ensure that they will sustain for generations to come. These structural elements must also aim to protect the ecological environment and ensure that they are conscious of any social and economic ramifications to ensure equity for all.
- **Resilience:** The term resilience has been a focal point within the Dayton community in the past year. From the tornados to the mass shooting, resilience is a core value of the citizens of Dayton. Resilience can be defined in many different contexts, but for our strategy resilience prioritizes opportunities and protections to ensure a healthy and vibrant community in the future.
- **Economic Development:** A priority for our strategy was to create goals that will stimulate economic growth within the region without compromising the needs of the community for the future. This strategy ensures that we will continue to create and promote jobs within the region while ensuring equal opportunity for all.
- **Equity:** In a truly sustainable community, every citizen should have access to the same services regardless of race, age, ability, or socio-economic status. It is important to acknowledge that the history of our nation and local community have hurt people of color and those with certain socio-economic status and to ensure we do better. Therefore, in order to adopt this strategy, we must recognize that some of these action items will be aimed to create equitable opportunities for all and create a more just community.

With these guiding principles, all projects within this strategy fall into 9 focus areas. These focus areas incorporate all the guiding principles. Each focus area has an overarching goal that all projects within that area are trying to achieve.

1. **Ground and Surface Water Projects:** Protect our natural resources, including preventing, eliminating, or reducing pollution of ground and surface waters.

2. *Air Pollution Projects:* Promote clean air and eliminate carbon emissions throughout the City. This includes eliminating the number of gasoline-fueled vehicles on the streets and promotes more green space.
3. *Renewable Energy Projects:* Shift to renewable energy resources for City buildings. Create programs that promote energy efficiency and renewable energy throughout the City.
4. *Climate Change Adaptation Projects:* Prepare our City for the imminent impacts of climate change. This includes looking at building infrastructure, emergency response and preparing the Dayton community for what is to come.
5. *Solid Waste Management Projects:* Maximize recycling, reuse and compost opportunities in the solid waste management program.
6. *Land Use and Community Garden Projects:* Modify zoning codes to help promote more ecologically diverse spaces. Create programs that focus on community development including expanding community gardens within the City.
7. *Transportation Projects:* Expand alternative sources of transportation and support infrastructure projects that promote sustainable transportation.
8. *Financial Projects:* Promote sustainability through financial decision making.
9. *Environmental Awareness Projects:* Create projects that focus on educating and promoting sustainability lifestyles and business practices.

Each of the projects and actions listed below are rooted in these goals and principles. Through this strategy, the City is pursuing further economic prosperity, while still protecting the natural systems of the planet; thereby meeting the needs of current residents without compromising the ability of future residents to pursue their own needs.

Sustainability is best summarized as providing City services in a manner that guarantees that these actions and activities can be performed indefinitely. In other words, City activities will be performed in such a way as to always protect, restore, and improve the quality and quantity of natural resources (including those used to generate energy).

We expect this approach to lead to improved public health, economic vitality and reduced environmental risks and liability. As noted above, these enhancements will position Dayton to become more competitive at attracting new residents, businesses, and visitors and avoid the anticipated costs of carbon consumption and inefficient operations.

The Limits of This Strategy

This strategy is intended to identify projects and activities that will move Dayton in a green and sustainable direction. It is not intended to describe implementation steps or funding options for any of these specific projects. Implementation will be managed by the various “owner” City Departments and Divisions. The City Sustainability Office will track each project and periodically report to the City Manager, the Mayor, the City Commission, the Environmental Advisory Board, and the public.

We want to build the capacity to allow non-profits, educational institutions, and other organizations to thrive. However, our goal through this strategy is to create policy reform that allows sustainable initiatives to take place. We are limited, in some capacity, to address all sustainable problems that occur within the City. As of this writing, the Mayor and City Commission have already issued a five-point plan for Police Reform that will increase transparency, seek to end systemic racial injustice, and position the City to better serve all citizens more equitably and justly. Further, we expect other City Departments (including the Police, Economic Development and Planning and Community Development) to simultaneously lead policy changes and retraining efforts designed to enhance diversity, citizen involvement, and to contend with institutional racial bias. This may or may not result in a separate *Equity and Justice Action Plan* for the City. While we deeply value social and racial equity and the voices of the citizens of Dayton, this strategy is intended to support a sustainable direction forward, while also paving the way for our City and community partners to undertake their critical work.

Next Steps

Once the initial strategy is adopted, the Dayton Sustainability Office will work with City Departments and Divisions to establish a plan for accomplishing each task. An example of this project-specific report can be found in Appendix C. These implementation plans will include anticipated timeframes and milestones for each project. A list of interested internal and external stakeholders will also be developed to ensure meaningful public involvement. As individual projects are underway and completed, the Public Affairs office will identify ways to bring them to the attention of residents and businesses and explain each’s relation to enhancing the City’s sustainability.

Planned Short-Term Sustainability Actions And Projects Currently Underway

The following list of sustainability initiatives and projects have been selected because they can be pursued during the next several fiscal years. We intend to track progress in completing these efforts and prepare periodic reports for each City Department Director, the City Manager, the Mayor and the Commission and the public.

Dayton's Criteria for Selecting Projects that Improve the Community's Sustainability and Resilience

Dayton anticipates that many of these initiatives will result in significant savings to taxpayers. Regardless of the promise of savings, Dayton intends to pursue Federal, State, County, and private (i.e., third party) funding sources to wholly or partially offset tax money that will be otherwise invested in the project. It is hoped that these funds will either cover the cost of the project entirely, or at least cover the difference between traditional purchases and the green alternative to these traditional purchases. For example, the third-party funding will cover the incremental difference between an all-electric vehicle and a gasoline or diesel-powered vehicle. That said, the City is aware that some projects may require an initial "sustainability premium" to accomplish.

Dayton intends to focus its sustainability efforts on the long run rather than short-term. To accomplish this, we will reorient our prioritization and purchasing processes to reflect the "total" or *life-cycle cost* of goods and services. This means that the initial purchase or off the shelf cost, while still very relevant, is not the only consideration in purchasing decisions. Rather the decision should turn on the total cost of an item or service. For example, if the initial cost of buying a product or service is expected to result in savings that recaptures the initial cost within a 3-5 year payback period, then decision-makers should look favorably on this purchase.

In addition, the City may periodically benchmark itself against the accomplishments of other local governments of similar size in Ohio and beyond. The following projects are not necessarily listed in chronological priority order; rather program managers responsible for these activities can tackle them in any order that make sense. That said, all projects are expected to be completed no later than five (5) years from the adoption of this strategy. The project sequence reflects the relative importance of the project within the following topical subcategories. Note in Appendix A, the most impactful projects are identified by an italic font.



Groundwater and Surface Water Projects

*The Great Miami River at Riverscape Metropark.
Photo courtesy of Meg Maloney and Sarah Richard*

Overview:

The City of Dayton has been a national leader in water conservation and protection over the past 100 years. From our dam system to the *source water protection program*, the City has prioritized the protection and regulation of our aquifer and surrounding rivers. Surface water plays a vital role in Dayton-area recreation, irrigation, commercial and industrial activities. Moreover, Dayton and its surrounding communities rely on groundwater for 100% of our drinking water. All of these water resources are closely regulated by both the Federal and State authorities, however, if contaminated, it will result in significant costs to the City. Therefore, the protection of these vital resources is a top priority. There are constant threats to our aquifer including chemical contamination, thermal pollution, and stormwater discharge. To ensure the continued availability and quality of these water resources, Dayton intends to take the following actions:

- Ensure the quality of groundwater by continuing to vigorously implement the *source water protection program* to guard against pollutant contamination of the City's wellfields from commercial, industrial, residential, and institutional sources.
- Continue to protect Dayton's rivers and streams by ensuring all (publicly and privately-owned) *stormwater facilities* are maintained and operated as designed. Effectively ensure this regulatory effort addresses runoff from construction sites, dry weather (non-rain event) flows, fats, oils and grease management, and illegal dumping (spills) that could contaminate stormwater or harm the storm drains and sewers carrying that stormwater.
- Move forward with planned and necessary upgrades to the City's *water reclamation (sewage treatment) facility* to ensure that discharges to the Great Miami River remain in full compliance with all Federal and State standards and requirements.

- Minimize the toxic pollutant discharges into the City's sanitary sewers and the storm drain network by increasing the frequency and vigor of *inspections of industrial (sewer) users*.
- Minimize or eliminate nutrients and sediments from discharging into rivers and streams by establishing *no mowing zones* or vegetated buffers along stream banks within the City. To the extent possible, reduce fertilizer applications on City-owned properties and encouraged similar restraint on private property.
- Reduce the volume of stormwater flowing into City storm drains (and ultimately into area waterways) by installing green infrastructure, including *street rain gardens* throughout the City, particularly in residential neighborhoods. Similarly, promote the use of residential rain gardens and barrels, and other techniques to reduce stormwater volumes; and take other storm water management controls.



Green Infrastructure: Protecting our Environment and Saving Money

Green infrastructure combines the natural and built environment to **reduce stormwater run-off, enhance our ecological environment, and protect our rivers**. Cities across the United States such as New York, St. Louis, and Chicago are adding green infrastructure into their urban landscape. In some cities such as New York, these projects are going to **save over \$1.5 billion dollars in infrastructure and maintenance costs⁶**. In a recent study that surveyed 479 projects within the US, it was found that most cities were able to save money through green infrastructure initiatives⁶.

- Reexamine the number of parking spaces required for new structures and allow for shared parking facilities when reasonable. Where feasible, incorporate pervious pavers, pervious concrete and asphalt into parking surfaces and alleyways.
- Reduce additional water loss by replacing or repairing drinking water distribution pipes that are approaching the end of their useful life cycle.
- Reduce trash and litter throughout the watershed by periodically sponsoring stream and land cleanup events in neighborhoods. Recruit commercial organizations to participate or sponsor these activities. Establish an *adopt-a-stream* program where a neighborhood or civic organization voluntarily takes responsibility for keeping a specific stream segment trash-free.
- Continue to reduce or eliminate metals, sediments, and other pollutants from rivers and streams by conducting routine sweeping on City streets and parking lots.
- Continue to inspect construction sites, storm drain outfalls, business and persons responsible for illegal dumping that may contaminate stormwater.
- Protect low lying areas from local flooding by ensuring that storm drain size and condition are capable of conveying floodwaters to river. Develop and redevelop these areas knowing they will likely flood.
- As drinking water infrastructure ages, incentivize residents to replace older plumbing fixtures with water and energy saving fixtures, including faucets and water heaters.

Air Pollution Reduction Projects

Power Plant located off Interstate 75

Photo courtesy of Meg Maloney and Sarah Richard

Overview:

Dayton has made strides over the last 50 years to improve air quality. This includes increasing tree canopy cover and undertaking many energy efficiency initiatives. However, as an industrial leader for many years, Dayton still has much further to go in order to improve our air quality. In 2019, Dayton was ranked a “F” by the American Lung Association for its weighted average number of high ozone days⁷. Dayton cannot reverse these potentially catastrophic air quality conditions by itself. However, we can do our share to reduce carbon emissions by cutting greenhouse gases, using less electricity generated from fossil fuel combustion and moving toward renewable sources of electricity (e.g., solar, wind, hydroelectric and geothermal) all of which have proven safe, reliable and affordable.

- Dayton expects that, due to State or Federal carbon fees or the imminent natural gas exportation (and likely both), the price of natural gas will rise sharply in the next five years. Therefore, the City will (except for large vehicles used for recycling and refuse collection, fire equipment, dump trucks, etc.) begin to reduce its dependence on fossil fuels, including natural gas whenever possible. Large vehicles currently in the inventory may continue to be fueled by CNG until capable alternatives emerge. When other fleet vehicles come up for replacement, the City should buy or lease electric sedans and light trucks. To accommodate these electric vehicles, suitable numbers of charging stations must also be installed at city-owned facilities, including Water facilities, Public Works facilities, and other facilities, including City Hall, with significant vehicle use.
- When market conditions favor such a move, the City should commercially sell the methane gas produced as a byproduct of its wastewater treatment at the Guthrie Reclamation Plant and at the City-owned landfill, rather than the current practice of flaring it, or when cost effective, reusing the gas (as heating or vehicle fuel at the facility).

- Dayton will reactivate the electric aggregation program for residents and businesses and include a renewable energy rate in the program.



What is electric aggregation and how does it work?

An electric aggregation program allows a group of consumers to combine their electrical usage to form a buying group. As a group, they can **secure lower and more stable electric prices**. This can be extremely beneficial as it can help lower income communities access renewable energy and **increase renewable energy within the Dayton region**. Moreover, this can be extremely beneficial for businesses to also secure lower energy bills. In 2011, Cincinnati adopted an energy aggregation program and **saved residents \$1.5 million on electricity and \$2 million on gas costs⁸**.

- City Hall has a green roof. To reduce energy demands for heating and cooling of City buildings, as other roofs need to be replaced, the city should install solar panels, green, or white (reflective) roofs (or all of them as space allows).
- Similarly, as infrastructure ages, replace existing HVAC units with more efficient energy star or similar technology. Avoid installing new natural gas units if equivalent electric units are available. If feasible, phase out natural gas HVAC systems by 2035.
- Install sensors on bay doors that turn off the HVAC systems while the doors are open to save energy. Similarly, install awnings over east, west, and south-facing windows to minimize solar heating in the summer. Collect stormwater and use it for non-potable purposes, such as cleaning the fire apparatus. Finally, install solar water heaters to replace current natural gas heaters.

- Maximize the City eligibility for rebates and discounts offered by the City’s electrical provider. By the end of 2020, reduce electrical consumption by completing the conversion of 2,000 City-owned, sodium streetlights to LED technology. This ongoing effort is projected to have a 4-year payback.
- In order to reduce electrical consumption and lower costs, complete the effort already underway to convert all airport terminal and taxiway lighting to LED technology.
- Continue to purchase energy star (or equivalent) rated computer technology, including personal computers, laptops, tablets, monitors, printers, copiers, blade servers and other office equipment. Investigate cloud storage as another alternative.
- The City Commission should adopt a ban on natural gas fracking activity inside the Dayton City limits.
- Assess the vehicle mileage and usage of the City’s fleet and look for opportunities to move to more fuel-efficient vehicles, including all-electric vehicles. Also conduct a study to determine whether the shared motor pool model is superior in economic and environmental costs to assigning vehicles to specific individuals or programs.
- Facilitate the use of plug-in electric vehicles by residents and businesses by installing more electric vehicle charging stations at public areas where people congregate. For example, charging stations should be located near public libraries, museums, Day-Air Ballpark (Dragon’s Stadium), Carillon Park, Levitt Pavilion, Riverscape Park, other historic properties and City-owned or leased buildings and parking facilities. Existing streetlight poles can be retrofitted, and pop-up or stationary sidewalk chargers can be installed.
- If feasible, offer City of Dayton employees who purchase electric or hybrid vehicles an annual reimbursement in an amount that offsets the increased registration fees the State of Ohio has imposed on electric and hybrid vehicles.
- The City will also approach Sinclair College, the Downtown Dayton Partnership, and the Chamber of Commerce to encourage private sector hotels, shopping centers, office buildings, movie theaters, grocery stores, and restaurants to follow suit at commercial parking areas. Finally, the City should maintain and periodically update a prioritized list of desired charging station locations in the event appropriate funding becomes available on short notice.
- The City should allow *free or discounted access* to use these chargers for at least the first few years of their operation. Similarly, the Parking Code should be modified to mandate

charging units as a component of all new private sector parking facilities (similar to handicap accessible spaces currently required). Amend the City Building Code to streamline the permitting and approval processes for the installation of electric vehicle charging equipment at private residential properties.

- If feasible, modify downtown parking meters that are already equipped with a credit card reader to provide a discount to electric vehicles and electric/gasoline hybrid vehicles.
- Continue to measure and track energy usage at each City facility to investigate ways we can reduce our demand. Report on significant increases or decreases (and supporting reasons) of these consumptive habits over time. After an appropriate period of time to gather data, set long-term goals for energy use reduction and report on our progress towards meeting them annually to the City Commission.
- Several years ago, Dayton established a tree canopy goal of 50%. To achieve this goal, the City must provide native trees for residents (for free or a nominal price) to plant in their yards, on City right-of-ways, vacant lots, low income neighborhoods, or in highly urbanized areas. Challenge City Commissioners and Department Heads to lead this effort by organizing tree planning in their own neighborhoods.



Increasing Tree Canopy Cover Is Far More Than Its Ecological Benefits

Throughout the past decades, multiple cities have started initiatives to plant more trees across their cities. Aside from the aesthetically pleasing appearance, more trees are vital to the economic and social well-being of a City. Recent studies have shown that the more trees that are planted within a yard, the higher the economic value of the lot. Moreover, the trees also help reduce the urban heat island effect, leading to healthy air and more protection for vulnerable populations when they are outside of their homes and businesses⁹.



Renewable Energy Projects

*Clean Energy 4 All placed solar PV on the East End
Community Service building in 2015 and 2020*

Photo courtesy of Clean Energy 4 All

Overview:

In the past 20 years, Dayton has made strides to curb energy usage. From the installation of LED light bulbs at the airport, to its recognition in energy improvements at City Hall by the US EPA, Dayton is rethinking our energy consumption. The City of Dayton needs to continue to push for energy reduction and sourcing from renewable energy resources as our energy markets shift. Within the next several years, it is estimated that a carbon tax will be put into place by the federal or state governments (and likely both) and those that remain reliant on fossil fuels will likely pay a premium for it. Investments in renewable energy projects will not only save money and create jobs but will lead to a more resilient City.

- Join the *Ready for 100* (percent renewable energy); and the “*Mayors for 100% Clean Energy*” national initiatives sponsored by the Sierra Club.
- Purchase renewable energy certificates (RECs) (which offsets the fossil-fuel generated electrical power currently consumed by the City’s general-funded activities). Pursue solar, wind, or other renewable power for operations at the City’s airport, water treatment, and wastewater plants. Explore ways to move forward with carbon neutrality.
- Amend the City Building Code to streamline the permitting and approval processes for the installation of solar panels on residential, multi-family dwellings and commercial rooftops.
- Similarly, determine whether existing roofs of City structures are candidates for behind-the-meter solar panels and install these as opportunities and funding present themselves. Further, as they come up for replacement, reinforce the roofs of City facilities as needed to support solar panels. Alternatively, ensure current or future roofs are constructed as either green, or white reflective surfaces (or both). Consider installing solar canopies over surface lot parking areas. Install ground mounted solar panels to partially offset City electrical consumption at smaller facilities.

- In 2011, Dayton conducted a comprehensive energy audit of City operations and buildings. Given the advances in energy technology and cost since then, the City should undertake a new evaluation of current buildings and structures to identify new opportunities for energy conservation and the resulting savings that can be realized.
- Recently, Dayton closed two municipally-owned golf courses. The City owns this land outright and is currently exploring appropriate future uses for these parcels. Since each is adjacent to a Dayton water plant that consumes a significant quantity of electricity to power their operations, Dayton will explore installing solar panels (through a PPA, or by other methods) on one or both of these parcels and direct the resulting power to City facilities.



Picture courtesy of the Hanley Sustainability Institute and Mark Gokavi

What is a Power Purchase Agreement (PPA)?

A power purchase agreement is where a third-party owns and operates a solar PV array. The customer agrees to put the array on their property and purchase the electricity from the third party for a certain amount of time. This is extremely beneficial as the customer usually pays below current electricity costs, and does not have to pay capital or operating expenses. In many cases, this saves cities thousands of dollars.

Many cities have begun to enter PPAs including Cincinnati¹⁰.

- Identify smaller power-generating opportunities for solar, geothermal and wind. Partner with willing developers or landowners to identify sites and potential cost share arrangements. Try to partner with low-income communities on this initiative.
- Encourage and facilitate existing building owners, including the City, to take advantage of Property Assessed Clean Energy (PACE) funding (e.g., 15-20 year low interest loans) to retrofit their structures with green features. In addition, claim applicable electrical rebates to help pay off these loans.

Climate Change Adaptation Projects

Taylorsville Metropark Dam aids in flood control for the Dayton region.

Overview:

Natural disasters (acute shocks) are imminent and destructive. From the Great 1913 Flood, to the Memorial Day tornados in 2019, Dayton has a history of responding to acute shocks and the community working together to rebuild. Acute shocks stress the City's infrastructure, therefore, future land use decisions should anticipate periodic, if not overlapping, natural disasters and plan for the community's rapid recovery. This plan recommends that Dayton directs its land use authority in a manner that ensures that Dayton is as *resilient* as possible.

- The City Commission should adopt a resolution declaring a *climate emergency* in Dayton.
- Align the zoning code, building code, and other parts of the City Code to be consistent with this strategy. Incorporate sustainability considerations into Code rewrites. Ensure that, at minimum, these code modifications remove and do not create obstacles or barriers to recycling, electric car charging, and the use of other alternative energy technologies such as solar and geothermal equipment.
- Consider requiring all new residential and commercial buildings be built with green features, including upgraded insulation, efficient appliances, and alternative energy technology (e.g., solar, geothermal, etc.). Further, building requirements should satisfy the requirements for, but not compel building owners to obtain certification from third party organizations such as Energy Star, Leadership in Energy and Environmental Design (LEED) or similar organizations.
- Protect low lying areas from local flooding by ensuring that storm drains are maintained so as to continue to convey design-level stormwater volumes to the river (e.g., maintain their

size and condition). Develop low areas knowing they will likely flood from time-to-time (e.g., require structures on stilts, or restrict development in such areas, etc.).

- Install battery backup technology at significant intersections, and place generators in areas with emergency equipment to ensure their continued performance in the event of a significant power outage.
- Ensure emergency equipment and generators are periodically tested (exercised) and fueled prior to the onset of predicted severe storms. Identify a method to refuel these emergency facilities and equipment in the event routine transportation routes are blocked or obstructed for a prolonged period of time.
- Purchase and maintain equipment needed for performing water rescues and medical emergencies, and for providing cooling centers, temporary drinking water and wastewater service, and for traversing post-storm debris fields and flood zones. Further, consider acquiring portable solar arrays which can be made available to deploy at shelters in neighborhoods expected to be without power for a prolonged period of time.
- Investigate changing the current practice of sending a fire engine or ladder truck in support of a medical unit to smaller more efficient and nimbler units. As light vehicles (e.g., administrative, support, staff, investigator, and inspector vehicles) are replaced, do so with electric or hybrid vehicles.
- Continue partnerships and coordination with the American Red Cross, Verizon, and the Dayton Department of Recreation and Youth Services to provide cooling stations, water and shelters during emergencies.
- Continue Dayton's participation with the Climate Mayors organization and the National League of Cities.
- Initiate volunteer neighborhood programs to check on vulnerable populations. These volunteers will check on the well-being of vulnerable populations that sign up for a check-in following a bout of severe weather (i.e., high heat or flood conditions). Investigate technologies that could aid in this task.



Waste Management Projects

Dayton recycling bins

Photo courtesy of Meg Maloney and Sarah Richard

Overview:

The City of Dayton has made strides over the last several decades to divert waste from the landfill. The recycling program began in the 1980's, largely before many major cities had prioritized recycling. In 2008, the City made recycling easier for residents by transitioning to single stream recycling. Despite these initiatives, the City still has a relatively low recycling percentage. The following recommendations are ways that the City can create more sustainable waste management practices beyond recycling throughout the City.

- Help ensure there is a vibrant and growing market for recycled materials by encouraging businesses (and the City itself) to buy products made with recycled content. Avoid purchasing “virgin” materials with little or no recycling content. For example, the City should begin purchasing copy paper with at least 25% post-consumer recycled content.
- The residential recycling percentage in Dayton is currently only 8% (i.e., 92% of the collected waste stream is disposed as trash [landfilled] rather than reused or recycled). The City should work to increase the percentage of reused and recycled materials. One method for accomplishing this is to ensure each household customer has a dedicated recycling cart and that recycling is collected weekly.
- Assuming curbside is retained, a further improvement would be to ensure that there is as little contamination in the recycling stream as possible. This “recycle right” initiative will seek to eliminate plastic bags from recycling materials, and ensure that residents know which items are recycled and which are disposed as refuse.
- If the City continues curbside recycling, the City Solid Waste Management Code should be amended to prohibit persons from discarding recyclable materials as refuse. The City should conduct a periodic audit of its recycling content and determine those items that do not belong there. An outreach and education campaign will then be initiated to target the elimination of these refuse items from residential recycling carts. The City should also

consider establishing a mandatory recycling rate for nonresidential (commercial) entities in the City.

- In order to keep the refuse disposal rate paid to the County as low as possible, the City should eliminate certain, one-time, persistent, or impossible-to-recycle, solid waste materials (e.g., Styrofoam) from the refuse waste stream.
- Approximately 30% of the residential waste stream is comprised of organic materials that are easily composted. Encourage residents to engage in backyard composting or contract with local, private composting businesses. If a local or regional composting facility or digester is available, consider starting a voluntary City-sponsored food and green waste collection effort thereby removing these materials from the refuse stream. Note: The United States Department of Agriculture (USDA) has funding for compost and digestion facilities if the property to be used for this purpose is zoned agricultural. Montgomery County may be interested in partnering on such a project.
- If State law allows, consider establishing a plastic bag fee (e.g., 5 cents) as a disincentive for shoppers to take these bags from commercial retail stores. Momentum for this type of effort has already begun; Kroger has already announced its intent to phase out the use of these bags. The ordinance should exempt restaurant *to go* bags from this fee. As an incentive to businesses, allow them to retain 2-3 cents for collecting, tracking, and reporting the fees to the City. Retail businesses that continue to offer plastic bags should also be required to accept them as returns from the public. However, if prudent, consider waiting until the end of the current pandemic emergency to enact these changes
- Ensure City employees can recycle at all City-owned buildings and facilities. Similarly, provide recycling containers and collection and at all City sponsored festivals, celebrations and other community events, including the annual City Health and Safety Fair. Loan recycling carts to neighborhood associations as needed for local gatherings.



Land Use and Community Garden Projects

*One of Mission of Mary's Farm in the Twin Tower
Neighborhood*

Photo Courtesy of Mission of Mary Farms

Overview:

Within the City of Dayton, there are many initiatives taking place to address food insecurity and vacant land use. Mission of Mary, Homefull, Five Rivers MetroParks and other organizations are taking the lead to create community gardens throughout the City, diversify the landscape, and support low-income residents. To continue diversify land use within the City, several zoning codes, programs, and initiatives could be implemented.

- Amend the zoning code to support smart land use strategies that prioritize high density development, redevelopment, infill, street connectivity, transit accessibility and walkability.
- Update *Urban Design Guidelines* to support connected green space and minimize fragmentation.
- Support neighborhood mixed-use development and redevelopment.
- Amend the zoning code to encourage backyard habitat and native-plant landscaping, and reduction of invasive species.
- In areas that are underserved by City parks, initiate a pocket park program. Develop program guidelines and identify neighbors that will benefit from these pocket parks.
- Promote no-mowing areas, soil development and community gardens, particularly on vacant parcels. Community gardens should also include orchards, and tree nurseries. Vacant parcels could also serve as staging areas for farmers markets and truck farm outlets. The City can partner with local colleges and universities to have vacant lots serve as a living laboratory to study prairie and other functioning ecosystem development.



Turning Vacant Lots into Pocket Prairies

The Ohio State University and the City of Cleveland have transformed 64 vacant lots into beautiful pocket prairies¹¹. This initiative, funded by the National Science Foundation, has added both aesthetic and ecological value to the City. The City of Dayton could also explore options with one or more local universities to expand prairies into vacant lots within the City. This will save the City time in mowing the lots and add aesthetic value to neighborhoods. This also provides a great opportunity to partner with residents to aid in land use decisions within neighborhoods.

- Ensure that the zoning and building codes do not contain any unreasonable obstacles to the use of alternative energy on residential and commercial properties. Analyze properties to identify the best candidates for solar panels. Publish a solar map as hard copy and online.
- Encourage new residential and commercial development to locate their structures on infill sites in the City. Similarly, encourage renovation of existing buildings rather than demolishing and constructing entirely new structures. Promote the redevelopment of brownfield sites across the City.
- Reduce food insecurity by recognizing and supporting urban agriculture initiatives and land use. Partner with organizations that encourage urban agriculture while working with at-risk community members.
- Continue to promote and facilitate the expansion of the Dayton tree canopy by providing trees for residents until a 50% canopy goal is reached.
- For the past 28 years, Dayton has been recognized by the Arbor Day Foundation as a *Tree City USA* community. The City must provide native trees for residents (for free or at a nominal price) to plant in their yards, on City right-of-ways, vacant lots, low income neighborhoods, or in highly urbanized areas.

- Currently, there are over 30 community gardens in Dayton. The City should identify City parks and vacant City-owned and designate them for use as community gardens. Adopt a *Community Garden Master Plan* specifying requirements for individuals or organizations that take responsibility for operating these community gardens and clarify what if any services they can expect from the City.
- Support community gardens (with services such as water, seed, fertilizers, compost, refuse, etc.) when residents come forward and agree to manage a community garden. Where possible, negotiate access for additional garden plots on privately-owned parcels.

Transportation Projects



Bike riders utilizing the paved trail network throughout the Dayton region.

Overview:

The City has made several strides over the past decade to promote alternative transportation. In 2010, the City was designated as a *Bicycle Friendly City* by the League of American Bicyclists. Moreover, the Miami Valley Regional Planning Commission, Bike Miami Valley, RTA, and countless other organizations are working to make sustainable transportation more accessible. However, we still have many people who chose their personal vehicle over alternative transportation. The following projects will help increase awareness and accessibility of alternative transportation.

- Continue to identify City streets that have unacceptably broken pavement and place them on a prioritized schedule to resurface.
- Begin planning streetscapes for the orderly transition from internal-combustion vehicles to electric vehicles and related charging equipment. Consider plans for the disposition of obsolete gas stations, storage or scrapping of gasoline vehicles, and focus particularly on the effect that these actions will have on low-income residents.
- Continue to implement the “complete streets” approach adopted into the 2040 Transportation Plan. Design and repave priority streets, sidewalks, bikeways and pedestrian safety features in the City’s transportation network. Increase the overall miles of sidewalks, and bike lanes, preferably by connecting existing sidewalk and bicycle trails. Ensure transportation system plans contemplate and accommodate driverless vehicles, buses, scooters, bicycles, Segways, shared micromobility, and ride sharing programs like Uber and Lyft.
- Continue to update and implement the 2025 *Bicycle Action Plan* adopted in 2011. Ensure that Dayton continues to be designated as a bronze or better level *Bicycle Friendly City*. Strive to become Ohio’s first silver level *Bicycle Friendly City*.

- Develop wayfinding signage, and publish routine pocket updates (e.g., every 5 years) of designated walkways and bicycle routes throughout the City. Distribute hard copies of these maps through City Hall, operational facilities, recreation centers, police and fire stations, and private bike shops, etc. Publish bicycle and pedestrian maps on line. Periodically update them to reflect changing amenities, conditions, and routes. Partner with organizations such as the Miami Valley Regional Planning Commission and Bike Miami Valley to accomplish these tasks.
- Ensure that there are bike racks installed throughout the downtown area and other points of interest, including libraries, museums, parks, and other places where people congregate. Consider holding a contest among public schools to identify designs to incorporate into unique Dayton signature bike racks. Continue requiring new developments to install bike racks on their properties. Encourage short and long-term bicycle parking options, including workplace showers.
- Encourage businesses to invest in enhancing transit stops.
- Design and install sidewalk segments and bike lanes needed to connect neighborhoods to main pedestrian or bicycle routes. For safety (and to encourage use) construct bike lanes separate from roadways when possible. Identify areas that are void of parks and plan bikeways to help connect residents to parks.
- Develop a plan to maintain and regularly sweep bicycle lanes to encourage use.



Financial Projects

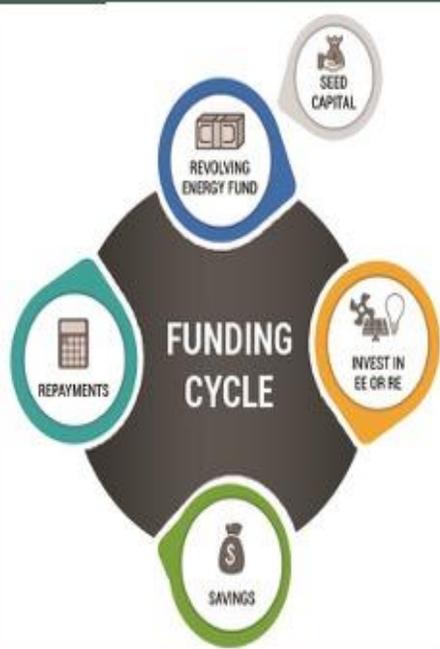
City Hall in downtown Dayton

Overview:

Sustainability initiatives go beyond environmental perseverance and can be utilized by citizen and the City of Dayton as a mechanism to save money. Some current practices within the City of Dayton are not only damaging for the environment but are not economically sustainable. The following projects are ways that the City can chose to support sustainability initiatives and also promote economic development.

- Adopt a sustainability purchasing policy that ratifies the Guiding Principles list above (page 10) and adopts a sustainable approach to procurement that prioritizes total or life cycle costs of purchasing goods.
- Turn off lighting in all City offices or conference rooms when they are vacated or otherwise not in use. Where possible, install motion sensors in City offices, rest rooms, and conference rooms thereby ensuring that lights are off when these spaces are not in use.
- Reduce the amount and storage needed for hard copy documents by purchasing cloud storage capacity, more scanners, laptops and tablets, particularly for City *field* personnel. Note: The City has already purchased flat screen computer monitors to replace traditional monitors. The flat screens consume 1/3 less electricity than other models.
- Install *smart* (radio frequency read) drinking water meters to ensure accurate data and maximum enterprise revenue to the Water Department. More accurate water fees are likely to also lead to more effective implementation of water conservation measures.
- Continue to explore and apply for Federal, State, Local, and Private grant funding to offset the City's investment in sustainability projects.

- Continue to implement the City’s wellness program and look for opportunities to reasonably expand the program.
- Partner with other City departments on capital improvement debt issuance for qualifying green projects.
- Investigate the feasibility of reusing the waste heat generated at swimming pools at the three City recreation centers.
- Establish reasonable paper reduction and digitization goals for the City to reduce our reliance on paper documentation and facilitate further on-line submissions, customer billing and payments.
- Consider adding a sustainability funding program to aid departments in kickstarting sustainability projects.



What is a Sustainability Funding Program?

Many cities and institutions across the United States are adapting a sustainability funding programs or green revolving funds as an internal grant program to fund sustainability initiatives. A sustainability revolving fund provides the initial startup funding for a sustainability project that saves money throughout its lifetime. The money saved goes back into the revolving fund and can sponsor the next project. This would be an internal program in which departments file a proposal to fund a favorable sustainability project. This fund is beneficial because it helps a) fast track sustainability projects, b) reduces the need to incur debt and maintains a positive cash flow and c) promotes ingenuity and aids departments in reaching sustainability milestones¹².



Environmental Awareness Projects

Environmental awareness initiative to educate residents that all storm drains lead to the river. Project supported by University of Dayton River Stewards and the City of Dayton Water Department.

Overview:

The City of Dayton was a national leader in innovation for numerous decades. Dayton had the highest number of patents per capita and had national recognition as a center for groundbreaking technology and manufacturing. Though Dayton has experienced numerous economic downturns, the City has kept its innovative spirit and its willingness to persist. Within the next decade, Dayton has the capability of becoming a sustainability leader within the Midwest. Ingenuity is still deeply rooted throughout the City and the following projects have the potential to showcase how resilient and sustainable the City of Dayton is:

- Work with neighborhood associations, the Public Affairs office, Dayton Public Schools and other civic organizations to develop tips and cost effective techniques for residents to conserve resources, including electricity and drinking water, as well as “right” recycling, backyard composting, grass-cycling, stormwater management, and other areas that are likely to save residents’ money and lead to a more sustainable lifestyle. Promote these tips on City social media, newsletters, TV programming, [You-Tube, and Cable Channel 6 (CDTN)] and the City website.
- Expand the mission of the Environmental Advisory Board (EAB) to serve as a clearinghouse and sounding board for potential sustainability actions and for identifying sustainable partnerships with external (third party) partners. Consider establishing Board Subcommittees on environmental justice and/or food equity.
- Reinvigorate the City’s internal “Green Team” to provide an employee and inter-department perspective on proposed sustainability enhancements, effective education techniques, and methods to measure performance and accomplishments.

- Establish an internal process (e.g., suggestion box) that employees can use to convey thoughts on ways for Dayton to save energy, water, waste-disposal costs, and further improve the purchases of goods and services. Consider establishing a reward for employees offering suggestions that are subsequently implemented.
- Explore the establishment of an *Energy and Sustainability Theme Park* in Dayton. Determine the feasibility of such a park, including the need for and members of a steering committee, alternative site locations, potential funders, proposed exhibits, virtual attractions, interactive experiences, and promotion.
- Establish an *Excellence in Sustainability Award* for residents and businesses and request the Environmental Advisory Board (EAB) to collect nominations, investigate, vet, and select deserving award nominees. Present these awards at a regularly scheduled evening Commission meeting.
- Adopt an internal *sustainable operations* personnel policy and inform all employees (e.g., during new employee orientation and the employee newsletters) of energy and water conservation expectations for City workplaces. For example, staff should use pitchers of tap water rather than buying bottled water for meetings, and use personal coffee or water containers rather than one-time Styrofoam cups. If single-use cups, plates and utensils are necessary, purchase those that are compostable.
- Design and present a children’s outreach program that teaches about gardening and eating well, composting, and recycling right.
- Periodically discuss planned sustainability improvements in resident and business forums and solicit feedback and additional ideas.
- Expand the capability of City employees to conduct zoom meetings and conferences within their work area.
- Continue to retrofit buildings with LED light fixtures, and motion-activated light switches; air hand dryers and reduced flow fixtures in the kitchens and bathrooms; increase recycling efforts and implement an idling policy for apparatus and vehicles.
- Consider offering low or no-cost energy audits to low income residents. Audits can be performed by a City contractor, and the actual home improvements can be made as funds become available. A report of findings and recommendations should be provided to each resident that participates in the program.

- Share Dayton’s expertise and experience in becoming more sustainable with other local governments, and nonprofit organizations in the region and State. Participate with the University of Dayton’s Resiliency Assessment and Plan.



Energy Audits for Low Income Residents

In the past decade, many cities have started initiatives to give energy audits to low income households. This is vital for low income communities as energy bills are usually one of the costliest expenditures for the month, and also one of the bills that many residents will not go without. Energy audits for low income households are quick to perform and are a great way to help residents save money. In Winona County, Minnesota, this program is partnered with the local universities so residents can connect with experts within the field¹³ and receive numerous tips on how to save money. Due to House Bill 6, DP&L is expected to end some of its energy efficiency programs so the demand for this service will be increasing over the next couple of years.

APPENDIX A

Short-Term Projects by Lead Department

Note- the most impactful projects are set out in an italic font

Dayton City Commission

- *Adopt a resolution declaring a climate emergency.*
- *Continue Dayton's participation with the Climate Mayors organization and the National League of Cities.*
- *Authorize the City to join the "Ready for 100" (percent renewable energy), and the "Mayors for 100% Clean Energy" national initiatives sponsored by the Sierra Club.*
- *Eliminate certain single-use, persistent or impossible-to-recycle solid waste materials (e.g., Styrofoam) from the refuse waste stream.*
- To further encourage and assist residents and businesses to "go electric," the City should allow free or very low access charges to use these chargers through 2025. The Parking Code should be modified to mandate chargers at all new private sector parking facilities (similar to required handicapped spaces).
- The solid waste ordinance should be amended to prohibit persons from discarding recyclable materials as refuse.
- Ban natural gas fracking activity inside the City limits.
- Explore the establishment of an *Energy and Sustainability Theme Park* in Dayton. Determine the feasibility of such a park, including the need for and members of a steering committee, alternative site locations, potential funders and partner institutions, proposed exhibits, virtual attractions, interactive experiences, and promotion.

- If State law allows, consider establishing a fee (e.g., 5 cents) to serve as a disincentive for shoppers to reduce or eliminate taking a single-use plastic retail bag. The ordinance should exempt restaurant *to go* bags from the fee. As an incentive to businesses, the business should retain 2-3 cents of the 5 cents as payment for collecting and reporting the bag sales and fees. In the event the Ohio legislature precludes this action, Dayton should join with other local governments to lobby to reverse this action.

Aviation Department

- *Complete the effort already underway to convert all main airport terminal and taxiway lighting to LED technology.*
- *Install solar canopies over surface lot parking areas.*
- *Promote electric vehicle use at the airport terminal by installing charging stations in the parking garage and surface parking lots.*
- Continue recycling and other energy efficiency programs at both City airports. Look for opportunities to expand participation in these programs.

City Manager Office

- *Track the City's progress in implementing the projects listed in this strategy and upon completion, assess their effectiveness at accomplishing the intended goals. Periodically report to the Commission. Coordinate the involvement of project partners and press coverage when appropriate.*
- *Establish reasonable paper reduction and digitization goals for the City to reduce our reliance on paper documentation and facilitate further on-line submissions, customer billing and payments.*
- Consider adding a sustainability funding program to aid departments in kickstarting sustainability projects.

Communications and Public Affairs Department

- *Work with neighborhood associations, schools and other civic organizations to develop tips and cost effective techniques for residents to conserve resources, including electricity consumption, engaging in "right" recycling, conserving drinking water, backyard composting, grass-cycling, stormwater management, and other areas to save money and lead a more sustainable lifestyle. Promote these tips on City social media outlets, TV programming [You-Tube, and Cable Channel 6 (CDTN)], the City website, and newsletters.*

- Establish a website subpage that contains green tips, and progress reports on implementation and enhancements to this strategy.
- Establish an *Excellence in Sustainability Award* for residents and businesses and request the Environmental Advisory Board (EAB) to collect nominations, investigate, vet, and select deserving award nominees. Present these awards at a regularly scheduled Commission meeting.
- Establish an internal process (e.g., suggestion box) that employees can use to make suggestions on ways for Dayton to save energy, water, waste disposal costs, and other purchases of goods and services. Consider a reward for employees offering suggestions that are subsequently implemented.

Economic Development Department

- *Promote the redevelopment of brownfield sites across the City.*
- Encourage new development at infill locations in the City. Similarly, encourage renovations of existing buildings rather than the construction of new structures.

Finance Department

- *Partner with other City departments, and the Capital Improvement debt issuance for qualifying green projects.*

Fire and Police Departments

- *Increase the City's emergency preparedness. Ensure the 2019 emergency operations plan is updated as needed. Continue to prepare for, purchase and maintain equipment needed for water rescues, victim location, rescue, and retrieval, and medical emergencies. Conduct training and exercises to ensure adequate staff preparation. Work with other Emergency Management partners including, the Public Works and the Water Departments, to ensure coordination and plans are in place for adequate cooling centers, temporary water and wastewater service, storm debris removal and disposal, and the ability to traverse post-storm debris fields.*
- *Consider buying or contributing to the purchase of mobile solar units to provide shelters, emergency management offices, and neighborhoods with a source of power for cooking, cooling, charging cell phones, communications, etc.*
- *Ensure emergency generators are exercised (tested) on a weekly basis. Use internal and external resources to ensure this emergency equipment is fueled prior to the onset of*

predicted severe storms. Identify a method to refuel this emergency equipment in the event routine transportation routes are blocked or obstructed for a prolonged period of time.

- Retrofit fire and police stations with LED light fixtures, and motion-activated light switches; air hand dryers and reduced flow fixtures in the kitchens and bathrooms; increase recycling efforts, and implement an idling policy for apparatus and vehicles.
- Install sensors on bay doors that turn off the HVAC systems while the doors are open to save energy. Similarly, install awnings over east, west, and south-facing windows to minimize solar heating in the summer. Collect stormwater and use it for non-potable purposes, such as cleaning the fire apparatus. Finally, install solar water heaters to replace current natural gas heaters.
- Investigate changing the current practice of sending a fire engine or ladder truck in support of a medical unit to smaller more efficient and nimbler units. As light vehicles (e.g., administrative, support, staff, investigator, and inspector vehicles) are replaced, do so with electric or hybrid vehicles.
- Continue partnerships and coordination with the American Red Cross, Verizon, and the Dayton Department of Recreation and Youth Services to provide cooling stations, water and shelters during emergencies.
- Initiate volunteer neighborhood programs to check on vulnerable populations. These volunteers will check on the well-being of vulnerable populations that sign up for a check-in following a bout of severe weather (i.e., high heat or flood conditions). Investigate technologies that could aid in this task.

Human Resources Department

- *Adopt an internal administrative sustainable operations policy and, together with Public Affairs, inform all employees of energy and water conservation expectations within the City workplaces. For example, employees should use pitchers of tap water rather than buying bottled water; and use a reusable coffee cup rather than a one-time Styrofoam cup.*
- *Incorporate sustainability concepts into the employee orientation program.*
- Continue to implement the City's wellness program and look for opportunities to reasonably expand this program.

Information Technology Department

- When replacing equipment or expanding work capabilities, purchase *energy star certified* equipment for the City.

- Expand the capability of City employees to conduct *zoom* meetings and conferences within their work areas.

Planning and Community Development Department

- *Align the zoning code, building code, and other parts of the City Code to be consistent with this strategy. Incorporate sustainability considerations into Code rewrites. Ensure that, at a minimum these code modifications do not create obstacles or barriers to recycling, electric car charging, or the use of other alternative energy technology such as solar and geothermal equipment.*
- *Ensure that all new residential and commercial buildings are built with green features, including upgraded insulation and efficient appliances. The building requirements should facilitate, (but not require) owners that wish to obtain approval of third party organizations that certify buildings under the Energy Star, Leadership in Energy and Environmental Design (LEED) or similar evaluation programs.*
- *Begin planning for the orderly transition from vehicles with internal combustion engines to electric vehicles and all that entails with antiquated gas stations, the need for charging stations, storage and reusing current vehicles as scrap, and the effect on low income residents.*
- Dayton will reactivate the electric aggregation program for residents and businesses; and include a renewable energy rate in the program.
- Amend the Zoning Code to support smart land use strategies that prioritize high density development, redevelopment, infill, street connectivity, transit accessibility and walkability.
- Update Urban Design Guidelines to support connected green space and minimize fragmentation.
- Support neighborhood mixed use development and redevelopment.
- Amend the Zoning Code to encourage backyard habitat and native-plant landscaping, and reduction of invasive species.
- Promote no-mowing areas, soil development and community gardens, particularly on vacant parcels. Community gardens should also include orchards, and tree nurseries. Vacant parcels could also serve as staging areas for farmers markets and truck farm outlets. The

City can partner with local colleges and universities to have vacant lots serve as a living laboratory to study prairie and other functioning ecosystem development.

- In areas that are underserved by City parks, initiate a pocket park program. Develop program guidelines and identify neighbors that will benefit from these pocket parks.
- Encourage pervious pavements rain gardens and rain barrels to reduce the volume of stormwater runoff. Similarly, promote no mowing areas, soil development and community gardens, particularly on vacant parcels.
- Ensure that the Zoning and Building Codes do not contain any unreasonable obstacles to the use of alternative energy generation on residential and commercial properties. Analyze properties to identify the best candidates for the installation of solar panels. Publish a solar map as hard copy and online.
- Encourage new residential and commercial development on infill sites in the City. Similarly, encourage renovations of existing buildings rather than construct entirely new structures.
- Reduce food insecurity by recognizing and supporting urban agriculture initiatives and land use.
- Explore installing solar canopies over surface lot parking areas.
- Currently, there are over 30 community gardens in Dayton. The City should identify City parks and vacant City-owned parcels (that are not yet developed and are zoned residential) and designate them for use as (at least temporarily) community gardens. Adopt a *Community Garden Master Plan* specifying requirements of individuals or organizations that take responsibility for operating these community gardens and clarify what if any services they can expect from the City.
- Support community gardens (with services such as water, seed, fertilizers, compost, refuse, etc.) when residents come forward and agree to manage a community garden. Where possible, negotiate access for additional garden plots on privately-owned parcels.
- Ensure transportation system plans contemplate and accommodate buses, scooters, Segways, and ride sharing programs.
- Reduce the volume of stormwater runoff by reexamining the number of parking spaces required for new buildings or structures and instead encourage shared parking facilities when reasonable. Where feasible, incorporate pervious pavers, pervious concrete, and

pervious asphalt into parking surfaces and alleyways. Similarly, promote the use of residential rain gardens, rain barrels and other techniques to reduce stormwater volumes.

- Ensure that Dayton continues to be designated at least a bronze *Bicycle Friendly City* by the League of American Bicyclists.
- Become the first community in Ohio to achieve a silver level *Bicycle Friendly City* designation from the League of American Bicyclists.
- Continue to implement the 2025 bicycle action plan adopted in 2011.
- Design and install sidewalk segments and bike lanes needed to connect neighborhoods to main pedestrian or bicycle routes. For safety (and to encourage use) construct bike lanes separate from roadways when possible. Identify areas that are void of parks and plan bikeways to help connect residents to parks.
- Develop a plan to maintain and regularly sweep bicycle lanes to encourage use.
- Publish routine pocket updates (e.g., every 5 years) of designated walkways and bicycle routes across the City. Distribute these folded maps through City Hall, operational facilities, recreation centers, police and fire stations, Chamber of Commerce, tourist information offices, private bike shops, etc.
- Periodically discuss planned sustainability improvements in resident and business forums and solicit feedback and additional ideas.
- Share Dayton’s expertise and experience in becoming more sustainable with other local governments in the region and State.

Procurement, Management and Budget Department

- *Draft and seek adoption on a Sustainable Procurement Policy that looks to evaluate the “total cost” of goods rather than only the off-the-shelf purchase price.*
- *Purchase solar, wind or hydroelectric renewable energy certificates (RECs) to offset the electrical power currently consumed by City activities.*
- *Enter into a power purchase agreement (PPA) to purchase electricity produced by an Ohio solar installation.*
- Help ensure there is a vibrant and growing market for recycling materials by encouraging businesses (and the City itself) to buy products made from recycled materials. For example,

the City should purchase copy paper with at least 25% post-consumer recycled content. Favor similar office supplies with a significant recycled content over those that do not.

- Reduce the amount and storage needs of hard copy documents by purchasing additional cloud capacity, more scanners, laptops and tablets, particularly for City *field* personnel. The City has already purchased flat screen computer monitors to replace traditional monitors. The flat screens consume 1/3 less electricity than other models.
- Continue to explore and apply for Federal, State and private grant funding to offset the City's investment in these sustainability projects.

Public Works Department

- *In 2011, Dayton conducted a comprehensive energy audit of City operations and buildings. While many of these recommendations were implemented at that time others were not. Given the advances in energy technology since, the City should conduct updated assessments for its buildings and structures to identify viable opportunities for energy conservation actions and reasonable operational savings.*
- *Anticipating that the Federal or State government (or both) will impose a future carbon fee, or the price of natural gas will rise due to increased exportation, the City should reduce its dependence on natural gas [including compressed natural gas (CNG) where ever possible].*
- *To reduce energy demands for heating and cooling City buildings, install solar, green or white roofs (or all) as roofs are scheduled for replacement.*
- *Assess vehicle mileage and usage of the City's fleet and look for opportunities to reduce the size of the fleet, or move to a more fuel-efficient vehicle. Revisit the practice of assigning fleet vehicles to individuals or programs and consider whether a motor pool or shared vehicle approach may be more efficient.*
- *As each needed City-owned vehicle is up for replacement, replace it with an all-electric, or hybrid-fueled vehicle.*
- *Approach Sinclair College, the Downtown Dayton Partnership, and the Chamber of Commerce to encourage private sector hotels, shopping centers, office buildings, movie theaters, grocery stores, and restaurants to install charging units at commercial parking areas. Finally, the City should maintain and periodically update a prioritized list of desired charging station locations in the event grant money becomes available on short notice.*

- *Facilitate the transition to plug in electric vehicles for residents and businesses by installing electric vehicle charging stations at City-owned or leased parking facilities and along right-of-ways. Deploy chargers built into streetlight poles and pop up sidewalk chargers to add to charger capacity along busy streets.*
- To further encourage and assist residents and businesses to “go electric,” the City should allow *free or discounted access* to use these chargers for at least the first few years of their operation. Similarly, the Parking Code should be modified to mandate charging units as a component of all new private sector parking facilities (similar to handicap accessible spaces currently required). Amend the City Building Code to streamline the permitting and approval processes for the installation of electric vehicle charging equipment at private residential properties.
- Reexamine the number of parking spaces required for new structures and allow for shared parking facilities when reasonable. Where feasible, incorporate pervious pavers, pervious concrete and asphalt into parking surfaces and alleyways.
- Continue to measure and track energy usage at each City facility to investigate ways we can reduce our demand. Report on significant increases or decreases (and supporting reasons) of these consumptive habits over time. After an appropriate period of time to gather data, set long-term goals for energy use reduction and report on our progress towards meeting them annually to the City Commission.
- For the past 28 years, Dayton has been recognized by the Arbor Day Foundation as a *Tree City USA* community. The City must provide native trees for residents (for free or at a nominal price) to plant in their yards, on City right-of-ways, vacant lots, low income neighborhoods, or in highly urbanized areas.
- Similarly, as existing infrastructure ages, replace existing HVAC units with more efficient energy star or similar technology.
- Maximize the City’s eligibility for rebates and discounts offered by the City’s electrical provider. Reduce electrical consumption by completing the effort underway to convert all City-owned sodium street lights to LED technology.
- Turn off lighting in all City offices or conference rooms when they are vacated or otherwise not in use. Where possible, install motion sensors in City offices elevators, hallways, and conference rooms thereby ensuring that lights are reduced or off when these spaces are not in use.

- Look for opportunities to reuse organic or “green” waste materials via backyard or City-sponsored mulching or composting thereby removing these materials from the refuse stream. Consider investing or otherwise supporting the operation of a regional food (organic) waste biological digester that will produce electricity or harvest natural gas while breaking down the waste. The United States Department of Agriculture (USDA) has funding for such programs if property to be used for this purpose is zoned agricultural. Montgomery County may be a willing partner in the project.
- Determine whether existing roofs are candidates for behind-the-meter solar panels and install these as opportunities and funding present themselves. Further, as they come up for replacement, reinforce the roofs of City facilities as needed to support solar panels.
- Install battery backup technology at significant street intersections, and deploy generators to ensure their vulnerable or critical areas continued to have minimal power in the event of significant, widespread outages.
- Continue to identify City streets that have unacceptably broken pavement and put on a prioritized schedule to resurface.
- Increase the level of recycling by providing all residents with a recycling cart, increasing collections to weekly, targeting an outreach and education campaign on exotic materials many residents may not realize are recyclable, and another effort on common items that must be disposed of as refuse.
- Continue to implement the “complete streets” approach to designing and repaving streets, sidewalks, bikeways and pedestrian safety features of the City’s transportation network. Install sidewalk segments, bike lanes and bike racks needed to connect neighborhoods to main pedestrian or bicycle routes.
- Ensure that there are bike racks installed throughout the downtown area and other points of interest, including libraries, museums, parks, and other places where people congregate. Consider holding a contest among public schools to identify designs to incorporate into unique Dayton signature bike racks. Continue requiring new developments to install bike racks on their properties. Encourage short and long-term bicycle parking options, including workplace showers.
- Encourage businesses to invest in enhancing transit stops.
- Investigate the feasibility of reusing the waste heat generated at the three (3) City owned recreation centers containing swimming pools.

- Complete an initiative to change out 2,000 street lights with LED technology. This investment is expected to have no less than a four-year payback.

Recreation and Youth Services Department

- Prepare and present environment, water pollution, sustainability and recycling programming for the City's youth.
- Prepare and present nutritional material to kids. Explain how to participate in local farmers markets as well as how to *recycle right*, and how to compost organic wastes.
- Ensure employees can easily participate in recycling at all City-owned buildings and facilities. Require recycling at all City sponsored festivals, celebrations and other public assemblies.
- Hold a contest among public school kids or recreational center users to identify designs to incorporate into unique Dayton signature bike racks. Deploy these in places where people congregate including museums, parks, and libraries.

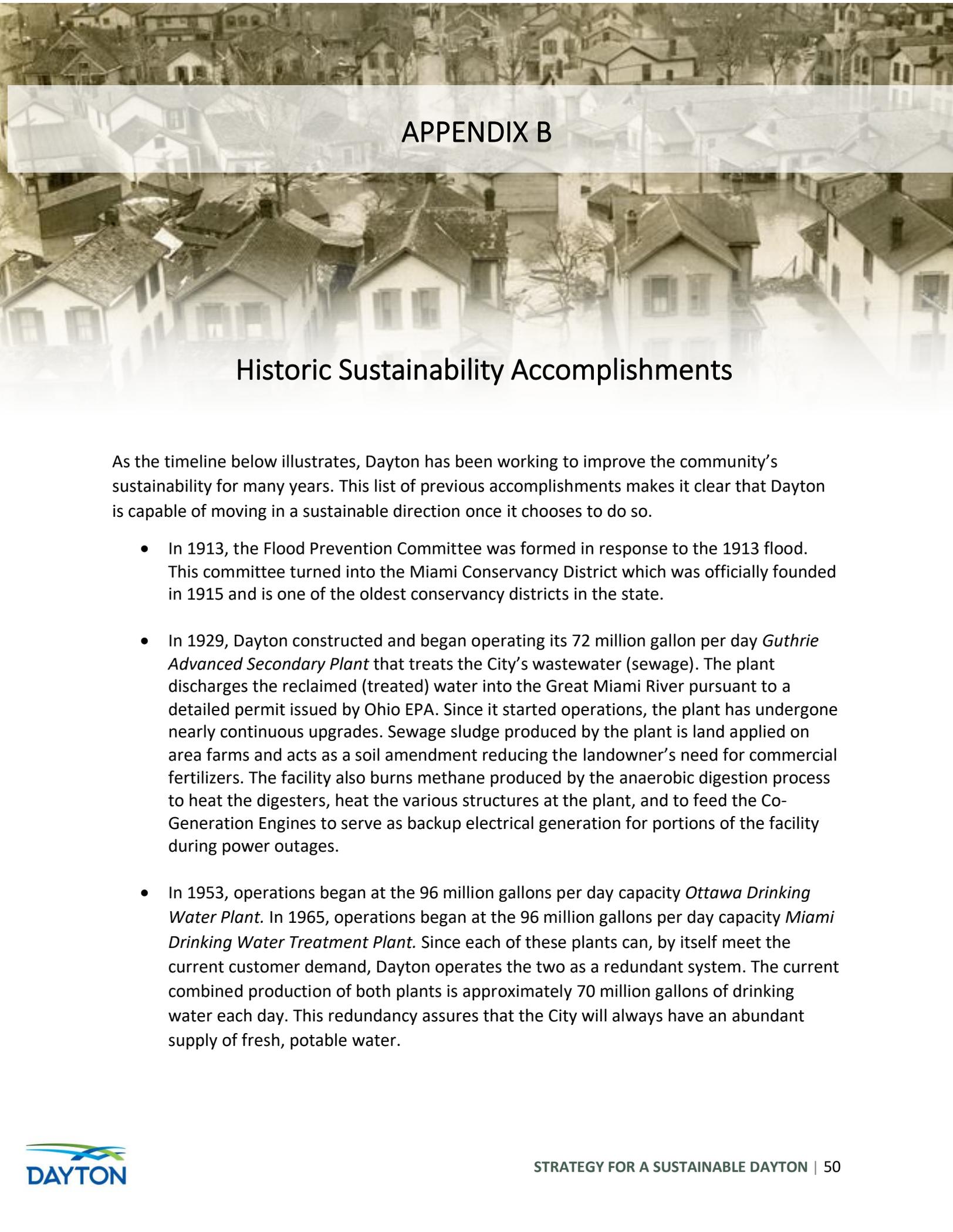
Water Department

- *Move forward with planned and necessary upgrades to the City's water reclamation (sewage treatment) facility and the City's sewer system to ensure that discharges to the Great Miami remain in full compliance with all Federal and State standards.*
- *Ensure the quality of the groundwater aquifer by vigorously implementing the City's existing source water protection program to guard against pollutant contamination of the aquifer from commercial, industrial, institutional, and residential sources.*
- *Inspect construction sites, storm drain outfalls, businesses generating fats, oils and grease, and persons responsible for illegal dumping that may contaminate stormwater.*
- Recently, Dayton closed two municipally-owned golf courses. The City owns this land outright and is currently exploring appropriate future uses for these parcels. Since each is adjacent to a Dayton water utility that consumes a significant quantity of electricity to power their operations, Dayton will explore installing solar panels on one or both of these parcels and direct the resulting power to these water facilities. Further, if the City enters into a purchase power agreement (PPA) with a solar installer, the City can avoid nearly all of the typical upfront capital costs of a solar facility.
- Continue to protect Dayton's rivers and streams by ensuring all (publicly and privately-owned) *stormwater facilities* are maintained and operated as designed. Effectively ensure

this regulatory effort addresses runoff from construction sites, dry weather (non-rain event) flows, fats, oils and grease management, and illegal dumping (spills) that could contaminate stormwater or harm the storm drains and sewers carrying that stormwater.

- Similarly, minimize the toxic pollutant discharges into both the City's sanitary sewers and the storm drain network by increasing the frequency and vigor of inspections of industrial (sewer) users, and construction projects discharging sediments.
- Minimize or eliminate nutrients and sediments from running into rivers and streams by establishing *no mowing zones* or vegetated buffers along stream banks within the City.
- Reduce the volume of stormwater flowing into City storm drains (and ultimately into area waterways) by installing green infrastructure, including *street rain gardens* throughout the City, particularly in residential neighborhoods. Similarly, promote the use of residential rain gardens and barrels, and other techniques to reduce stormwater volumes; and take other storm water management controls.
- Reduce additional water loss by replacing or repairing drinking water distribution pipes that are approaching the end of their useful life cycle.
- As drinking water infrastructure ages, replace older plumbing fixtures with water and energy saving fixtures, including faucets and hot water heaters.
- Reduce trash and litter throughout the watershed by periodically sponsoring stream and land cleanup events in neighborhoods. Recruit commercial organizations to participate or sponsor these clean-up efforts. Consider establishing an *adopt-a-stream* program where a neighborhood or civic organization takes responsibility for keeping a stream segment trash free over time.
- Reduce or eliminate metals and other pollutants from reaching streams and the storm drain network by conducting routine street sweeping of City streets and parking lots
- Install *smart* (radio read) drinking water meters to ensure accurate data (and maximize enterprise revenue) for the Water Department. More accurate water fees may lead to more revenue to the program and the implementation of more efficient water conservation measures by customers.
- When market conditions favor such a move, consider commercially selling the methane gas produced as a byproduct of wastewater treatment at the Guthrie reclamation facility rather than the current practice of either flaring it or reusing the gas at the plant itself.

- Expand the mission of the Environmental Advisory Board (EAB) to serve as a clearinghouse and sounding board for potential sustainability actions and potential City sustainability partners. Consider adding a subcommittee for environmental justice and food equity.



APPENDIX B

Historic Sustainability Accomplishments

As the timeline below illustrates, Dayton has been working to improve the community's sustainability for many years. This list of previous accomplishments makes it clear that Dayton is capable of moving in a sustainable direction once it chooses to do so.

- In 1913, the Flood Prevention Committee was formed in response to the 1913 flood. This committee turned into the Miami Conservancy District which was officially founded in 1915 and is one of the oldest conservancy districts in the state.
- In 1929, Dayton constructed and began operating its 72 million gallon per day *Guthrie Advanced Secondary Plant* that treats the City's wastewater (sewage). The plant discharges the reclaimed (treated) water into the Great Miami River pursuant to a detailed permit issued by Ohio EPA. Since it started operations, the plant has undergone nearly continuous upgrades. Sewage sludge produced by the plant is land applied on area farms and acts as a soil amendment reducing the landowner's need for commercial fertilizers. The facility also burns methane produced by the anaerobic digestion process to heat the digesters, heat the various structures at the plant, and to feed the Co-Generation Engines to serve as backup electrical generation for portions of the facility during power outages.
- In 1953, operations began at the 96 million gallons per day capacity *Ottawa Drinking Water Plant*. In 1965, operations began at the 96 million gallons per day capacity *Miami Drinking Water Treatment Plant*. Since each of these plants can, by itself meet the current customer demand, Dayton operates the two as a redundant system. The current combined production of both plants is approximately 70 million gallons of drinking water each day. This redundancy assures that the City will always have an abundant supply of fresh, potable water.

- In 1956, Dayton installed a *Lime Kiln Reclamation Facility* at the Ottawa Plant. This unit recycles the calcium carbonate extracted during the treatment of raw groundwater and converts it to lime to be used in the later stages of treatment. The kiln allows the City to avoid paying to dispose of the calcium carbonate it extracts and avoid the need to purchase lime which it would otherwise have to do.
- In 1980s, Dayton began collecting *recyclable materials* from residents. In 2008, the City instituted single-stream collections which eliminated the need for residents to sort these materials. The City offers residents a choice of cart size to encourage maximum participation in the program. All collected recycling materials are retained and recycled in the United States.
- In 1983, Dayton began implementing a *Local Pretreatment Program* to control the discharges of over 40 industrial facilities into the City's sanitary sewers. This regulatory program ensures that these discharges do not harm the collection system, the plant itself, or pass through to the river.
- In 1985, Dayton established a 9 member *Environmental Advisory Board* to ensure the City environment is protected, maintained, and improved by having this Board advise the City staff and the Commission on environmental matters.
- In 1988, Dayton established the *Source Water Protection Program* to safeguard the City's ground water (our drinking water source). The program inspects commercial and industrial facilities, identifies and restricts potentially harmful substances generated or kept onsite, monitors groundwater quality, and provides funds for corrective actions as needed.
- In 1989, to provide leadership and ensure compliance with various Federal and State Clean Water Act requirements, Dayton, created an *Office of Environmental Management* within the Water Department.
- Since 1994, Dayton has been designated as a *Groundwater Guardian Community* for its ongoing protection of the City's groundwater wellfields.
- In 1997, Dayton adopted a *Stormwater Management Program* to protect the City storm drains and surface waters potentially adversely affected by untreated runoff. The City's stormwater infrastructure carries 100-year, storm events from City streets thereby preventing local flooding.

- In 2007, Dayton’s City Commission adopted a *Sustainable Practice Policy*. The stated purpose for this initiative was to establish strategies, benchmarks and milestones to save energy, money and other resources to protect the environment; and improve the quality of life in and around Dayton.
- By 2008, the City had installed *LED light bulbs* in all of the City’s traffic signals.
- In 2010, Dayton achieved a bronze level designation as a *Bicycle Friendly City* by the League of American Bicyclists. With the goal of making bicycling even safer, more reliable, and convenient, in 2011 Dayton adopted a *Bicycle Action Plan* and created a *Bike/Walk Dayton Committee* to advise the City on these matters.
- Since 2011, Dayton has embraced the concept of *Complete Streets* (aka *Livable Streets*) ensuring that streets and avenues accommodate all types of transportation, including vehicles, pedestrians, bicycles, electric scooters, electric cars and mass transit [i.e., Regional Transit Authority (RTA) buses].
- In 2012, the City initiated post-consumer materials collection and recycling at both airport terminals.
- Since 2012, Dayton has supported Montgomery County’s *Used Tire Buy-Back Program* (paying residents \$2 per tire brought to the County transfer station).
- Since 2014, Dayton has *tracked its energy consumption* on at least a quarterly basis and analyzed the data to identify energy conservation measures and savings.
- In 2014, Dayton adopted a comprehensive *Sustainability Master Plan for the International Airport*.
- In 2014, the City Commission adopted a resolution (No. 6010-14) to support the creation of *Dayton Regional Green* (DRG) program led by Montgomery County.
- In 2015, Dayton set an overall *Tree Canopy Goal* of 50% coverage to keep the City cooler, attractive, and reduce stormwater volumes by absorbing rainfall. The current percentage of tree canopy across Dayton is approximately 22%.
- In 2016, to conserve electricity, the City replaced traditional incandescent lighting with LED lighting throughout the *Fleet Management Shop* at the Ottawa Maintenance Yard. Similarly, speed bay doors were installed in the shop to minimize the loss of heated or cooled air when vehicles are brought in and out of the facility.

- In 2017, the lime kiln system was expanded to allow Dayton to take calcium carbonate from other Cities also withdrawing groundwater from the aquifer, and sell the resulting lime back to those communities (and a private businesses) thereby creating two revenue streams for the Water Department. The new unit produces up to 156 tons of lime per day (saving the City \$3.4 million each year) and generates \$1.6 million per year in additional revenue (lime sales).
- In 2018, Dayton City Hall was presented with an *Energy Star Award* by the U.S. EPA in recognition of the City's energy efficient improvements in that building.
- In 2019, Dayton replaced 600 (of approximately 1,800) airport taxiway lights and all of the street lights leading to the terminal building with *LED fixtures*.
- In 2019, to promote and encourage the use of electric vehicles, Dayton added 4 new *vehicle charging stations* (2 in the Oregon District and 2 near Day-Air Ballpark). The City expects to add 2-4 additional charging units in 2020.
- In 2019, Dayton, in partnership with MetroParks, completed work on a *Riverfront Master Plan*.
- In 2019, Dayton created a new *Sustainability Manager* position within the City Manager's Office. The position was filled in September 2019.
- In 2020, Dayton purchases hydropower (renewable) electricity for its general fund electrical consumption (e.g., buildings, street lights, traffic signals).
- In 2020 Dayton joined the *Climate Mayors* organization with nearly 450 other U.S. City Mayors.
- As Dayton replaces older fire apparatus and medical response units, it increases the fire fleet's fuel efficiency and reduces carbon emissions. For example, in 2020, Dayton replaced three 1997 Jeep Cherokees with new Chevrolet Malibu vehicles.
- In 2020, Dayton replaced the windows at two fire stations with more energy efficient windows. In addition, since 2015, Dayton has replaced the boilers in seven fire stations. Similarly, the HVAC units at six fire stations have been replaced and as each unit is replaced, the station has also been retrofitted with programmable thermostats.

- Dayton has already installed numerous bicycle racks in the downtown area and created miles of bike trails and lanes across the City.
- The City has partnered with vendors to establish *bike sharing and SPIN electric scooters rentals* for pedestrians to use to move about the downtown area without the need for gasoline powered vehicles.
- The City sponsors more than 30 *neighborhood beautification (clean-up)* days each year.
- The Dayton Police Department has moved away from generating and retaining paper based records to cloud-based, software programs that contain digital information on investigations, accident reports, parking citations, crime reports, injury reports, police purchasing, and policies.
- Dayton has provided residents with a smart phone application and a special website titled *Dayton Collects* which contains information on collection schedules, including holiday schedules, street leaf collections and other related topics.
- Dayton also has a second smart phone application called *Dayton Delivers* where residents can report potholes, maintenance concerns, abandoned cars and more.
- Historically, Dayton collected street *leaves* and other green waste in bulk, but subsequently switched these collections to bags. In 2019, Dayton returned to the practice of collecting street leaves in bulk; residents need only rake their leaves to City curbs while avoiding storm drains and driveways. The City continues to accept bagged street leaves at its green waste debris site at the Wagner Ford Landfill. Ground up green waste and street leaves are mulched and used on City property around the community.
- The City collects tree trunks and branches and saws them into lumber at a City-owned *sawmill in the Ottawa Yards*. The resulting wood is used in City projects around the community.
- Dayton has purchased and deployed 30 *Big Belly solar-powered, trash compactors* as refuse and recycling containers around the City. Most are located at bus shelters and recreation centers.
- Dayton has taken advantage of *Property Assessed Clean Energy (PACE)* discounted funding to pay for energy efficiency upgrades at its facilities.

- If residents have more than one property receiving city drinking water, they can consolidate and pay their water fees via a website at paydaytonwater.com; thereby, saving both paper and postage.
- Dayton conducts an *annual survey of residents* on their thoughts about refuse and recycling service, drinking water, parks, and green space, and uses the results to improve these services.
- As the City replaces aging office equipment and HVAC systems, the City installs *Energy Star* rated equipment and HVAC systems in their place.
- Dayton has negotiated favorable *electrical contracts* running through 2024 that save the City over \$107,000 per year over the rates that would have otherwise applied to our power consumption.
- Dayton leases a compressed natural gas (*CNG*) *vehicle fueling station* outside the Ottawa facility that allows City vehicles to operate using the less expensive and cleaner burning CNG for fuel instead of gasoline or diesel. Between the cheaper fuel and the reduced maintenance expenses, the City saves approximately \$10,000 per vehicle, per year.

APPENDIX C

Project Tracking Sheet

Description of Sheet: The project tracking sheet is split into three categories: *Project details*, *measuring* and *feasibility*. The sustainability manager, department head, and other leads involved in the project will meet to fill out this tracking sheet together to set goals/metrics for each initiative. This sheet is used to help track projects and also set priority for a variety of sustainability initiatives within each department. This sheet will be held in a shared excel document and will be updated as the projects progress.

Example Document

PROJECT DETAILS				
Department	Initiative	Contact/Lead on Project	Description of Project (ie: who and why)	Education
Water Department	Green Roof Installation on City Hall	Jane Doe- Environmental Scientist at the Water Department. Jane.Doe@CityofDayton.Gov	8 varieties of drought resistant, slow growing, pre-planted sedum will be placed on top of City Hall in an effort to mitigate urban heat island effect as well as stormwater run-off. Energy cost savings will be achieved by reducing the temperature of the roof. Weston Solutions will design the roof, William Kramer & Son will install the sedum. Carl Walker Inc performed an evaluation of the structural integrity of the roof. Additional trays with white stones will spell out "Dayton." A group of volunteers will water the garden in periods of no rain.	Tours were conducted throughout the year to showcase project success.

MEASURING		FEASIBILITY				
Goal	Metric	Cost	Projected Savings	Timeline	Difficulty	Next Check In
20% energy savings throughout the next 10 years.	Comparing cost savings in energy bills from 2005-2011 onward.	\$22,000 in capital costs	10-43% in energy savings to cool the building in the summer. <i>Natural Resource Defense Council</i>	Evaluation of roof: December of 2009; Contracting and planning: April of 2010; Installation: July of 2010	2 day installation- easy	6 months from X date



Appendix D

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