



Citizens Guide to Sustainability

In Allegheny County, we are committed to doing our part to build a sustainable community. We are proud to provide this guide to share information on our sustainability efforts to date.

JANUARY 2021



ALLEGHENY COUNTY

County Executive's Message



Before running for County Executive in 2011, I was a small-business owner whose company was focused on water and energy efficiency. When I became County Executive, I carried those interests into this position, challenging the County Manager and department directors to improve our sustainability. Our region is not the Pittsburgh of 30 years ago, but it is a community that welcomes, embraces and invests in green energy and sustainability. It's important that our county is a leader in that space, and I am proud of the work that we have done thus far.

Since I took office in 2012, the county has reduced its reliance on fossil fuels. We have moved purposefully to use renewable energy sources in our buying, as well as in our own building and development. We have worked collaboratively and strategically to reduce our impact on the community and environment, while also taking steps to protect it. While not always the most cost-effective choice, those investments have improved our operations, our health, our bottom line and our county.

For the first time in our history, all eight air quality monitors in Allegheny County met federal air quality standards. We are already in attainment with carbon monoxide, nitrogen oxide, ozone and particulate matter (PM 2.5, PM 10). We recently announced our investment in locally-generated clean energy through a partnership with a company that will construct a 17.8 MW low-impact hydropower facility on the Ohio River. With each step we take, we move closer to using 100% renewable energy at the county. And that commitment also expands access to locally-generated clean energy, increasing the availability of renewable energy, providing the bridge between fossil fuels and renewable energy for our entire community.

I'm proud of the work that we have done to date, and excited about the opportunities for even more moving forward. It is my privilege to share just a few of those accomplishments with you here.

Rich Fitzgerald
County Executive

Improving Air Quality

Allegheny County, in partnership with the Allegheny County Conservation District, Allegheny County Parks Foundation, Western Pennsylvania Conservancy, and Tree Pittsburgh has planted over 6,935 trees in county parks since 2012, as well as shrubs and herbaceous perennials. More than 2,600 trees were planted in 2020 alone. Annually, each planted tree will absorb about 50 pounds of carbon dioxide (or the amount emitted from 55.6 miles driven by the average passenger vehicle).

Here are just a few of the projects we have completed that improve our community's air quality:

- Reduced the carbon emissions generated from our use of electricity, steam, bulk fuel, refrigerants, vehicles, streetlights, water and waste. Between 2015-2020, the county **reduced carbon emissions** from building energy use by

16% or 5,900 metric tons (the amount emitted by 1,275 passenger vehicles in one year).

- Provided support for further trail development that can be used for recreation, as well as alternative transportation, **reducing the burning of fossil fuels** and **improving our air quality**. Those efforts include our Active Allegheny Grant Program (AAGP) that assists municipalities in the creation of projects that connect this region's growing bicycle and pedestrian infrastructure to important community destinations. Now in its fourth year, the program has awarded \$625,279 to 26 different projects, 21 of which have been fully completed.

- Enacted a clean construction ordinance in June 2020 aimed at **reducing particulate matter and nitrogen oxide emissions from diesel vehicles** used in county construction projects. Diesel emission contains more than 40 toxins, carcinogens, smog-forming compounds and fine particulate matter. The ordinance requires all construction projects having a total cost of \$2.5 million or more to use diesel vehicles with installed Best Available Retrofit Technology (BART) or verified diesel emissions control strategies, reducing nitrogen oxide and particulate matter emissions by up to 95%.

- Transitioned county fleet vehicles to more alternative fuels, such as compressed natural gas (CNG), dual fuel propane, and both hybrid-electric and all-electric plug-in vehicles. Hybrid electric vehicles used by Public Works produce 72% less CO₂ than conventional vehicles. In early 2020, the county purchased four all-electric Chevy Bolts, using grant funding through the state's Alternative Fuels Incentive Grant. These electric vehicles have no tailpipe emissions, and so **do not release CO₂ into the atmosphere like traditional gasoline vehicles**.

Projects Underway



In 2021, the county will be purchasing two dual-fuel (propane and gasoline) garbage trucks that will primarily be used to collect trash throughout the parks system. Propane fuel provides cost savings in the form of lower fuel and maintenance costs and fueling infrastructure, but it also produces fewer carbon emissions than either gasoline or diesel. Additional dual-fuel vehicles are also expected to be used by the park rangers.



In 2021, Public Works will replace four dump trucks with newer Tier 4 Diesel dump trucks to reduce particulate matter and nitrogen oxide emissions by up to 86%. These pollutants contribute to poor air quality. These trucks are used for hauling materials to and from construction sites, as well as in the winter for plowing and salting.

Managing Land and Water

Since 2017, the Parks Department has converted approximately 25 acres in North, South, Boyce, Round Hill, White Oak, and Hartwood Acres parks to no-mow meadows. The success of one of the first meadows on Indian Hill in Boyce Park inspired additional projects, which are visually attractive and environmentally-friendly.

These conversions eliminate approximately 10 million gallons of stormwater runoff annually. That equates to enough water to fill the North Park pool five times! In addition, it also reduces about 3,800 pounds of carbon dioxide (or the amount emitted from 4,250 miles driven by the average passenger vehicle) annually because there is no need to mow that acreage.

We don't just do meadows. Here are just a few of the other projects that address land and water on county properties:

- **Restored and replanted 16 acres of valuable riparian buffer** (land areas adjacent to a stream or waterbody) since 2017. When these ecosystems are densely vegetated and healthy, they reduce stormwater flows, minimize sedimentation and erosion in streams, and provide valuable aquatic and avian habitat.

- Kicked off the Cascades Restoration in late 2020, marking a momentous historical

restoration effort in South Park to sustain culturally significant pieces of park history. In addition to restoring and preserving the Cascades stone structure, surrounding woodland plantings will create a sense of place and **restore forest habitat throughout the site.**

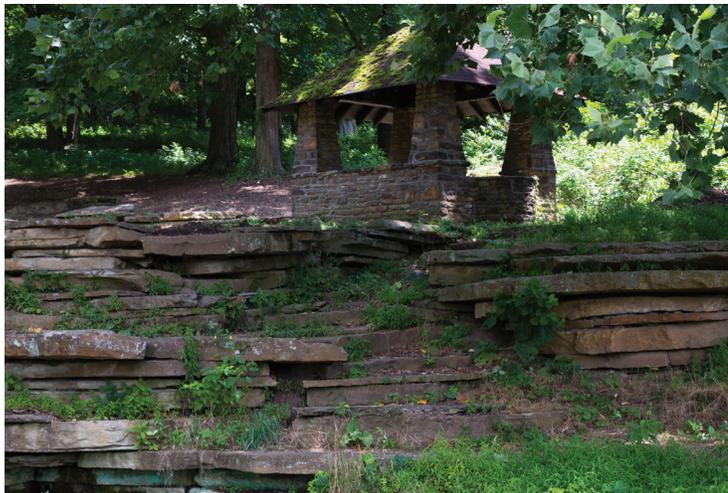
- Constructed a permeable paver parking lot in Deer Lakes Park that allows precipitation to naturally **drain** through to the subsurface. The lot **captures about 95% of all stormwater runoff** and prevents about 600,000 gallons (or enough water to fill 7,500 average residential bathtubs) from entering Little Deer Creek each year.

- Built environmentally friendly Naturally Engineered Waste Treatment (NEWT) systems in Round Hill and Deer Lakes parks that use the wetlands' natural filtration properties and ultraviolet light disinfection to **treat the facilities' wastewater.**

- Installed new sensors on the County Office Building's 8,400-square-foot green roof. When installed in 2010, the green roof was the first of its kind on a public building in the county. It is covered in waterproof fabric, various insulating and water-trapping materials, as well as a mix of sedum, native plants, shrubs, and grasses. It holds between 90-100% of rainfall over a 24-hour period and **prevents about 500,000 gallons of stormwater runoff annually** (or enough water to fill 6,250 average residential bathtubs). The roof also **naturally insulates the building**, which saved the county \$80,000 in energy costs during its first year.

- Invested — \$2.1 million in 2020— in the rehabilitation and development of brownfields, which makes possibly-contaminated former industrial land **safe again for productive use in our community and economy.** Economic Development has also begun administering a \$1 million revolving loan fund dedicated to remediation efforts across the county.

- Teamed with the Allegheny County Conservation District to install 150-square-foot floating islands in a pond in Round Hill Park. The islands were vegetated with perennials and grasses that **improve**



South Park Cascades



Hartwood Acres Park Meadow



Boyce Park Ski Slopes NEWT



Deer Lakes Park Permeable Parking Lot



Carrie Furnace Brownfield Site



Projects Underway



In spring 2021, construction will begin on a two-acre green parking lot in South Park. The new lot will improve traffic flow and functionality and will add almost 100 new trees, two rain gardens, permeable pavers, bioretention islands, benches and boardwalks. The project will increase water quality and decrease water quantity draining into Catfish Run. Approximately 95%, or two million gallons of stormwater, annually will be captured. The finished project will also make the parking lot feel more like an extension of the park.



In 2021, Deer Lakes and White Oak parks will have Photovoltaic (PV) solar arrays installed. The two “Net Zero Park” projects will allow the county to generate about 380,000 kWh each year. In addition to reducing electricity usage from the traditional electric grid, the use of solar will also reduce carbon emissions by 269 metric tons. The savings is equivalent to replacing 10,207 incandescent light bulbs with LEDs or preserving 351 acres of forest. Providing a community benefit, our park rangers will incorporate the demonstration solar systems into education programs with visitors to showcase the feasibility of solar power in our region.

Reducing Waste



Recycling

The county contracts with RoadRunner Recycling, a web-based company that uses an application to communicate hauling routes to small-fleet truck drivers who have empty truck beds and downtime. The collection at several county facilities and all nine county parks using the application **make waste and recycling operations more efficient.**

Since July 2018, we have recycled 427,070 pounds of cardboard, 120,837 pounds of commingled materials, 26,956 pounds of mixed paper, and 11,365 pounds of composting. This effort **reduces carbon emissions by 890 tons**, equivalent to the consumption of 100,168 gallons of gasoline or providing electricity for up to 151 homes in one year.

In 2020, Facilities Management also **began recycling of mixed scrap metals** from renovations and construction projects. In just one year, 296,200 pounds of metal were recycled.



Sustainable Materials

In 2019, the Kane Community Living Centers began a pilot to **replace all Styrofoam products** with compostable materials in the employee cafeteria at the Glen Hazel facility.

The county also began using compostable corn replacement straws in concessions at the county parks in 2019, **eliminating approximately 225,000 plastic straws** previously in use.



Household Collections

The county continues to help fund the Pennsylvania Resources Council's Household Chemical Collection and Household Hazardous Waste Collection events at locations within the parks system. The five Hazardous Waste events in 2020 resulted in the **collection and recycling of more than 243,000 pounds** of e-waste, refrigerant appliances, batteries and tires. The three Chemical Collection events brought in **252,000 pounds of household chemicals** (or about the weight of 1,000 refrigerators).

Cutting Utility Usage

The county has been a proud member of the Pittsburgh 2030 District since 2012. The Green Building Alliance initiative supports area building owners and managers to achieve 50% reductions in energy and water use and transportation emissions by the year 2030. We have five buildings and 1.6 million square feet committed. In 2021, two county parks, White Oak and Deer Lakes, will join as affiliate members of the 2030 District's Net Zero Energy Parks initiative.

In the latest Pittsburgh 2030 report, the County Office Building and Health Department's administrative building showed a combined decrease of 14% electricity consumption compared to 2015, while the Family Law Center showed an 8.2% decrease in natural gas, and a 4.8% in electricity consumption.

Additional Projects



In recent years, the South Park ice rink and wave pool were renovated, resulting in energy savings of up to 50%.



Energy Efficient Upgrades

The county has replaced incandescent and fluorescent light fixtures with high-efficiency LED lights and made other energy efficiency upgrades, resulting in an average electricity use reduction of about 9 million kWh and savings of \$1.2 million since 2015. These efforts have also avoided 6,363 metric tons of carbon dioxide. That's enough electricity to power 1,077 homes for a year, or emissions produced by an average passenger vehicle driving 15,790,000 miles.



Renewable Energy

The county purchases energy from a renewable energy consortium for its largest electricity accounts. One hundred percent (100%) of the power comes from a combination of certified renewable solar and wind power.

Solar crosswalks, path light fixtures and shelters installed in our county parks provide renewable power in North, South and Boyce parks, as well as resources for shelter users that were not previously available.



Monitoring Energy Use

The county has begun development of an Energy Dashboard that will show monthly and annual energy and water usage in county facilities. This data will allow staff to compare the energy intensity of similar type buildings to help identify high energy use and begin investigating problems, or work on more employee education, to reduce consumptions. The dashboard will include office and courthouse buildings, as well as the county parks.



Boasting Clean Energy Jobs

Allegheny County has 12,460 jobs in the wind, solar, energy-efficiency, and clean-vehicle industries. This is the **highest number of clean-energy jobs in the state** according to an analysis from Environmental Entrepreneurs, an advocacy group. While that growth has slowed due to the pandemic, it is expected to rebound quickly.



Cleaning with Green Products

In 2020, the Sustainability Office began developing a **comprehensive green cleaning program** for in-house janitorial services for county-owned facilities. This effort will improve not only indoor air quality, but the health and safety of our custodial staff and county employees.

Cleaning products can contain harsh ingredients that may cause anything from mild skin irritation to inflammation of lungs and skin. These ingredients can also be harmful to wildlife and contaminate our water systems. This program is meant to provide a **safer and healthier work place** for custodians and employees alike, while lessening our environmental impact.

We are implementing a cultural shift in how we clean our building with education and a new janitorial contract using data and expertise to increase adoption and use. The goal for this program is that **at least 75% of all cleaning products** meet these requirements by 2022. Exceptions are made for disinfectants, hand sanitizers and specialty cleaning needs.



Supporting Property Owners

In 2019, Allegheny County approved the Commercial Property Assessed Clean Energy (C-PACE) program. It is a financing mechanism that allows commercial, industrial and agricultural property owners to obtain long-term financing to pay for energy efficiency, renewable energy, and water conservation projects. These upgrades result in **consumption and cost savings for the property owner while reducing the property's carbon footprint**, which – in turn – reduces the county's carbon footprint.

C-PACE works by allowing property owners to apply for a loan with a capital provider to fund eligible project costs. That loan is then repaid through a voluntary special assessment that is billed and collected by the county as part of its annual real estate tax bill.

The nonprofit Sustainable Energy Fund (SEF) has been selected to administer all C-PACE program-related services in the county. More information on the program is available at alleghenycounty.us/cpace or by calling SEF directly at 610-264-4440.

Anyone seeking to serve as a C-PACE lender is also encouraged to contact SEF for more information.



Parks – Living Classrooms

Since the creation of the Park Rangers program in 2015, rangers have played an important part in educating the public. Between 2015 and 2020, 1,033 programs were hosted by the rangers that **promoted sustainability and natural-resource protection**, reaching 7,464 participants.

In that same time period, they also organized and led **239 volunteer projects involving 6,714 participants** giving 20,712 volunteer hours. The projects ranged from tree plantings and riparian restorations to sustainably-designed and maintained trails.

In 2020 alone, 2,151 visitors stopped by the Latodami Nature Center in North Park to participated in hikes, bird counts, and other educational programs.



Educating the Public

Allegheny County has had a Sustainability Program in place for over a decade. Once a stand-alone office, the program is now located within the Facilities Management Department. Its focus and impact has increased along with the current administration’s focus on improving the county’s overall sustainability. The Sustainability Manager is responsible for the coordination and implementation of practices that promote sustainability within county operations. The office also coordinates outreach to employees and the public on topics related to sustainability and the environment.

Each year, the Sustainability Manager talks to thousands of employees and residents about the **importance of energy, water and waste efficiency and what they can do to make a difference**. There are also regular meetings with employees (and ongoing recruitment) to become Green Team members or Green Champions who promote sustainability in their own departments and at home.

Office of Sustainability

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Park Rangers Riparian Plantings



North Park Latodami Nature Center



All-Electric Plug-In Vehicle



Solar Path Lighting



Renovated South Park Ice Rink



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