



15 YEAR  
REPORT  
FOR BERKS  
COUNTY

# STATE OF THE ENVIRONMENT

• BERKS COUNTY, PA •

Learn what you can do to make Berks County greener through simple, everyday choices.



Brought to you by:



575 Saint Bernardine Street  
Reading, PA 19607  
Phone 610-372-4992  
Fax 610-372-2917  
info@berksnature.org  
www.berksnature.org

Download a copy of this report at  
[www.berksnature.org](http://www.berksnature.org)

Produced by Berks Nature's  
team of dedicated environmental  
stewards with expert advice  
and input from

**Gavin Biebuyck**  
Liberty Environmental, Inc.

**Beth Burkovich**  
Berks County Planning Commission

**Tracey Ciesnolevicz**  
UGI Utilities, Inc.

**Eric Grindrod**  
SSM Group, Inc.

**Kent Himelright**  
Berks County  
Conservation District

**John Jackson**  
Stroud Water Research Center

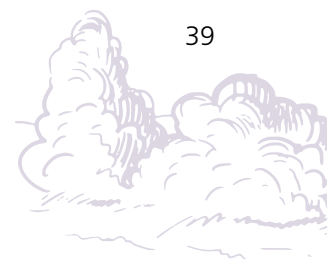
**Ronald Long**  
Met-Ed, FirstEnergy Corp.

**Jane Meeks**  
Solid Waste Authority  
of Berks County

**Ashley Showers**  
Berks County Planning Commission

## TABLE OF CONTENTS

|                                                        |           |
|--------------------------------------------------------|-----------|
| Executive Summary                                      | 3         |
| Report Overview                                        | 4         |
| Summary of Indicators                                  | 4         |
| <b>WATER</b>                                           | <b>6</b>  |
| Impaired Stream Miles                                  | 7         |
| Aquatic Life in Streams                                | 7         |
| Sourcewater/ Drinking Water                            | 8         |
| Groundwater Elevations                                 | 8         |
| Stormwater/Impervious Cover                            | 9         |
| <b>ENERGY</b>                                          | <b>12</b> |
| Vehicle Miles Traveled Per Year                        | 13        |
| Residents Using Public Transportation                  | 13        |
| Electricity Generation                                 | 14        |
| Household Energy Use                                   | 15        |
| New "Green-Certified" Construction                     | 16        |
| <b>AIR</b>                                             | <b>19</b> |
| Number of "Bad" Air Days                               | 20        |
| Lead Air Quality                                       | 20        |
| Air Toxics                                             | 21        |
| Regional Air Pollution                                 | 21        |
| Localized Air Pollution                                | 22        |
| <b>WASTE</b>                                           | <b>25</b> |
| Waste Generated in Berks County                        | 26        |
| Waste Disposed of in Berks County                      | 26        |
| Electronic Recycling                                   | 27        |
| Special Waste Collection                               | 28        |
| Recycling Rate                                         | 28        |
| <b>LAND</b>                                            | <b>31</b> |
| Protected Land                                         | 32        |
| Tree Cover                                             | 33        |
| Multi-Municipal Cooperation and Planning               | 33        |
| Pace of Development                                    | 34        |
| Encroachment and Expansion of Outdoor Recreation Areas | 35        |
| Where Do We Go From Here?                              | 39        |



# EXECUTIVE SUMMARY

Welcome to the fifteenth annual State of the Environment report for Berks County.

Berks Nature launched the first State of the Environment report in 2009 with the philosophy of “what gets measured, gets done.” We identified 25 environmental indicators across five critical categories – Water, Energy, Air, Waste, and Land – and shared the data, assigning a thumbs up when the data was positive or moving in the right direction, and a thumbs down to indicate areas where we as a community needed to work harder.

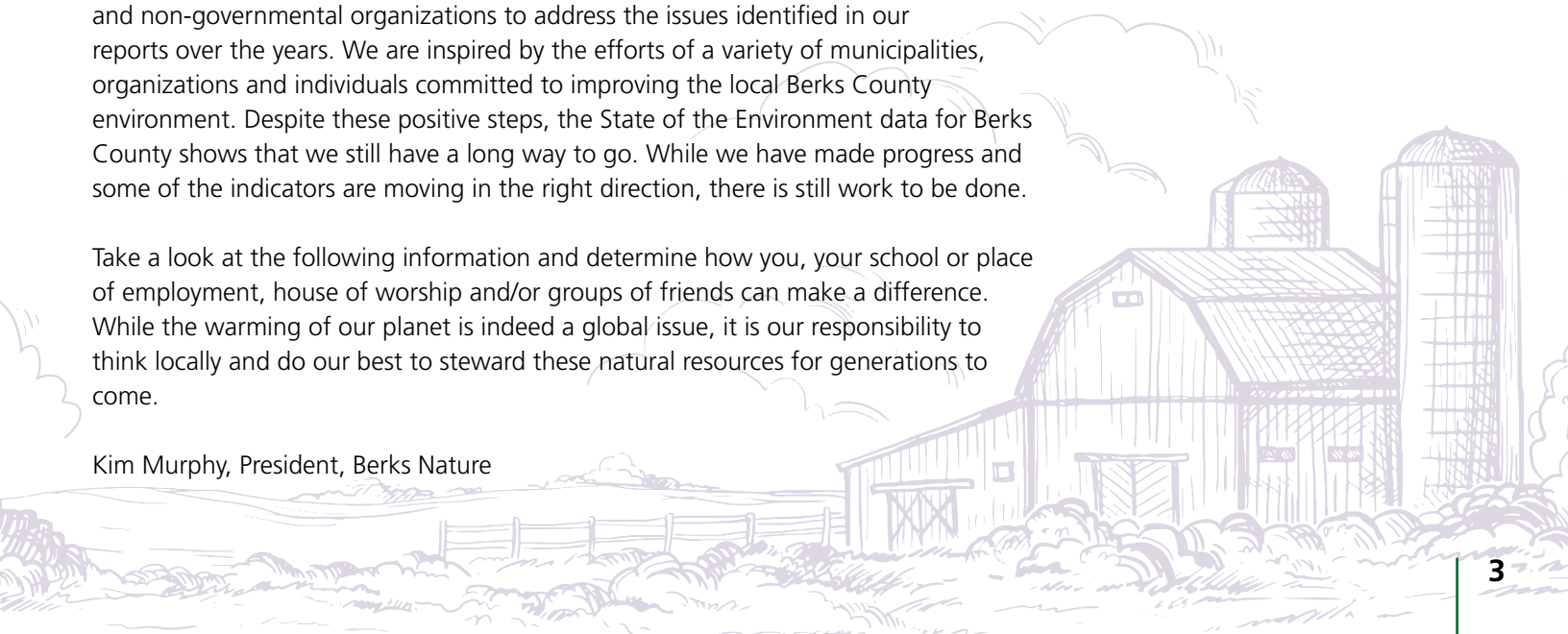
A lot has happened in the 15 years since we introduced our very first State of the Environment (SOTE) report. Berks Nature changed its name, previously known as the Berks Conservancy. We built and opened The Nature Place at Angelica Park where we opened the first nature preschool in Berks County and expanded The Nature Place to include the Rookery rooftop deck and meeting space. We have permanently protected thousands of acres of land, installed numerous best management practices along local waterways to help improve water quality and we have planted thousands of trees. We have focused our SOTE publications on the economics of nature, healing in nature, our local watersheds, extreme weather, climate change, what it takes to be a good neighbor and local sustainability efforts. Our annual SOTE breakfasts have had interesting speakers on children’s nature play, nature deficit disorder, prescribing nature for your health, climate change and experts in the field representing each of our indicator categories. Our goal throughout has been to elevate our understanding of these issues and how we can improve them.

Thank you for your continued interest and your work to help make things better. You will see that we are retiring some indicators this year, and reprioritizing others. For example, the impervious cover indicator has moved from the Land category to the Water category to reflect emerging issues of extreme weather and stormwater. In acknowledgement of the increasing conflict between our recreational areas and future growth as identified in the County’s Greenway, Park and Recreation Plan, we will also begin to measure the pace of development in Berks County and seek to argue with data that while growth is important, we risk losing important environmental services if we’re not careful about where and how we develop.

There has been a lot of municipal, state and county cooperation among governments and non-governmental organizations to address the issues identified in our reports over the years. We are inspired by the efforts of a variety of municipalities, organizations and individuals committed to improving the local Berks County environment. Despite these positive steps, the State of the Environment data for Berks County shows that we still have a long way to go. While we have made progress and some of the indicators are moving in the right direction, there is still work to be done.

Take a look at the following information and determine how you, your school or place of employment, house of worship and/or groups of friends can make a difference. While the warming of our planet is indeed a global issue, it is our responsibility to think locally and do our best to steward these natural resources for generations to come.

Kim Murphy, President, Berks Nature





# REPORT OVERVIEW

When the original State of the Environment report was published, Berks Nature identified the following five broad categories of environmental indicators to evaluate the environmental health of Berks County: • Water • Energy • Air • Waste • Land

For each category, Berks Nature selected five critical environmental indicators to measure and track. These indicators are used to determine how well Berks County is doing to ensure the overall health within each category. How well are we doing in Berks County to protect the safety of our water? How well are we doing to reduce air pollution and improve air quality? How wisely are we using the available land within the county? The following chapters provide an overview for each of the five environmental categories and details about the five indicators within each category. Each chapter includes an overall assessment of our progress in Berks County to ensure that the environmental indicators are moving in the right direction.



To read all 15 issues of the State of the Environment program, download them for free at [berksnature.org](http://berksnature.org).

## ABOUT THE THUMBS

The thumbs throughout the document point up, sideways, and down as an indicator of how well Berks County is doing to move the critical environmental indicators in positive directions. In some cases, the data makes it easy to assign a thumbs up or a thumbs down. In other cases, the positive things we are doing are not yet fully reflected in the data. It takes decades, for example, for a river to fully recover from generations of abuse but we might assign a thumbs up because the positive actions we are taking now will create the improved results we are seeking. The direction that the thumbs are pointing is a combination of what the data shows, what actions Berks County residents are taking, and our expert consensus around political and citizen commitments to continue doing what it takes to improve our local environment.

## SUMMARY OF INDICATORS



### THUMBS UP

This is generally encouraging; keep up the good work!



### THUMB TRENDING UP

Moving in the right direction, but there is more work to do.



### THUMBS DOWN

This is not tracking the way we want to see it; hard work to do.



### THUMB TRENDING DOWN

Not moving in a positive direction; more work to do to correct course.



### THUMBS NEUTRAL

We'll need to track this a while longer to see what happens.



## WATER



### 1. IMPAIRED STREAM MILES

Efforts to restore and protect our waterways are underway, but 828 impaired stream miles remain.



### 2. AQUATIC LIFE IN STREAMS

Only 36% of stream monitoring locations fall within the "good" rating in the MAIS system.



### 3. SOURCEWATER/ DRINKING WATER

46 of 70 community water suppliers have water protection plans, covering 99% of the population!



### 4. GROUNDWATER ELEVATIONS

Berks County could use more monitoring wells.



### 5. STORMWATER/ IMPERVIOUS COVER

Impervious cover makes up about 5.7% of Berks, which has encroached on the active river area of eight watersheds.

## ENERGY



### 1. VEHICLE MILES TRAVELED PER YEAR

We have not been successful in reducing the number of miles traveled by car compared to others across Pennsylvania.



### 2. RESIDENTS USING PUBLIC TRANSPORTATION

Berks residents use public transportation less than the PA average.



### 3. ELECTRICITY GENERATION AND USE

Berks County's energy grid region has become much less reliant upon fossil fuels as an energy source, but we are behind in renewable energy generation compared to the national average.



### 4. HOUSEHOLD ENERGY USE

Homes are getting more efficient in Berks, but we could focus much more on energy savings.



### 5. NEW "GREEN CERTIFIED" CONSTRUCTION

Berks County continues to construct LEED certified buildings, but the rate of Green Construction has slowed.

## AIR



### 1. NUMBER OF "BAD" AIR DAYS

Number of Bad Air Days are decreasing, but rising temperatures and traffic congestion challenge our air quality.



### 2. LEAD AIR QUALITY

Lead-in-air levels are well below the federal standards.



### 3. AIR TOXICS

County-wide air toxic releases have decreased significantly over the past fifteen years, however air releases of metals are relatively high in Berks County compared to the rest of Pennsylvania.



### 4. REGIONAL AIR POLLUTION

Particle pollution has declined over the past fifteen years; however the US EPA may recommend more stringent standards in light of changing climate and the health impacts of PM2.5 pollution.



### 5. LOCALIZED AIR POLLUTION

Increased traffic congestion paired with our aging infrastructure continue to challenge Berks County's localized air pollution.

## WASTE



### 1. WASTE GENERATED IN BERKS COUNTY

There does not appear to be any evidence that Berks County is making any significant effort to reduce the waste it generates.



### 2. WASTE DISPOSED OF IN BERKS COUNTY

The total amount of waste disposed of in Berks County has been increasing over the last ten years, 80% of which comes from outside the county.



### 3. ELECTRONIC RECYCLING

Electronic recycling has grown significantly since becoming available to county residents, and remain fairly stable today.



### 4. SPECIAL WASTE COLLECTIONS

As special waste collection programs become better known, more people are participating, and more materials are being collected.



### 5. RECYCLING RATE

The recycling percentage for Berks County has increased to 35% over the past few years, but remains below the County's 2024 recycling goal of 40%.

## LAND



### 1. PROTECTED LAND

16% of Berks' lands are permanently protected, and continuing to trend in a positive direction.



### 2. TREE COVER

While forest acreage in Berks County remains fairly stable at 39%, the size and shape of forest patches shows signs of changing.



### 3. MULTI-MUNICIPAL COOPERATION AND PLANNING

Participation in joint comprehensive planning and joint zoning is high.



### 4. PACE OF DEVELOPMENT

Annual acreage of planned and completed development is on the rise.



### 5. ENCROACHMENT OF OUTDOOR RECREATION

Berks County's greenway system areas have been subject to significant encroachment.

# WATER

Without a doubt, clean water is a fundamental measure of environmental health. We rely on both surface water and groundwater for cooking and drinking, for irrigating crops, for industrial processes, and for outdoor recreation. Healthy and resilient water bodies are able to support essential aquatic ecosystems and hydrological processes upon which human and animal alike depend. In addition, the natural beauty of clean water – free-flowing streams and rivers or serene ponds and lakes – has long inspired and connected people to their environment.

The entire water cycle – from rainfall to runoff – plays a critical role in our lives and in our watersheds. Rain falling from the sky waters our fields and, by percolating through the earth, refills underground aquifers which our wells dip into for drinking water. Changing climate and land use patterns threaten the integrity of this system. The timing and increasing frequency of extreme storm events put strain on local waterways and community infrastructure in the way of flooding. At the same time, as rainfall becomes increasingly concentrated during intense and localized storm events, droughts too are likely to increase, which has implications for local industry and human health.

Rain that does not percolate into groundwater aquifers flows over the land into our streams and rivers, carrying with it anything left on the ground, from trash to herbicides to loose dirt. Human development, which often includes an abundance of impervious cover in the form of roads and roofs, impedes rainfall's infiltration into the ground, creating a surplus of stormwater runoff and threatening groundwater recharge. Additionally, stormwater laden with litter and chemical pollutants can sicken local streams and their aquatic denizens.

Humans are not the only organisms that depend on high-quality water to survive. Clean water is home to a wide variety of fish, frogs, salamanders, birds, insects, and plant life. Polluted waters support fewer plants and animals and have far less diversity. As a result, the health of a stream can be measured with precise water quality and chemical analysis and by observing and quantifying the kinds of plants and animals that live in the water.

As an invaluable resource to our success and survival, protecting and enhancing the health of surface water and groundwater has generally been at the forefront of environmental laws and regulations at the federal, state, and local level since 1972. As a result, there are clear standards for measuring water quality and quantity, which we have utilized in this report on the County-scale.

Our Water indicators include the following:

- Miles of Impaired Streams
- Aquatic Life in Streams
- Drinking Water Systems with Protection Plans
- Groundwater Elevations
- Impervious Cover



# WATER DATA UPDATES

## WATER INDICATOR #1: IMPAIRED STREAM MILES

The Pennsylvania Department of Environmental Protection (PA DEP) evaluates the status of surface waters (e.g., lakes, ponds, rivers, streams, and tributaries) within the state on a regular basis. It determines whether the surface water meets its criteria for such general uses as aquatic life, fish consumption, recreation, and drinking water supply. Pennsylvania identifies specific water quality requirements for each use. Surface waters that do not meet the requirements for their designated use are identified as “impaired.”



### THUMB TRENDING UP; WHAT THE DATA TELLS US:

Across Berks County's 1,276 miles of streams, 828 miles (or 64.9%) are considered impaired by the PA DEP. In 2022 alone, about 36 miles of streams were reclassified as impaired, while only 1.8 miles (along the Perkiomen Creek) were reassessed from impaired to attaining their designated use. Agricultural activity is responsible for the bulk of this impairment, followed by urban runoff and point source pollutants. More and more though, we are seeing farmers and other landowners taking action to protect their nearby streams.



Learn more about the Berks County farmers who are keeping local waterways clean.

## WATER INDICATOR #2: AQUATIC LIFE IN STREAMS

Scientists use macroinvertebrates, organisms large enough to be seen by the naked eye like flatworms, snails, and mayflies, as bioindicators of stream health. The Stroud Water Research Center in Avondale, PA, has implemented a long-term assessment of streams in the Schuylkill River Basin, sampling aquatic macroinvertebrates at more than 60 locations. The data are assessed using the Macroinvertebrate Aggregated Index for Streams (MAIS), which combines or aggregates several conventional ways of assessing the health of a stream's invertebrate community. MAIS scores range from 0 to 20 with higher scores indicating a higher quantity and diversity of aquatic life and, therefore, higher water quality. The scores are divided into the following categories: “good” (13.1-20), “fair” (6.1-13), and “poor” (0-6).

| MAIS Classification | MAIS Score Ranges |
|---------------------|-------------------|
| Good                | 13.1 – 20         |
| Fair                | 6.1 – 13          |
| Poor                | 0 – 6             |

Benthic macroinvertebrates are animals without backbones living on the bottom of streams and ponds. This group includes crayfish, snails, clams, and many immature forms of insects (e.g., mayflies, caddisflies, gnats, midges, dragonflies).



Scan the QR code to see Berks County's full MAIS scores breakdown.



### THUMBS NEUTRAL; WHAT THE DATA TELLS US:

There are several additional sites since 2018, but only 36% of the stream sampling sites fall within the “good” rating under the MAIS classification system; a 2% increase since 2018. Most sites fall within the “fair” rating, but 7.6% fall under the lowest rating of “poor.” There is certainly room for improvement.



WATER INDICATOR #3:  
SOURCEWATER/DRINKING WATER

The Federal Safe Drinking Water Act (SDWA) Amendments of 1996 require that each state develops a Source Water Assessment and Protection (SWAP) Program for all drinking water sources – groundwater and surface water – that serve community water systems. The SWAP program for a Community Water System (CWS) consists of two parts: a mandatory assessment to identify the immediate protection area for existing water sources and the voluntary source water protection (SWP) plan.



THUMBS UP;  
WHAT THE DATA TELLS US:

Forty-six out of 70 Berks County community water systems have SWP plans, which is an improvement from the 36 communities who had SWP plans ten years ago. These 46 plans cover 99% of the population that is covered by a community water system. More than half of Berks County community water systems have SWP plans, but that means that 17 of 70 community water systems do not yet have plans in place to protect their source water. SWP assistance is available through DEP.

WATER INDICATOR #4:  
GROUNDWATER ELEVATIONS

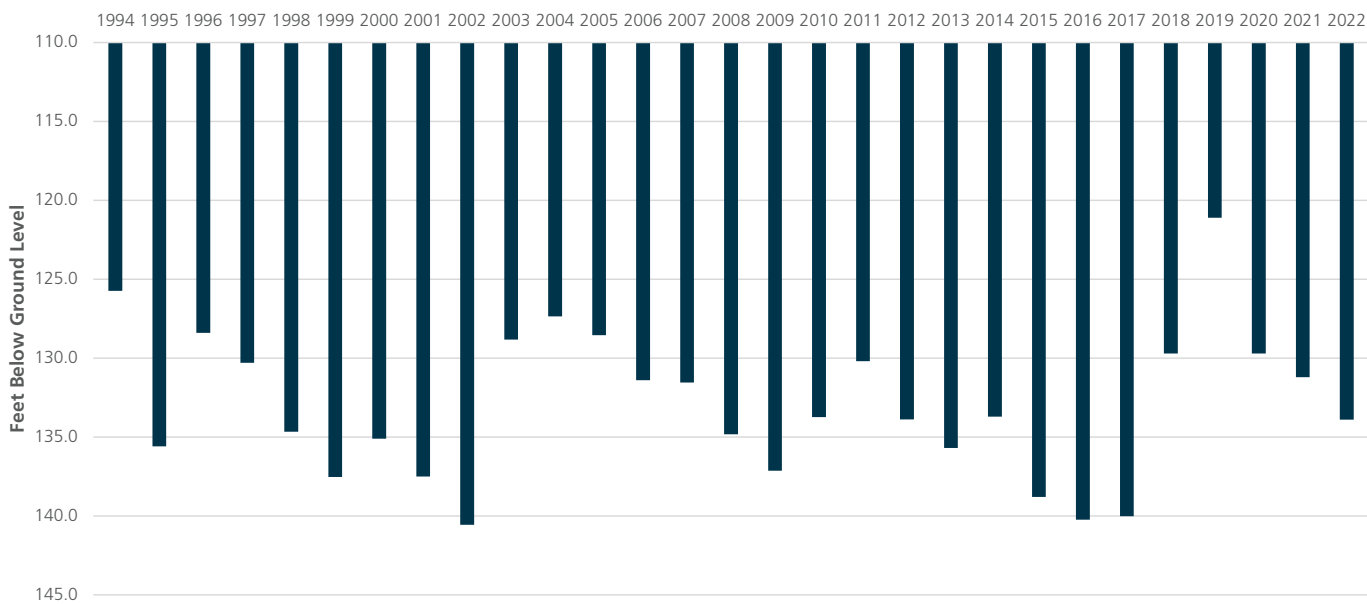
Although surface water – lakes, ponds, rivers, and streams – are the most conspicuous of our water resources, the water stored below the ground and out of sight is a critically important resource. Groundwater provides the drinking water tapped by individual and community wells and feeds streams and rivers through seeps and springs. Groundwater is replenished (or “recharged”) when rain percolates through the soil and into the underlying bedrock, but only a fraction of the annual precipitation percolates deep enough to do so. Therefore, the depth we must drill our wells is an important measure of available groundwater. The United States Geological Survey (USGS) tracks groundwater depth and currently monitors one well in Fleetwood.



THUMBS NEUTRAL;  
WHAT THE DATA TELLS US:

Groundwater elevations at the Berks County monitoring well in Fleetwood have varied over a relatively narrow range since 1994 with an average of 133 feet below ground surface since that time. For the limited area of Berks County that this well monitors, groundwater elevations have been relatively stable over this period. Berks County only has one monitoring well and we could use more so that we have a better understanding of groundwater levels across the county. Nearby Montgomery County, for example, has 18 monitoring wells.

DEPTH TO GROUNDWATER



## **WATER INDICATOR #5: STORMWATER/IMPERVIOUS COVER**

Impervious surfaces are areas that prevent water from being absorbed into the ground when it rains. They include roadways, driveways, parking lots, buildings, and other areas where percolation of rainwater into the soil is partially or completely blocked. This simultaneously reduces groundwater recharge while increasing surface runoff – laden with debris and chemical contaminants picked up from the ground – into streams and rivers. In urban areas, between 30-40% of rainfall flows directly into the nearest stream compared to less than 5% in a forest. The result: accelerated erosion and pollution which compromises stream health, degrades natural habitats, and increases remediation costs at water treatment plants.

The hydrological disruptions produced by impervious cover can be offset in part by proper stormwater management designs that promote infiltration, detain or slow surface runoff, or recycle runoff into irrigation systems. Reducing the amount of impervious surfaces is an obvious first step.



### **THUMB TRENDING DOWN; WHAT THE DATA TELLS US:**

As of 2021, 5.7% of Berks County is developed with impervious cover. Since the first State of the Environment publication was published in 2008, Berks County has seen a nearly 7% net increase in impervious cover. Most of this sprawl has come at the cost of lost cropland, pasture, and deciduous woodlands. Studies evaluating the degree of impervious cover in watersheds have found that most stream health indicators decline when watershed-impervious cover exceeds 10%. Unfortunately, mean impervious surface area has exceeded 10% in the active river area of eight Berks County watersheds.



The Antietam Creek in Lower Alsace Township, Berks County, spills over its banks and surrounds Antietam Middle-Senior High School with floodwater. Some of the water got inside the school. The district's superintendent said the school "sustained significant damage." ~ Steve Kruszewski, WFMZ-TV 69 News



# THE WATER CYCLE



“Don’t it always seem to go,  
That you don’t know what you’ve  
got ‘til it’s gone?  
They paved paradise,  
And put up a parking lot.”  
- Joni Mitchell, “Big Yellow Taxi”

It doesn’t take much to throw the water cycle off balance. Once 5-7% of a watershed is sealed up with impervious surfaces, water and aquatic habitat quality can deteriorate. However, the environmental cost of impervious cover is both a matter of quantity as well as proximity.

The closer we pave to our waterways, the greater the consequences to stream health.

In 2022, a group of master’s students pursuing degrees in Geoenvironmental Studies at Shippensburg University evaluated the change in impervious cover within the active river area of Berks County’s watersheds. The active river area encompasses the land surrounding a waterway within which important physical and ecological processes of that river or stream occur.

Excessive impervious cover in these hydrologically influential spaces poses a substantial risk to the health and functionality of our river habitats.

Using data from the National Land Cover Database, the Shippensburg students identified eight Berks County watersheds where mean impervious surface area within the waterway’s active river area exceeded 10%, breaching the threshold after which deterioration to a stream’s health can be expected. Five of these watersheds (Willow Creek, Laurel Run, Antietam Creek, Wyomissing Creek, and Angelica Creek) are located around the City of Reading.

The greater Reading area now faces the challenge of restoring the integrity and capacity of their urban watersheds for people and wildlife alike. Efforts to do so in the Angelica Creek watershed have been underway for over 15 years. These demonstrations of both nature’s design and man’s engineering to mitigate stormwater runoff are on full display across The Nature Place’s campus at Angelica Creek Park.

From rain gardens lush with native perennials, to a subterranean Brentwood filtration system, the restored wetland nexus at Angelica Creek Park has been thoughtfully designed to buffer Angelica Creek and its surrounding community from the deluge of Reading’s stormwater.

The success of these and other efforts in the Angelica Creek watershed community are already apparent in the physical characteristics of the water and in the diversity of aquatic wildlife who call Angelica Creek home. So much so that the Delaware Riverkeeper Network and the Angelica Creek Watershed Association have petitioned the PA DEP to redesignate the Angelica Creek to Exceptional Value status, acknowledging the watershed’s restored health and granting additional protection against development and degradation.



# HOW DO WE MAKE THINGS BETTER?

While data from most of our water indicators suggest that we are moving in the right direction, there is still much to be done to ensure that Berks County is more sustainable in terms of water health.

Changing weather patterns threaten the hydrological processes that maintain our ground and surface water. In the last 20 years, Pennsylvania has been soaked with an extra 4.6 inches of rainfall each year, and by 2050 annual precipitation is expected to increase by 8%. Increasing development of impervious surfaces can exacerbate this trend by preventing groundwater recharge, creating new stormwater management challenges while increasing the flow of contaminated rainwater into our streams. Flooding stormwater is not only inconvenient and costly for people, but the resulting pollution threatens aquatic life and is placing more and more of our waterways on the PA DEP's list of impaired waterways.

All of our water indicators are interrelated to each other and collectively provide a picture of the health of our water resources. Likewise, the health of our water resources is intricately tied to our actions as individuals and as a community. In all aspects, community engagement is crucial.

## WHAT CAN YOU DO?



### SAVE WATER!

Turn off the water while brushing your teeth, washing your face, or doing the dishes. You can also install water-saving showerheads and faucets.



### USE A RAIN BARREL

Use a rain barrel at the bottom of your gutter downspouts to collect rainwater for watering your garden and plants.



### GROW A RAIN GARDEN OR ANY NATIVE PLANTS

Typically, species of plants native to Pennsylvania require less watering and are more tolerant of drought. These plants also help to recharge groundwater because they are more permeable, allowing for more water to filter through the ground and refill the underground water supply.



### IMPLEMENT BMPs

Implement best management practices (BMPs) to protect waterways on or adjoining their property. Farmers can get information on agricultural BMPs from Berks Nature and Berks County Conservation District. Many of the same BMPs recommended for farms apply to residential, commercial, and industrial sites.



### KEEP YOUR WATER CLEAN AND PROMOTE AQUATIC LIFE.

Never dump anything into storm drains, be sure to pick up pet waste, practice environmentally friendly lawn and garden care and don't mow to the edge of streambanks – plant trees instead. Don't move rocks or disturb streambeds. Participate in community cleanups.



### GET INVOLVED!

Find out about the status of source water protection plans for your area and try to attend public meetings discussing these issues. Encourage your water supplier and municipality to participate in the SWAP program.



### GET YOUR WELL TESTED

If you get drinking water from your own well, you should get your well water tested periodically and be aware of changes in land use around you. New developments or land use practices could affect local groundwater or surface water quality and/or quantity, as can chemical fertilizers.



Scan the QR code for a Berks County local feature on water!

# ENERGY

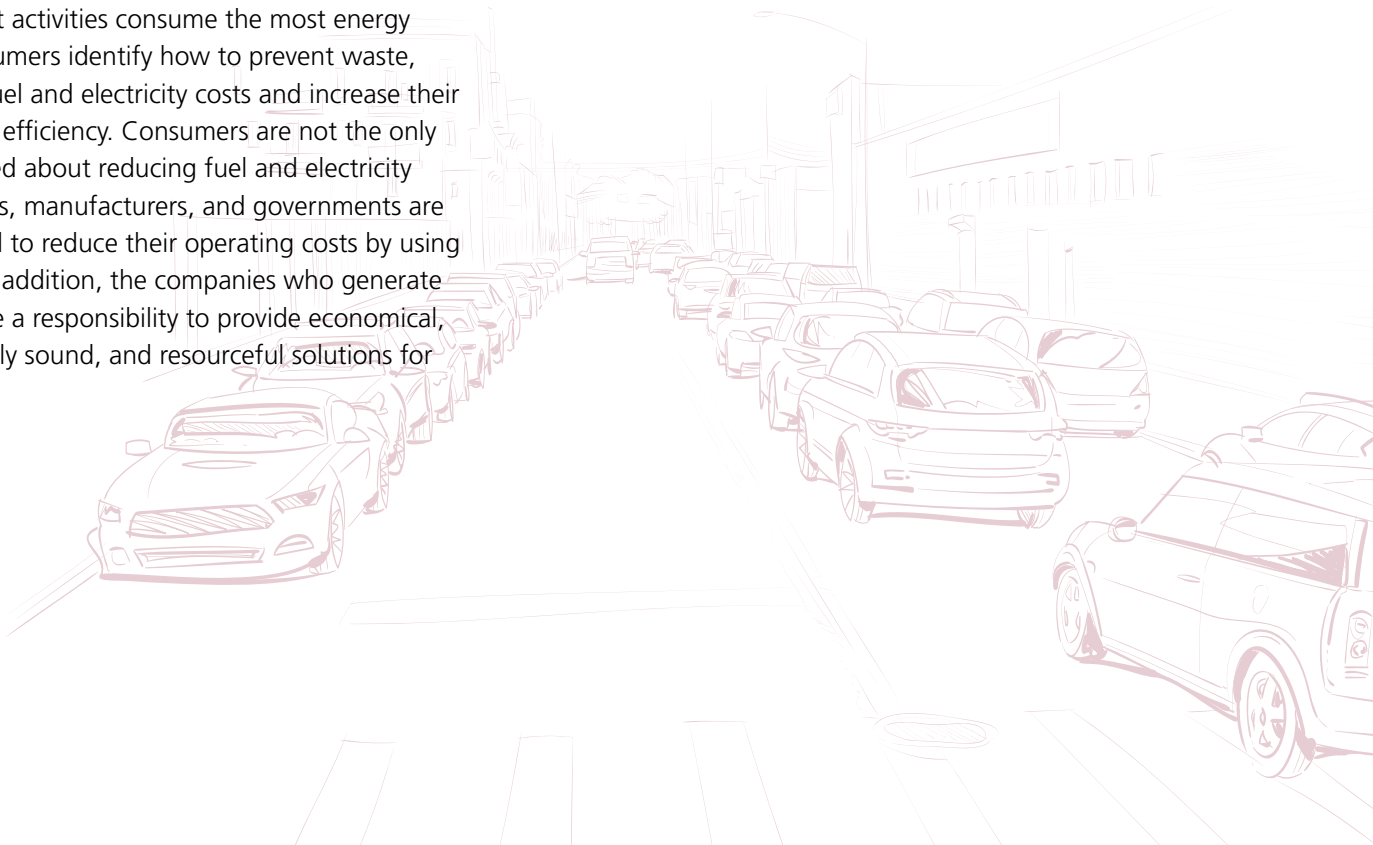
Do you know where your energy comes from when you turn on the television or turn up the air conditioning? What is the easiest way to reduce electricity use at home? At work? What is the fuel efficiency rating for your car or truck? How many miles per gallon (MPG) does your vehicle get in a typical month? How does the MPG you get compare with others? Are you spending more on electricity than your neighbors? Many of us have considered all of the above due to rising energy costs in recent years.

Electricity is generated by a variety of different sources: coal, oil, natural gas, nuclear, hydropower, wind, solar, and other renewable sources. The full impacts of our energy decisions can be challenging to examine in a study like this because of the many factors involved – gathering the fuel, turning the fuel into power, and delivering it to our homes and businesses. Even though we may not be able to determine the specific energy source powering our lives, we can study the different types of energy sources, how much is being generated and how much energy and fuel we consume.

Our Energy indicators include the following:

- Vehicle Miles Traveled Per Year
- Use of Public Transportation
- Electricity Generation and Use
- Household Energy Use
- Green-Certification Construction

Knowing what activities consume the most energy will help consumers identify how to prevent waste, reduce their fuel and electricity costs and increase their overall energy efficiency. Consumers are not the only ones concerned about reducing fuel and electricity use. Businesses, manufacturers, and governments are also motivated to reduce their operating costs by using less energy. In addition, the companies who generate electricity have a responsibility to provide economical, environmentally sound, and resourceful solutions for the public.



# ENERGY DATA UPDATES



## ENERGY INDICATOR #1: VEHICLE MILES TRAVELED PER YEAR

The amount of fossil-fuel needed to drive our vehicles is one area that we can control. We can choose to reduce the amount of fuel we use and the amount of air pollution we generate because we control the fuel efficiency of the vehicles we drive. We can choose to drive more efficient vehicles or to drive less-polluting electric vehicles. More importantly, we can control the amount of miles we travel on a daily, weekly or monthly basis. Vehicle miles traveled per year on a county-wide basis is tracked across the Commonwealth by the Pennsylvania Department of Transportation (PennDOT).



### THUMBS DOWN; WHAT THE DATA TELLS US:

Vehicle miles traveled per capita in Berks County have been on a steady increase since 2013 (with the exception of 2020 during the COVID pandemic). Berks County residents have not been more successful in reducing the number of miles they travel than other residents across Pennsylvania.



Scan the QR code to learn more about BARTA's work in your community!

## ENERGY INDICATOR #2: RESIDENTS USING PUBLIC TRANSPORTATION

One way to reduce fossil fuel consumption is to take public transportation rather than driving your own vehicle. The Berks Area Regional Transportation Authority (BARTA) makes travel throughout the greater Reading area convenient, allowing people to avoid traffic hassles and to make their commutes more relaxing or productive. BARTA not only tracks public transit use but also regularly reviews ridership trends and changes routes in response to these analyses.



### THUMBS DOWN; WHAT THE DATA TELLS US:

Unfortunately, only 1.4% of Berks County residents use public transportation, which is well below the 5.6% average for Pennsylvania. Despite BARTA's efforts to meet the community's evolving transportation needs, ridership remains below the national and state averages because Berks County residents continue to use their personal vehicles.





ENERGY INDICATOR #3:  
ELECTRICITY GENERATION & USE

There are different ways to generate electricity: by burning coal or natural gas, nuclear fission, hydroelectric dams, wind turbines, and solar panels, among others. Each has a different environmental footprint; from the physical infrastructure to the pollution emitted during energy production, each impacts the environment in a different way.

Berks County is a part of the Reliability First/Central – East (RFCE) Sub-Region of the US power grid. The region is grouped together by areas of similar weather conditions, energy resources and emissions. Our analysis for this indicator compares electricity generation, carbon dioxide emissions, and renewable energy generation in the RFCE to California and to the US National Average.



Scan the QR code to view these trends.



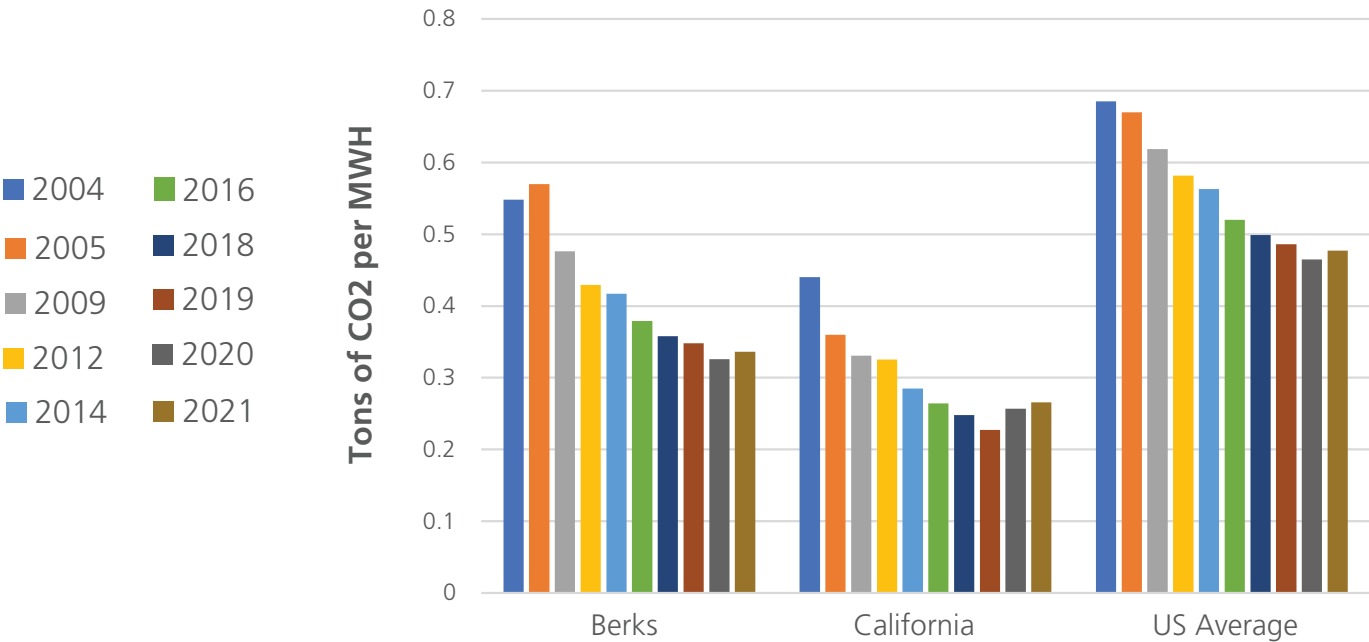
THUMBS NEUTRAL;  
WHAT THE DATA TELLS US:

Our energy grid region has become much less reliant upon coal and oil as a fuel source, while natural gas and renewable energy sources are on the rise. Nuclear sources are just beginning to trend downward due to the closing of nuclear power plants.

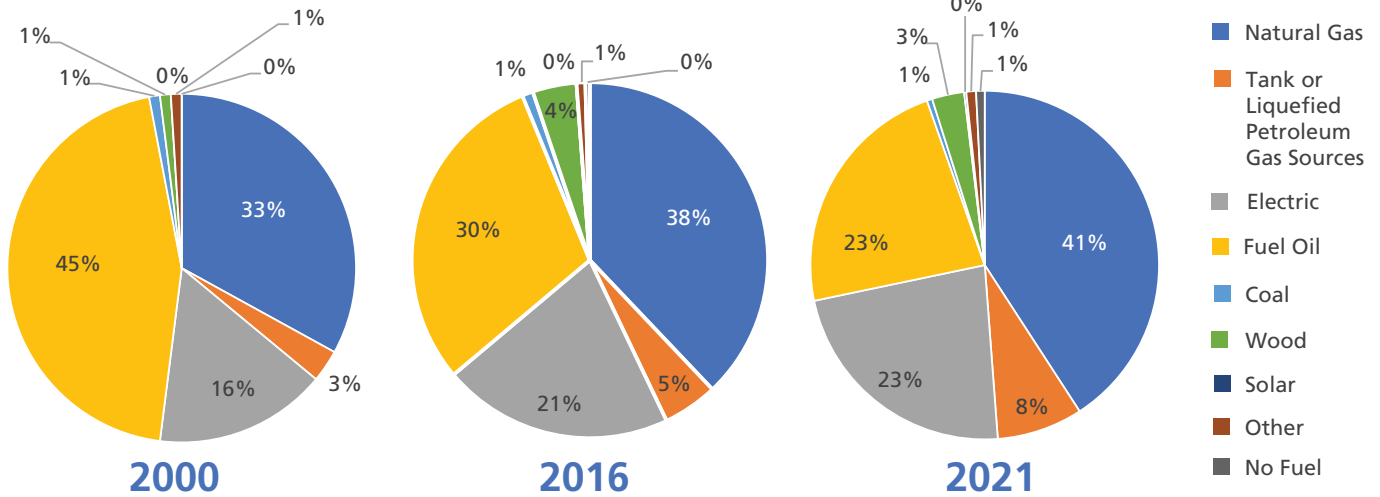
The RFCE region currently produces less global warming pollution (CO2 emissions) per MWh when compared to the national average, but significantly more than the California region.

Berks County (RFCE regional) is significantly behind in renewable energy generation compared to the national average, and our use of renewables is only a fraction of the California region. As a community, we need to advocate for an increased proportion of renewables in the energy generation mix for our region.

REGIONAL COMPARISON OF CARBON DIOXIDE (CO2) EMISSIONS



## HOUSEHOLD ENERGY USE



### ENERGY INDICATOR #4: HOUSEHOLD ENERGY USE

Annual averages of residential electricity in Berks County have slightly trended downward over the past fifteen years. This can be attributed to consumers switching to more energy-efficient lighting and appliances. However, the typical Berks County home still uses about 11,460 kilowatt hours (kWh) of electricity every year. This is slightly higher than the Pennsylvania annual average of 10,212 kWh.

Certain Berks County residential heating sources have also been trending in a positive direction, with less fuel oil and coal being used.

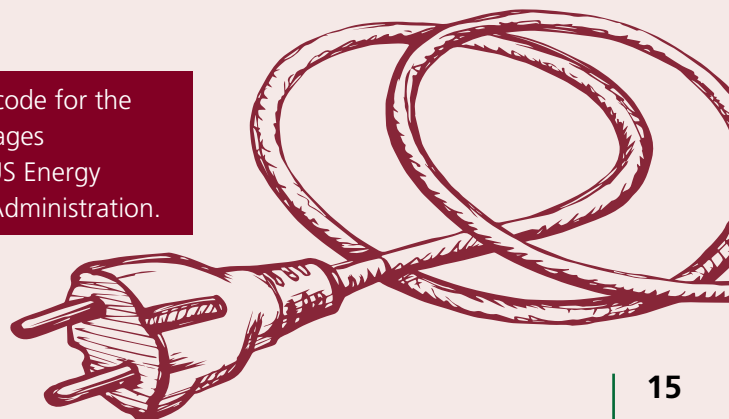
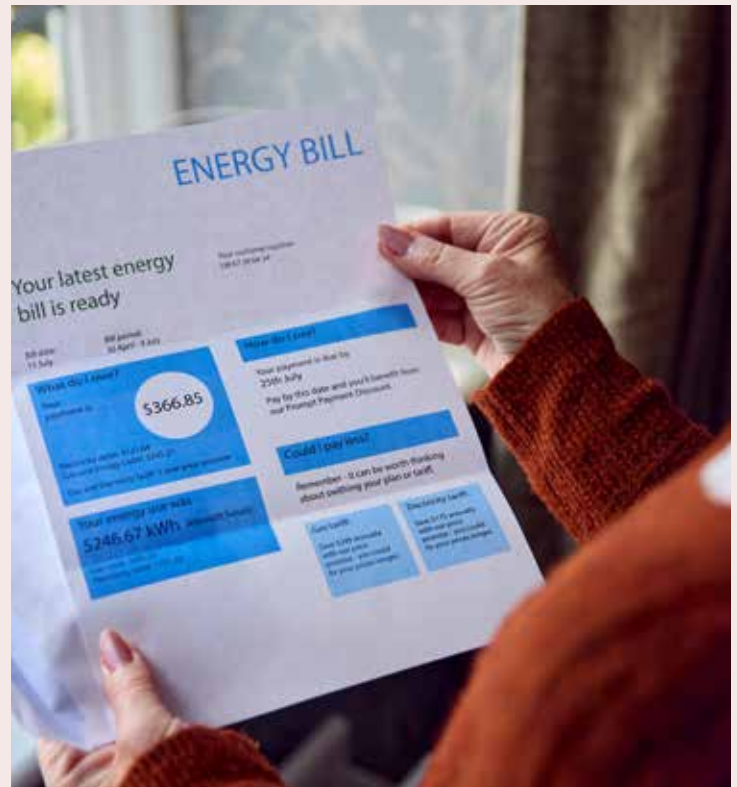


#### THUMBS NEUTRAL; WHAT THE DATA TELLS US:

Berks County homes are slightly more efficient, and use of fuel oil to heat our homes continues to decline. However, Berks County uses more electricity than the PA average and we can improve our energy choices.



Scan the QR code for the national averages used by the US Energy Information Administration.



## ENERGY INDICATOR #5: NEW “GREEN-CERTIFIED” CONSTRUCTION

“Green” construction is an effort to build high energy- and water-efficient buildings with local, recycled-content, and other more environmentally friendly materials. The U.S. Green Building Council (USGBC) developed its Leadership in Energy and Environmental Design (LEED) system to quantify a building’s “green” value in terms of construction and operation. The rating awards “points” for environmentally preferable design features in the construction of the building (e.g., using recycled materials) that lower the building’s operational energy costs (e.g., using automated dimmers to adjust lights or energy-efficient appliances), or contribute to the community’s environmental footprint (e.g., installing bike racks or landscaping with native plants). Based on the number of points accumulated, buildings are rated as Platinum, Gold, Silver, or Certified.



### THUMB TRENDING UP; WHAT THE DATA TELLS US:

Fifteen years ago (2009) when the State of the Environment report was first issued, there was only one LEED-certified building in Berks County and only nine registered projects. In mid-2018, there were 25, and as of 2022 there are 28 green buildings in our community. However, new Green Construction has slowed down within the past five years, which could be related to a decrease in new construction during the pandemic years. Berks County is fortunate to have some impressive LEED-certified buildings, but more should be considered as new construction occurs.



Scan the QR code to see the list of 28 current green-certified buildings in Berks County.

### DID YOU KNOW BERKS NATURE IS HOME TO A LEED-CERTIFIED GOLD BUILDING, THE NATURE PLACE?

We are open to the public – visit our green features today!





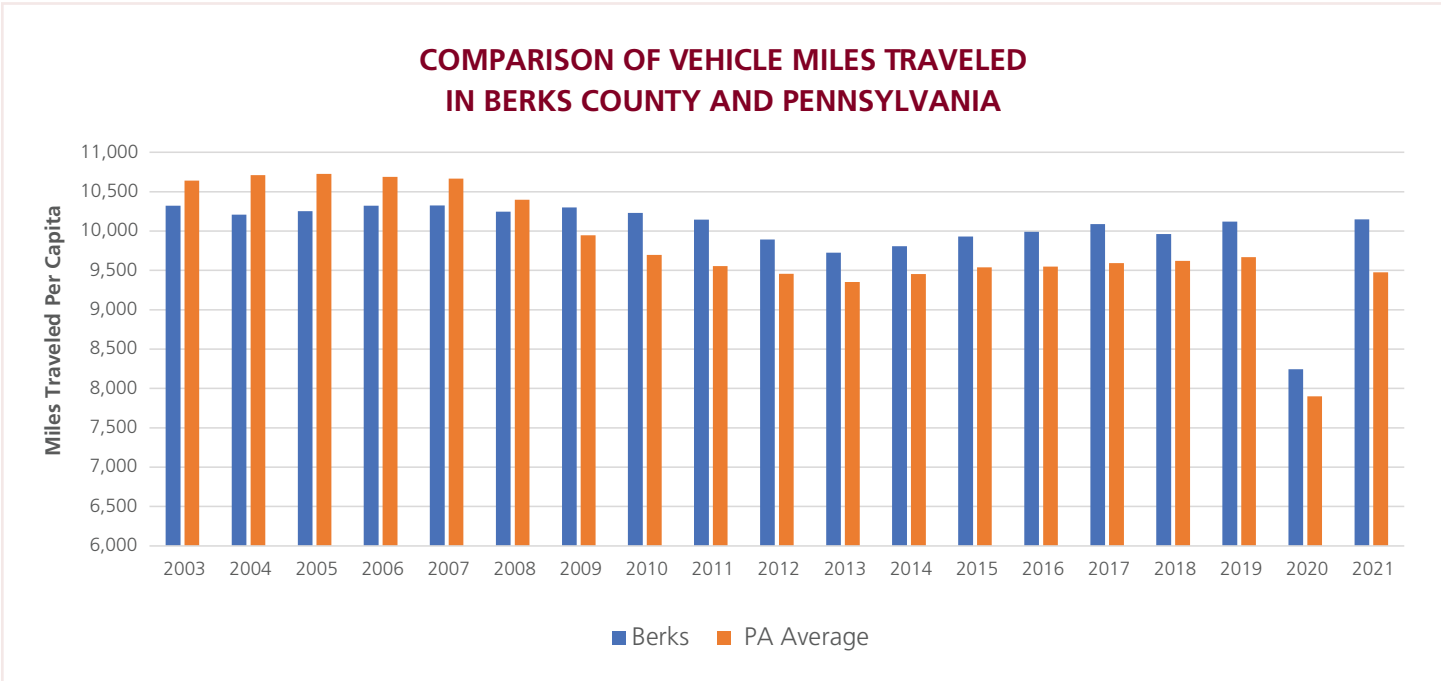
# VEHICLE MILES NOT TRAVELED

Vehicle miles traveled per capita in Berks County have been on a steady increase since 2013, with the exception of 2020. During the height of the COVID-19 pandemic, miles traveled was cut in half, as you can see in the graph. The pandemic brought the world to an abrupt pause, and one of the most notable changes was the dramatic reduction in travel. As the world shifted into lockdowns and travel restrictions, streets and highways grew eerily quiet.

Almost immediately, we saw a drop in global oil consumption. Oil prices plummeted and demand for alternative modes of transportation rose. Bicycles, electric scooters, and sidewalks became increasingly popular means of commuting, aiding in the lesser miles traveled by vehicles. Cities had been forced to reevaluate their urban planning and prioritize pedestrian-friendly spaces and public transportation options, signaling a potential shift toward more sustainable living.

The pandemic also heightened remote work and virtual meetings. With millions of employees working from home, the need for daily commutes was immensely reduced. Video platforms became the norm for meetings, lessening the need for both domestic and international travel. This allowed for the opportunity of businesses to continue running while reducing energy consumption dramatically. The impact that untraveled vehicular miles had on our environment reached far beyond just energy consumption, though. With roadways almost deserted, the environment seemingly took a sigh of relief. Air pollution decreased and smog cleared, stories of wildlife reentering our urban spaces became more and more prevalent, and people started advocating for sustainability. Having seen what occurred when streets and highways laid vacant, many began to advocate for more sustainable transportation options and a reduced reliance on fossil fuels.

The effect that vehicle miles not traveled had on the world was a lesson learned during a time of crisis, but seemingly also one that the world will carry forward. Let the evidence push you to make more sustainable choices in terms of transportation. Take actions to achieve that clean air, those wildlife sightings, and the decreased energy consumption. Choose riding a bike, walking, or taking public transportation in solidarity of a more sustainable future.



# HOW DO WE MAKE THINGS BETTER?

Over the past decade, there has been a noticeable increase in vehicle miles traveled per capita, and addressing energy use has become vital. More than 50% of residential heating sources in Berks County are considered high carbon dioxide emitters, making the need to reduce energy consumption more critical than ever.

At the same time, efforts to make Berks County more bicycle-friendly have earned recognition, as expanding bike networks and increasing bicycle-friendly events are occurring more frequently. Increasing our use of renewable energy is just as important as cutting back on driving our vehicles. Solar energy, wind energy, and geothermal heat all harness natural resources for sustainable power generation. Implementing energy-efficient practices at home, such as using LED light bulbs, can also reduce energy waste.

Together, we all can contribute to a more sustainable future.

## WHAT CAN YOU DO?

- 💡 Start a carpool at work and consolidate several errands into one trip.
- 💡 When possible, buy local goods and services. Explore the local parks and recreation areas of Berks County instead of traveling a long distance.
- 💡 Familiarize yourself with BARTA routes and bus stop locations.
- 💡 Use bus transportation for traveling around town and to avoid paying parking fees at special events at out-of-county venues.
- 💡 Ride your bike, walk, or use the bus for short trips.
- 💡 Send your children to school on the bus rather than driving them.
- 💡 Reduce the temperature of your water heater – but first, be sure to consult your manual for safety precautions.
- 💡 Consider having a home energy audit conducted to identify measures to make your home more energy efficient.
- 💡 Take advantage of your electric and/or natural gas utility's energy efficiency rebate and audit or assessment programs.
- 💡 Use “smart” devices such as programmable thermostats that adjust the temperature (and lower your electricity costs) in your house. Smart receptacles can also be programmed to reduce or eliminate standby power when small appliances or devices are not actively in use.
- 💡 Research federal and state tax incentives available for renewable energy efficiency improvements for your home, such as solar panels.
- 💡 Write to elected officials to request increased renewable energy generation in Pennsylvania.
- 💡 Ask your electricity supplier if you can purchase renewable energy for your home.
- 💡 For more information about renewable energy, visit the Mid-Atlantic Renewable Energy Association's (MAREA) website at [www.themarea.org](http://www.themarea.org). MAREA is a nonprofit organization, dedicated to informing and educating the public on renewable energy production, energy efficiency, and sustainable living through meetings, workshops, educational materials, and energy fairs.



Scan the QR code for a Berks County local feature on energy!

# AIR

We can all agree that the quality of the air we breathe is an important indicator of our health. Our region of Pennsylvania was reminded of this during the 2023 Canadian forest fires when many suffered and sheltered through poor air quality days.

Outdoor air pollution is regulated by the Pennsylvania Department of Environmental Protection (PA DEP) to ensure that counties meet federal National Ambient Air Quality Standards (NAAQS) that are established by the U.S. Environmental Protection Agency (US EPA).

The NAAQS are established to protect the public from the following key air pollutants:

- Ozone
- Particle Pollution
- Lead Pollution
- Nitrogen dioxide, sulfur dioxide, and carbon monoxide (produced by fuel combustion at power plants and industrial boilers/furnaces and by vehicles)

These standards are critical, as air pollution is one of the greatest environmental risks to health. Breathing ozone or particulate pollutants can trigger a variety of health problems including chest pain, coughing, throat irritation, airway inflammation, and difficulty breathing. Ultrafine PM 2.5 particulate pollution has been shown to pass through our lungs and into the bloodstream, leading to cardiovascular health impacts. Additionally, ozone affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas.

By reducing our own self-inflicted air pollution, we can reduce the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma.

Fortunately, atmospheric concentrations of sulfur dioxide and carbon monoxide are no longer a concern in Berks County thanks to the introduction of new cleaner vehicles, ultra low-sulfur diesel fuel, and the shutdown of many of the older, polluting coal power plants. On the other hand, nitrogen oxide (NOx) emissions – a contributor in ozone formation – produced by vehicles, gas-fired power plants, and cement plants are still of local concern.

Air quality in Berks County is monitored by PA DEP at several locations. Background air pollution levels are measured at the Reading Airport (Ozone, PM10, PM2.5, NOx, SO2, Lead, Air Toxics) and at Kutztown University (Ozone). Additionally, lead air pollution levels are measured at several locations adjacent to two lead recycler locations in Berks County.

Our Air indicators in this report include the following:

- Number of Bad Air Days
- Lead Air Quality
- Air Toxics
- Regional Air Pollution
- Localized Air Pollution



# AIR DATA UPDATES

## AIR INDICATOR #1

### NUMBER OF "BAD" AIR DAYS

In hot weather, the photochemical reaction from hydrocarbon fumes (e.g., vehicle exhaust) and nitrogen oxide reacting with sunlight produces ozone, the primary ingredient in "smog." When PA DEP issues "Air Quality Action Day" alerts during heat waves, they are generally in response to projections of elevated ozone levels.



#### THUMB TRENDING DOWN; WHAT THE DATA TELLS US:

According to the US Environmental Protection Agency (EPA), the number of bad air days has decreased over the past fifteen years. Ground level ozone concentrations too have decreased not just in Berks County, but in much of Pennsylvania over the same time period. More stringent vehicle exhaust standards coupled with stricter limits on the volatile organic compound (VOC) content of many solvent-based products like paints and adhesives have likely contributed to this decline. However, rising temperatures and traffic congestion concerns will contribute to ozone pollution and vehicle air pollution, and we may be seeing a slight trend in this direction over the last 3 years. There are still air quality challenges.



Scan the QR code to see air quality index (AQI) trends across the region.

## AIR INDICATOR #2

### LEAD AIR QUALITY

Lead air pollution levels have historically been a concern in Berks County because of our industrial heritage and the presence of metal industries including several lead-acid battery plants and battery recyclers in the County. Lead air pollution levels are measured at several locations in Berks County, including monitoring sites adjacent to two lead recyclers. The good news is that Berks County's lead-in-air levels have consistently decreased over the past fifteen years and between 2014 and 2016, the US EPA revised the attainment status from "nonattainment" to "maintenance" air quality status. In addition, background lead levels measured at the Reading Airport and at Kutztown University have all been well below the lead standard.

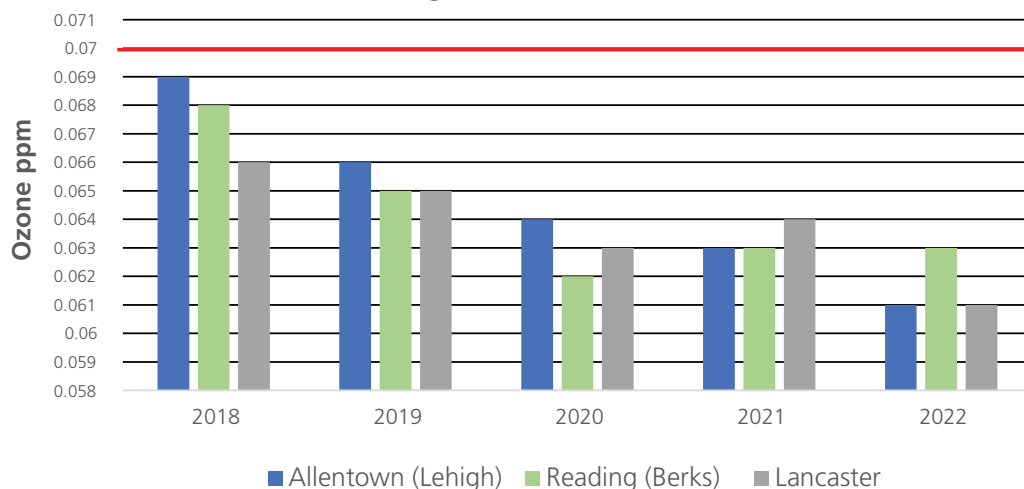


#### THUMBS UP; WHAT THE DATA TELLS US:

Lead-in-air levels are well below the federal lead levels of 0.15 ug/m3 in all areas of Berks County.

### OZONE (8-HOUR AVERAGE)

4th High — Ozone NAAQS





## AIR INDICATOR #3

### AIR TOXICS

Air toxics are those air pollutants that the US EPA has designated as “hazardous air pollutants” (HAPs) in the 1990 Clean Air Act. These 187 pollutants are comprised of three general categories: (1) metals like chromium, nickel, and manganese; (2) organic compounds found in paints, inks, and solvents like benzene, toluene, and xylene; and, (3) acid gases like hydrochloric acid and hydrofluoric acid from coal combustion, brick manufacturing, or metal treatment operations.

Releases of air toxics are required to be reported under the US EPA’s Toxic Release Inventory (TRI) program by manufacturers and power plants, which has informed this analysis.



### THUMBS DOWN; WHAT THE DATA TELLS US:

Thanks in large part to the shutdown of the Titus Station coal-fired power plant and the Exide lead smelter in 2013, County-wide air toxic releases have decreased significantly over the past fifteen years (by 30-40% depending on the pollutant). Hydrochloric acid emissions from the coal power plant accounted for 30-50% of the total HAP emissions in Berks County prior to its shutdown. Lead air emissions decreased approximately 40% following shutdown of the Exide smelter.

However, air releases of metals (lead, chromium, nickel, copper) are relatively high in Berks County compared to other counties in PA, and air releases of an industrial solvent, MIBK, are very high from a single source in Boyertown. These air toxic emissions currently show no downward trends.

## AIR INDICATOR #4

### REGIONAL AIR POLLUTION

This indicator tracks particle pollution levels, specifically concentrations of fine particulates PM2.5, which can contribute to an increased risk of health problems when inhaled. Particle pollution has been identified as a “regional” air pollution problem because significant levels of PM2.5 pollution are blown into Berks County from upwind areas outside county borders. For example, it is estimated that more than half of our PM2.5 pollution levels are a result of secondary sulfate and nitrate aerosol pollution largely caused by coal-fired power plants located outside Berks County in western PA and along the Ohio River valley in Ohio, West Virginia, and Kentucky.



### THUMBS TRENDING DOWN; WHAT THE DATA TELLS US:

The annual average and daily average PM2.5 concentrations have trended downwards since 2007 and have been below the federal standards – the national ambient air quality standards (NAAQS) – since 2013. However, PM2.5 air pollution and its health impacts are currently under review by the US Environmental Protection Agency (EPA) and the EPA’s advisors have recommended lowering the PM2.5 NAAQS to further protect human health. Increased traffic congestion, hotter summers, and more frequent, intense wildfires could contribute to elevated PM2.5 concentrations in Berks County in the future.



Scan this QR code to view a chart of industrial toxic air released in Berks County.

## AIR INDICATOR #5

### LOCALIZED AIR POLLUTION

This indicator tracks local air pollution impacts associated with traffic congestion and seasonal and periodic air pollution associated with older wood stoves, outdoor hydronic heaters, and trash burning in “burn barrels.” Because pollution from automobiles contributes significantly to air quality problems, it is important to consider the impacts on traffic congestion associated with land development decisions. Households have become increasingly dependent on the automobile for youth recreation, transportation to schools, shopping and many other things that only a few decades ago were within walking distance.

Education to encourage carpooling and public transit and to discourage open burning and promote the use of clean burning stoves and heaters can help improve local air pollution caused by these activities.



#### THUMB TRENDING DOWN; WHAT THE DATA TELLS US:

Traffic continues to increase in Berks County as our vehicle miles traveled per capita continues to rise (according to PennDOT, see Energy Indicator #1 on page 13). In addition, the County's population remains on a steady increase per the US Census Bureau. The result is increased traffic levels on our aging infrastructure which contribute to traffic congestion, and ultimately localized air pollution.



**Delaware County Pennsylvania**  
 ELECTED OFFICIALS COURTS A TO Z PUBLIC ACCESS STAY INFORMED  
 LIVE, WORK, & PLAY

## Update: PA DEP Declares Air Quality Action Day to Code Red for Wednesday, June 7th, 2023

Released June 7, 2023

Due to the smoke and haze from the wildfires in Canada, the PA DEP has upgraded the Air Quality Action Day Declaration to Code Red Status for Wednesday, June 7th, 2023, to Code Red for Delaware County. The Declaration to Code Red means that air quality is unhealthy. Some members of the general public may experience health effects, and members of sensitive groups may experience more serious health effects. Sensitive groups should avoid long or intense outdoor activities, and consider rescheduling or moving activities indoors. Everyone else should reduce long or intense activities, and take more breaks during outdoor activities.

Children, including teenagers, are at higher risk because they often play outdoors in warmer weather. They are more likely to have asthma and their lungs are still developing.

Elderly adults may be more affected by smoke exposure, possibly because they are more likely to have pre-existing lung disease.

Prolonged exertion. This means any outdoor activity that you will be doing intermittently for several hours and that makes you breathe slightly harder than normal. A good example of this is working in the yard for part of a day. When air quality is unhealthy, you can protect your health by reducing how much time you spend on this type of activity.

**DCHD**  
 DELAWARE COUNTY HEALTH DEPARTMENT

**HEALTH DEPARTMENT NAVIGATION**

- Home
- About/Location
- A to Z
- Board
- Costs
- News
- Search
- Twitter

## DEP Declares Statewide Code Orange Air Quality Action Day For Fine Particulate Matter For July 17, 2023, Across Pennsylvania

07/16/2023

**MEDIA CONTACT:** DEP Press Team [dep@pa.gov](mailto:dep@pa.gov)

**Harrisburg, PA** – The Pennsylvania Department of Environmental Protection (PA DEP) has declared a statewide Code Orange Air Quality Action Day for fine particulate matter (PM<sub>2.5</sub>) on Monday, July 17, 2023, in Pennsylvania.

Smoke from wildfires is expected to impact Pennsylvania air quality throughout the day and will likely contribute to daily average concentrations of fine particulate matter in the Code Orange range on Monday. On an hourly basis, a number of locations may see a rise in concentrations that are at least in the lower end of the Code Red/Unhealthy range for several hours. Residents are encouraged to check [airnow.gov](http://airnow.gov) for current conditions in their area.

PM<sub>2.5</sub> particulate matter (or PM<sub>2.5</sub>) comes in many sizes and shapes and can be made up of hundreds of different chemicals that are emitted directly from a source, such as construction sites, unpaved roads, fields, wildfires, or fires. Most PM<sub>2.5</sub> forms in the atmosphere as a result of complex reactions of chemicals such as sulfur dioxide and nitrogen oxides and "precursors", which are pollutants emitted from power plants, industries, and automobiles.

Code Orange Air Quality Action Day, during children, the elderly, and those with respiratory problems, such as asthma, pneumonia, and bronchitis, are especially vulnerable to the effects of air pollution and should limit outdoor activities.

Businesses within the Air Quality Action Day area are encouraged to limit outdoor activities and should limit outdoor activities.

The use of open burning of leaves, brush, and other yard waste is strictly prohibited.

## Code red air quality alert in effect again for south-central Pennsylvania

**WGAL 3** Updated 7:00 AM EDT Jun 29, 2023

Watch These hours take spooky Halloween displays to new heights

3-year-old shot and killed at Lancaster County campground

Multi-vehicle crash in Lancaster County

Get involved! Community representation to Chester County

Mysterious white substance found in elementary school playground

**AIR QUALITY ALERT**  
 CODE RED - UNHEALTHY FOR ALL

**GET LOCAL BREAKING NEWS ALERTS**  
 The latest breaking updates, delivered straight to your email inbox.

Your Email Address:

Privacy Notice

## BAD AIR DAYS

The phrase Bad Air Day has essentially become a routine part of our conversations over the past few years, especially during the early summer months of 2023. As the Canadian wildfires burned, our region of Pennsylvania (and elsewhere in the northeast) were directly impacted. To many people that already suffer from respiratory issues, this was a scary time that resulted in illness and restricted time indoors. To others that have never known respiratory illness, it was a shocking time that awakened our desire for something we take for granted nearly every day, clean air.

The last 23 years have been Pennsylvania's hottest. Temperatures in the Commonwealth have risen almost 2 degrees F since the beginning of the 20th century and are expected to warm another 5.9 degrees F by 2050. Extreme heat and heat waves are also on the rise. Summer days registering temperatures above 90 degrees F have been historically rare for Pennsylvania, occurring about five or so days a year, on average. By 2050, hot days with temperatures of 90 degrees F or more are expected to occur a blistering 37 times per year. Why? Our planet's climate is changing, spurred by increasing global temperatures.

Higher temperatures and hotter summers mean more bad air days in our future. Sweltering summer days when the pavement bakes and the air is still – those are the days when air quality can plummet. Hot, still, dry weather can lead to a build-up of pollutants in the air we breathe. This is called stagnation and it can have serious health consequences, especially during summer.

## WHAT DOES THIS MEAN FOR YOU?

Awareness of the impacts of climate change and how it relates to your health is the first step. Utilize the EPA's AirNow ([airnow.gov](http://airnow.gov)) site. AirNow includes tools to search current air quality by city, state, and zip code. The site also includes interactive air quality maps, and resources in English and Spanish, including those focused on air quality and health. Taking positive steps to be safe and improve air quality will help to reduce the health and economic impacts of air pollution. Think of clean air as preventative medicine on a regional scale.



Utilize the EPA's AirNow ([airnow.gov](http://airnow.gov)) site.

# HOW DO WE MAKE THINGS BETTER?

Air quality indicators trended in a general upward direction since we started measuring indicators for Berks County fifteen years ago. However, in the past three years air quality has worsened (with the exception of Lead air quality which remains Thumbs Up). Rising temperatures, traffic congestion, and wildfires pose as the main threats to our air quality, and we must especially continue to work against these as our population continues to grow on our warming planet.

Actions such as driving less, refraining from burning trash, and using products with fewer toxic solvents can all contribute to cleaner air. Our community must take action on a local level. Stay informed about industrial toxic releases in the community and promote these air quality actions to your friends and family.

## WHAT CAN YOU DO?



### DRIVE LESS

Try taking public transportation, carpooling, walking, or riding a bike instead of using your vehicle next time you have to travel. This will cut down on our localized air pollution as well as your cost of travel!



### CAUTION DURING AIR QUALITY DAYS

Don't mow the lawn, refuel your car, or use paints or cleaning solvents during Air Quality Action days.



### DON'T BURN TRASH

Educate your neighbors and township officials about the hazards of trash burning.



### CUT BACK ON DELIVERY STOPS

Be thoughtful about your online purchases. Buy all of your items at once to cut back on delivery stops.



### RIDE THE BUS

Have your children take the bus or walk to school. If they can't do this safely, bring it up with your school district and local municipality. Also, check out [www.penndot.gov/travelinpa/safety/schoolresourcesandprograms/saferoutestoschool](http://www.penndot.gov/travelinpa/safety/schoolresourcesandprograms/saferoutestoschool)



### UTILIZE AIRNOW

Utilize the EPA's AirNow ([airnow.gov](http://airnow.gov)) site.



### REVIEW HAZARD WARNINGS

Carefully review the hazard warnings on consumer cleaning products and paints and try to avoid using products that include toxic solvents.



### MINIMIZE GAS FUMES

Minimize exposure to gasoline fumes.



### MINIMIZE INDUSTRIAL TOXIC RELEASES

Be vigilant about industrial toxic releases in your community – EPA provides toxic release data by zip code at their TRI Explorer website at [https://iaspub.epa.gov/triexplorer/tri\\_release.chemical](https://iaspub.epa.gov/triexplorer/tri_release.chemical)



Scan the QR code for a Berks County local feature on air!

# WASTE

The Berks County Solid Waste Authority (SWA) is responsible for the development and implementation of the County Solid Waste Management Plan that details what we do with all of the “trash” and other waste that the County generates.

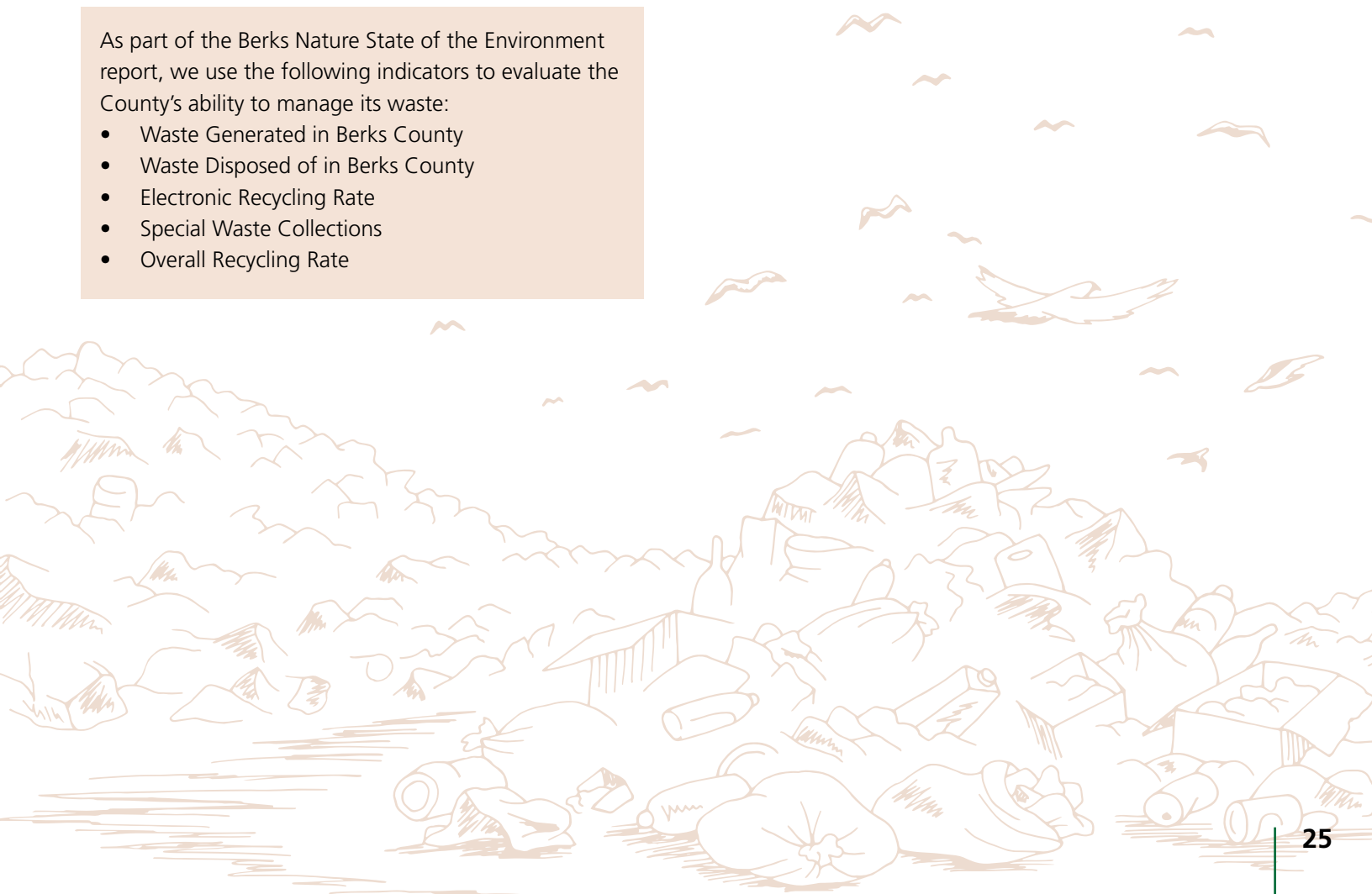
The Solid Waste Management Plan tackles a number of important goals:

1. Ensure adequate disposal capacity for county-generated waste for a period of ten years
2. Evaluate the County's recycling program and achieve the statewide goal of 35% recycling
3. Develop and administer collection programs for special wastes; and
4. Provide assistance to municipalities

The most recent Berks County Solid Waste Management Plan was approved by the Pennsylvania Department of Environmental Protection (PA DEP) in October 2014 and is required to be revised every 10 years. It projects that Berks County will achieve a 40% recycling rate by 2024. The 2014 Plan is currently being revised, as required by PA DEP.

As part of the Berks Nature State of the Environment report, we use the following indicators to evaluate the County's ability to manage its waste:

- Waste Generated in Berks County
- Waste Disposed of in Berks County
- Electronic Recycling Rate
- Special Waste Collections
- Overall Recycling Rate





# WASTE DATA UPDATES

## WASTE INDICATOR #1: WASTE GENERATED IN BERKS COUNTY

As homeowners, when we think of waste, we may first think of the “garbage” that we put out for pick-up once a week or so. Your domestic garbage, however, is just one of the many categories of waste that need to be disposed of in a proper manner.

Different types of wastes collected in Berks County over the past decade include: municipal waste (the garbage that we generate at home), residual wastes (non-hazardous industrial wastes), sewage sludge (dried solids that remain after sewage is processed at a wastewater treatment plant), infectious wastes from medical facilities (which require specialized handling and disposal because of their health risk), construction debris (from demolition and building sites), waste to energy (WTE) (ash is created from the combustion of coal and other fuels), and asbestos-containing materials (includes waste from pipe insulation, certain floor tiles, transite shingles, and some asphalt roofing shingles).



### THUMBS DOWN; WHAT THE DATA TELLS US:

The bulk of Berks County's waste comes from municipal and residual sources. The data shows that the amount of waste generated fluctuates with economic conditions. While Berks County's population has grown from 389,000 in 2004 to more than 430,449 today, the waste generated per person remains about the same. Unfortunately, there does not appear to be any evidence that Berks County is making any significant effort to reduce the waste it generates.

## WASTE INDICATOR #2 WASTE DISPOSED OF IN BERKS COUNTY

Most solid waste generated in the United States is disposed of in landfills, which require a lot of open space. Large cities and municipalities without their own landfill must often truck waste long distances, sometimes crossing state lines, to landfills with available capacity.

Landfill owners charge a “tipping fee” for each ton of waste they accept. In addition to their tipping fees, landfill owners in Pennsylvania also collect State-mandated fees that are returned to the State, as well as host fees that generate revenue for the municipality and in some cases the County that hosts the solid waste facility. Lower tipping fees will sometimes create an incentive for communities and waste haulers to transport their waste long distances to find the most affordable place to dispose of their wastes. Berks County, because of its available landfill capacity and its proximity to communities with large populations that generate large volumes of solid waste, imports a lot of other people's waste.



### THUMBS TRENDING DOWN; WHAT THE DATA TELLS US:

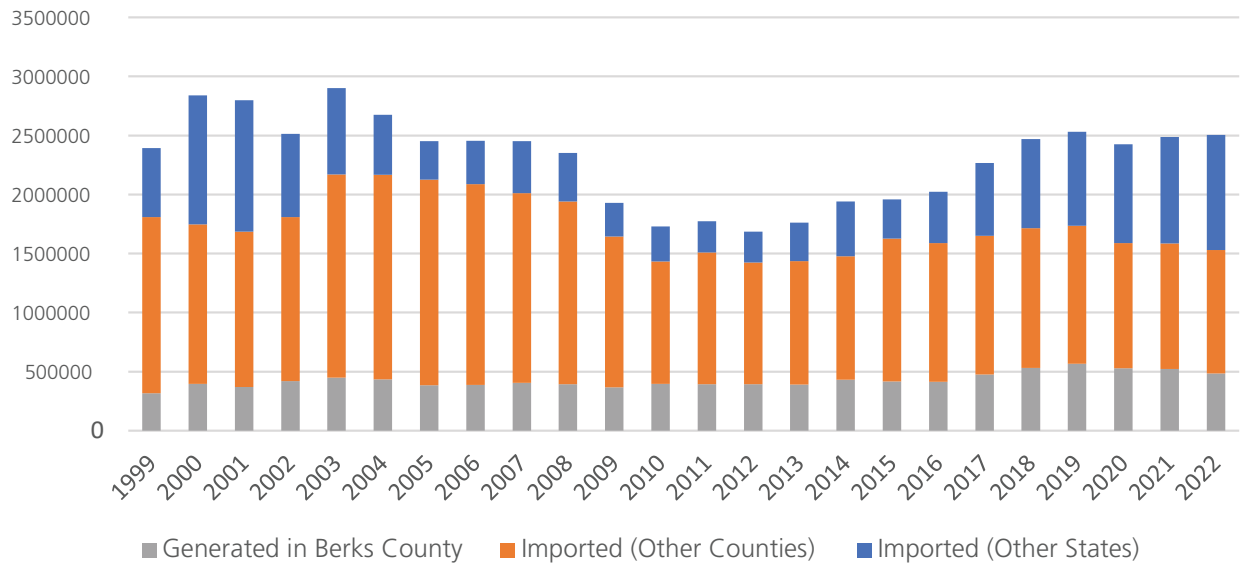
As the graphic on page 27 illustrates, the total amount of waste disposed of in Berks County has been increasing over the last ten years. In 2022, more than 80% of the waste buried in Berks County came from outside of the county and more than 39% of it came from outside of Pennsylvania.



Check out the QR code for more on waste generation in Berks County.



## SOURCES OF WASTE DISPOSED IN BERKS COUNTY



### WASTE INDICATOR #3 ELECTRONIC RECYCLING

Modern electronic devices – televisions, computers, cell phones, and more – can make life easier, more efficient, and more convenient. Unfortunately, these same electronic devices are hazardous if not disposed of properly. They frequently contain toxic substances such as lead, mercury, cadmium and chromium. They may also contain other heavy metals, potentially toxic chemical flame retardants, and small quantities of precious metals like gold and silver that can be reused for other devices or even jewelry.



#### THUMBS UP; WHAT THE DATA TELLS US:

More than 18,000 Berks County residents recycled almost 1.1 million pounds of electronics in 2022. These numbers have grown significantly since the recycling center first started collecting waste electronics in 2010 and they remain fairly stable today.



Scan this QR code to see electronic recycling data for Berks County.



WASTE INDICATOR #4  
SPECIAL WASTE COLLECTIONS

Materials that are too dangerous, too bulky, or too sensitive to be collected in other ways, like hazardous waste (paint, oil, cleaning solvents, etc.), and shredded paper documents, are collected as part of special waste collection programs.



THUMBS UP;  
WHAT THE DATA TELLS US:

Because these are not waste items that are regularly generated, unlike domestic garbage, the data collected generally varies. As special waste collection programs become better known, more people are participating, and more materials are being collected.



WASTE INDICATOR #5  
RECYCLING RATE

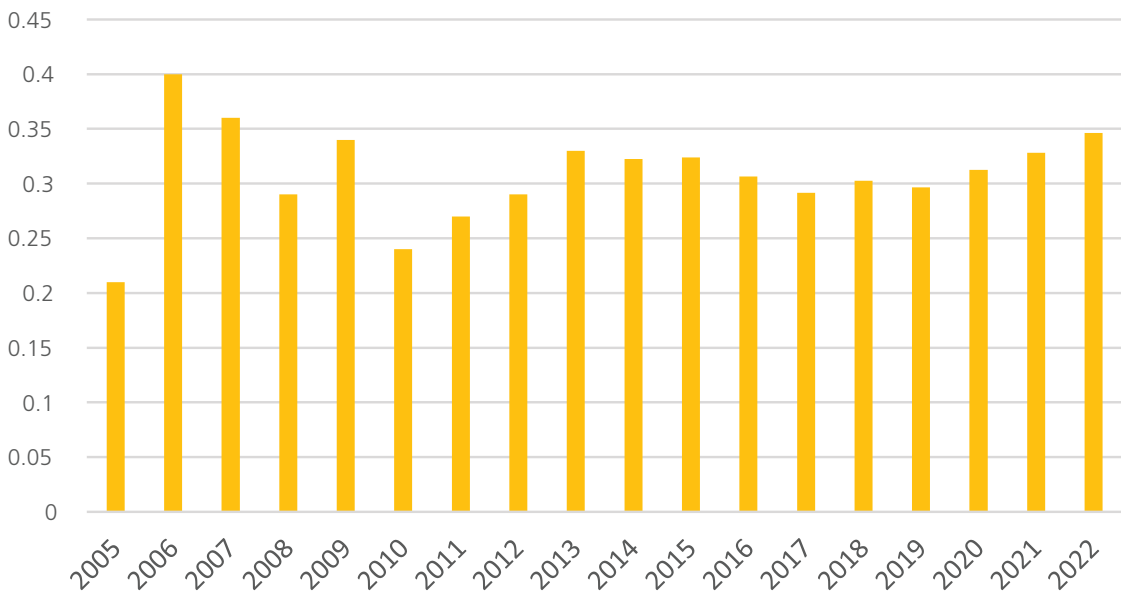
The Berks County Solid Waste Authority (SWA) manages recycling operations at the full-time recycling center on Hilltop Road in Bern Township. Residents of any municipality in the County with more than 5,000 residents with a population density of more than 300 people per square mile are required to have access to curbside recycling. Everyone in the County also has drop-off recycling locations within a short drive. The SWA adopted a recycling plan, approved by the Pennsylvania Department of Environmental Protection in October 2014, to achieve a 40% recycling rate across Berks County by 2024. Achieving this goal will require everyone’s active participation. The 2014 Plan is currently being revised, as required by PADEP.



THUMBS NEUTRAL;  
WHAT THE DATA TELLS US:

The recycling percentage for Berks County has remained steady at around 35% over the past few years, which represents an improvement from 2017 when recycling rate in the County had dipped below 30%. This is still slightly below Berks County’s goal of 40% by next year.

BERKS COUNTY RECYCLING PERCENTAGE





# RECYCLING INNOVATION

A milk carton, a plastic bag, a soda can, and a cardboard box – which of these items can be recycled and which gets thrown in the trash?

Recycling isn't as straightforward as America's single-stream system tries to make it. There are quite a few rules, which vary from city to city, and not enough teachers. A 2019 survey revealed that 68% of Americans thought the interlocking triangle symbol emblazoned on plastic products simply meant the item could be recycled. This is not the case!

While each recycling facility is different, plastics labeled with the number one or two (rigid plastics often used in water bottles and milk jugs) are most likely to be recycled while three, four, six and seven (plastics used for bubble wrap, shopping bags, and flexible food packaging) are more often destined for the landfill. You should always check with your local recycler to understand which plastics they accept.

Unfortunately, some communities do not accept all types of recycling, because there is no local market willing to buy the recycled material. Without a buyer, it's hard to justify the cost of recycling.

No wonder only about 32% of our trash gets recycled, and less than 10% of all plastic ever produced has been recycled to date.

Where does all this plastic go? While some plastic is still in use, about 50% of virgin plastic produced each year is used just once before getting tossed. Each year, about 8 million metric tons of plastic waste enters our oceans, killing over 1 million seabirds who accidentally ingest or become tangled in our plastic refuse.

Our plastic habit isn't just killing birds. As plastic breaks down, it fragments into microscopic particles no bigger than a grain of salt. These microplastics are everywhere – in the food we eat, the water we drink, and air we breathe. People inhale about 22,000,000 micro- and nanoplastics annually. In 2020, microplastics were found in 53 Pennsylvania waterways, including Berks County's Tulpehocken Creek and Blue Marsh Lake.

We're only just starting to understand the effect of microplastics on human health, but research suggests we have cause for concern.

The way forward requires creativity and local action.

Across the globe, innovators are experimenting with new processes for recycling and reusing plastics, creating a closed loop system to replace our current, linear "make-take-dispose" system. PureCycle Technologies, for example, has found a way to remove the color, odor, and contaminants from polypropylene plastic waste, significantly improving its recyclability. Although polypropylene is the second-most used plastic in the world, only 1% is currently recycled.

In May of this year, Greenback Recycling Technologies opened a new recycling plant in Cuautla, Mexico that uses a microwave-induced recycling process to transform flexible, difficult to recycle plastics (for example, multi-layered packaging containing aluminum in addition to plastic) into new raw content to create food packaging. This recycling plant is the first of its kind.

Here in the United States, new policies to reduce waste are on the rise at both the municipal and state level. "Zero waste" targets, plastic bag bans, and legislation holding plastic producers responsible for the recyclability of their products are all examples of the new political momentum building behind national waste reduction. Pennsylvania currently has set a statewide goal of recycling 35% of its municipal waste.

## REFERENCES

- Cook, Stacey (n.d.) Innovations in Recycling. *National Geographic*. <https://www.nationalgeographic.com/science/article/partner-content-innovations-in-recycling>
- Gibbens, Sarah (2021, January 17) Why your recycling doesn't always get recycled. *National Geographic*. <https://www.nationalgeographic.com/environment/article/why-recycling-plastic-doesnt-always-get-recycled>
- Zachos, Elaina (2023, August 17) Microplastics are hidden in your home. Here's how to avoid them. *National Geographic*. <https://www.nationalgeographic.com/environment/article/how-to-avoid-microplastic-health-home>
- Alliance to End Plastic Waste (2023, May 29) Greenback Closes the Loop with its First Advanced Plastic Recycling Plant. <https://endplasticwaste.org/en/news/greenback-closes-the-loop-with-its-first-advanced-plastic-recycling-plant>
- Sheid, Lisa (2021, March 9) Microplastics found in Tulpehocken Creek and Blue Marsh Lake. *The Mercury*. <https://www.pottsmmerc.com/2021/03/09/microplastics-found-in-tulpehocken-creek-and-blue-marsh-lake/>

# HOW DO WE MAKE THINGS BETTER?

Berks County residents can recycle their electronic waste, tires, pharmaceuticals, hazardous waste (paint, oil, cleaning solvents, etc.) and document shredding services at one of the many collection programs offered throughout the year. Make sure you know what items they accept, when events are scheduled, and the location of each event by visiting [www.countyofberks.com/departments/solid-waste-authority](http://www.countyofberks.com/departments/solid-waste-authority). If possible, hold these waste items until the scheduled collection times rather than putting them in the municipal waste stream (i.e., your garbage can). The little effort it takes to participate in these special waste collections pays off in a big way by decreasing the amount of municipal waste produced.

When and where you can, try your best to create less waste and recycle as much as you can. Composting is also a great way to cut back on municipal waste and could even help you grow healthier plants and save money at home. Tell all your friends and neighbors that they can recycle their special waste, electronics and compost too! The more people that are aware of these special collections and waste prevention methods, the less waste we will see in our landfills.

## WHAT CAN YOU DO?



### BE AWARE OF THE SPECIAL COLLECTIONS SCHEDULE FOR MORE DIFFICULT ITEMS

The schedule may be different for certain items and may require you to save up your recyclables; scan the QR code at right for more information!



### COMPOST YOUR FOOD SCRAPS

Composting is a natural process that breaks down organic material into a rich, organic fertilizer. By composting, you can reduce the amount of garbage you send to the landfill, grow healthier plants, and save money.



### BUY RECYCLED-CONTENT PRODUCTS

Look for products that are made from recyclable materials. Buying products made from recycled paper, glass, and plastic helps to promote a market for sustainability while ensuring that those materials do not end up in a landfill. You can even buy gold and silver jewelry made by recycling those precious metals from old electronics.



### REDUCE CONTAMINATION

Make sure that you only recycle materials that are actually recyclable and do not put recyclables in plastic bags for recycling collection. When people mix trash with their recyclables, it is considered contamination. This increases the cost of recycling, decreases the value of the recyclable materials, and makes it more expensive to make new products out of the recycled materials.



### DO YOUR RESEARCH

If your municipality doesn't offer curbside recycling, do your research and select a waste hauler who will.



Scan the QR code for a Berks County local feature on waste!

# LAND

In the 19th century, the noted American humorist Mark Twain advised, “Buy land, they’re not making it anymore.”

Certainly, land acquisition and development has been a driving force in American life. By the 20th century, scientists began recognizing the environmental damage resulting from humanity’s poor stewardship of the land. We now understand that poor land use management can have a devastating impact on the environment including the loss of topsoil, adverse effects of persistent pesticides on human and wildlife health, wide-scale filling of wetland habitats, contamination of small and large waterways, and reductions in plant and animal diversity, among a host of other environmental consequences related to imprudent land use.

In the early years of the 21st century, society began emphasizing more sustainable uses for our land – uses that allow us to continue benefiting from the land while preserving its quality, useful properties, and aesthetic beauty. Sustainable land use means preserving and enhancing an area’s beneficial features for future generations.

Berks County is fortunate to harbor an abundance of natural resources: forested ridges, trickling streams and tumbling rivers, and fertile valleys. Agriculture was, and remains, a dominant influence in the County. The industrial operations that fueled the growth of Reading and its surroundings have declined over the past few decades, while the commercial, professional, and retail sectors have been growing. Each has a different impact on land use. Changing too is the County’s population: now 430,000 people strong, Berks’ growing population has also given rise to increasing development pressure.

The Land Indicators below describe the state of land within Berks County as a result of our agricultural heritage and the sustainability of our modern land use choices.

The indicators selected by Berks Nature to describe the state of land within Berks County relate directly to its heritage – its fertile farmlands – and to factors associated with the sustainability of land use choices.

- Protected Land
- Tree Cover
- Multi-Municipal Planning
- Pace of Development
- Encroachment & Expansion of Outdoor Recreation Areas



# LAND DATA UPDATES

## LAND INDICATOR #1 PROTECTED LAND

Land protection is an option for landowners in our community who wish to never see their special properties developed for residential, commercial, or industrial use. Conservation easements are agreements between a landowner and a land trust such as Berks Nature permanently limit use of the land to protect its conservation values. In Berks County, there are two primary institutions that work with landowners to develop easements: the Berks County Department of Agriculture's Land Preservation Program and Berks Nature. The Berks County Department of Agriculture's Land Preservation Program protects quality agricultural land, and Berks Nature protects forests, agriculture, trails, and more. Open space and wildlife habitats are also protected by Federal, State, or County government ownership and preservation.



### THUMB TRENDING UP; WHAT THE DATA TELLS US:

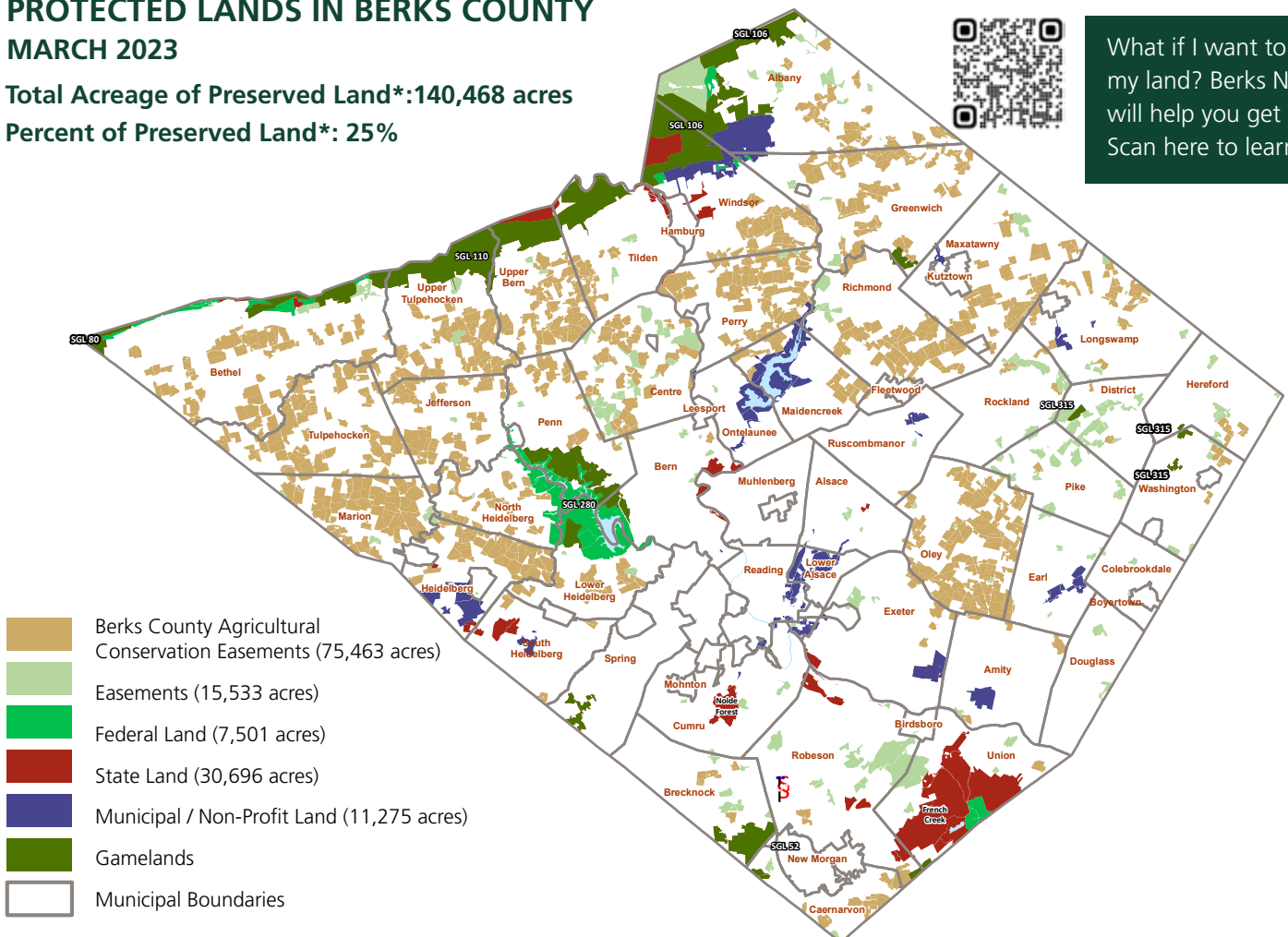
As of March 2023, 25% of the total 554,605 acres of land in Berks County is considered protected. This land includes Agricultural Conservation Easements, Conservation Easements, and Federal/State/County/ Municipal Owned Lands for a total of 140,468 acres. Across the County's total land area, 16% is protected through a conservation easement.

While the current scope of open space protection is admirable, further action is required to sustain our agricultural heritage, protect our natural resources, and mitigate the effects of climate change; a priority that is echoed in the Berks County Vision 2030 Comprehensive Plan. For example, the Berks County Vision 2030 Comprehensive Plan identified 27.5% of the total County land area for agricultural preservation yet as of March 2023, 14.5% of the County falls into this preservation category.

## PROTECTED LANDS IN BERKS COUNTY MARCH 2023

Total Acreage of Preserved Land\*: 140,468 acres

Percent of Preserved Land\*: 25%



Source: Berks County Planning Commission, Berks County GIS, Berks County DES, Berks County Mapping Dept.

\* Preserved Land includes Agricultural Conservation Easements, Conservation Easements, Federal/State/County/Municipal Owned Lands

## LAND INDICATOR #2

### TREE COVER

The ecological values of forested lands are well documented. Forest cover stabilizes the soil, reduces erosion from heavy rainfall, provides habitat for many plant and animal species, produces useful and renewable resources, and takes up carbon dioxide and produces oxygen. Large continuous forests are especially important because they are more resilient to disturbances and provide invaluable wildlife habitat. Trees also have a substantial role to play in our growing climate crisis by sequestering carbon dioxide.



#### THUMBS NEUTRAL; WHAT THE DATA TELLS US:

According to the National Land Cover Database, about 39% of Berks County was forested in 2021. This represents a 1% net decrease in forest area since 2001. The largest unbroken tracts can be found along the Kittatinny Ridge, across the Oley Hills, and within the Hopewell Big Woods. There are increasing threats to the quality of our forests. While forest acreage remains fairly stable, the size and shape of forest patches shows signs of changing, with implications for wildlife and climate resiliency. Forest protection should be a priority in Berks for drinking water supplies, and for carbon sequestration.



Scan to learn more about  
forest fragmentation  
in Berks County.



## LAND INDICATOR #3

### MULTI-MUNICIPAL COOPERATION AND PLANNING

Each municipality in Berks County is responsible for plans that represent the municipality's sense of how land should be used and how development should proceed in various sections of the municipality. Land use conflicts commonly occur particularly at municipal boundaries where, for example, a commercial zone might border the neighboring municipality's rural residential zone. These conflicts can be avoided when municipalities work together to coordinate land use plans. This is called joint planning and joint zoning. Pennsylvania strongly encourages its municipalities to work jointly, and even prioritizes distribution of grant funding to those who cooperate in a joint comprehensive plan supporting their project. The Berks County Planning Commission leads this impressive effort in our community.



#### THUMB TRENDING UP; WHAT THE DATA TELLS US:

Participation in joint comprehensive planning is high: 86% (62 out of 72) of municipalities participate in a joint comprehensive plan and 21% also took the next step of incorporating joint zoning as well. In fact, it has been said that Berks County has the largest joint planning program in the state, possibly in the nation. However, there is room for more municipalities to participate, and advance their cooperation from joint planning to joint zoning projects.



Scan here to explore more information on  
multi-municipal cooperation from the Berks  
County Planning Commission.



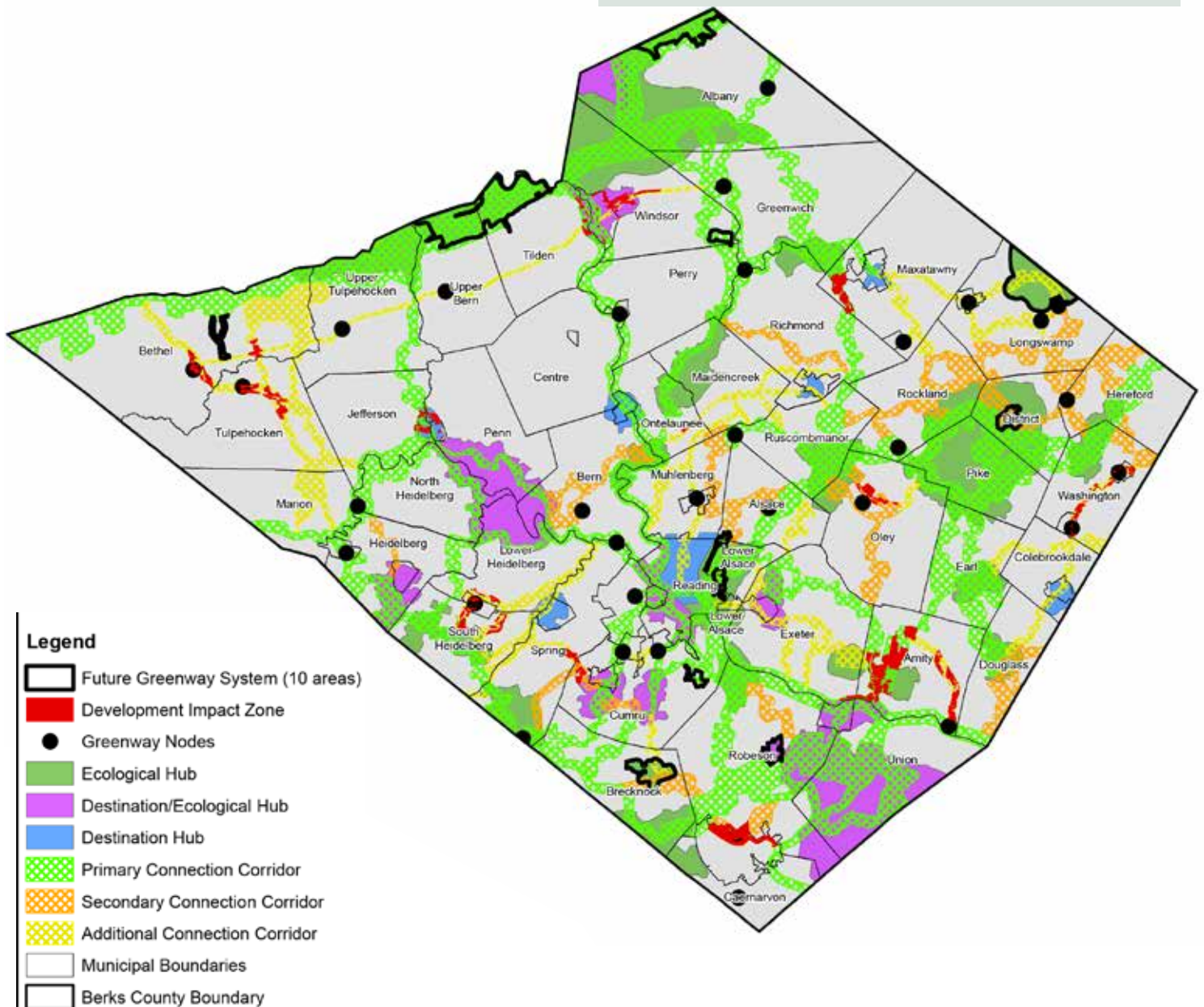
## LAND INDICATOR #4 PACE OF DEVELOPMENT

As our population grows, so too does the demand for development. With 430,000 people living in Berks County, it is no surprise that the Berks County Planning Commission (BCPC) reports an increasing number of development projects. To preserve land and ensure sustainable development, BCPC provides guidelines for land use. One such guideline is the “growth zone” designation, which identifies areas of the County appropriate for development. When development occurs outside of these growth zones, it has the potential to threaten other priority land uses, like open space and agriculture.



### THUMBS NEUTRAL; WHAT THE DATA TELLS US:

Over the last five years, the annual acreage of planned and completed development projects has gradually increased. Fortunately, the majority of this development is occurring in designated growth zones. Even with appropriate planning, it is important to recognize that development projects (especially those that don't incorporate Smart Growth principles) can create environmental issues in the way of impervious cover, construction runoff, and green space destruction. Those acres of planned and completed development projects located in non-growth zones are at greater risk of threatening open space.





## LAND INDICATOR #5

### ENCROACHMENT AND EXPANSION OF OUTDOOR RECREATION AREAS

Enthusiasm for outdoor recreation – like hiking, biking, or jogging – has been on the rise in Berks County for the past 15 years. Thankfully, the County is endowed with an abundance of these outdoor spaces and resources. The 2022 Berks County Greenway Plan highlights the importance of both preserving the ecological integrity and increasing access to these green spaces in their proposed network of “greenways.” A greenway is a corridor of open space, both publicly and privately held, that connects and protects the land’s environmental, cultural, or historic value.



#### THUMBS DOWN; WHAT THE DATA TELLS US:

Currently, there are 64,434 acres of recreation land in Berks County, or 11% of the county’s total acreage. Over the last 15 years, the County’s greenway system has expanded by 26,416 acres and has experienced 10,456 acres of encroachment; where areas identified as Berks County greenways have now been designated for future development.



Scan here to read the Berks  
County Greenway Plan



# TREE PLANTING AND STEWARDSHIP RECIPE



Visit the Arbor Day Foundation  
for interesting tree facts.

Let's face it, we could not exist as we do if there were no trees. A mature leafy tree produces as much oxygen in a season as 10 people inhale in a year. Tree cover also acts like a giant filter that cleans the air we breathe. Trees are on the job 24 hours every day working for us to improve our environment and quality of life. Yet we often take them for granted.

As Berks County (and communities across the nation) continues to experience the impacts of climate change, the benefits of trees are becoming a topic of interest to many. Trees improve our health, provide habitat for wildlife, clean our air, reduce the effects of climate change, and much more.

Berks Nature plants nearly 1000 large mature native trees every year. We have developed a "tree planting and stewardship recipe" that ensures an excellent survival rate. We are beginning to share this recipe with local partners, municipalities and corporations to help increase our tree planting capacity.

To ensure survival, proper tree planting techniques are demonstrated to our team of staff and volunteers each April and October. Those two months are the best months to plant trees due to temperature and anticipated rainfall in our region. After each tree is carefully planted, sheltered and watered (important ingredients in the recipe), the real work begins. You see, proper stewardship of this newly planted tree is critical to its survival rate. What do we mean by proper stewardship? Revisiting the tree to water sufficiently, manage growth of vines and other vegetation around it, and provide necessary maintenance to the tree shelter. These stewardship activities lead to high survival rates, but are often overlooked. Berks Nature has developed a dedicated team of Tree Stewards that not only help plant native trees, but commit to revisiting the tree planting site to conduct stewardship activities. This dedication of our Tree Stewards is critical to our work to increase tree cover in Berks.

It is also the reason that Berks Nature has had success in attracting corporate funding for tree plantings. Local businesses recognize our tree planting and stewardship recipe as a good investment of their dollars.



Let's use Penske as an example. For several years, Penske's environmental services department has helped to sponsor the purchase of trees for the Spring season. Not only do they help purchase the trees, but they also send a team of employees to help plant them. Then the fun begins. Their team utilizes our tree invoice (listing species, size and quantity) to calculate carbon sequestration for the project.

A recent example included a total of 358 native trees and shrubs representing 20 different species. Each species has its own climate code and carbon sequestration value. Carbon sequestration is the process of removing carbon from the atmosphere and storing it in another form that cannot immediately be released, like wood. The calculations resulted in 42.3 tons of carbon being removed from the atmosphere. This is equivalent to driving 106,327 miles, or 4,156 gallons of diesel fuel. Determining these calculations provides meaningful data for our local businesses and for Berks Nature.

We welcome additional participation in our successful tree planting efforts each year through donations and volunteering. We invite you to become a key ingredient in our tree planting and stewardship recipe.



# HOW DO WE MAKE THINGS BETTER?

Berks County is lucky to have lots of natural resources like forests, streams, and good soil for farming. As land demands shift and population continues to grow, how we use land looks different. While some of our data indicated a shift in a positive direction, the use of land is constantly changing. Right now, about 25% of Berks County's land is protected, but we need to do more to safeguard our green spaces and promote a healthier planet. Whether it's through agricultural or conservation easements or other land protection methods, you can contribute to preserving Berks County's natural beauty.

Tree cover is crucial for things like stabilizing soil, providing habitat for animals, and cleaning the air. This is where we can take action in our own backyard by planting new trees or preserving old grown trees. Many municipalities in Berks County are working together on land planning, yet there's room for more collaboration and joint planning efforts.

## WHAT CAN YOU DO?



### PROTECT YOUR LAND

If you own agricultural land, consider the Agricultural Conservation Easement (ACE) Program to protect it. If you have other types of land, consult Berks Nature for guidance on land preservation options.



### PARTICIPATE IN PLANNING EFFORTS

Recognize that planning and zoning decisions have long-term impacts on your community's development. Attend public meetings where these decisions are made and get involved in planning efforts when possible.



### GET INFORMED

Learn about the programs available in your community for land conservation and protection. Be aware of your options, whether you own land or not, and share this information with others who may be interested in protecting land.



### USE NATIVE PLANTS

Incorporate native plants into your landscaping, as they require less maintenance, reduce the need for fertilizers and pesticides, and attract beneficial wildlife and insects. Native plants also help improve air quality and water quality while conserving resources.



### PRESERVE EXISTING TREES

If your property includes forested areas, try to keep them intact. Trees play a vital role in carbon absorption and habitat preservation.



### PROMOTE OPEN SPACE

Use the open space and recreational resources that exist in Berks County. Help promote these public resources and volunteer to help maintain them. This will help allow the governments and organizations that manage these resources to devote more time and energy to planning for future parks and greenway connections.



### PLANT NATIVE TREES

If your property lacks trees, consider planting native trees suitable for your regional climate, soil, and moisture conditions. Clusters of trees are more effective for wildlife habitat than individual trees.



### SUPPORT JOINT PLANNING

If you live in a municipality that hasn't yet developed joint planning or zoning agreements with neighboring areas, consider the benefits of creating such agreements to make land use decisions that benefit the entire community.



Scan the QR code for a Berks County local feature on land.



# CLIMATE CHANGE IS HERE.

## RESILIENCY IS THE CONVERSATION FOR BERKS.

Global climate change is not a future problem. Changes to Earth's climate are already having widespread effects on the environment and people. Locally, we are experiencing more intense heat waves, extreme weather events and flooding, plant and animal geographic ranges are shifting, and plants and trees are blooming sooner.

Some changes (such as droughts, wildfires, and extreme rainfall) are happening faster than scientists previously assessed. In this increasingly interconnected world, only resilience—achieved by way of innovation, collaboration, and systems-deep approaches—will allow us to prepare our communities for these changes, now and on into the future.

Climate resilience is generally considered to be the ability to recover from, or to mitigate vulnerability to, climate-related shocks such as floods and droughts. It will take our entire community to address climate resiliency in Berks County. The conversations have started. In 2023 the Institute for Conservation Leadership worked with the Berks County Community Foundation to assess the best ways to address environmental issues and climate resilience in Berks County. They, too, believe that collaborative thinking and action have the greatest potential for positive change.

*"We need to act. The environment is sending the signals all the time; we are seeing it in the shifts in biodiversity, the magnitude of soil loss, the continuation of food deserts right here in Reading, and the inability of a Reading native to be able to get good, healthy, reasonably priced food is horrible. There's no reason it should be that way. We need to get moving."*

David Osgood, ICL Recommendations to the Berks County Community Foundation 2023

There are existing resources available in our community for action, for collaboration, for resiliency:

- Berks County Greenway, Park & Recreation Plan 2022
- Berks County Comprehensive Plan 2030 Update
- Berks Nature's State of the Environment in Berks resources
- City of Reading Climate Resiliency & Sustainable Development Plan
- Imagine Berks: Strategic Economic Development Action Plan

As a resident, community leader, student, legislator, government official, or community activist, utilize these resources and collaborate with others to address climate resiliency issues in Berks.

Our environment, our people, our wildlife, our community depend on it.

# WHERE DO WE GO FROM HERE?

Fifteen years of reporting on data trends in the areas of Land, Energy, Waste, Air, and Water has allowed Berks Nature to share great successes, a few disappointments, and reminds us daily that positive change takes time. This State of the Environment in Berks report needs to be an ongoing community conversation about setting goals and changing behaviors that help protect the resources that sustain our lives.

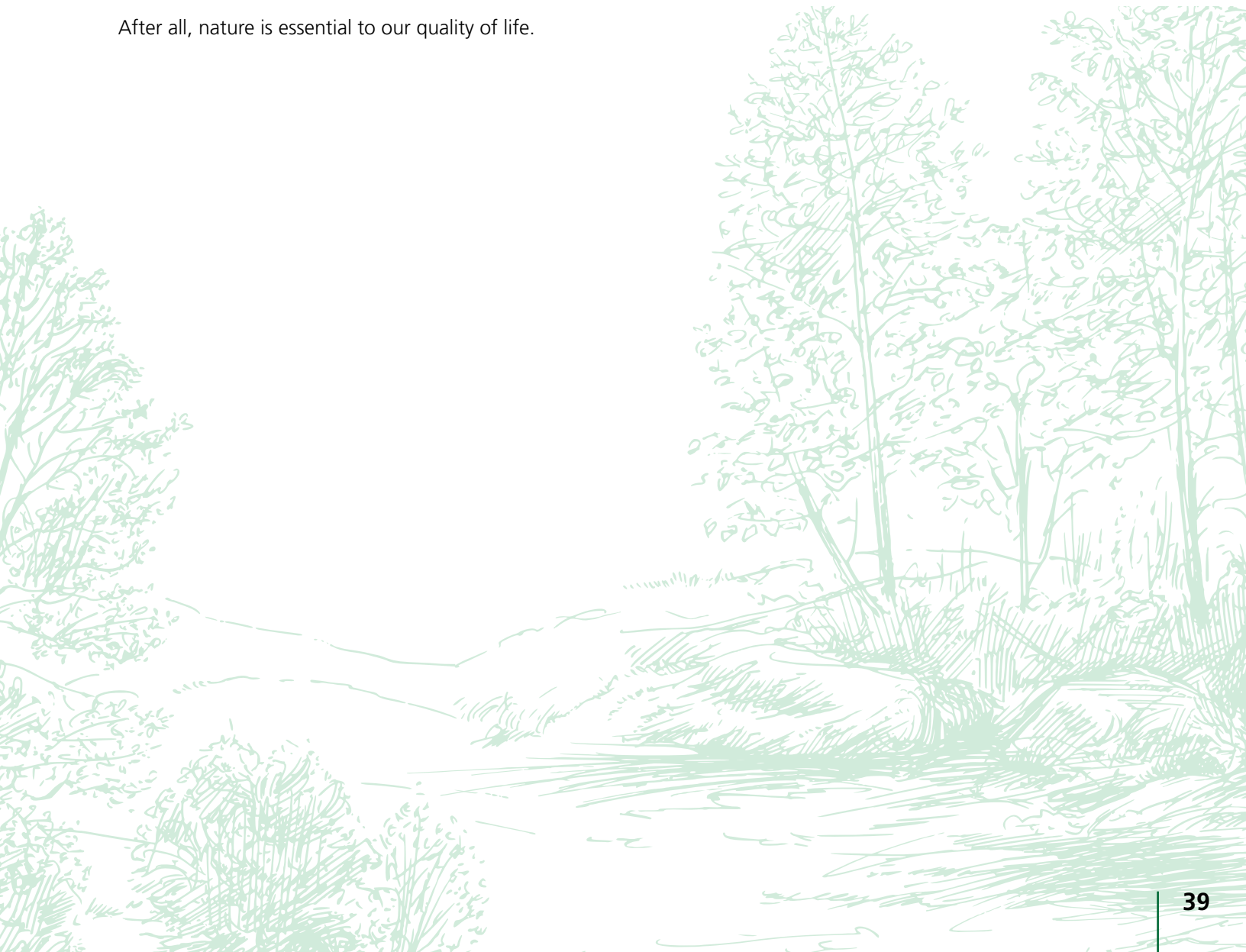
Berks Nature encourages you to:

- Implement one or more of the How do we make things better actionable items contained in this report.
- Share this report with family, friends, students, colleagues, municipalities, and neighbors!
- Begin the conversation by sharing a link to this report on social media, and tagging Berks Nature.
- Inspire behavior change by sharing How you make things better on social media, and tagging Berks Nature.
- Become a “Champion of Nature” by making a donation to Berks Nature.

Click the yellow donate button at [www.berksnature.org](http://www.berksnature.org)

- Volunteer for your favorite environmental organization

After all, nature is essential to our quality of life.





## TOGETHER WE CAN MAKE A DIFFERENCE.

Berks Nature is a non-profit organization committed to protecting our natural resources and to connecting people to nature. Donations from people like you make our work possible.

## BECOME A CHAMPION OF NATURE.



Any donation made to Berks Nature will qualify you as a Champion of Nature. Champions of Nature receive recognition in our annual report, regular Berks Nature mailings, digital updates, and more!

Your contribution will stay in Berks County to help us protect nature!  
At Berks Nature, we believe that nature is essential to our quality of life.



## THANK YOU FOR BECOMING A CHAMPION OF NATURE.

We invite you to become involved with Berks Nature in many ways from attending our public events and programs to volunteering!

**Learn more at [berksnature.org](https://berksnature.org)**



575 St. Bernardine Street, Reading, PA 19607 | (610) 372-4992  
Open Tuesday through Saturday | 10:00 am - 3:00 pm