



The economic benefits of Metroparks Toledo

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The Trust for Public Land
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and protects land for people,
ensuring healthy, livable communities
for generations to come.

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Table of contents

Executive summary.....5

Map..... 9

Introduction10

Enhancing property value.....12

Infiltrating stormwater16

Reducing air pollution.....20

Generating travel and tourism22

Providing recreational value30

Providing health care cost savings34

Bolstering economic development.....42

Conclusion.....51

Endnotes.....53

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Executive summary

METROPARKS TOLEDO (HEREAFTER REFERRED TO AS “METROPARKS”) HAS SERVED AS THE PARK DISTRICT FOR LUCAS COUNTY SINCE 1928. Metroparks works to conserve the region’s natural resources by creating, developing, improving, protecting, and promoting clean, safe, and natural parks and open spaces for the benefit, enjoyment, education, and general welfare of the public. The park district boasts over 12,300 acres of protected land and 180 miles of trails.¹ These amenities include the historic Fallen Timbers Battlefield Metropark, natural assets like Oak Openings Preserve Metropark, and recreational venues such as the Beach Ridge Singletrack Trail and the Oak Openings Preserve Horse Trail.

Metroparks enhances property values, reduces stormwater runoff, filters pollutants from the air, attracts visitors to the community, provides recreational opportunities for residents, improves community health, and boosts economic development. These amenities support local jobs, increase spending at local businesses, decrease costs, and generate local tax revenue. Specifically, the parks and trails, as pictured in [Figure 1](#), produce the following economic benefits (see [Table 1](#)):²

- Parks and trails in Lucas County increase the value of nearby homes because people enjoy living close to these well-kept amenities and are willing to pay for that proximity. Metroparks raises the value of nearby homes by \$40.8 million and increases property tax revenues by \$1.13 million a year (see [Table 2](#)).
- Parks capture precipitation and slow runoff, reducing the volume of water entering the stormwater system. Metroparks provide stormwater infiltration valued at \$5.50 million annually (see [Table 4](#)).
- Trees and shrubs in parks remove air pollutants that endanger human health and damage structures. Such spaces provide health benefits and reduce pollution control costs in Lucas County by \$1.46 million per year (see [Table 5](#)).
- Metroparks is critical to the local tourism economy because it provides numerous parks, trails, facilities, and programming that attract visitors. Metroparks generates \$59.5 million annually in direct visitor spending (see [Table 9](#)).
- Residents also enjoy Metroparks. Each year residents of Lucas County receive a benefit of \$27.5 million for the recreational use of these spaces (see [Table 12](#)). Popular activities include hiking, walking, visiting with family, relaxing, playing in playgrounds, picnicking, running, jogging, taking photographs, observing wildlife and birding, and biking.

Metroparks provides stormwater infiltration valued at
\$5.50 million annually
and reduces pollution control costs by
\$1.46 million a year



Parks and trails raise the value of nearby homes by
\$40.8 million
and increase property tax revenues by
\$1.13 million per year



The Lucas County recreation economy supports
22 sporting-goods stores
80 jobs
\$18.0 million in sales each year



Metroparks generates
\$59.5 million annually
in direct visitor spending



Physical activity in parks
reduces health care costs.



The average
adult saves:
\$1,230/year
Adults over 64:
\$2,470/year

Residents receive a
\$27.5 million per year benefit
for recreational use of Metroparks



- Independent research shows that park use translates into increased physical activity, resulting in measurable medical care cost savings. The average adult saves \$1,230 each year and the savings are doubled for adults 65 years and older. In total, the combined health savings gained by residents of Lucas County who were physically active in Metroparks were \$12.5 million each year (see Table 13 ➔).
- Parks and trails, such as those provided by Metroparks as well as other organizations, contribute to the region's high quality of life, which plays an important role in attracting businesses and employees to the region and enhancing the community's recreation economy. Residents of Lucas County spend \$28.0 million annually on sports, recreation, and exercise equipment (see Table 16 ➔). This spending, along with tourist spending, supports 22 sporting-goods stores that generate \$18.0 million in sales and provide 80 jobs.



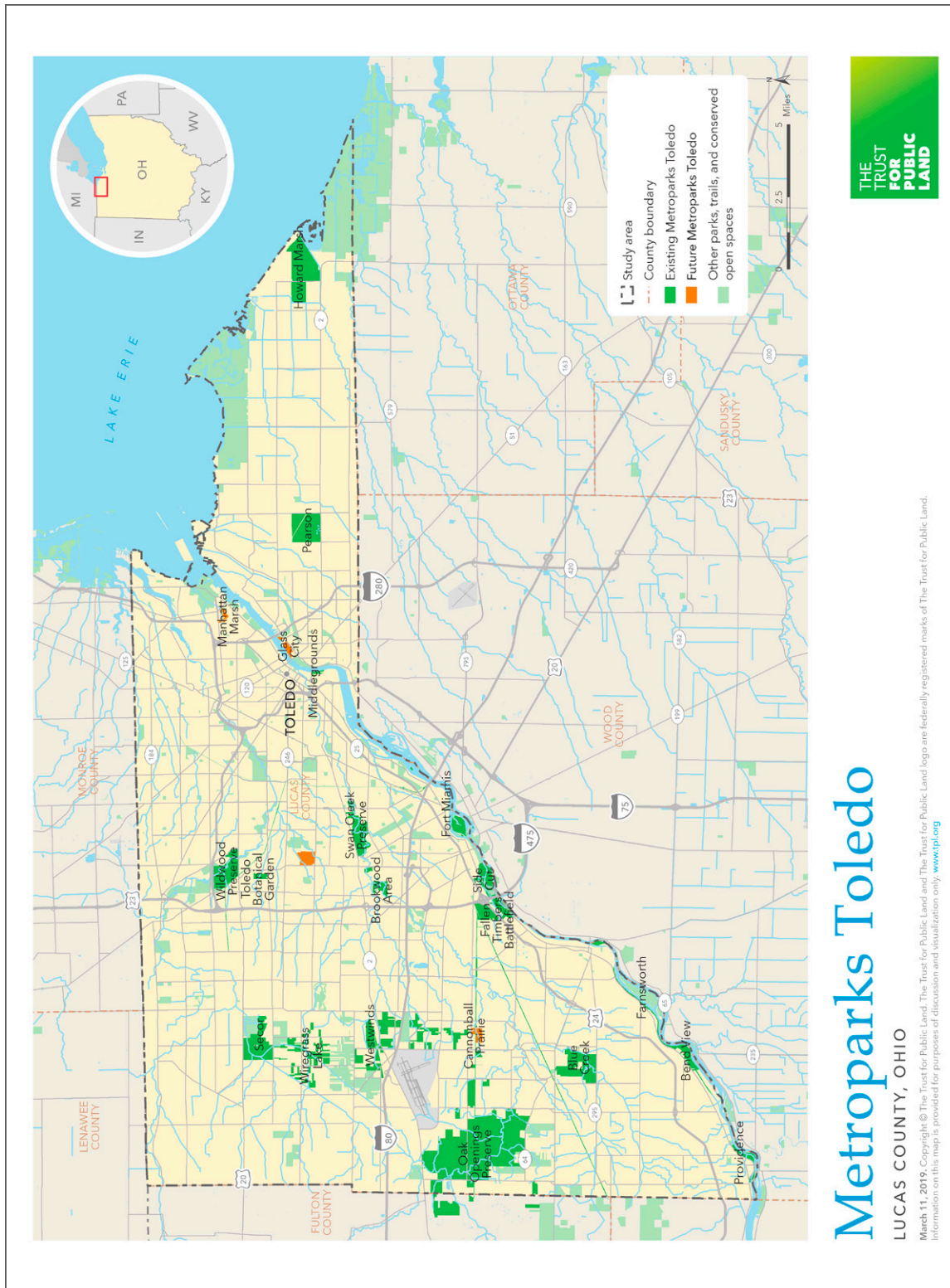
METROPARKS TOLEDO

These benefits are distributed across many sectors of the economy in Lucas County. Each estimate above represents a different type of value, with different time frames, accruing to different beneficiaries such as local businesses, government, and residents. In order to provide a robust and reliable report, this analysis relied on the most conservative methods supported by existing methodology and literature. For example, in any instance where multiple valuation methods were available, The Trust for Public Land utilized the method that produced the conservative, lower bound estimate. This study illustrates that Metroparks Toledo is a key economic driver that contributes tens of millions of dollars in economic benefits annually to the community as a whole (Table 1 [↗](#)).

TABLE 1. SUMMARY OF ESTIMATED ECONOMIC BENEFITS PROVIDED BY METROPARKS TOLEDO (2018\$)³

Benefit category	Total
Enhanced property value	
Total additional property value	\$40,800,000
Additional annual property tax	\$1,130,000
Stormwater infiltration	\$5,500,000
Air pollution removal	\$1,460,000
Tourism	\$59,500,000
Recreational use	\$27,500,000
Health care cost savings	\$12,500,000
Economic development*	
Annual spending on sports, recreation, and exercise equipment by residents	\$28,000,000
Annual sales generated by sporting-goods stores	\$18,000,000

*The economic development values presented here illustrate the importance of the recreation economy in Lucas County. Not all spending and sales in these categories are exclusively generated by Metroparks Toledo.



➤ **FIGURE 1** Map of Metroparks Toledo.⁴ Copyright © The Trust for Public Land. The Trust for Public Land and The Trust for Public Land logo are federally registered marks of The Trust for Public Land. Information on this map is provided for purposes of discussion and visualization only.

Introduction

PARKS AND TRAILS, SUCH AS THOSE PROVIDED BY METROPARKS TOLEDO (HEREAFTER REFERRED TO AS “METROPARKS”) ARE VALUABLE COMPONENTS OF HEALTHY, FLOURISHING COMMUNITIES. Parks and trails in Lucas County are public goods that are owned and maintained by federal, state, and local governments, as well as nonprofit organizations, for residents to access at little or no cost. As such, the actual value of park and trail amenities is often overlooked. Unlike selling tickets to a sporting event, for instance, a park does not increase revenues with additional visitors. Well-maintained parks and trails do, however, provide tangible and measurable economic benefits to local residents and governments. Through economic analysis, it is possible to isolate and quantify many of these benefits and help interested parties gain a fuller understanding of the value of their parks and trails. This report analyzes Metroparks Toledo and documents a selection of the significant economic benefits that this network of parks and trails provide to the community.

Side Cut Metropark was the system’s first park, created in 1930. Since that time, Metroparks Toledo has expanded to include 16 parks that are open to the public. Metroparks encompasses over 12,300 acres of parkland and 180 miles of trails.⁵ These amenities include the historic Fallen Timbers Battlefield Metropark, natural assets like Oak Openings Preserve Metropark, and recreational venues such as the Beach Ridge Singletrack Trail and the Oak Openings Preserve Horse Trail. Since its first levy in 1971, Metroparks Toledo has received funding that is generated by a property tax. Currently, 90 percent of Metroparks Toledo’s operating costs are funded by Lucas County residents through taxes. The latest levy in November 2017 passed with 75 percent voter support.⁶ This funding, along with over \$50 million in matching grants, helps the system maintain its reputation as a premier park agency across the state, as evidenced by the organization’s receipt of over 20 industry awards since 2014 for capital projects, marketing, conservation, innovation, youth leadership, and law enforcement. This includes the Ohio Parks and Recreation Association (OPRA) Governor’s Award in 2018 and three consecutive Jack Hanna Resource Conservation Awards.⁷ Recently, Metroparks Toledo has been focused on connectivity and access.⁸ Lucas County residents are close to having a park system that puts all residents within five miles of a park. Metroparks expects to meet this goal after the completion of Manhattan Marsh Preserve Metropark in 2019.⁹

Metroparks Toledo provides many recreational opportunities to the public for free or at a reasonable cost, including archery, bicycling, birding, camping, cross-country skiing, exercising, exploring nature, fishing, hiking, horseback riding, ice skating, mountain biking, picnicking, paddling, photography, playing in playgrounds, running, sledding, snowshoeing, viewing wildlife, walking, and more. By providing access to an array of outdoor amenities and activities, Metroparks generates numerous economic benefits within the local community.



Parks and trails enhance property values, offer recreational opportunities, improve human health, attract visitors, and provide natural goods and services such as filtering air pollutants and managing stormwater. In addition, they support local jobs, boost spending at local businesses, and generate local tax revenue.

In order to provide robust and grounded evaluations, this analysis relied on the most conservative methods supported by comparable economic valuation studies. In any instance where multiple valuation methods were supported, or where a range of values were available for analysis, The Trust for Public Land selected the method or values producing the lower bound estimate. As such, it is likely that the actual benefits are higher than what The Trust for Public Land estimated in the following pages.

Although this analysis determined many of the economic benefits of Metroparks Toledo in Lucas County, it did not capture the full value of these high-quality, well-managed spaces for area residents. From quiet places for walking to summer camp programming, the full value of Metroparks Toledo goes far beyond dollars and cents.

Enhancing property value

PARKS AND TRAILS HAVE A POSITIVE IMPACT ON NEARBY RESIDENTIAL PROPERTY VALUES.¹⁰ All other things being equal, people are willing to pay more for a home close to these amenities. Further, since property tax is based on a home's value, the increased value of homes near these spaces leads to additional property taxes being generated annually. Through economic analysis, it is possible to isolate the impact that parks and trails have on home values. This section estimates the enhanced property value that can be attributed to Metroparks Toledo in Lucas County, as well as the additional tax revenue generated on an annual basis.

The effect of parks and trails on local property value is evident in Lucas County. These spaces contribute to the quality of life in the area, which is a draw for home buyers. Metroparks plays an important role in creating a place where people want to live. According to a local story by *13abc Action News* in February 2017, Middlegrounds Metropark has been boosting the area's attractiveness since its opening in September 2016. Jim Eckert, director of real estate at Owens Corning, a Fortune 500 company with world headquarters in Toledo, was interviewed for the story. Eckert explained that the area's quality of life is enhanced by the Metropark: "Prior to the Metropark being down here, it was largely space that no one would want to be. And now it is. And I think the visibility of the area has picked up 100 percent."¹¹ Residents of Lucas County not only enjoy these amenities, they are willing to pay a premium to live close to parks and trails.

The property value added by parks and trails is separate from the value that residents gain from the recreational use of these amenities. Property value goes up even if the resident never visits or uses a given park or trail. Rather, property value is affected by two factors: quality of and distance from the park or trail.

Research has found that the quality of parks and trails can affect nearby property values in several ways.¹² Beautiful natural areas with public access, scenic vistas, and bodies of water are markedly valuable. Less attractive or outdated parks and trails may provide only marginal value, and in some cases, they may actually reduce nearby property values. When looking at the impact of individual parks and trails, economic analysis is complicated by the subjective nature of a park's or trail's quality as well as the variation in quality across time. In order to account for such variations and impacts on the premiums generated by individual parks, The Trust for Public Land relies on a methodology that accounts for the impact of a community's entire park and trail system. The park premium that is applied in this analysis of Metroparks Toledo parks and trails isolates the minimum average value added by these spaces collectively, separate from other locational factors that affect a home's value, such as proximity to transportation networks and central business districts. Using this method, the park premium applied is not based on any one park or trail but rather on the entire system of these spaces. This makes it possible to



generate a reliable, conservative estimate of the total impact of parks and trails on property values based on established rates from comparable studies.

Distance from parks and trails is the second factor influencing property values. Nationwide research, as well as work locally in Ohio, shows that the premium for proximity to these spaces can extend up to 2,000 feet and can also affect market values by as much as 20 percent.¹³ A 2009 report from the National Association of Realtors found that the premium for homes near parks can extend three blocks and start at 20 percent, declining as the distance from the park increases.¹⁴ Research in nearby Cincinnati, Ohio, found that impacts on home prices are enhanced by proximity to parks. For the average property in the study (valued at \$123,000), every 100-meter¹⁵ increase in the distance from the closest park decreased the sale price up to 0.51 percent (\$627).¹⁶ In addition, a study of Three Rivers Park in Pittsburgh, Pennsylvania, found that since 2001, home values within the vicinity of riverfront park investment projects had risen 60 percent compared to the 32 percent rise citywide.¹⁷ Trails also increase property values. For example, a study of the Little Miami Scenic Trail in Hamilton County, Ohio, found that access increases property values for homes located within 10,000 feet of one of the trail entrances.¹⁸ This body of literature establishes the measurable impact of parks on property

values and showcases the range of property value benefits that have been measured locally and across the country.

Using the most conservative method of analysis supported by these and other studies, The Trust for Public Land analyzed the enhanced property value and increased tax revenue from residences due to their proximity to Metroparks parks and trails in Lucas County. First, the Trust for Public Land identified all homes in the county within 500 feet of these spaces using spatial analysis.¹⁹ The Trust for Public Land obtained property value and tax information for all homes in the county using parcel and tax data from Lucas County that were provided by Metroparks Toledo. This information was then combined with the spatial analysis to estimate a



TABLE 2. ENHANCED PROPERTY VALUE DUE TO PROXIMITY TO METROPARKS TOLEDO IN LUCAS COUNTY (2018\$)

	Homes within 500' of parks	Homes within 500' of trails only	Homes within 500' of Metroparks
Residential value	\$427,000,000	\$388,000,000	\$815,000,000
Residential tax	\$12,000,000	\$10,700,000	\$22,600,000
Enhanced residential value	\$21,400,000	\$19,400,000	\$40,800,000
Enhanced residential tax	\$598,000	\$533,000	\$1,130,000

5 percent value premium for residences proximate to Metroparks parks and trails, as well as the accompanying property tax contributions due to this premium. The application of a 5 percent premium is consistent with The Trust for Public Land's conservative approach to measuring property value in over a dozen other communities across the country.

Table 2 shows the results of this analysis for all Metroparks in Lucas County. In 2018, 7,220 of the 172,000 homes in Lucas County were located within 500 feet of these amenities, with 3,000 located within 500 feet of trails only and 4,220 located within 500 feet of parks. These homes had a total market value of \$815 million. An additional \$40.8 million in residential property value in Lucas County resulted from proximity to Metroparks parks and trails, with \$19.4 million for homes proximate to trails only and \$21.4 million for homes proximate to parks. Each year, \$1.13 million in additional property tax revenue is generated by Metroparks parks and trails in Lucas County, with \$533,000 generated by trails only and \$598,000 generated by parks.

Infiltrating stormwater

STORMWATER MANAGEMENT IS AN IMPORTANT ISSUE FOR COMMUNITIES IN LUCAS COUNTY.

Rainwater that flows off roads, sidewalks, and other impervious surfaces can cause flooding, erosion, and declines in water quality by carrying pollutants with it. This section uses economic analysis to determine the value of stormwater infiltration by Metroparks, specifically considering the management costs that are avoided because of these parks and recognizing the active role Metroparks plays in the solution to Lucas County's water issues.

Metroparks Toledo parks support stormwater management by capturing precipitation and slowing its runoff and filtering out pollutants. Large pervious surfaces in parks absorb precipitation, allowing it to infiltrate and recharge groundwater. Meanwhile, vegetation in parks provides a considerable surface area that intercepts and stores rainwater, allowing some to evaporate before it ever reaches the ground. In effect, these green spaces function like storage reservoirs, reduce peak flows of runoff during rain events, and are an important form of green infrastructure, which naturally filters, infiltrates, harvests, or reuses stormwater.

Understanding the importance of parks as part of a robust stormwater management system, the former Western Research Station of the U.S. Forest Service developed a model to estimate the value of stormwater retained by such lands. Inputs to the model consist of geographic location, climate region, surface permeability, acres of parkland, land cover, and vegetation types. The Trust for Public Land adapted the model specifically for use in Lucas County. First, The Trust for Public Land determined the perviousness of Metroparks Toledo parks using the 2011 Percent Developed Imperviousness data from the National Land Cover Database (NLCD) that is created by the U.S. Geological Survey.²⁰ Impervious areas within the parks consisted of roadways and buildings. The 12,200 acres of parks within the study area had 122 acres of impervious surface, making these lands 99.0 percent permeable and 1.0 percent impermeable (Table 3 [↗](#)).²¹

**TABLE 3. ACREAGE AND PERMEABILITY
OF METROPARKS TOLEDO IN LUCAS COUNTY**

Acres of parks	Acres	Percent of area
With pervious soil	12,100	99.0%
With impervious soil	122	1.0%
Total	12,200	100.0%



Second, The Trust for Public Land estimated the amount of perviousness of the rest of Lucas County (i.e., the county without its parkland) using the same NLCD impervious surface data. The pervious land consisted largely of residential front and back yards; private natural areas; municipal, state, and federal parks or conserved lands, and golf courses. Combined, the land in Lucas County is 82.0 percent permeable, meaning that 18.0 percent of the precipitation falls on impermeable surfaces. Metroparks Toledo parks are thus more permeable than the surrounding lands.

Third, the University of California, Davis, created a stormwater reduction model for Metroparks Toledo parks. The model first determined annual rainfall on these lands based on precipitation data for Lucas County. Lucas County receives 34.0 inches of rain in a typical year.²² The model then used hourly annual precipitation data for Lucas County to estimate runoff, which is reported in inches and cubic feet. The reduction in runoff in Lucas County that is attributable to Metroparks Toledo parks was calculated by comparing the modeled runoff with the runoff that would leave a hypothetical site of the same size but with a land cover that is typical of the surrounding urban development (i.e., with streets, rooftops, parking lots, etc.). In other words, the analysis does not measure all of the water that is absorbed by Metroparks parks; it only measures the amount of water that is retained by these spaces above what would be absorbed had the land been developed in a way similar to the rest of Lucas County. Of the 34.0 inches of rainfall that the study area receives in an average rain year, 0.61 inches of runoff are generated;

TABLE 4. ANNUAL STORMWATER COST SAVINGS FROM METROPARKS TOLEDO (2018\$)

Category	Inches	Amount
Rainfall	34.0	1,510,000,000 cubic feet
Runoff with parks	0.61	27,100,000 cubic feet
Runoff without parks	3.23	143,000,000 cubic feet
Runoff reduction from parks	2.62	116,000,000 cubic feet
Value of stormwater (\$ per cubic foot)		\$0.05
Total savings from parks		\$5,500,000

however, a total of 3.23 inches of runoff would result if parks did not exist and absorb the stormwater that they do. That is, Metroparks reduce stormwater runoff in Lucas County by 116 million cubic feet in an average year (Table 4 ➡).

This stormwater runoff volume includes what is passively infiltrated by pervious parkland. It does not include intentional stormwater capture, such as that which is infiltrated by Middlegrounds and Howard Marsh Metroparks. For example, at Middlegrounds Metropark, a three-step process treats both on-site and off-site runoff through stormwater troughs, vegetated bio-swale, and wetlands. On average, 300,000 gallons of stormwater will be filtered during every 24-hour rain event. Howard Marsh Metropark is expected to capture stormwater from more than 320 acres of residential land, filtering phosphorus and other pollutants before they reach Lake Erie.

The final step in determining the economic value of stormwater retention by Metroparks was to estimate the cost of managing stormwater using built infrastructure (e.g., concrete pipes, sewers, and detention ponds). National studies have found that construction and annual maintenance costs for common stormwater-management infrastructure range from \$0.05 to \$0.82 per cubic foot of stormwater managed.²³ Economists know that this natural stormwater management service provided by parks has value in Lucas County as well because the County implemented a Stormwater Utility in 2011 to help fund stream improvements and U.S. Environmental Protection Agency Clean Water Act mandates to keep pollutants out of streams as much as possible. Lucas County uses this mechanism to improve water quality using funds collected from property owners.²⁴ To be conservative for the purpose of this analysis, The Trust for Public Land used the lower bound of the national cost range to estimate the value of stormwater infiltration provided by Metroparks Toledo parks (\$0.05 per cubic foot). Applying this cost to the volume of reduced stormwater runoff, The Trust for Public Land estimates that these spaces provide a total annual stormwater value of \$5.50 million (Table 4 ➡).

The stormwater value provided by Metroparks extends far beyond the cost savings estimated for this analysis and includes improving drinking water quality and working in partnership with the Lucas County Engineer's Office.

Stormwater runoff in Toledo has garnered public attention in recent years, particularly after Toledo's drinking water crisis, when the use of drinking water was suspended in 2014 due to toxins from harmful algal blooms in Lake Erie.²⁵ Although recent efforts to clean up the lake have included voluntary measures to encourage farmers to use best management practices, these efforts have not led to significant decreases in Lake Erie's phosphorous levels, which are needed to improve water quality.²⁶ Phosphorous reduction is important to the region's water quality, particularly because of the impact it has on the economy in terms of fishing, recreation, and drinking water. In fact, the phosphorous levels are so concerning that the United States and Canada agreed to a 40 percent reduction target for the Western Lake Erie Basin as part of the 2012 Great Lakes Water Quality Agreement. Statewide research, including that led by Elizabeth Dayton, is helping farmers and other interested parties reduce the risk of phosphorous runoff and quantifying how voluntary changes in agricultural practices contribute to achieving target runoff reduction goals.²⁷

While maintaining agricultural production is paramount to safeguarding local economies, the goal of this research is to help farmers identify alternative management practices that could help them reduce their impact on surface water quality; however, there are complementary strategies for achieving this reduction in phosphorous. For example, where viable, farmland can be converted to undeveloped open space. In that vein, and where community support exists, Metroparks has acquired farmland properties for parkland development. For example, the creation of Howard Marsh Metropark, currently the largest new wetland restoration project on the Great Lakes, involved converting the 1,000-acre Howard Farms into an enhanced marsh. The property was the last remaining large tract of land in the Western Lake Erie marsh region and will now serve as a critical buffer between residential land uses and Lake Erie.²⁸

Metroparks is also a vital community partner on water quality issues. Metroparks Toledo works closely with many community organizations, including the Lucas County Engineer's Office, to minimize the impacts of flooding and stormwater runoff. Many Metroparks amenities include streams or waterways and offer natural opportunities for partnership. For example, Metroparks Toledo and the Lucas County Engineer's Office often work together on efforts to clear streams and remove log jams. The Stormwater Utility within the Engineer's Office also partners with Metroparks on stream and wetland restoration projects to implement measures to increase regional retention and reduce flooding. The two groups are also part of the Clear Choices Clean Water Stormwater Coalition, which is focused on improving water quality in Lake Erie.²⁹ These approaches, and generally keeping lands open and permeable, enable Metroparks Toledo to complement and strengthen flood control and water quality protection efforts in the region.

Reducing air pollution

AIR POLLUTION IS A SIGNIFICANT AND EXPENSIVE PROBLEM ASSOCIATED WITH METROPOLITAN GROWTH THAT INJURES HUMAN HEALTH AND DAMAGES STRUCTURES. Human cardiovascular and respiratory systems are affected, with broad consequences for health care costs and productivity.³⁰ In addition, acid rain, smog, and ozone increase the need to clean and repair buildings and other infrastructure.³¹

The vegetation in parks and trails plays a role in improving air quality, helping nearby areas avoid the costs associated with pollution.³² Trees and shrubs have the ability to remove pollutants from the air. Leaves absorb gases such as nitrogen dioxide, sulfur dioxide, carbon monoxide, and ozone. By adhering to plant surfaces, particulate matter (PM), which includes small particles of dust, metals, chemicals, and acids, can also be removed.³³ This section uses economic analysis to determine the cost savings these amenities provide by reducing the concentration of pollutants in the air.

Air pollution is a significant issue in Lucas County. *State of the Air* is an annual report by the American Lung Association that looks at air quality across the United States. Although air quality in the area has improved despite historically failing grades, Lucas County's air quality received a D grade for ozone pollution in 2019 based on the number of days of dangerous concentration levels.³⁴ The same report found that the Cleveland-Akron-Canton region had the ninth-highest level of year-round particulate pollution and that Cincinnati-Wilmington-Maysville had the 13th-highest level.³⁵ The positive, pollution-reducing benefits of parks and trails are thus magnified in Ohio.

The Trust for Public Land estimated the value of air pollution removed by Metroparks trees using a model designed at the Northeast Research Station of the U.S. Forest Service in Syracuse, New York. This program utilizes the U.S. Forest Service's i-Tree Eco model, which is location-specific and incorporates factors such as tree canopy, pollution, weather, and local demographic data.³⁶ The model measures change in pollutants, including carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter. It does not include the value of carbon sequestration and storage; however, ecologists know that vegetation in Northwest Ohio is sequestering and storing carbon.³⁷ In fact, trees in the Oak Openings region appear to be 75 percent more efficient than most trees in removing carbon dioxide, the chief greenhouse gas that causes global warming.³⁸

The Trust for Public Land determined the amount of tree canopy cover in Metroparks using LIDAR data³⁹ provided by Metroparks Toledo. The Trust for Public Land further classified canopy cover type using the National Land Cover Database. Although Lucas County has numerous trees

on private property as well as on streets, this study measures only the economic value of trees located on Metroparks parks and trails. Tree canopy covers 53.0 percent of the 12,200 acres of parkland considered in this analysis.

The i-Tree Eco model processed the tree canopy cover data to estimate hourly changes in annual air pollution removal due to vegetation in parks and along trails. The model then estimated the value of these changes for each pollutant based on values established by i-Tree researchers. These values are determined primarily from savings in health care costs related to reduced exposure to harmful pollutants, based on the Environmental Protection Agency's Environmental Benefits Mapping and Analysis (BenMap) Program. These values were then adjusted to 2018 values using the producer price index.⁴⁰

A total value of \$1.46 million in air pollution removal was estimated for Metroparks Toledo annually (Table 5 ➔).

TABLE 5. VALUE OF AIR POLLUTION REMOVED BY METROPARKS TOLEDO IN LUCAS COUNTY (2018\$)		
Pollutant	Pounds removed	Pollutant removal value
Carbon monoxide	5,200	\$3,950
Nitrogen dioxide	39,200	\$11,400
Ozone	236,000	\$350,000
Coarse dust particles	97,600	\$349,000
Fine particles	15,000	\$742,000
Sulfur dioxide	18,100	\$1,630
Total	411,000	\$1,460,000

Generating travel and tourism

FROM A NATURALIST'S PARADISE IN OAK OPENINGS PRESERVE METROPARK TO TOLEDO BOTANICAL GARDEN, METROPARKS TOLEDO ATTRACTS VISITORS TO LUCAS COUNTY.⁴¹ Travelers who visit these amenities spend money on food, travel, and lodging during their stay, bringing new dollars and new tax receipts into the region. Metroparks Toledo amenities thus support this large and growing industry. Within Lucas County, visitor spending increased 4.2 percent from 2016 to \$1.39 billion in direct sales in 2017. The rate of this growth outpaces both the region and the rest of Ohio, translating to \$2.10 billion in business activity and generating nearly \$262 million in taxes each year.⁴² This section explores how Metroparks Toledo contributes to this critical sector of the region's economy.

Beyond Oak Openings Preserve, Metroparks Toledo includes places like Wildwood Preserve, Pearson, Swan Creek Preserve, Side Cut, and Middlegrounds Metroparks as well as ten other parks. The Metroparks system is used to host events, activities, and outdoor concerts as well as to provide river access, all of which attract visitors to the area. Outdoor recreation, such as that provided by Metroparks, is recognized as a driver of tourism. *U.S. News and World Report* named the city of Toledo as a top destination for outdoor enthusiasts in 2016.⁴³ In fact, outdoor enthusiasts will find many opportunities in Toledo.⁴⁴ Middlegrounds Metropark is featured on Destination Toledo's website as one of the high-quality amenities attracting visitors to the area, indicative of the nonlocal use generated by all Metroparks.⁴⁵ According to Melinda Huntley, executive director of the Ohio Travel Association, "In today's homogenous world, it's a community's uniqueness that sets it apart from other places. It's having stories, assets, and land—all of which are unique to each community. That's what gives a place its competitive advantage. Authenticity is key, and Metroparks is playing a very critical role in protecting the region's most prized lands, and importantly, providing access to the incredible places that make Toledo unique and attract visitors."⁴⁶

The Metroparks Toledo amenities also enhance the visitor experience for people already traveling to the region. Outdoor recreation activities can often extend the length of a stay in the region for visitors who have a varied itinerary, such as those who might paddle along the Maumee River after attending a special event or theme park, which was the driver of their visit. Other visitors may come to Lucas County for the primary purpose of accessing the outdoors, such as those who travel to the region specifically to spend the day at Wildwood Metropark. Either way, visitors can enjoy these amenities without paying admission but will have several expenditures related to their trip that contribute to the local economy. They may purchase paddling gear from nearby sporting-goods stores, hire a guide, eat at local restaurants, and buy gas for their vehicle during the trip. Thus, the number of visitors and their spending and activity determine the contribution to the tourism economy.



Metroparks Toledo directly generates tourism by providing outdoor recreation opportunities and hosting concerts and events. In this analysis, The Trust for Public Land considers the economic value of these amenities to the fullest extent possible. First, this analysis begins with an investigation of outdoor tourism in Lucas County, followed by an investigation of the specific contribution of Metroparks, including concerts and events.

A conservative way to estimate the contribution of parks and trails to the tourism economy involves understanding the visits made by travelers who come primarily to access the outdoors and the associated spending these travelers generate.⁴⁷ To calculate the tourism benefit provided by outdoor amenities as a whole, The Trust for Public Land first isolated the number of visitors to Lucas County whose primary purpose for travel was the outdoors and then applied this percentage to total direct tourism expenditures and tax receipts for Lucas County. Based on visitor survey data, The Trust for Public Land determined that approximately 3 percent of overnight visitors and 7 percent of day visitors to the Toledo region cited the outdoors as the main reason for their trip. Using information on the percentage of overnight and day visitors, The Trust for Public Land was then able to calculate a weighted average for the percentage of

TABLE 6. TOURISM IMPACTS ATTRIBUTABLE TO ALL PARKS AND TRAILS IN LUCAS COUNTY (2018\$)

Category	Value
Total direct tourism spending	\$1,420,000,000
Total local tourism tax revenue	\$36,000,000
Total state tourism tax revenue	\$52,800,000
Percentage of tourists whose primary reason to visit is the outdoors	6.32%
Approximate spending of tourists attributable to parks and trails	\$89,700,000
Approximate local tourism tax attributable to parks and trails	\$2,280,000
Approximate state tourism tax attributable to parks and trails	\$3,340,000

visitors who come for the purpose of the outdoors: 6.32 percent.⁴⁸ Applying this percentage to the total direct tourism spending and taxes generated in Lucas County, The Trust for Public Land estimated that \$89.7 million in spending each year is attributable to the parks and trails that make the outdoors accessible to tourists (Table 6). Spending by these visitors generates \$2.28 million and \$3.34 million in local and state tax revenues, respectively. Furthermore, spending by outdoor visitors ripples through the economy, adds value, and supports additional jobs. Businesses serving tourists must purchase labor and supplies from other businesses within the local economy. These businesses, in turn, increase their purchases and employ more individuals who spend their earnings on local goods and services. Including direct spending plus these ripple effects, \$135 million in total visitor spending is attributable to the parks and trails that make the outdoors accessible to tourists.⁴⁹

To isolate the impact of Metroparks Toledo, the impacts of visitors to other federal, state, and local parks in Lucas County must be removed from this outdoor tourism component.⁵⁰ The Trust for Public Land collected the available visitor information for a host of substitute sites that also contribute to the outdoor tourism economy. As part of this research, The Trust for Public Land investigated major parks in Lucas County, including Cedar Point National Wildlife Refuge, Maumee Bay State Park, and Magee Marsh Wildlife Area. The Trust for Public Land also considered the economic impact of local parks, such as those owned and maintained by the City of Toledo as well as private outdoor amenities, such as Big Sandy Campground, and events such as the Biggest Week in American Birding. The best available data were incorporated into this analysis to isolate the contribution of Metroparks.⁵¹

Maumee Bay State Park is a popular attraction used by overnight and day-use visitors. Ohio Department of Natural Resources (ODNR) data are available to track overnight visitors who reserve campsites and yurts; however, information on day use is more limited. ODNR provided day-use visitation based on reservations; however, it likely underestimated the total number of day visitors. In addition, these visitor numbers do not include visitors to the Maumee Bay Lodge and Conference Center, which is managed by a private contractor but is an essential part of the state park visitor experience.⁵² From data The Trust for Public Land accessed using Esri Business Analyst, it is clear that the lodge generates robust sales on an annual basis and employs over 150 people.⁵³ Using the available data on visitors, as well as information on the average per-person expenditures for day and overnight leisure trips to the Toledo area (\$47 and \$110, respectively),⁵⁴ The Trust for Public Land estimated that the 74,700 overnight visitors and 4,110 day visitors to Maumee Bay State Park spent \$8.76 million on their trips, which generated approximately \$222,000 and \$326,000 in local and state tax revenue (see Table 7 ➡).⁵⁵ These figures are subtracted from outdoor tourism figures to further refine the tourism spending attributable to Metroparks.

METROPARKS TOLEDO





The Magee Marsh Wildlife Area is primarily located in Ottawa County, with a small portion and point of access located in Lucas County. The area is open to the public for wildlife-related recreation, such as hunting, fishing, trapping, and wildlife watching during the day. A 2012 study of the impacts of birding along Lake Erie found that visitor spending in Magee Marsh amounted to \$21.4 million.⁵⁶ This spending also results in an estimated \$544,000 in local tourism tax revenue and \$798,000 in state tourism tax revenue (see Table 8 ➔).

TABLE 7. TOURISM IMPACTS ATTRIBUTABLE TO MAUMEE BAY STATE PARK (2018\$)

Category	Value
Estimated direct spending by visitors to Maumee Bay State Park	\$8,760,000
Total local tourism tax revenue	\$222,000
Total state tourism tax revenue	\$326,000

TABLE 8. TOURISM IMPACTS ATTRIBUTABLE TO MAGEE MARSH WILDLIFE AREA (2018\$)

Category	Value
Estimated direct spending by visitors to Magee Marsh Wildlife Area	\$21,400,000
Total local tourism tax revenue	\$544,000
Total state tourism tax revenue	\$798,000

In addition to these state amenities, local parks are part of the tapestry of amenities that make the outdoors accessible to tourists. Unfortunately, there is no comprehensive information available on the nonlocal visitors to local parks. As such, their component of spending cannot be removed from the overall tourism spending attributable to the outdoors. However, based on its work across the country, The Trust for Public Land knows that federal, state, and county park district amenities are the most likely to draw tourist visits.⁵⁷

While not exhaustive of the total visitor impact of Metroparks Toledo, spending from outdoor tourism, minus the impacts of substitute federal, state, and local parks, provides an insight into the scale of this impact.⁵⁸ In total, Metroparks Toledo supports \$59.5 million in tourism spending each year (Table 9). This spending generates an estimated \$1.51 million and \$2.21 million in local and state tourism tax revenue, respectively.

TABLE 9. ESTIMATED TOTAL TOURISM SPENDING ATTRIBUTABLE TO OUTDOOR TOURISM FOR METROPARKS TOLEDO (2018\$)

Category	Value
Approximate spending of tourists in Lucas County attributable to parks and trails	\$89,700,000
Approximate local tourism tax in Lucas County attributable to parks and trails	\$2,280,000
Approximate state tourism tax in Lucas County attributable to parks and trails	\$3,340,000
Approximate spending of tourists in Lucas County attributable to outdoor amenities not provided by Metroparks	\$30,200,000
Approximate local tourism tax in Lucas County attributable to outdoor amenities not provided by Metroparks	\$767,000
Approximate state tourism tax in Lucas County attributable to outdoor amenities not provided by Metroparks	\$1,120,000
Approximate spending of tourists in Lucas County attributable to Metroparks Toledo	\$59,500,000
Approximate local tourism tax in Lucas County attributable to Metroparks Toledo	\$1,510,000
Approximate state tourism tax in Lucas County attributable to Metroparks Toledo	\$2,210,000

Toledo Botanical Garden and Holidays in the Manor House

To illustrate a subset of the \$59.5 million economic value provided by Metroparks, The Trust for Public Land summarized the impact of Toledo Botanical Garden as well as Holidays in the Manor House at Wildwood Preserve Metropark. The Trust for Public Land estimated that these facilities and events supported nearly 157,000 tourist visits and \$9.45 million in additional direct tourism spending, which generates \$240,000 and \$352,000 in local and state tax revenues, respectively (Table 10 [🔗](#)).



The Trust for Public Land estimated the number of tourist visits for Toledo Botanical Garden and Holidays in the Manor House by first determining the number of visitors or participants originating from outside Lucas County. The Trust for Public Land based this calculation on information from Metroparks Toledo that indicated that 30 percent of the 492,000 visitors to Toledo Botanical Garden are from out of the county and 25 percent of the 37,600 visitors to Holidays in the Manor House are nonlocal.⁵⁹ The Trust for Public Land then calculated total spending impacts by determining the

breakdown of overnight and day visitors using visitor profiles for the Toledo region and multiplying each user group by the average expenditures for each type of visitor (\$47 and \$110 for day and overnight leisure trips to the Toledo area, respectively).⁶⁰

While spending from visitors to Toledo Botanical Garden and Holidays in the Manor House provides an example of the tourism value provided by Metroparks, this spending does not capture the total impact of the park system. Furthermore, looking only at the primary purpose of travel does not capture impacts from visitors who come for another primary purpose, such as visiting family, but who also engage in outdoor recreation or attend special events at Metroparks as part of their stay. It also excludes the impact of visitors who increase the length of their trip to enjoy Metroparks amenities. As this analysis has shown, tourism is an important and growing economic driver in Lucas County. Metroparks plays an important role in supporting the tourism industry. These amenities, special events, and activities attract new visitors to the region, bringing new dollars into the local economy. Further, for those already in the area visiting family, traveling for business, or taking vacation, Metroparks offers a host of amenities and activities that enhance the visitor experience. Altogether, Metroparks provides critical public-facing amenities that are both directly supporting tourism and contributing to the reputation of Toledo and the surrounding region.

**TABLE 10. TOURISM SPENDING FROM
TOLEDO BOTANICAL GARDEN
AND HOLIDAYS IN THE MANOR HOUSE**

Category	Nonlocal visits	Tourism spending (2018\$)	Local tax revenue (2018\$)	State tax revenue (2018\$)
Toledo Botanical Garden	148,000	\$8,880,000	\$225,000	\$331,000
Holidays in the Manor House	9,410	\$566,000	\$14,400	\$21,100
Total	157,000	\$9,450,000	\$240,000	\$352,000



CASE STUDY

Economic impacts of bird watching

Bird watching, or birding, provides important economic impact to the county and greater region. According to Kimberly Kaufman, executive director of the Black Swamp Bird Observatory, over 90,000 birders visit the area to observe migrating birds. Birders come from every state and 32 countries and spend nearly \$40 million in local businesses. This spending occurs during the shoulder season, and businesses now open nearly a month earlier to accommodate this activity.⁶¹



Providing recreational value

IN ADDITION TO BOLSTERING THE TOURISM ECONOMY, THE PARKS AND TRAILS OWNED AND MANAGED BY METROPARKS PROVIDE SUBSTANTIAL ECONOMIC BENEFITS THROUGH THEIR WIDE USE BY LOCAL RESIDENTS. These amenities offer value to residents in Lucas County by providing access to recreational opportunities such as walking, hiking, enjoying nature, observing wildlife and birding, visiting with family, relaxing, playing in playgrounds, picnicking, and photography. This section measures the recreational value that accrues to local residents who use Metroparks. The value from nonresident use is excluded from this analysis since it is accounted for in the tourism section (see page 22).

Economists know that park and trail amenities provide value because people are willing to pay for recreational access to trails, parks, and even private facilities. This value exists even if individuals do not have to pay to access these amenities (e.g., pay an entry fee). Most recreational uses in Metroparks are available at low or no cost. Thus, the benefit accrues to the user in one of two ways: by providing cost savings to individuals who were willing to pay to recreate but did not have to, or by providing travel cost savings to individuals who do not have to travel to access a substitute site. In this section, The Trust for Public Land estimates the number of recreational users and the recreational value gained by residents.

To calculate the recreational use value to residents of Lucas County, The Trust for Public Land first determined the number of visits to Metroparks. To do this, The Trust for Public Land relied on the results of a professionally conducted telephone survey of Lucas County residents.⁶² Respondents provided information about the frequency of their visits to Metroparks, as well as detailed information about the types of activities in which they participated.

The survey results indicated that 68.6 percent of adults and 88.2 percent of children visit Metroparks annually. These levels of participation are consistent with national trends in recreational use. The results also indicate that the most popular activities for children were walking or hiking followed by general park use (such as sitting, picnicking, visiting with family and friends, reading, relaxing, and visiting playgrounds) and biking. For adults, walking or hiking was followed by general park use and taking photographs or viewing birds and wildlife. These activities are also in the top five for adults and children combined. See [Table 11](#) for a listing of the five most popular activities overall. To be conservative for the purposes of the recreational use analysis, the self-reported participation data were adjusted to account for participation in multiple activities during a single visit, as well as the overreporting of park use by respondents. The Trust for Public Land also adjusted weekly reported participation in park and recreation activities to account for seasonality. For example, paddle sport participation drops to lower levels during certain times of year, such as in the winter months. As such, participation is not included in this analysis for those months.



Each visit a resident makes to Metroparks Toledo has value. Once participation was determined, The Trust for Public Land assigned dollar values to each park use by each participant in each activity. The methodology applied by The Trust for Public Land was developed using the framework of the Unit Day Value method, which the U.S. Army Corps of Engineers employs to count park visits by specific activity, assigning each activity a dollar value.⁶³ The Trust for Public Land determined the value of recreation activities in Lucas County utilizing market rates or estimates of outdoor recreation value from Oregon State University's Recreation Use Values Database. Oregon State University's database contains values for more than 20 activities and is

**TABLE 11. TOP FIVE ACTIVITIES IN METROPARKS TOLEDO
AS DETERMINED BY SELF-REPORTED PARTICIPATION**

Activity	Total visits	Child visits	Adult visits
Walk or hike	1,200,000	269,000	930,000
General park use	691,000	251,000	439,000
Run or jog	549,000	177,000	372,000
Take photos or view birds and wildlife	547,000	151,000	396,000
Bike	426,000	180,000	246,000

based on over 420 economic studies that estimated the use value of recreation activities in the United States and Canada from 1958 to 2015.⁶⁴ In determining which values to use, The Trust for Public Land's economists applied the values most conservative and relevant to Lucas County.

The average value per visit of \$6.73 is a unique calculation for Lucas County park users across all activities they engaged in (Table 12 [🔗](#)). The value was calculated based on the frequency and type of park visits engaged in by Lucas County residents in the past year. It takes into account the different types of activities available to residents, seasonality of park use, varying values by park activity, and the economic concept of diminishing returns, in which the first visit is worth the most and value decreases for each additional use.

Applying these values to the number of visits to Metroparks by children and adults, this analysis finds the recreational use value for Lucas County is \$27.5 million for 2018 (Table 12 [🔗](#)).⁶⁵

TABLE 12. THE ANNUAL ECONOMIC VALUE OF RECREATIONAL USE IN METROPARKS TOLEDO (2018\$)			
	Person visits	Average value per visit	Value
Total	4,090,000	\$6.73	\$27,500,000

To be conservative for the purposes of the recreational use analysis, The Trust for Public Land designed the approach to be conservative in several ways.

- The Trust for Public Land adjusted the data to account for individuals' participation in multiple activities during a single visit, such as walking, wildlife watching, and visiting a playground.
- The Trust for Public Land addressed the tendency of individuals to overreport park visitation due to recall bias as well as the fact that park visitation is perceived to be a socially desirable activity.⁶⁶
- The Trust for Public Land considered fluctuations in usage by season.



- In quantifying the benefits of resident use, The Trust for Public Land also recognized that not every visit within a given period has the same value to the visitor. In fact, additional uses of a park are less valuable than the first use.
- The Trust for Public Land also took into account any fees charged to participate in an activity. The per-person fee is subtracted from the imputed value and only the “extra” value is assigned. For example, if participation in an archery program costs \$6 at a Metropark and \$12 at a private facility, the value of the resident’s first time practicing archery at Metroparks would be \$6.

These results are consistent with the results of Metroparks Toledo visitation estimates that are based on counters. For the 2018 calendar year, Metroparks estimated that 4.97 million visits occurred within the park system. Based on the tourism analysis, The Trust for Public Land estimates that approximately 872,000 park users are visiting from outside Lucas County. In addition to those visits, this recreation analysis estimates that 4.09 million visits are made by residents. Together, this accounts for 0.1 percent fewer visits than is estimated by the Metroparks counters. In addition, these estimates are consistent with other surveys that have been conducted about use of Metroparks, such as a 2017 survey of residents in which Metroparks sought information about an upcoming levy.⁶⁷

Providing health care cost savings

ACCESS TO PARKS AND TRAILS, LIKE THOSE PROVIDED BY METROPARKS, CAN HELP A COMMUNITY MEET ITS HEALTH GOALS AND REDUCE MEDICAL COSTS FOR RESIDENTS. The relationship between health, nature, and parks is well documented in the health care literature and recognized locally through partnerships between Metroparks and health organizations, such as ProMedica and Mercy Health. This section recognizes the important role that parks and trails, including those owned and maintained by Metroparks Toledo, play in improving health, discusses relevant literature and data, and measures the health care cost savings to residents that result from their physical activity and exercise in Metroparks.

Parks provide numerous health benefits, from enhancing mental health to improving physical health. Research indicates that people who have increased exposure to the outdoors show long-term mental health improvements. Several studies have demonstrated that access to public outdoor spaces can decrease stress, aid in mental fatigue recovery, and reduce levels of depression and anxiety.⁶⁸ Exposure to natural environments or more green areas provides further benefits. Researchers have found that leisurely walks in natural environments lead to a 12 percent decrease in the stress hormone cortisol and are linked to lower depression and perceived stress.⁶⁹ In addition, women living with a higher amount of greenness around their homes had a 12 percent lower rate of death from non-accidental causes compared to women living with the least amount of greenness.⁷⁰ Metroparks consists of many passive-use parks that improve the mental health of Lucas County residents.

In addition to mental health benefits, studies have found that physical inactivity and poor diet together are the second-leading cause of death in the United States.⁷¹ Physical exercise can reduce the likelihood of illnesses such as obesity, cardiovascular disease, diabetes, and arthritis, and, consequently, it can also reduce the associated medical costs.⁷² There are many potential ways by which nature has been empirically tied to specific physical and mental health outcomes.⁷³ Studies of health care economics and policy have established that increased access to public outdoor spaces and more biking and walking infrastructure encourages people to exercise, reducing overall health care expenditures.⁷⁴ Investment in public open space encourages behavioral changes that not only reduce chronic diseases and health care costs, but also improve quality of life.⁷⁵

The Robert Wood Johnson Foundation recently ranked the health of Ohio counties, taking into consideration length of life, quality of life, health behavior (including physical inactivity and access to exercise opportunities), clinical care, social and economic factors, and the physical environment. The results show that Lucas County residents are more physically inactive than the average Ohioan. That is, according to the Robert Wood Johnson Foundation,



27 percent of Lucas County's population was physically inactive in 2018, compared to 26 percent of the state's residents. The community's physical activity was lower despite the fact that Lucas County residents have more access to exercise opportunities. That is, 95 percent of the county's residents have access to exercise opportunities, compared to 85 percent of the state's population.⁷⁶

Physical inactivity and obesity are challenging health problems that have significant impacts on the resident population. In 2018, 33 percent of Lucas County residents were obese.⁷⁷ Physical inactivity and obesity can lead to chronic illnesses, which cost Ohioans significant amounts each year. If Ohioans could reduce the average body mass index (a measure of body fat based on height and weight) by 5 percent, the state could save as much as \$1.2 billion in health care spending and prevent 650,000 cases of diabetes, heart disease, and cancer by 2030.⁷⁸

The most recent Lucas County Community Health Needs Assessment identified physical inactivity as one of the major risk factors for cardiovascular disease, along with smoking, obesity, high cholesterol, high blood pressure, and diabetes.⁷⁹ The 2015–2018 Community Health Improvement Plan ranked priorities to address key health issues, and adult weight control, which consists of obesity, nutrition, and physical activity, was the top priority. Child weight control was the third overall priority.⁸⁰

Metroparks is committed to improving the health of area residents through facilities, programming, and partnerships. This role in the community is acknowledged by key health experts and organizations. For example, as part of Lucas County's strategies for increasing



health, and specifically increasing healthy weight status for residents, the county has implemented a community-based walking program. Parks and recreation centers were identified as a strategy for prevention.⁸¹ Metroparks provides critical opportunities for active recreation within its parks and trails.

Beyond providing access to parks and trails for active recreation, several key initiatives of Metroparks include programming focused on health. For example, Metroparks Toledo started a trail challenge to encourage community members to set a goal for the number of miles they want to walk in a year, from June 2018 to June 2019. The challenge kicked off on National Trails Day in 2018. “Go hit the trails for your health and hopefully discover new areas of the Metroparks you have never discovered before,” said Scott Carpenter.⁸² The challenge, which is open to all community members, had approximately 700 participants last year and a similar number are expected this year.⁸³ One especially dedicated community member walked over 600 miles in fewer than 80 days, putting in an average of three and a half hours at the park each day, and averaging about 10 miles.⁸⁴ In addition to programming that supports the health of residents, Metroparks recently opened a new trail for mountain bikers at Oak Openings Preserve Metropark, which hosts events to introduce residents to the sport of mountain biking.⁸⁵ Metroparks was also instrumental in starting a bike share program in downtown Toledo, which will be critical to enhancing the connectivity and accessibility of the city and the Metroparks system.⁸⁶

Another example of Metroparks programming is focused on vulnerable populations. Because physical inactivity and obesity are not evenly distributed across the population, the most vulnerable populations must be addressed to ensure equity in health outcomes, especially considering the fact that in Lucas County, Hispanic and African Americans are most at risk for being obese or overweight.⁸⁷ Metroparks specifically targets these populations in its Connections Camps programming. These camps engage at-risk and underserved children in free summer camp adventures in the parks. Using nature as a classroom, children of many diverse backgrounds experience the natural world through a variety of hands-on fun and educational activities. Children are immersed in activities such as canoeing, kayaking, archery, fishing, survival skills, photography, art, and journaling. Children learn to care for the environment and develop respect for themselves, others, and their communities. Metroparks works with different agencies in the Toledo area to bring students for a weeklong, day camp experience. Most of the children attending at Connections Camp have never visited a Metropark prior to camp. Connections Camp is held for five weeks in the summer and each week brings different children and community agencies to the Metroparks; in 2018, 544 children attended along with 93 adults. Introducing children to dynamic, outdoor activities gives them a chance to learn new skills that can be honed and enjoyed over a lifetime. Children can reduce the likelihood of obesity and gain a sense of accomplishment. All these outdoor activities are set in some of the most beautiful and unique natural areas in the state, where children can experience the mental health benefits of being in nature.

Recognizing the links between parks, physical activity, and health, Metroparks and ProMedica are also working together. In 2016, ProMedica stepped up to purchase and hold the former Marina District site in downtown Toledo after years of development plans that did not materialize. ProMedica continues to work on the transfer of 60 acres of this property to Metroparks over several phases, allowing Metroparks the time to secure necessary funding for acquisition, restoration, and park development. According to Randy Oostra, president and CEO, “at ProMedica, we believe parks play an important role in our community and they are critical to the health and well-being of our citizens. We point to the Metroparks and our other cultural assets during recruitment and when designing our wellness programs. In fact, many of our facilities have walking trails of their own and several are near Metroparks. ProMedica was deeply involved in the 22nd Century report that showed our community is lacking in the essential parks and greenspaces it needs, especially in the central business district. Research also shows that parks drive economic vitality. We are looking forward to continued conversations about how we can work together in partnership with Metroparks and others to increase access and better connect existing assets.”⁸⁸

Metroparks is also partnering with Mercy Health to implement a series of FitPark outdoor exercise areas. The Mercy Health Foundation is donating \$100,000 a year for five years to fund the installation of fitness equipment that residents can use to improve their health. The first FitPark was opened in September 2018 at Wildwood Preserve Metropark. “At Mercy Health, our commitment to health extends beyond the walls of our facilities. We want to empower the community to take back their own well-being and start the journey to healthy living,” said Bob Baxter, president, Mercy Health–Toledo & Lima. “The Metroparks are a staple in Northwest Ohio and they serve as a great community destination for outdoor fun and exercise. Mercy Health is honored to partner with them to bring another way for the community to enjoy getting fit in the outdoors.” Mercy Health and Metroparks are currently working on FitPark Ride, located at Oak Openings Preserve Metropark, which is scheduled to open later this year.⁸⁹

In this analysis, The Trust for Public Land measured the collective cost savings realized on an annual basis by residents of Lucas County who use the Metroparks Toledo system exclusively to exercise at a frequency, duration, and intensity that results in health care cost savings. The Centers for Disease Control and Prevention (CDC) recognizes that physical activity helps improve overall health and reduces the risk for chronic diseases. As such, the CDC promotes physical activity guidelines, defining sufficient activity as at least 150 minutes of moderate-intensity activity per week or at least 75 minutes of vigorous-intensity activity per week, along with muscle-strengthening activities at least two days per week.⁹⁰





Having access to places to walk can help individuals meet recommendations for regular physical activity.⁹¹ Parks are some of the most commonly reported convenient places for improved physical and mental health, especially if the space is well maintained, safe, and accessible.⁹² From a public health perspective, parks provide low-cost, high-yield wellness opportunities.⁹³ In addition to providing a location for physical activity, Metroparks Toledo offers significant staff and programming to reach residents. This is key because a growing body of literature shows that park use and physical activity in the park system increase with more staff members and programming.⁹⁴ Based on the CDC's guidelines for physical activity, The Trust for Public Land used the results of the professionally conducted telephone survey (see page 30) to determine how many adults were using Metroparks at a frequency and intensity that would result in health care cost savings. The Trust for Public Land conservatively defines vigorous- and moderate-intensity physical activity according to the guidelines developed by the CDC⁹⁵ and assumed the lowest level of intensity possible for each activity. That is, if the respondent reported bicycling, The Trust for Public Land assumed he or she did so at a leisurely pace on level terrain, which qualifies as a moderate activity, rather than bicycling at a brisk pace or on steep uphill terrain, which qualifies as a vigorous activity. The Trust for Public Land limited vigorous-intensity activity to running or jogging. Moderate-intensity activities included walking, hiking, road or mountain biking, paddling, and winter sports, including sledding, cross-country skiing, snowshoeing, and ice skating. The health analysis does not include sedentary or low-heart-rate activities, such as picnicking, wildlife watching, or fishing. In addition, individuals must utilize the Metroparks exclusively to an extent that is sufficient to meet the CDC's physical activity guidelines. This analysis does not include individuals who use municipal or state parks and trails or private facilities in conjunction with Metropark facilities to meet the CDC's physical activity thresholds. This analysis finds that 9,030 adult residents of Lucas County improve their health to a degree that meets the CDC's physical activity guidelines by using Metroparks Toledo.

Based on previous work in health care economics, The Trust for Public Land assigned a value of \$1,230 as the annual medical cost savings between adults under 65 years old in Lucas County who exercise regularly and those who do not. The Trust for Public Land chose this value based on a careful review of health care economics literature that focuses on the cost difference between physically active and inactive persons. The cost savings were based on the National Medical Expenditures Survey, which has been widely cited in similar studies.⁹⁶ The Trust for Public Land adjusted the medical care cost savings for inflation and converted the value to 2018 dollars.⁹⁷ The Trust for Public Land doubled the health care cost savings for persons over the age of 65 because seniors typically incur two or more times the medical care costs of younger adults.⁹⁸ This doubling of health care cost savings is conservative. For example, one study found that average health care expenses for adults over 65 were over three times those of working-age people.⁹⁹

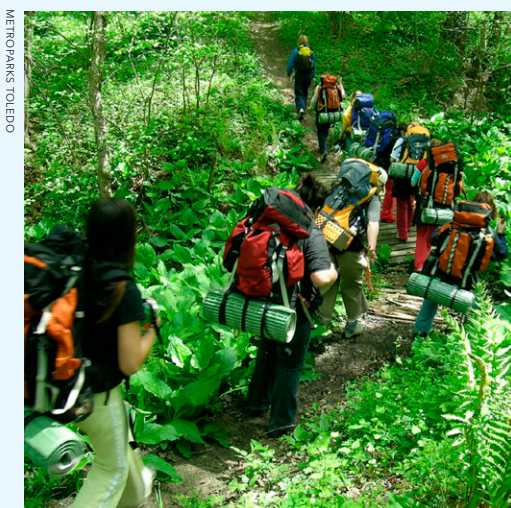
In 2018, the combined health savings gained by residents of Lucas County who were physically active in Metroparks Toledo were \$12.5 million (Table 13 [🔗](#)).

TABLE 13. ESTIMATED HEALTH BENEFITS OF LUCAS COUNTY RESIDENTS' PHYSICAL ACTIVITY IN METROPARKS TOLEDO (2018\$)	
Adults 18-64	Value
Number of adults (18-64) physically active in parks	7,980
Average annual medical care cost difference between active and inactive persons 18-64	\$1,230
Subtotal of health care benefits (18-64)	\$9,850,000
Adults 65+	
Number of adults over 65+ physically active in parks	1,060
Average annual medical care cost difference between active and inactive adults over 65 years old	\$2,470
Subtotal of health care benefits (65+)	\$2,610,000
Total adults physically active in parks	9,030
Total annual value of health benefits from parks	\$12,500,000

Parks and youth

It has been shown that public outdoor spaces also provide important benefits to children and childhood development.¹⁰⁰ Multidisciplinary research has consistently shown that child's play, playgrounds, and parks are linked to positive development of neural pathways for large and small motor skills and social skills.¹⁰¹ Parks and trails can also provide additional benefits to children with developmental disorders. For example, one study on the effects of outdoor playtime on children with attention-deficit/hyperactivity disorder (ADHD) showed that a 20-minute exposure to the outdoors, such as walking in a park or reservation, improved concentration just as effectively as

common prescription medications.¹⁰² Similarly, other studies have found that limited or no access to nature leads to higher rates of ADHD and other mental disorders.¹⁰³ In acknowledgment of the importance of outdoor play to the health of children, Metroparks developed a new inclusive playground at Secor Metropark. The playground provides a place where any child can enjoy playing outside and was recently recognized as an Inclusion National Demonstration Site.¹⁰⁴



that children and adolescents participate in at least 60 minutes of physical activity per day, including an appropriate mix of aerobic, muscle-strengthening, and bone-strengthening activities at least three days per week; however, only 26 percent of children in a recent survey participated in at least 60 minutes of physical activity every day in the past week, and 13 percent of youth did not participate in at least 1 hour of physical activity on any day in the past week.¹⁰⁵

Providing access to parks and trails for youth is an essential benefit provided by Metroparks Toledo, especially given the extent to which physical inactivity and its related health challenges affect youth in the region. For example, the CDC recommends

This estimate allows interested parties to gain a sense of the health value provided by Metroparks. Additional value is likely provided by:

- Physical health benefits that result from active park use by adults that partially contributes to medical care cost savings. That is, while many residents use parks to engage in physical activity within Metroparks exclusively at a frequency, duration, and intensity that meet CDC guidelines, others use these amenities in combination with other public or private amenities to improve their physical health.
- Mental health benefits that adults receive from using these spaces.
- Health care cost savings that result when children use these resources to an extent that makes them healthier—physically and mentally.

Bolstering economic development

METROPARKS TOLEDO CONTRIBUTES TO ECONOMIC DEVELOPMENT. These amenities enhance quality of life as well as offer many leisure opportunities that are important generators of economic activity—attracting talent, employers, and investment to the region. This section explores how these amenities enhance quality of life, boost the recreation economy, and support local businesses. It includes in-depth statistics on participation in recreation and annual household spending on sports and recreation equipment, indices of market and spending potential, and a comparison of these results for Metroparks with the national average and three comparison park districts.

Quality of life

Quality of life plays a critical role in the region's economic development. Employees in today's economy consider more than salary when choosing where to work. For example, focus groups conducted by Carnegie Mellon University have found that young creative workers, particularly those in high-technology fields, consider lifestyle factors, such as environmental and recreational quality, more heavily than the job itself when choosing where to live.¹⁰⁶ Additional research on local economic development has focused on quality of life and concerns about the natural, social, and cultural environment as well as on lifestyle affordability. This research has looked at a broader range of quality-of-life considerations, from transportation and housing to health care, labor, and the environment. Parks contribute to local economic development by making communities more attractive to new residents and also providing low-cost opportunities for recreation and health that increase the quality of life for residents.¹⁰⁷

The Toledo region has received accolades for its high quality of life and livability. Toledo's park system is one of the top three reasons for living in the city that *Livability* suggests Millennials should consider, citing the 77 percent of Toledoans who are within a 10-minute walk of a park and the city's 14 parks that offer over 120 miles of trails and other recreational offerings.¹⁰⁸ According to *U.S. News and World Report*, Toledo is a great place to live for people who want easy access to the outdoors because the Metroparks system offers residents opportunities such as camping, fishing, hiking, and biking, making it the second-best metro area in the United States.¹⁰⁹

The importance of the region's quality of life for economic development is acknowledged by the region's community and economic development organizations as well as its business community. According to the Comprehensive Economic Development Strategy for Northwest Ohio and Southeast Michigan, the region's relatively high quality of life and wide variety of recreational opportunities are critical factors that help attract and retain workers. Ensuring a



high quality of life for residents and businesses is one step in the proposed five-step economic development strategy. The industries that are targeted as part of the economic development strategy include financial, information, leisure and hospitality and professional and business services.¹¹⁰ The Downtown Toledo Master Plan also recently identified the key to attracting and retaining young, talented workers: investment in creating downtown places that include housing, parks and greenspace, walkable streets, bike facilities, public art, transit, traffic calming, and outdoor dining.¹¹¹ According to Melinda Huntly, executive director of the Ohio Travel Association, “Transportation networks, workforce training . . . these and other attributes of a community are important for economic development. But we often think of things in terms of either/or. In reality, it’s an either/and situation. Businesses don’t relocate; people do. And to entice these business decision makers, there are multiple assets that must be in place, including access to outdoor recreation, trails and parks.”¹¹²

Local businesses see the value of Metroparks in creating a vibrant and attractive community and thus support the park and trail system. According to Don Rettig, director of Community Affairs and president of Owens Corning Foundation, “Along with low cost of living and a world class art museum and zoo, our parks are certainly one of the highlights we discuss when recruiting talent. Our people also enjoy volunteering for many local organizations, Metroparks

among them.” The direct adjacency of Middlegrounds Metropark to the Owens Corning campus is a bonus for employees, who, Rettig says, “enjoy it a great deal and we think it greatly enhances the downtown experience for all. More and more of our people, particularly young adults and empty nesters, are choosing to live downtown.”¹¹³

The future Glass City Metropark in downtown Toledo is also already spurring economic development. There are plans to build a 360-unit residential complex adjacent to the project site. According to the developer, Frank Kass of Continental Real Estate of Columbus, Metroparks’ plan for the new riverfront park on the adjoining land is vital to the \$50 million investment he expects to make.¹¹⁴ Businesses adjacent to the future Metropark should be able to take advantage of the increase in traffic in the area. Future park amenities will additionally boost the quality of life for local employees and help enhance curb appeal in the area. Parks, trails, and open spaces are critical to creating economic opportunities—especially in areas and for demographic groups that have traditionally lacked access to these opportunities. Metroparks is part of the evolving and innovative community-wide conversations that are focused on creating solutions to these issues in the region. As Kimberly Cutcher, executive director of Toledo Local Initiatives Support Corporation (LISC), explains, “LISC believes that greenspace development, whether passive or actively programmed, is key to cultivating talent and providing the types of amenities that young professionals and others seek. These amenities are also desired by professionals on the global market that are looking for denser, pedestrian-friendly, planned spaces. While that’s true for this competitive labor market, parks and trails are also essential to increasing neighborhood stabilization, mental and community health, and public safety for the entire community. LISC sees opportunity in being able to work with Metroparks and a diverse coalition of partners, to bring these benefits to all of Toledo, especially the core city where residents would benefit immensely from neighborhood revitalization that connects people and places to equitable access to parks and economic opportunity, especially with women and minority-based businesses.”¹¹⁵

Boosting the recreation economy

In addition to improving the quality of life, which supports a vibrant workforce and provides equitable economic opportunities, Metroparks bolsters local sales by attracting visitors. According to Neal Kovacik, general manager at Maumee Bay Brewing Company, “The Middlegrounds Park next door, that’s bringing a lot of people in. We’re very happy they’re making use of the river asset. All of the businesses around here are starting to pick up.”¹¹⁶ Recognizing the importance of optimizing these river resources, Metroparks is also working with a number of partner groups, including the Healthy Downtown Toledo Coalition,




ConneCToledo, and the Downtown Development Corporation to implement a riverwalk along downtown Toledo's Waterfront.¹¹⁷

Metroparks amenities also enable recreation activities that generate economic benefits by supporting related businesses, including those that sell recreation equipment. In order to understand the recreation-related economic activity that occurs in Lucas County, The Trust for Public Land utilized information from the Esri Business Analyst tool, which allows users to understand the local economy, consumer behavior, participation in leisure activities, and business activity for a defined geography.¹¹⁸

Using this tool, one can begin to understand how an area compares to U.S. averages, as well as to other places across the country, such as the three comparison counties considered in this analysis: Ada County, Idaho; Douglas County, Nebraska and Kent County, Michigan.¹¹⁹ These counties contain Boise, Omaha, and Grand Rapids, the three main competitors that have been identified in benchmarking exercises by the Toledo Regional Chamber of Commerce, based on a host of factors including city size, employees and employers, chamber size and programs, and similarity. The Trust for Public Land used data obtained with Esri Business Analyst and from the Bureau of Economic Analysis to understand how the Lucas County economy compares with the

TABLE 14. DEMOGRAPHIC CONTEXT FOR COMPARISON COMMUNITIES (2018\$) ¹²⁰							
County	Population, 2018	Median age, 2018	Households, 2018	Median household income, 2018	Average amount of household budget, 2018	Market potential index, total household budget, 2018	Gross domestic product, 2015
Lucas	436,000	38.3	179,000	\$47,500	\$57,100	80	\$26,500,000,000
Ada	468,000	36.1	175,000	\$61,800	\$71,000	100	\$25,500,000,000
Douglas	571,000	35.0	223,000	\$59,200	\$71,200	100	\$45,600,000,000
Kent	652,000	36.0	245,000	\$55,400	\$64,600	91	\$42,100,000,000
Average (Ada, Douglas, Kent)	563,000	35.7	214,000	\$58,800	\$68,900	97	\$37,700,000,000
Lucas compared to average	77%	107%	84%	81%	83%	83%	70%

other communities (see Table 14 ). Overall, Lucas County's economy is less robust. For example, the median household income in Lucas County is lower than each of the comparisons; in fact it is only 81 percent of the average for Ada, Douglas, and Kent Counties. Lucas County also has the lowest and oldest population, and one of the smallest economies based on gross domestic product.

Esri Business Analyst compiles estimates of expenditures and calculates a spending potential index (SPI) that represents the amount spent for products and services relative to the national average. In 2018, Lucas County households spent an average of \$57,100 on household budget expenditures, including items like food, housing, transportation, health care, and education. This is 80 percent of the national average for household budget expenditures, which also falls below the household spending of the comparison communities. These findings will provide important context for interpreting the statistics related to recreation spending later in this section.

Participation in recreation

While the recreational use survey discussed earlier in this report looked at recreational use among Metroparks users, Esri Business Analyst allows for the examination of outdoor recreation activities across the entire population (e.g., municipal parks and private facilities). According to this tool, participation in recreation activities is prevalent among residents of Lucas County.¹²¹ The top outdoor activity was walking for exercise—22.4 percent of households did so in the last 12 months (Table 15). Other popular activities included freshwater fishing (12.4 percent), jogging or running (11.1 percent), and hiking (10.1 percent)—all recreation activities available at Metroparks. Esri Business Analyst also calculates a market potential index (MPI) that measures the relative likelihood of individuals and households in an area participating in certain activities compared to the U.S. average.¹²² Based on the market potential index, The Trust for Public Land knows that households in Lucas County are less likely than households nationwide to participate in many outdoor activities; however, Lucas County households are more likely than households across the country to fish, canoe, or kayak.

TABLE 15. ESTIMATED PARTICIPATION IN OUTDOOR RECREATION, SPENDING, AND MARKET POTENTIAL IN LUCAS COUNTY (2018)		
Activity	Percent of households participating	Market potential index (MPI)
Walking for exercise	22.4%	92
Fishing, freshwater	12.4%	108
Jogging or running	11.1%	86
Hiking	10.1%	83
Bicycling, road	9.5%	94
Canoeing or kayaking	6.6%	101
Bicycling, mountain	3.6%	88
Backpacking	3.1%	87
Ice skating	2.9%	97
Archery	2.6%	96
Horseback riding	2.1%	91

Recreation expenditures and spending potential

Individuals who participate in recreation activities purchase products to enhance their experiences, such as exercise clothing, footwear, bicycles, and fishing tackle. In addition to participation, the Esri Business Analyst tool compiles estimates of recreation expenditures and calculates a spending potential index (SPI) that represents the amount spent on products and services relative to the national average.¹²³ As with the MPI, the SPI can be useful for comparing the Metroparks Toledo district to other communities and the U.S. averages.

Residents of Lucas County spend \$28.0 million annually on sports, recreation, and exercise equipment, with households spending an average of \$139 (Table 16). This spending—among other recreation equipment expenditures—includes \$45.80 on exercise equipment,¹²⁴ \$42.90 on hunting and fishing equipment, \$22.00 on bicycles, and \$11.60 on camping equipment. From a run in the park after work to fishing at one of the six major fishing areas within Metroparks,¹²⁵ the park system enables a wide array of recreation activities and thus supports these recreation expenditures. Household spending on sports and recreation in Lucas County is lower than spending nationally or in the other comparison communities. Although actual spending is

TABLE 16. ANNUAL HOUSEHOLD SPENDING ON SPORTS, RECREATION, AND EXERCISE EQUIPMENT IN LUCAS COUNTY (2018\$)

Spending category	Average amount spent per household	Total spending	Spending potential index
Sports, recreation, and exercise equipment	\$139.00	\$28,000,000	78
Exercise equipment and gear, game tables	\$45.80	\$8,200,000	80
Bicycles	\$22.00	\$3,940,000	75
Camping equipment	\$11.60	\$2,080,000	81
Hunting and fishing equipment	\$42.90	\$7,690,000	79
Winter sports equipment	\$4.45	\$797,000	68
Water sports equipment	\$4.73	\$848,000	72
Other sports equipment	\$6.40	\$1,150,000	83
Rental and repair of sports, recreation, and exercise equipment	\$1.67	\$300,000	71

TABLE 17. ANNUAL HOUSEHOLD SPENDING ON SPORTS, RECREATION, AND EXERCISE EQUIPMENT FOR LUCAS COUNTY AND COMPARISON COMMUNITIES (2018\$)				
County	Average amount spent per household	Total spending	Median household income	Spending potential index
Lucas	\$139	\$28,000,000	\$47,500	78
Ada	\$185	\$32,400,000	\$61,800	103
Douglas	\$180	\$40,100,000	\$59,200	101
Kent	\$163	\$39,900,000	\$55,400	91
Comparison average	\$176	\$37,500,000	\$58,800	98
Lucas County compared to average	79.3%	74.7%	80.8%	79.3%

lower than the U.S. average (SPI of 78) and the comparison communities (SPI ranging from 91 to 103), income and cost of living vary greatly across communities. In Ada County, for example, average household spending on recreation equipment is 32 percent greater than for Lucas County households. Median income, similarly, is also about 30 percent higher in Ada County. This means that Lucas County households are actually spending similar amounts on recreation equipment, relative to their income. When median income is taken into account, average spending per household in Lucas County is consistent with the comparison communities (Table 17). Considering that the MPI for recreation activities in Lucas County was at or slightly below national averages, this suggests that household income, rather than recreation demand or interest, may be a larger influence on recreation expenditures. In other words, residents want to engage in outdoor recreation but have less income to spend on such activities and equipment. In light of this, the free and low-cost amenities and activities available through Metroparks provide additional value in meeting this recreation demand, especially for lower-income Toledoans.

Local recreation businesses

Metroparks are used for multiple types of activities that generate economic activity and support businesses, including those that sell related equipment. For example, in 2017, Metroparks Toledo opened the Beach Ridge Singletrack Trail, a 12-mile single-track mountain biking trail. The trail has affected local businesses, such as Spoke Life in Perrysburg. As Don DiBartolomeo, the



store's manager, explains. "The mountain bike trails that were built by Metroparks almost two years ago, combined with ongoing programming, like free mountain bike rides and camps, are having an enormous impact on the bicycling community here in Northwest Ohio. And they're keeping riders from traveling to Michigan to ride. Instead they're staying local, riding here, and then hitting up local restaurants and bars to refuel after enjoying the trails. These resources are serving as a welcome mat, adding fuel to fire, bringing new individuals and families to the sport. The mountain bike camps, in particular, are helping lots of new people discover their love for mountain biking, especially since the trails are designed for multiple skill levels. This also has the added benefit of increasing bike sales. Our mountain bike sales have gone up at least 20 percent since the new trails were put in. And the new Beach Ridge Trail Head at Oak Openings is going to solidify interest in biking even more—offering bathrooms, showers, space for events, and a place for kids to ride within their parents' view—helping to create a central hub for the mountain biking community."¹²⁶

In addition to this anecdotal evidence of the support Metroparks Toledo provides for local recreation businesses, Esri's Business Analyst tool contains information for 22 local recreation-related businesses in Lucas County.¹²⁷ This includes businesses such as bike retailers; those that sell camping, fishing, and archery equipment; wholesalers; and many others. In total, these businesses generate \$18.0 million in sales each year and employ 80 people.

Whether through renting equipment directly to park users, leading outdoor tours, or offering exercise classes at private facilities, many businesses provide recreation-related activities in the county. Not all of these businesses are directly affected by Metroparks amenities, but they support the same sort of activities and users as Metroparks, and the existence of a private market further demonstrates the value of these types of amenities to residents.

Conclusion

THIS STUDY ILLUSTRATES THAT METROPARKS TOLEDO IS A KEY ECONOMIC DRIVER THAT CONTRIBUTES TENS OF MILLIONS OF DOLLARS ANNUALLY IN ECONOMIC BENEFITS. The benefits studied in this report are just a selection of the many, varied, and robust economic contributions generated by the Metroparks system.

Local residents value being close to parks and trails and are willing to pay for that proximity. Metroparks increases the value of nearby residential properties in Lucas County by \$40.8 million and property tax revenues by \$1.13 million per year.

Parks provide natural goods and services. Specifically, by reducing the amount of stormwater, Metroparks provide a value of \$5.50 million each year. By removing air pollutants that cause damage to structures and endanger human health, the trees and shrubs within Metroparks reduce health care costs and lower pollution control costs by \$1.46 million per year.

Parks and trails also contribute to the tourism economy. By enabling outdoor experiences, as well as supporting special events and activities, Metroparks generates \$59.5 million in tourism spending each year. People who live in Lucas County also gain from Metroparks parks and trails.





Each year residents receive a benefit of \$27.5 million for the recreational use of these amenities. In addition, approximately 9,030 adult residents of Lucas County engage in physical activity at a level sufficient to generate measurable health benefits, yielding annual medical cost savings of \$12.5 million.

Metroparks parks and trails contribute to the high quality of life, which plays an important role in attracting business and employees to the county and supporting a robust recreation economy. By providing opportunities for recreation, these amenities support \$28.0 million in resident spending on sports, recreation, and exercise equipment annually, or an average of \$139 per household. Along with tourist expenditures, this spending helps support 22 sporting goods stores that generate \$18.0 million in sales and provide 80 jobs, further demonstrating that parks and trails are significant contributors to the economy in Lucas County.

This report is the first time that the significant economic benefits of Metroparks Toledo have been analyzed. The methodology reflects current best practices for economic analysis and finds that Metroparks Toledo provides extensive economic value, with these investments paying dividends throughout the region.

Endnotes

- 1 While the Metroparks system currently encompasses 12,300 acres of parkland, this analysis was conducted for the 12,200 acres of Metroparks that were part of the system at the time of the spatial analysis in August 2018. The analysis did not include 110 acres that were acquired after August 2018.
- 2 The values of the economic benefits estimated in this analysis are reported in 2018 dollars. Consumer Price Index (CPI) and Producer Price Index (PPI) data are typically released with a slight delay and were not available for 2019 at the time of analysis.
- 3 All numbers in the text and tables are rounded to three significant digits unless otherwise noted. Because of rounding, some report figures and tables may not appear to sum.
- 4 While the Metroparks system currently encompasses 12,300 acres of parkland, this analysis was conducted for the 12,200 acres of Metroparks that were part of the system at the time of the spatial analysis in August 2018. The analysis did not include 110 acres that were acquired after August 2018.
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- 10 Virginia McConnell and Margaret Walls, *The Value of Open Space: Evidence from Studies of Nonmarket Benefits* (Washington, DC: Resources for the Future, 2005); John L. Crompton, "The Impact of Parks on Property Values: Empirical Evidence from the Past Two Decades in the United States," *Managing Leisure* 10, no. 4 (2005): 203-218.
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- 13 John L. Crompton, *The Proximate Principle: The Impact of Parks, Open Space and Water Features on Residential Property Values and the Property Tax Base* (Ashburn, VA: National Recreation and Park Association, 2004).
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- 19 A home consists of a residential structure that is owned and taxed. This analysis includes single-family homes as well as multiple-unit dwellings (e.g., condominiums). Other property types were not considered in this analysis because sufficient data were not available to quantify the benefit. Nonresidential property types are rarely studied in the literature as they are more difficult to statistically analyze—there are more variables that influence value and fewer real estate transactions to compare.
- 20 The model inputs such as park acreage and permeability are based on the most recent available data.
- 21 This analysis was conducted for the 12,200 acres of Metroparks that were part of the system at the time of the spatial analysis in August 2018. The analysis did not include 110 acres that were acquired after August 2018.
- 22 Precipitation inputs for this model are based on a "typical" rain year determined from many years of actual local precipitation data. The stormwater model uses real precipitation data from the region based on the annual precipitation that is closest to normal with the smallest standard deviation for annual precipitation and for annual air temperature. Precipitation data are from the National Oceanic and Atmospheric Administration's National Centers for Environmental Information.
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- 51 Data were not included for Cedar Point National Wildlife Refuge, Mary Jane Thurston State Park, or the Biggest Week in American Birding. Cedar Point National Wildlife Refuge, part of the larger Ottawa National Wildlife Refuge Complex, provides limited levels of public access for fishing. Based on input from the U.S. Fish and Wildlife Service, The Trust for Public Land determined that Cedar Point National Wildlife Refuge is not drawing significant numbers of tourists. Mary Jane Thurston State Park is located in Wood and Henry Counties; thus, The Trust for Public Land assumed the park does not draw visitors to Lucas County. In addition, the Biggest Week in American Birding was excluded due to the unavailability of detailed data on visitors or their economic impact.
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- 57 Outdoor recreation likely includes some river- and lake-based recreation, such as that which can be accessed via Metroparks Toledo access points, like Howard Marsh Metropark, or state access points such as Maumee Bay State Park. Other amenities provide access to the lake, including Cullen Park, Bayview Park, Bayshore Fishing Access and Oregon Boat Ramp, South Shore Veterans Park, Ashcroft Drive Basin Access, Lake Erie Center Basin Access, Mallard Club Marsh Wildlife Area, and Metzger Marsh Wildlife Area. These state public access points could not be included in the analysis due to the lack of available data.
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- 121 The data analyzed here are from the Sports and Leisure Market Potential report and are based on national propensities to use various products and services, applied to local demographic composition. Usage data were collected by GfK MRI, a leading market research firm, in a nationally representative survey of U.S. households.
- 122 The MPI is tabulated to represent a value of 100 as the overall demand for the United States. An MPI of more than 100 represents high demand; a value of less than 100 represents low demand. For example, an MPI of 120 implies that demand is likely to be 20 percent higher than the national average.
- 123 The SPI is tabulated to represent a value of 100 as the overall spending for the United States. When the SPI is equal to 100 for a specific type of merchandise, consumers are spending at a rate equal to the national average. The SPI is an indicator of what level of discretionary income consumers are willing to devote to a particular good or service.

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