



# The Business Case for Supporting Clean Water in the Delaware River Watershed



Water is one of our nation's priceless resources, essential to life itself. Healthy ecosystems and a robust economy depend on plentiful, clean water — and unlike almost all other resources, water has no substitute. It's why businesses from all sectors support the need for clean water — whether to directly support their operations or simply to keep their communities and employees healthy. And in the Delaware Watershed, clean water is big business.

## The Delaware River: Supporting a Vibrant Economy

The Delaware River runs 330 miles from upstate New York to the Delaware Bay, providing a critical resource for New York, New Jersey, Pennsylvania, and Delaware. It provides a critical water supply for 15 million people in these four states — including nearly 50 percent of the drinking water supply for New York City and 100 percent for Philadelphia. Overall that's 5% of the nation's population.

More than 8,000 million gallons per day are withdrawn from the Delaware Basin to sustain the region's economy and population.<sup>1</sup> The waterway contributes over \$22 billion in annual economic activity



The Catskill/Delaware River Watershed, which extends 125 miles north of New York City, delivers more than 90 percent of the city's water supply. The rest comes from the Croton Watershed.

and supports 600,000 direct and indirect jobs, with \$10 billion in wages.<sup>2</sup> Numerous sectors rely on the clean water provided by the river for both extractive and non-extractive uses. Some sectors obviously rely on the health of the watershed. Recreation and tourism combined contribute \$1.2 billion annually, with recreational fishing alone accounting for about half

(\$575 million) annually. These activities contribute directly to local economies along the length of the river. For example, the Delaware Water Gap National Recreation Area, which straddles the Pennsylvania/New Jersey border, is one of the busiest parks in the national system and supports 2,232 local jobs, \$219 million in sales at local businesses, and \$97 million in local wages and salaries.<sup>3</sup>

<sup>1</sup> [http://www.state.nj.us/drbc/library/documents/AWRA-Mid-Atl-Conf\\_water-useBarr092613.pdf](http://www.state.nj.us/drbc/library/documents/AWRA-Mid-Atl-Conf_water-useBarr092613.pdf)

<sup>2</sup> <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1936-704X.2016.03222.x>

<sup>3</sup> <https://www.npca.org/articles/548-new-report-highlights-economic-value-and-quality-of-life-benefits-of>



### Businesses Support Clean Water<sup>4</sup>

- ★ More than 70% of small business owners believe clean water protections help spur economic growth.
- ★ 67% of small business owners are concerned that water pollution could hurt their business operations.
- ★ 71% deem it very important to improve and modernize the water infrastructure system.

A clean, healthy river also significantly enhances property values and supports a thriving riverfront economy.<sup>5</sup> Recently, cities along the Delaware River have begun revitalizing downtown areas to attract new business and promote economic growth. Wilmington, DE has seen significant growth: Condos with riverfront views now sell for over \$1 million, and small, local businesses have opened where there were once only shipping ports and manufacturing plants.<sup>6</sup> Over the last decade, Philadelphia, PA also has invested millions in development of waterfront commercial and residential properties, parks, and community spaces; in large part due to water quality improvements.<sup>7</sup>

Agriculture in the Delaware Basin is a \$3.4 billion industry and accounts for 27 percent of farm products sold in NY, NJ, DE and PA. Agriculture is supported by 61 million gallons of water per day, drawn from the basin for irrigation and livestock.<sup>8</sup> A reliable source of clean water is also essential to local farmers providing the farm-to-table produce in demand in many restaurants in New York and Philadelphia.

In any case, the region's vibrant restaurant sector is also heavily dependent on the watershed. As Emma Hollister, Director of Operations for The Cleaver Company in New York

City explains, "Especially in the food industry, so much of the quality of the final product can be traced back to the health of the conditions in which the food was grown or fished. Without clean water, our farmers and fishers would not be able to produce the food that feeds us all, and we would not be able to prepare the dishes that our clients love. There is no work-around available. Clean water is simply essential to every step of this process."

Some owners in the Delaware River Basin assert that the minerals in its water make the region's pizza and bagel dough better than elsewhere in the U.S. And New York state officials have described the water from the New York City Watershed as the "Champagne" of drinking water.

Clean water is also essential to many other industries in the region, including the fast-growing craft beer industry. As a leader of Catskill Brewery in Livingston Manor, NY says, "A change in water quality or taste forces breweries to achieve the expected flavor of the beer through a chemical process. This extra step in the brewing process increases internal costs for breweries — costs that matter for small-volume businesses like ours."

<sup>4</sup> <http://thevalueofwater.org/sites/default/files/Value%20of%20Water%20National%20Poll%202016%20Presentation.pdf>

<sup>5</sup> <https://www.nj.gov/drbc/library/documents/SocioeconomicValueDRB-UDEL-FinalRpt.pdf>;  
[http://www.delawareriverkeeper.org/sites/default/files/River\\_Values\\_Report\\_0\\_0.pdf](http://www.delawareriverkeeper.org/sites/default/files/River_Values_Report_0_0.pdf).

<sup>6</sup> [http://www.delawareriverkeeper.org/sites/default/files/Clean\\_Water.pdf](http://www.delawareriverkeeper.org/sites/default/files/Clean_Water.pdf)

<sup>7</sup> <https://philly.curbed.com/maps/delaware-river-philadelphia-development-projects>

<sup>8</sup> <http://www.state.nj.us/drbc/library/documents/WRP2015-2017.pdf>

## Clean Water is Good for Business Campaign Priorities

- ★ *Create a comprehensive, region-wide vision and strategy* to preserve clean water, a healthy ecosystem, and economic opportunities. Protecting, conserving, and managing the water resources of the Delaware River Watershed requires a coordinated, region-wide strategy. High-level government engagement from each state will ensure both the needed vision and support to advance basin restoration and protection.
- ★ *Grow funding for conservation and water infrastructure* within the Delaware River Basin. Funding for the protection and restoration of the Delaware River Basin — the source of drinking water for 15 million people and a \$25B economy — is woefully inadequate, especially when compared to available funding for other critical national waterways. All options, including federal appropriations, state and local sources like stormwater utilities and green bonds, and private investment, need to be pursued to increase overall funding.
- ★ *Decrease stormwater runoff* by investing in green infrastructure and better land-use practices. Excess water from rain and irrigation that runs from streets, parking lots, lawns, and agricultural fields carries chemicals, pesticides, and nutrients that all threaten water quality in the river. Nature-based stormwater solutions and better land-use practices can significantly reduce these sources of pollution in the river basin — often at an overall lower cost than traditional stormwater infrastructure solutions. ★

The Delaware River is what created the economic opportunity that spurred the growth of major industrial centers in Philadelphia, Camden, Wilmington, Trenton, and even New York City. Over the past two hundred-plus years, a vast array of businesses have come and gone; all reliant on the river for manufacturing and transportation. Today, power generation is the leading sector for surface water consumption. Power companies use over 5 billion gallons per day of Delaware River surface water and employ thousands of workers.<sup>9</sup> Other businesses that operate along the Delaware River include steel manufacturers, chemical companies, paper mills, cement production facilities, and oil refineries. Improved water quality benefits such industrial water users by reducing wear on equipment and costs of water and wastewater treatment.<sup>10</sup> These manufacturers rely on clean water to operate — and therefore are major partners in ensuring the health and quality of the River.

The benefits of clean water to businesses across the watershed cannot be overstated. Waters from the Delaware River Basin launched the region's economy and are crucial to its ongoing revitalization. Reliably available, clean water will stimulate more growth and opportunities for manufacturing, farming, recreation, residential real estate, and commerce in every community dependent on the watershed.

### Threats Facing the Delaware Watershed

In 1940, the Interstate Commission on the Delaware River Basin called the Delaware River near Philadelphia "one of the

most grossly polluted areas in the United States."<sup>11</sup> While conditions are certain better today than they once were, numerous threats to water quality throughout the region still exist.

#### • *Urban Runoff*

During rainstorms, water runs off roofs, roads, sidewalks, and other impervious surfaces and into drains instead of being captured in soils. This runoff water picks up pollution — from trash, excess oil, chemicals, and salt from roads and sidewalks; fertilizers and pesticides from lawns; and sediment from construction and other surfaces — and runs, untreated, into rivers, streams, and other water sources. What's more, when big cities undergo larger storms that overwhelm their combined sewer systems, raw sewage is released directly into rivers.

#### • *Agricultural Runoff*

Many farmers rely on pesticides and other chemicals to protect crops, but the way they irrigate their fields and the type of pesticides they use have a significant impact on water quality. When water runs off fields, it carries residual compounds from pesticides, fertilizers, and livestock waste.<sup>12</sup> Referred to as "nutrient pollution," these compounds affect oxygen levels in rivers and can lead to algal blooms and other negative environmental impacts. Agricultural runoff can also contaminate drinking water<sup>13</sup> and cause not only health risks but problems with taste and odor that are costly to treat.<sup>14</sup> Nutrient pollution also causes negative economic impacts to tourism, property values, commercial fishing, and recreation.<sup>15</sup>

<sup>9</sup> [http://www.delawareriverkeeper.org/sites/default/files/Environment\\_&\\_Economy.pdf](http://www.delawareriverkeeper.org/sites/default/files/Environment_&_Economy.pdf)

<sup>10</sup> <http://www.delawarewatersheds.org/wp-content/uploads/2014/09/GovernancePolicyandEconomicsofCleanWaterintheDelawareRiverBasinWinter-2014GJKauffman.pdf>.

<sup>11</sup> <https://dspace.njstatelib.org/xmlui/bitstream/handle/10929/15641/d3431939b.pdf?sequence=1&isAllowed=y>

<sup>12</sup> [http://www.delawareriverkeeper.org/sites/default/files/River\\_Values\\_Report\\_0\\_0.pdf](http://www.delawareriverkeeper.org/sites/default/files/River_Values_Report_0_0.pdf)

<sup>13</sup> <https://www.epa.gov/nutrientpollution/effects-human-health>.

<sup>14</sup> <https://www.epa.gov/sites/production/files/2015-04/documents/nutrient-economics-report-2015.pdf>

<sup>15</sup> <http://www.wrc.udel.edu/wp-content/uploads/2017/01/TheCostofClean-Waterinthe-DelawareRiver-BasinGJKauffmanDec2016.pdf>



## Green City, Clean Waters - Philadelphia

As Philadelphia grew into a thriving metropolis, the hundreds of waterways that once naturally ran through the city were channelized and connected to its sewer system. The result was that even small storms often overwhelmed the system, which released raw sewage directly into the Schuylkill and Delaware Rivers and upstream from the city's drinking water intakes. In 1987, following an amendment to the Clean Water Act, the EPA ordered Philadelphia to deal with this problem.

The city is now several years into a 25-year, comprehensive, nature-based stormwater management plan to provide environmental, social and economic benefits for the city and region, reducing Philadelphia's combined sewer overflows by 85 percent. But rather than spending an estimated \$9.6 billion to update its "gray" infrastructure, the city is instead investing an estimated \$2.4 billion in public funds — matched by private funds — to create "green" stormwater infrastructure throughout the city. This infrastructure includes roughly 10,000 acres of green spaces to capture water onsite and reduce runoff. To date, Philadelphia has built



nearly 1,100 greened acres and expects to add another 1,300 in the next three years. To date, the plan is working nearly three times better than projected, cutting storm water volume by 1.7 billion gallons. A study<sup>16</sup> by the Sustainable Business Network of Greater Philadelphia (SBN) projects the city's efforts will produce a \$3.1 billion impact in the Philadelphia economy, supporting about 1,000 jobs per year and generating \$2 million per year in local tax revenues for the entire 25-year period. ★

Photo: Basel-Almishhal

### • Manufacturing Discharge

Many types of manufacturing processes use large volumes of water. Paper, textile, and chemical manufacturers, among others, can release wastewater, adding toxic pollutants to rivers, streams, and lakes if not properly regulated and operated. These industrial discharges can threaten wildlife and ecosystems and infiltrate drinking water supplies, causing dramatic hazards to human health.

### • Power Production and Fracking

Water is used in many stages of energy production and generation, and if the process is not managed properly, causes significant risks to water quality. For example, hydraulic fracturing, or "fracking," injects water and chemicals that crack shale rock deep underground to extract oil and gas.<sup>17</sup> If not handled properly, this process can pollute ground and surface water.<sup>18</sup> Fracking may reduce water quality to the point that investments in additional water treatment are

required to make water safe to drink. Water is also used as a coolant in power plants.<sup>19</sup> In certain types of cooling systems, once the water makes its way through the plant, it is discharged at a high temperature into rivers or other water sources, which causes thermal pollution and threatens organisms living in the waterbody.<sup>20</sup>

### • Outdated Infrastructure

Water infrastructure in many cities has not been upgraded for decades or longer, and significant investment is needed to ensure our continued access to clean water. The 2017 Infrastructure Report Card from the American Society of Civil Engineers (ASCE) states that more than \$105 billion is currently needed to improve our water and wastewater infrastructure.<sup>21</sup> By 2040, unless this infrastructure deficit is addressed, 956,000 jobs will be at risk. The cumulative nationwide economic impact through 2040 is expected to be \$3.2 trillion of GDP. ★

<sup>16</sup> <http://www.sbnphiladelphia.org/images/uploads/Green%20City,%20Clean%20Waters-The%20First%20Five%20Years.pdf>

<sup>17</sup> <https://www.state.nj.us/drbc/programs/natural/>

<sup>18</sup> [https://www.psr.org/wp-content/uploads/2018/04/Fracking\\_Science\\_Compndium\\_5.pdf](https://www.psr.org/wp-content/uploads/2018/04/Fracking_Science_Compndium_5.pdf); <http://www.delawareriverkeeper.org/sites/default/files/resources/Reports/Jane%20Davenport%20ABA%20Paper%20January%209%202012%20Final.pdf>

<sup>19</sup> <https://www.energy.gov/sites/prod/files/2014/07/f17/Water%20Energy%20Nexus%20Full%20Report%20July%202014.pdf>

<sup>20</sup> <https://www.state.nj.us/dep/dsr/njcrp/thermal-pollution.pdf>

<sup>21</sup> <https://www.infrastructurereportcard.org/the-impact/failure-to-act-report/>



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For More Information on  
The Delaware River Watershed: Clean Water is Good for Business Campaign  
[cleanwater.asbcouncil.org](http://cleanwater.asbcouncil.org)