WOMEN for a Healthy ENVIRONMENT

Something's in the Water

A System Analysis on Quality and Transparency in Allegheny County Community Water Systems

APRIL 2021 — Revised June 2021

Overview

The following report analyzes Allegheny County water systems' operational and communications capacity, public accessibility and information transparency, adherence to drinking water quality standards, and strategies to reduce lead in drinking water exposure. Of the 36 water systems we contacted:

- 28 systems replied in full
- 8 did not complete the Right To Know request in full, of which 3 never replied to the request and 5 replied but never submitted complete documentation.

Despite the disparity in responses, for some measures, we were able to glean information from the water system websites or other sources and report a nearly complete dataset.

The prevalence and impact of environmental hazards, amplified by socioeconomic factors, are a threat to the health of Allegheny County residents. We analyze how the water systems in Allegheny County vary based on ownership, water source, and the Pennsylvania Department of Environmental Protection's (DEP) designation of private or public. We explain the funding obstacles that water systems face and how this nuanced process may affect sampling ability and water quality. The report provides a case study on lead in Allegheny County, juxtaposing Pittsburgh Water and Sewer Authority (PWSA) and Braddock Water Authority in the context of the Lead and Copper Rule, as well as the Municipal Authorities Act. In addition, we share the results of a DEP database search on a selection of water contaminants and the exceedances of federal thresholds. Finally, the report concludes with a transparency analysis of each water authority to assess what information is made available to the public.

Some key findings from the report include:

- Most community water systems in Allegheny County are publicly owned.
- Community water systems serving Allegheny County may be understaffed and under-resourced.
- Since 2016,[2] more than half of the community water systems had water quality-related violations.
- 80 percent of community water systems[1] reported detectable levels of lead in their drinking water in their 2019 Consumer Confidence Reports.
- Community water systems could improve their accessibility and risk communication to their consumers.

1 35 of the 36 systems had available CCR results from 2019

2 Violations accounted for in this report are from 2016 through the conclusion of data collection on March 25, 2020.

Introduction

Women for a Healthy Environment

Women for a Healthy Environment (WHE) is a nonprofit organization whose mission is to educate and empower community members to act as ambassadors regarding environmental risks so they can make healthy choices for themselves and their family and advocate for change for a better tomorrow for all. Through educational programming, technical assistance and advocacy, the organization focuses on creating healthy environments in three key areas: homes, schools and early learning centers.

Environmental Health

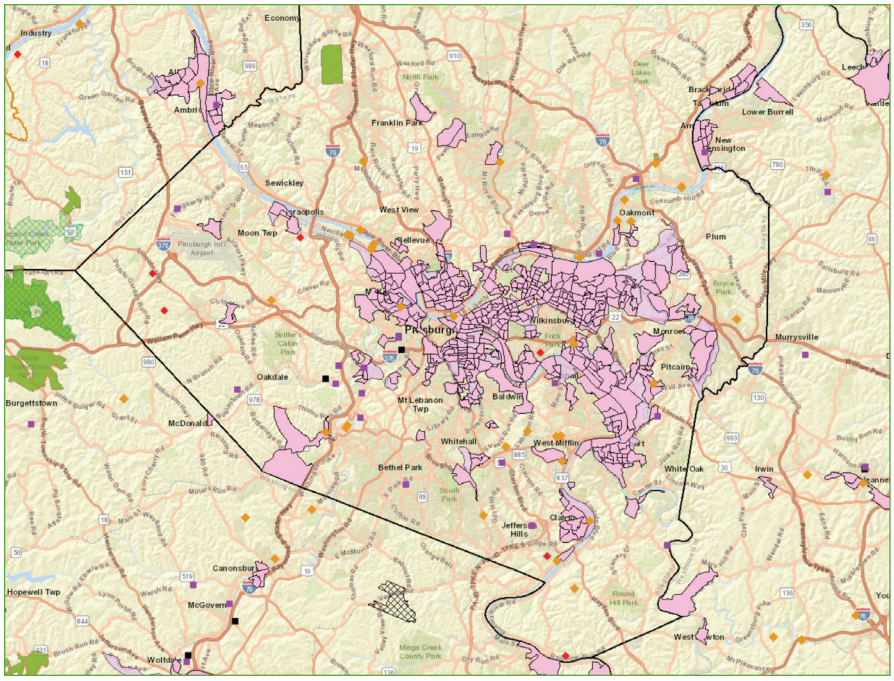
In recent years, public health professionals have focused on how the built and natural environment can affect the short- and long-term health and well-being of individuals. In Allegheny County, environmental pollution comes from point sources (e.g. shale and coke oven facilities, petrochemical development and manufacturing sites) as well as nonpoint sources, including diesel and radon. As a region with aging infrastructure, asbestos and lead are often present in our buildings, homes, soil and water. Exposure to poor air and water quality can cause asthma, damage to the central nervous system, and even death, to county residents depending on the source and the level of risk the consumer faces. For this report, we will examine how drinking water quality may affect the health of Allegheny County residents.

Environmental Justice Areas in Allegheny County

As a rust-belt region situated along three rivers, Allegheny County historically has grappled with ensuring healthy drinking water to communities in close proximity to industrial point sources. In addition to this industrial history, the demographics of Allegheny County communities, particularly those areas identified as environmental justice areas, contribute to the pertinence of this report's analysis on water quality. Both the Pennsylvania Department of Environmental Protection[3] and the U.S. Environmental Protection Agency define Environmental Justice (EJ) communities as "any census tract where 20 percent or more individuals live in poverty, and/or 30 percent or more of the population is minority." Below is a distribution[4] of EJ communities in Allegheny County.

3 Pennsylvania Department of Environmental Protection. (2020). PA Environmental Justice Areas. https://www.dep.pa.gov/PublicParticipation/OfficeofEnvironmentalJustice/Pages/PA-Environmental-Justice-Areas.aspx

4 Pennsylvania Department of Environmental Protection. (2020). Environmental Justice Areas Viewer. https://padep-1.maps.arcgis.com/apps/webappviewer/index.html?id=f31a188de122467691cae93c3339469c



Distribution of EJ communities in Allegheny County

As the map indicates, towards the center of the county, there is a higher concentration of environmental justice communities. In the next two sections, we will explore the disproportionate burden of environmental hazards such as lead exposure among EJ communities and how this burden corresponds with income and housing.

Poverty Rates and Housing Disparities for People of Color

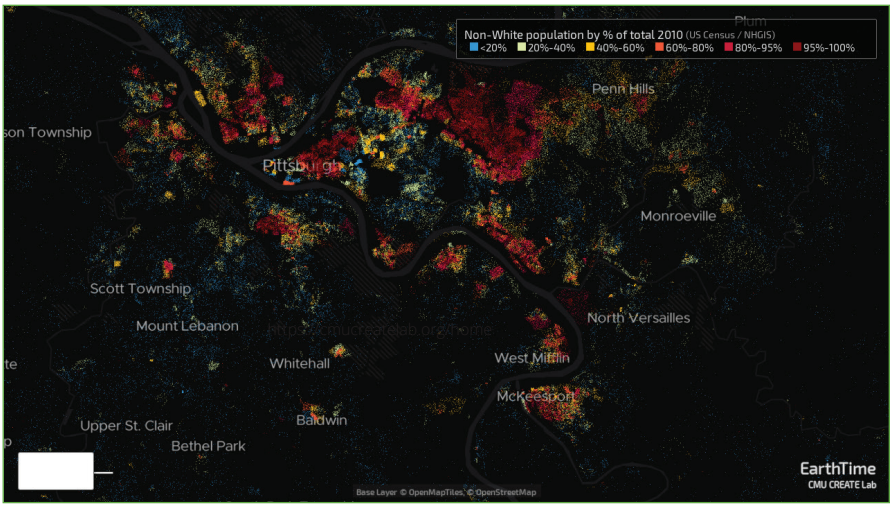
With a poverty rate of 11.7 percent and a 2018 per capita income of $36,907, Allegheny County residents often face significant financial obstacles.[5] These obstacles can prevent residents from remediating environmental hazards such as lead service lines. As we will discuss later, some water systems—such as Pittsburgh Water and Sewer Authority—have the capacity to help their fiscally disadvantaged residents secure the necessary repair. However, water systems often cannot cover these costs, forcing them to put the burden on residents to replace private lead service lines.

In terms of housing, Allegheny County has a mix of renters and homeowners. In 2018, this broke down into approximately 35 percent and 65 percent, respectively.[6] Renters and homeowners have different obligations when it comes to remediating environmental hazards in their home. In broad terms, homeowners face the responsibility of addressing the environmental hazards in their home, whereas renters have little to no control over the remediation of environmental hazards. In the case of rental units, the responsibility falls upon the property owner; therefore, if a property owner fails to address environmental hazards, the renter may suffer from exposure to lead, mold, radon, or other contaminants and may need to seek legal assistance.

5 Data USA. (2020). Allegheny County, PA. https://datausa.io/profile/geo/allegheny-county-pa/
6 United States Census Bureau. (2020). Allegheny County, Pennsylvania. https://www.census.gov/quickfacts/alleghenycountypennsylvania

Municipal water systems that do have have the means to replace privately-owned lead service lines place the onus on homeowners and rental property owners. If the landlord fails to fulfill this responsibility, and the municipality has replaced the public portion of the lead service line, tenants will likely experience high concentrations of lead in their drinking water.

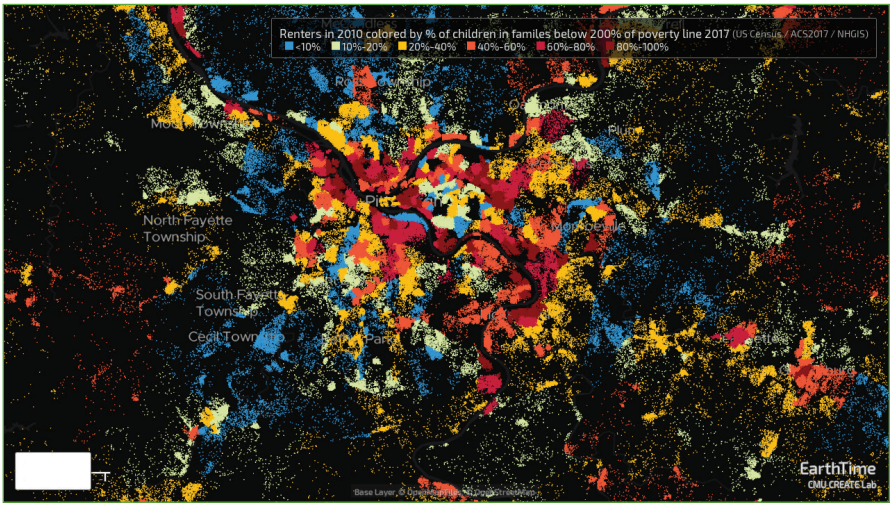
The below maps demonstrate how these inequities manifest in Pittsburgh. The first indicates how non-white populations are distributed throughout the county with blue representing the lowest percentages and red representing the highest percentages.



Source: Create Lab, https://cmucreatelab.org/home

Non-White Populations - the darkest shade of red are areas in which 95-100 percent of the total population are Non-White.

The second map shows the distribution of poverty across renting families. Red areas are communities in which 80-100% of the children living in rental housing are below 200 percent of the poverty line (in 2017).

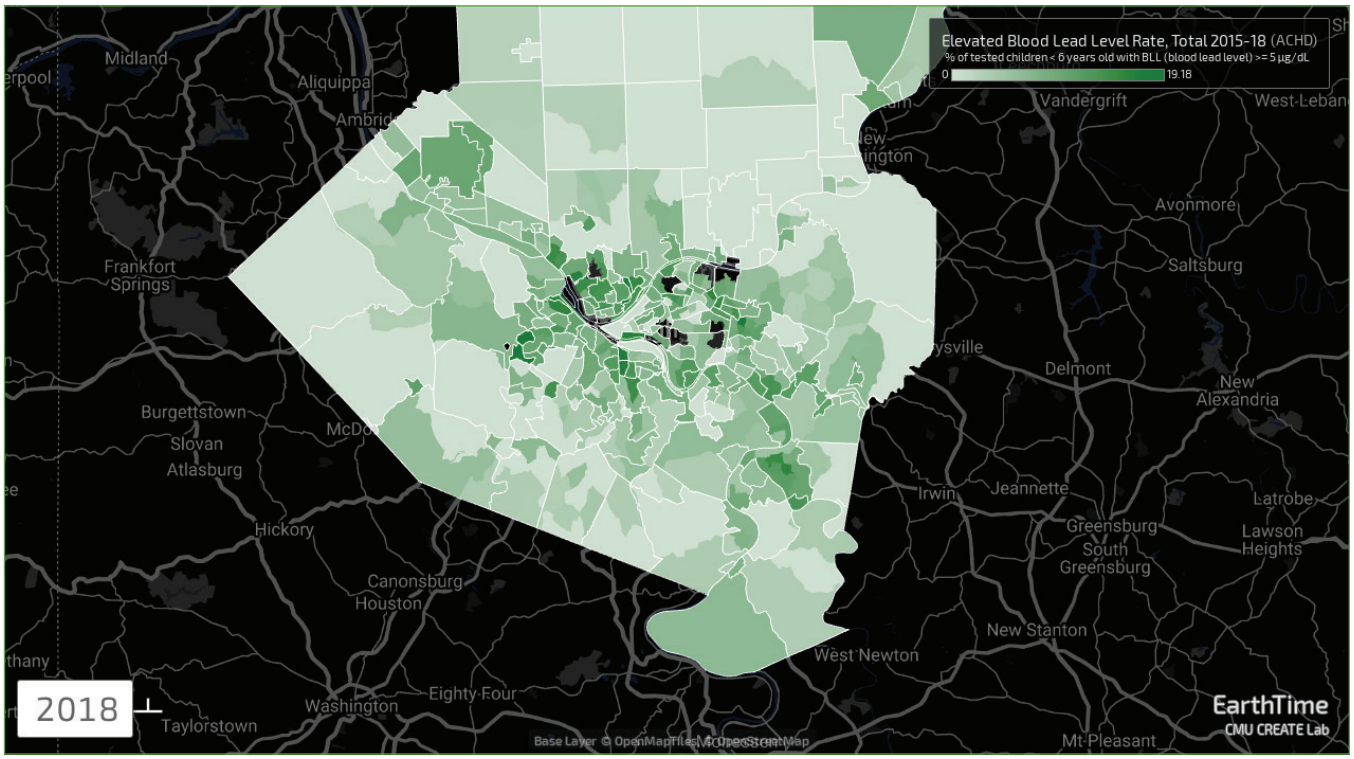


Source: Create Lab, https://cmucreatelab.org/home

Renting Families in Poverty - the darkest shade of red are areas in which 80-100% of children living in rental housing are in families below 200 percent of the poverty line.

Introduction

In this map, we see a correlation between the populations towards the center of the county where there are higher populations of residents of color. The next map shows how elevated blood lead levels (EBLLs) among children under the age of six between 2015 and 2018 are distributed throughout the county.



Source: Create Lab, https://cmucreatelab.org/home

A higher concentration of elevated blood levels are seen in the center of the county which corresponds with renters living below the poverty line.

Again, we see a higher concentration of EBLLs towards the center of the county and certain areas of Pittsburgh and Mon Valley municipalities, where there are higher populations of renters living below the poverty line and people of color and where the most EJ areas in the county are located.

Impact on People of Color

The maps show a trend. Residents of color, and impoverished residents, including renters are concentrated in similar neighborhoods where elevated blood lead levels have been recorded. Unfortunately, for renters of color facing poverty, environmental hazards tend to be magnified. In particular, communities of color face higher rates of lead exposure. The CDC website page regarding Childhood Lead Poisoning Prevention notes, "Communities of color are at a higher risk of lead exposure because they may not have access to safe, affordable housing or face discrimination when trying to find a safe, healthy place to live. This is called housing inequity, and it puts some children, such as non-Hispanic Black persons, at a greater risk of exposure to lead." [7]

According to the Pennsylvania Department of Health *2018 Childhood Lead Surveillance Annual Report*, 7.47 percent of Non-Hispanic black or African American and Hispanic children in Allegheny County tested for lead poisoning before the age of 6 (4,962) in 2018 had confirmed elevated blood lead levels. This percentage is 6.3 times greater than the 1.19 percent of non-Hispanic white children in Allegheny County tested for lead poisoning before the age of 6 (15,149) in 2018.[8]

The social and racial demographic data available suggests that there are neighborhoods where minority residents, including renters, and low-income residents are concentrated. This context is important for understanding how safe and healthy drinking water is made accessible and delivered to these communities, who may carry a disproportionate environmental health burden due to housing inequity and other important factors. Ultimately, the scope of our report is water systems in Allegheny County. We do not have sufficient racial data to draw conclusions between each individual water system in the county and the demographics of the ratepayers they serve*. However, our hope is that, in shedding light on the performance of each water system, we can increase their public accountability to mitigate the health burdens faced by those living in environmental justice areas within their service areas in Allegheny County. In fact, ensuring healthy drinking water upholds Pennsylvanians' right to "pure water" under the state constitution. We must advocate and secure that right for all residents equally but particularly those residents who have less agency and access to resources.

7 Centers for Disease Control and Prevention. (2020). Populations at Higher Risk. https://www.cdc.gov/nceh/lead/prevention/populations.htm

8 Pennsylvania Department of Health. (2020). 2018 Childhood Lead Surveillance Annual Report. https://www.health.pa.gov/topics/Documents/Environmental%20Health/2018%20Childhood%20Lead%20Surveillance%20Annual%20Report.pdf

Variations in Water Systems

When discussing water systems, it is important to note that there are several varying designations for consumer population type, ownership, and water source. These designations, in turn, impact the regulations of each water system.

Private vs. Public Systems

The U.S. Environmental Protection Agency (EPA) and the DEP break water systems down into three major groupings:

1. Community water systems
2. Non-transient, non-community water systems
3. Transient non-community water systems

Community water systems are those public water systems that supply water to the same population year-round—which is the focus of this report. Non-transient non-community water systems are those that regularly supply water to at least 25 of the same people at least six months per year. Finally, transient non-community water systems are those public water systems that provide water in a place such as a gas station or campground where people do not remain for long periods of time.

According to representatives from the DEP's Bureau of Safe Drinking Water, under both the federal and state Safe Drinking Water Acts, any facility in Pennsylvania that meets the definition of a public water system (PWS) is regulated by PA DEP. The designation of community vs. non-community—and further, non-transient vs. transient non-community—determines the specific provisions of the regulations that apply to that PWS. Generally, the permitting and monitoring requirements for non-community water systems (NCWS) may be less stringent than community water systems because NCWS are not serving a year-round residential population.

The terms private and public water systems, therefore, reflect these designations which depend upon the population size and the consistency of supplied water.

Private-Owned vs. Public-Owned Systems

Private-owned water systems are those water systems that private entities own and operate. These systems do not have an elected board of public officials who represent the consumers in the area that the water system serves. Public water systems, conversely, are more likely to interact with elected officials whom consumers can directly contact with concerns and grievances and can hold accountable with their votes.

It is important to understand that, while there are variations in representation of these water systems, there are no regulatory differences. This is to say that, as long as water systems exceed the aforementioned thresholds of either more than 25 consumers, or supplying water more than six months per year, the system will be subject to the regulations of the DEP and EPA, regardless of ownership of the system. There has, however, been some backlash towards those systems that consider switching to private ownership. Concerns include lack of accountability or transparency and increased rates.

Privatization

Another operational aspect of a community water system is its management structure. Community water systems can choose to privatize by turning over their operations or full ownership of the system to private companies. This process is called Privatization.

Under this kind of management, community water systems are controlled by investors, who are experts in producing profits not in healthy and affordable drinking water. To produce more revenue, rates may increase and corners may be cut in general operations, water quality testing programs, infrastructure improvements, or corrosion controls. For these reasons, investor-owned or investor-influenced water systems tend to be more expensive and less transparent. In fact, on average, bills cost 59 percent more when the water system is private[9]. Further, these privatized systems are less transparent as they have fewer mechanisms for public input and public oversight, such as a Board of Directors or Municipal Boards or Councils. They are significantly more difficult to hold accountable and have the tendency to hold weaker relationships with their consumers. Finally, privatization can worsen service. In fact, poor performance is the primary reason driving local governments to reverse their privatization decisions[10]. These "remunicipalized" water systems experience a 21 percent reduction in operating costs, on average[11].

Despite the fact that public water systems may not currently perform as best as they can, it is imperative to note that this performance is a result of inadequate state and federal investment in the maintenance and improvements of our aging infrastructure. Federal support for water infrastructure has declined 77% since its peak in 1977[12]. This report and its findings do not make the case for the privatization of water systems. Instead, regionalization and collaboration across water systems, along with the allocation of significant public funding, are key to community water systems' success.

Ultimately, water is not a commodity, it is a right. Public control of water is critical to a healthy democracy and a healthy community.

Pennsylvania American Water Company

To test these claims, we had hoped to analyze the price differences and transparency difference between private-owned and public-owned water systems in Allegheny County. This only fully privately-owned system servicing Allegheny County communities is Pennsylvania American Water Company. According to the 2017 Food and Water Watch report, the Pittsburgh service area of Pennsylvania American Water is the fifth most expensive water supplier in the United States[13]. While the water bills issued by this system can be noted as particularly costly for consumers, we were unable to perform a robust affordability comparison given the lack of other private-owned systems.

Additionally, this water system was not responsive to our request for information after several attempts of contacts were made. Lack of transparency sometimes associated with the privatization of water systems cannot be sufficiently supported by this single instance. Yet, it is notable.

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9 Food and Water Watch (August 2019). Digging Deeper: An Investigation into Corporate Control of Water. https://www.foodandwaterwatch.org/news/digging-deeper-investigation-corporate-control-water

10 Food and Water Watch (2015). Water Privatization: Facts and Figures. https://www.foodandwaterwatch.org/insight/water-privatization-facts-and-figures

11 Ibid 2

12 Congressional Budget Office (2018). Public Spending on Transportation and Water Infrastructure, 1956 to. https://www.cbo.gov/publication/54539

13 Food and Water Watch (2017). Top Ten Most Expensive Water Providers in the Country: 2017 Update. https://www.foodandwaterwatch.org/sites/default/files/top_ten_most_expensive_water_providers-web.pdf

Water Sources

Water systems can either directly source and treat their water or purchase the treated water from another source. The main sources of water include:

- groundwater
- purchased groundwater
- surface water
- purchased surface water
- groundwater Under Direct Influence of (UDI) surface water
- purchased groundwater UDI surface water

The major differences in sampling between systems that purchase and those that treat internally are outlined below:

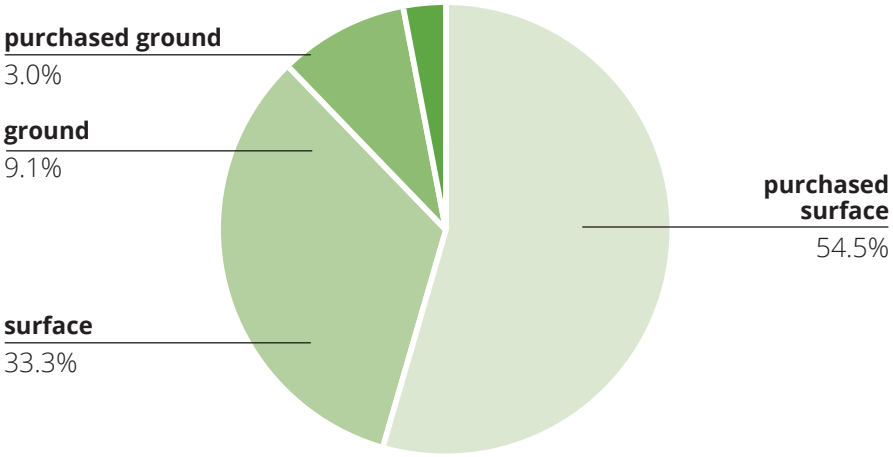
- *Purchased surface water:* system purchases water that originates from a surface source such as a river, reservoir, or intake.
- *Purchased groundwater:* system purchases water that originates from a groundwater source that is not under the direct influence of surface water (e.g., protected wells) and no surface water or groundwater under the influence of surface water sources.
- *Groundwater (GW):* system has a groundwater source that is not under the direct influence of surface water (e.g., protected wells) and no surface water or groundwater under the influence of surface water sources.
- *Surface water:* system has a surface source (e.g., river, reservoir, intake).
- *Groundwater UDI Surface Water:* system has a source that provides water under the direct influence of surface water (e.g., unprotected well or springs) and no surface water sources.
- *Purchased groundwater UDI Surface Water:* system purchases water that originates from source that provides water under the direct influence of surface water (e.g., unprotected well or springs) and no surface water sources.

According to representatives of DEP's Bureau of Safe Drinking Water, each of these different water sources requires different sampling regulations. Generally, surface water sources are required to install filtration and disinfection to meet specific log removal/inactivation requirements for microbial pathogens, such as Giardia & Cryptosporidium. Additionally, finished water monitoring requirements are more stringent. Groundwater systems that are community water systems are required to install disinfection treatment for inactivation of viruses, but filtration treatment is not required unless the source is determined to be under the direct influence of surface water. Additionally, groundwater systems may achieve a more reduced monitoring frequency for some parameters. Systems that purchase their water from another public water system are purchasing water that already has been treated and tested by the seller, so a water system that purchases all of their water from another public water system has fewer monitoring requirements.

Of all the water systems in Allegheny County, 33.3 percent utilize surface water, 9.1 percent utilize ground water, 54.5 percent utilize purchased surface water, and 3 percent utilize purchased ground water. With this information in mind, it is important to understand the regulatory differences between purchased surface water and surface water, as well as between purchased groundwater and groundwater.

The pie chart below indicates the breakdown of water source throughout all systems.

Water Types Across Systems



As the chart indicates, most water systems in Allegheny County use purchased surface water or surface water which they treat at their own facilities. With this information in mind, it is important to understand the regulatory differences between purchased surface water and surface water, as well as between purchased groundwater and groundwater.

Systems with different water sources must respond to different treatment responsibilities and regulations. Specifically, those water systems that treat their water in house and distribute it to other systems, experience more regulations as imposed by the DEP. These systems typically have to take more annual chemical samplings and, when lead levels are in exceedance, the onus of evaluating corrosion control falls upon these systems. Conversely, those water systems that purchase water do not have to evaluate corrosion control treatment when their systems are in exceedance of the federal Lead and Copper Rule (LCR), and, similarly, they have to take fewer samples annually.

However, the replacement of lead service lines falls to each individual water system, regardless of where their water comes from. As such, water systems that treat and distribute water have the monetary advantage of receiving more funds from their ratepayers; however, they face the procedural complications of treating and distributing water, higher levels of sampling, and, when necessary, evaluating corrosion control treatment and creating a lead service line inventory. With this in mind, these systems usually have ample resources but many responsibilities. Conversely, those systems that purchase water do not have to answer to as many regulations, nor do they have to evaluate corrosion control treatment when in exceedance of the LCR. However, these systems are typically replete in resources because they utilize much of their funds to simply purchase water in accordance with their source's rates. This, in turn, leaves less fiscal autonomy and can create problems when these systems need to conduct lead service line replacements.

Funding Nuances

Funding Sources and Disparities in Funding Access

Given the variation in size, oversight, and capacity of water systems, there is subsequently much variation in how water systems fund day-to-day operations as well as larger projects such as lead service line replacement—a topic we will dive into further. For the most part, water systems receive financial support from two primary channels: rates, grants, municipal bonds low interest loans

Many water systems have their rates determined by the system where they purchase water. In short, water systems that purchase ground or surface water from another system, which handles the treating of this water must adjust their rates in accordance with the rates of the system that distributes this water.

For example, Braddock Water Authority purchases its water from Wilkinsburg-Penn Joint Water Authority. As such, when Wilkinsburg-Penn Joint Water Authority raised its rates in November 2019, Braddock Water Authority, too, had to raise its rates. As a result, Braddock Water Authority was left very little room to increase rates for the purposes of public projects, such as lead service line replacements.

Another source of funding comes from local, state, and federal funding and financing which primarily manifests in the form of grants and low interest loans. Though there are numerous avenues for financial support—a list of grants and loans in Pennsylvania is attached at the end of this document—the predominant source of support for lead service line replacement in the state of Pennsylvania is PennVest.

PennVest Programs and Qualifications

PennVest, the Pennsylvania Infrastructure Investment Authority, is a state office that offers financial support in the form of grants, loans, or a combination of both to water systems for infrastructure projects. In 2019, PennVest provided low interest loans to 88 projects, and 34 of those projects received grant funding in addition to the loan support. Because many of PennVest's programs are supported by revenue from these low-interest loans, the Authority remains relatively self-sufficient and does not anticipate major impacts from the 2020 state budget. In order to apply for PennVest support, water systems can apply via the portal and are encouraged to attend one of the four annual meetings PennVest hosts to determine allocation of support.

PennVest offers many sources of funding and financing; however, there are several qualifications that water systems typically must meet to qualify. In some instances, financial support is distributed in the form of a matching grant, thus prohibiting financially distressed systems from qualifying. Many systems that need the most help do not qualify for PennVest funding and financing or other sources of support because they do not have sufficient capital.

Lead Line Replacement

PennVest has several funding and financing programs including—but not limited to—Clean Water State Revolving Fund, PFAS, On-Lot Sewage Disposal, Drinking Water State Revolving Fund, and Lead Line Replacement. For the purpose of this report, we will focus on the Lead Line Replacement (LLR) projects. PennVest has, for a long time, had one robust LLR program that evaluates water systems based on 15 socioeconomic factors[14] and prioritizes financial support to communities most in need. Usually, this support is distributed to water systems in the form of low interest loans, however PennVest also distributes several grants when the conditions require it.

In addition to this traditional LLR project, PennVest is implementing a new LLR project that draws excess funds from the Clean Water Program to create more opportunities for replacement. This funding transfer is made possible through the federal Water Infrastructure Funding Transfer Act (WIFTA). Under this program, Pennsylvania has been able to reallocate approximately $90 million for this second lead program. It differs from the traditional program in that it is not based on affordability as much as it is based on eligibility—this program does not require an analysis of the aforementioned 15 socioeconomic factors. Under this second program, those water systems that may not be able to commit to loan payments can now qualify, as long as they hold a public supply permit and have lead lines identified in the system that can be replaced. This new funding source applies to both public and private systems. The application cutoff for these funds is February 3, 2021 to be evaluated at the April 21, 2021 Board Meeting.

When these systems do not qualify for this financial support to complete projects, they must generate revenue internally, typically via rate increases. This, in turn, puts the financial burden of lead service line replacements upon the consumers either through rate increases which are then redistributed or through the individual sponsorship of a replacement. These financial obstacles and "red tape" often disincentivize both water systems and individual homeowners from taking the necessary steps to remediate lead lines.

14 These factors include: Change in Fund Equity, cash position, debt service, gross debt, expenditures/resources, adjusted expenditures, pensions payable, unfunded pensions, government services, market value, total taxes, earned income tax change, assess valuation change, adjusted millage rate, per capita debt, percent below poverty, population change, percent population over 65, per capita income, and unemployment rate.

Lead Report

History of Lead Pipes in Pittsburgh

Lead has been present in the United States in many different forms for hundreds of years including in gasoline, paint, and pipes.[15] Lead can become present in water when it is transported from water treatment facilities to homes through pipes that contain lead, or when it travels within the home through plumbing fixtures that contain lead.[16] As a highly ductile and long-lasting material, lead was preferred for pipe materials for many years.

The Safe Drinking Water Act (SDWA) prohibits the "use of any pipe or plumbing fitting or fixture, any solder, or any flux, after June 1986, in the installation or repair of (i) any public water system; or (ii) any plumbing in a residential or non- residential facility providing water for human consumption, that is not lead free."[17] Section 1417 of the SDWA originally established the definition for "lead free" as solder and flux with no more than 0.2 percent lead and pipes with no more than 8 percent lead.[18] The rule was strengthened in 1996 to require plumbing fittings and fixtures to be "lead free" as well.[19] In 2011, the Reduction of Lead in Drinking Water Act (RLDWA) revised the definition of lead free, reducing the allowable lead content from 8 percent to 0.25 percent in pipes and fixtures.[20] Fixtures in non-potable uses were exempt; fire hydrants were later exempted as well. Due to these many changes, pipes and plumbing fixtures in current use throughout Allegheny County may contain variable amounts of lead.[21]

Lead and Copper Rule

In 1991, the EPA published the Lead and Copper Rule (LCR), a regulation to control lead and copper in drinking water. Since its original publication in 1991, this rule has been modified several times. Currently, the most recent iteration of the rule is undergoing a modification process.

The EPA's proposed revisions to the current rule include: a new trigger level of 10 ppb instead of 15 ppb, requiring water systems to develop lead service line replacement plans only after sampling exceeds the action level, requiring any water system with a lead service line in exceedance under new guidelines to develop replacement plans with the state government, re-optimizing corrosion control when in exceedance, and reducing the replacement of lead service lines from 7 percent to 3 percent, just to name a few.

A public comment period for these revisions began November 13, 2019 and ended on February 12, 2020, a 30-day extension on the original deadline of January 13, 2020. This period, which saw the contributions of more than 78,000 individuals and

15 *Allegheny County. (December 2017). Allegheny County Lead Task Force Final Report and Recommendations. https://alleghenycounty.us/uploadedFiles/Allegheny_Home/Health_Department/Programs/Special_Initiatives/Lead/Lead-Task-Force-Report-Dec2017.pdf*
16 *Ibid 7*
17 *EPA. (1986). Title XIV of The Public Health Service Act: Safety of Public Water Systems (Safe Drinking WaterAct). https://www.epa.gov/sdwa/title-xiv-public-health-service-act-safety-public-water-systems-safe-drinking-water-act*
18 *Ibid 9*
19 *Ibid 7*
20 *EPA. (December 2013). Summary Of The Reduction Of Lead In Drinking Water Act And Frequently Asked Questions. https://fccchr.usc.edu/_downloads/Lead%20Free/Summary.of.the.reduction.of.lead.in.drinking.water.act.FAQ.12.19.2013.pdf*
21 *Ibid 7*

organizations, allowed the EPA to consider the opinions of environmental health thought leaders.[22] Some groups joined the EPA in support of the proposed revisions while others did not think the revisions went far enough.[23] A final decision on which revisions the EPA will implement is anticipated in 2020.

On December 22, 2020, the EPA released its long-awaited, revised Lead and Copper Rule. While some elements of the revision demonstrate progress toward focusing on addressing public health, others may be viewed simply as window dressing. Below are some of the deficiencies WHE identified under the revised requirements:

- Action levels remain at 15 ppb (not a health-based standard). The American Academy of Pediatrics and Centers for Disease Control and Prevention, as well as the EPA, recognize that no amount of lead in drinking water is safe, so too should our federal government and reflect that in this rule.
- Schools and child care centers must be tested every five years under the rule. Simply testing is not enough, we must require remediation.* (This is also where the PA legislation falls short.)
- Cities will now be required to replace just three percent of lead service lines each year rather than the previous seven percent after exceeding the federal action level of 15 ppb. EPA also will require cities to do the replacements over a two-year period, rather than just one. Essentially, it will take longer (several decades) to replace the leaded pipes we have underground.
- Partial lead service line replacements will continue. Full lead service line replacements are incentivized by the new requirement that will not count partial lead service line replacements toward mandatory rates or goal-based rates, but this does not outright ban partial LSL replacements.

Below are revisions that are beneficial and focus on protecting public health:

- Prohibits sampling instructions that include recommendations for aerator cleaning/removal and pre-stagnation flushing prior to sample collection. Therefore, a more accurate reflection of lead presence should be realized with the sampling.
- All systems must develop a Lead Service Line (LSL) inventory or demonstrate absence of LSLs within 3 years of the final rule publication. All systems with known or possible LSLs must develop a Lead Service Line Replacement plan.
- All community water systems are required to include information on how to access the LSL inventory and how to access the results of all tap sampling in the Consumer Confidence Report.
- Regarding corrosion control treatment options, removes calcium hardness as an option and specifies any phosphate inhibitor must be orthophosphate.

**We found in the 1000 Hours program (a collaboration between WHE and the Green Building Alliance) that with testing of over 200 schools and child care centers, lead was detected in at least one outlet at every school district. This demonstrates that our region continues to be impacted by aging infrastructure. We must take corrective actions once the source of the lead in drinking water has been identified. Then we must ensure that the remediation plan is working effectively to remove the lead.*

22 *"National Primary Drinking Water Regulations: Lead and Copper Rule Revisions," (February 2020) Regulations.gov https://www.federalregister.gov/documents/2019/11/13/2019-22705/national-primary-drinking-water-regulations-proposed-lead-and-copper-rule-revisions*

23 *Olson, Erik D. and Valerie Baron. NRDC. (February 2020). Lead Contaminated Water: EPA's Proposal Fails Our Kids. https://www.nrdc.org/experts/valerie-baron/lead-contaminated-water-epas-proposal-fails-our-kids*

Methodology

For this report, we chose to highlight lead violations in Allegheny County, outlining the following for each water authority:

- 90th percentile in light of the current action level of 15 ppb
- the required sample number
- the actual number of samples conducted
- the number of lead service line replacements
- the mapped inventory of lead service lines
- whether or not the authority provides free testing
- the method of communication to consumers
- the corrosion control method

It is important to note that, though the action level is currently 15 ppb, environmental health specialists agree that there is no "safe" level of lead. This is because, even at some of its lowest levels, lead can cause significant health complications. **As such, the EPA states that there is no safe level of lead in drinking water.**[24]

This section has been compiled by first scanning each system's website to determine whether or not they have provided the information publicly and accessibly. The remainder of the information came directly from right-to-know reports.

Municipal Authorities Act

Towards the end of 2017, the Municipal Authorities Act of 1945 posed significant challenges to water systems seeking to conduct full lead service line replacements. The law, at the time, stated that municipalities could only utilize these funds to remediate public lines. As such, when water systems did partial replacements, and, subsequently, galvanization took place, these systems could not access funds to address private lines.

To amend this, several water systems petitioned the state legislature and the Pennsylvania Public Utilities Commission (PUC) to allow systems to use funds for private line replacement. In March 2017, the PUC and York Water Company set a precedent by permitting the use of these funds for private lines. Later, other water authorities, including PWSA, took the same action. Ultimately, with PWSA's advocacy, the state legislature passed and signed HB-674 into law, empowering municipal systems across the state to remediate private water and sewer laterals if the municipality determines the work "will benefit the public health."[25]

24 *Council on Environmental Health. (July 2016). Prevention of Childhood Lead Toxicity. https://pediatrics.aappublications.org/content/138/1/e20161493*

25 *House Bill 674; Regular Session 2017-2018.*

PWSA and Braddock Water Authority as Case Studies

As part of the LCR, the EPA requires all water systems to conduct sampling every three years to maintain compliance with the lead action level of 15 ppb and the copper action level of 1.3 mg/L. When water systems exceed these action levels, the LCR asserts that they must do three things: evaluate the corrosion control treatment, develop an inventory of lead service lines if one does not already exist, and test every six months rather than every three years until there are two consecutive samples that are below the action level.

In particular, the inventory of lead service lines helps water systems evaluate how harmful their water can be to consumers. Partial lead service line replacements often raise more costs than they mitigate because of a chemical reaction called galvanic corrosion. Galvanic corrosion occurs when two types of metal—lead and copper—are fused together, ultimately creating more corrosion of the lead pipe.[26] This, in turn, further increases the risk of lead-contaminated drinking water.[27]

Partial lead service line replacements create both short-term and long-term risks to community health. In the short-term, partial lead service line replacements have been linked to elevated drinking water lead levels. One study found that partial lead service line replacements more than doubled premise plumbing lead release in the short-term and did not reduce the lead release of two other samples in the long-term.[28] Another study found that mean concentrations of particulate lead increased immediately after partial lead service line replacements.[29] Further, this study observed erratic particulate lead spikes over the 18-month monitoring period following the replacements.[30]

To evaluate how different water systems with different capabilities respond to exceedances, below we juxtapose the experiences of Braddock Water Authority and Pittsburgh Water and Sewer Authority, both of which exceeded the action levels and had to implement plans to resolve such exceedances.

26 *Roper, Cyndi. NRDC. (March 2018). The Hidden Costs and Dangers of Partial Lead Pipe Replacements. https://www.nrdc.org/experts/cyndi-roper/hidden-costs-dangers-partial-lead-pipe-replacements*

27 *Ibid 11*

28 *Trueman BF, Eliman C, and Gagnon GA. "Evaluating the Effects of FUll and Partial Lead Service Line Replacement on Lead Levels in Drinking Water," (June 2016). Environmental Science and Technology.*

29 *Deshommes E, Laroche L, Deveau D, Nour S, and Prevost M, "Short- and Long-Term Lead Release after Partial Lead Service Line Replacements in a Metropolitan Water Distribution System." (August 2017) Environmental Science and Technology.*

30 *Ibid 5*

Pittsburgh Water and Sewer Authority

In 2016, Pittsburgh Water and Sewer Authority (PWSA) exceeded the action level of 15 ppb as mandated by the Lead and Copper Rule. In order to redress this, PWSA initiated three major activities based on the requirements of the LCR. First, to evaluate corrosion control treatment, PWSA conducted a year-long study to analyze different treatment technologies to reduce lead levels. This study ultimately indicated that orthophosphate, at a particular concentration, provided the best results. The Pennsylvania DEP approved the use of orthophosphate and, as of April 2019, PWSA began utilizing this additive as part of the treatment process. PWSA has recently completed the second six-month testing round with the results lower than the 15 ppb action level; in December 2019 the level was 10.0 ppb and in June 2020 the level was 5.1 ppb, demonstrating the effectiveness of the actions taken by PWSA. However, it is important to note that there is no safe amount of lead in drinking water.

In response to the inventory requirement of the LCR, PWSA devised a plan to first look at drill records (record created when the water main has been tapped to install a service line) and put the information—though sometimes limited—into a database for reference. This database provided a clearer depiction of how many lead service lines exist within PWSA jurisdiction; however, PWSA found that even this number was largely underestimated. Since the original inventory was developed in 2017, PWSA has continued to update the inventory with information developed through curb box inspections, construction activities, data collected by our plumbers during meter replacements, operational records research, collaboration with ACHD regarding private side records and the development of a machine-learning predictive model with the University of Pittsburgh. An update to the 2017 inventory was scheduled to be submitted to DEP in December 2020.

PWSA began lead service line replacements in 2017; however, at the time, state law—the Municipal Authorities Act—prohibited the use of public funds for improvements to private property. As such, PWSA only replaced the public side of lead service lines, which ultimately proved to create temporary increases in lead levels at the homes where the replacements occurred. Working with the state legislature, PWSA advocated to amend this law so that public funds could be used for public health benefit. This succeeded and the law was amended, allowing PWSA to remediate both public and private side lead service lines.

Further, PWSA implemented a program to retroactively replace those private lines in which they had already replaced the corresponding public line. Since 2016, PWSA has replaced over 7,400 public and 4,700 private lead service lines throughout its water service area. In addition, PWSA has rolled out a robust testing and filtration program for its consumers through which it offers free lead test kits. Finally, PWSA has partnered with Women for a Healthy Environment to help distribute water pitchers and filters which are certified to remove lead from tap water to those consumers who need them. The funding for all of these initiatives has come from one of two sources: actual rates paid by consumers and the PennVest state infrastructure funds.

Braddock Water Authority

Similar to PWSA, the DEP has mandated semi-annual testing by Braddock Water Authority (BWA), a process that began in 2016. As such, BWA has faced many of the same challenges as PWSA in evaluating methods to mitigate lead levels in its drinking water. BWA, however, differs from PWSA on several dimensions: public line remediation, treatment, lead testing, and funding. First, beginning in the 1970's BWA removed all of its public lead service lines. As such, it currently does not need to change any public lines; however, these partial replacements have given rise to the galvanization process like the partial replacements conducted by PWSA. Next, BWA differs from PWSA because it purchases its water from Wilkinsburg-Penn Joint Water Authority and, as such, does not conduct or oversee the water treatment process. Therefore, the corrosion control evaluation component for systems in exceedance, as mandated by the LCR, does not apply to BWA.

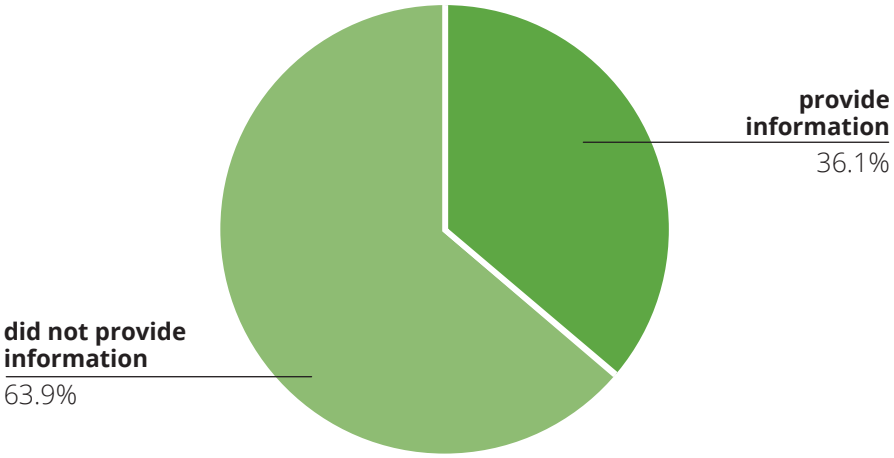
With respect to lead testing, BWA requires individual consumers to conduct lead testing in areas where the borough does not have lead lines. However, BWA will provide personnel to tell residents whether or not their private lines are made of lead. For areas that have lead service lines, BWA tests twice a year, providing instructions and water bottles. Finally, with respect to funding, BWA has yet to qualify for many grants simply because most grants are matching grants. The Borough of Braddock is a municipality with limited resources, that under Act 47, receives assistance and oversight from the PA Department of Community and Economic Development (DCED) as a community "experiencing severe financial difficulties in order to ensure the health, safety and welfare of their citizens.[31] Further, BWA just recently raised its rates in response to the raised rates of Wilkinsburg-Penn Joint, its provider; therefore, the authority does not plan to raise its rates soon to supply the funds for aforementioned matching grants. BWA does, however, plan to apply for grants like the PennVest funds this upcoming year.

31 *Pennsylvania Department of Community and Economy Development. (2020). Act 47 Financial Distress. https://dced.pa.gov/local-government/act-47-financial-distress/*

Lead Data

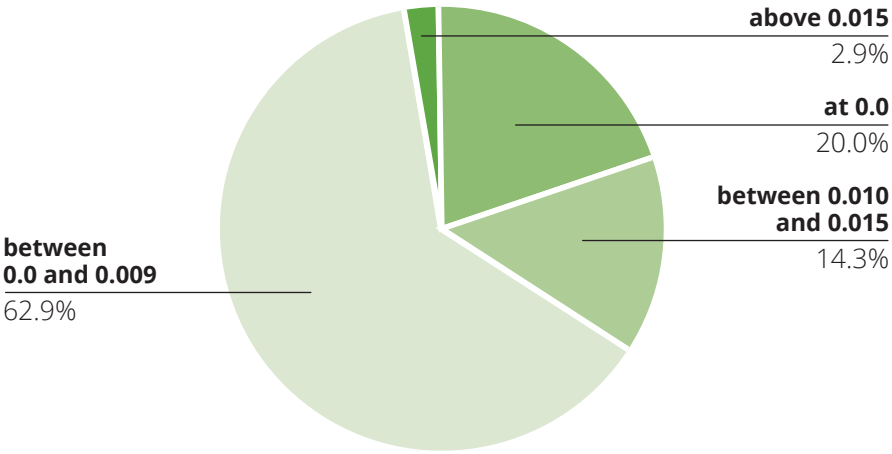
We examined the websites of each water system to determine whether information had been posted about lead and its corresponding harmful effects to the community. For each water system, we sought to determine whether the ratepayer could easily find information on lead in drinking water. When collecting this information in September and October of 2019, two-thirds of water systems failed to post information regarding lead hazards while the other one-third posted resources and information. The chart below shows the exact percentages.

Water Systems That Provide Lead Information on Website



To better understand lead sampling, we used data from the 2018 and 2019 consumer confidence report posted on the websites of most systems. We then compared these results with those of the state database for the sake of certainty. The following graph outlines how the water systems performed with respect to EPA's *current* action level, as well as the *proposed* action level. Put simply, we account for those water systems that are above 15 parts per billion (ppb), those at 0 parts per billion, those that fall between 0-10 parts per billion and finally those that fall between 10-15 parts per billion. The latter two ranges account for both the current 15 ppb action level, which the EPA enforces as well as the 10 ppb action level which the EPA proposed in its LCR revisions.

90th Percentile Concentrations of Allegheny County Water Systems



As the chart demonstrates, most water systems—62.9 percent—are above 0 ppb but below 10 ppb. The 10ppb to 15ppb range—which accounts for 14.3 percent of water systems—is a range of concern. Specifically, if the aforementioned Lead and Copper Rule revisions go into effect as anticipated, this means that an additional 14.3 percent of water systems will be above the 10ppb trigger level. This, in turn, means that these water systems will be required to develop plans for lead service line replacement and reduce lead exposure within their systems.

In terms of data gleaned from Right to Know requests, most water systems answered questions related to lead; however, some systems responded that certain questions do not apply to their water systems. As such, the chart below demonstrates the answers of the water systems which replied to each question.

Question	Yes	No	N/a	No response
Are lead service lines known of or present in your system's jurisdiction?	41%	44%		15%
Does your water system have a lead service line inventory?	12%	31%	41%	16%
Does your system provide notices to consumers if partial lead line replacements are about to occur?	22%	41%		37%
Are testing services available upon request?	28%	56%		16%

The Right to Know also requested information regarding lead service line replacements, asking for numbers on full, partial-public, and partial-private replacements since January 1, 2015. Of the 36 systems that received Right to Know requests, eight systems reported partial replacements on the public side. The system names and the corresponding number of partial-public replacements are listed below:

Partial (Public) Lead Service Line Replacements in Allegheny County Water Systems	
Water System Name	**Number of Partial LSL Replacements**
City of Duquesne	30
Coraopolis	12
Edgeworth	107
Hampton-Shaler	34
PWSA	674
Sewickley Borough	8
West View Borough	348
Wilkinsburg Penn Joint	135

Of the 36 water systems that received Right to Knows, three reported partial replacements on the private side since January 1, 2015. The system names and the corresponding number of partial-private replacements are listed below:

Partial (Private) Lead Service Line Replacements in Allegheny County Water Systems	
Water System Name	**Number of Partial LSL Replacements**
City of Duquesne	15
Sewickley Borough	2

Finally, of the 36 water systems that received Right to Know requests, five reported total lead service line replacements since January 1, 2015. The system names and the corresponding number of full lead service line replacements are listed below:

Total Lead Service Line Replacements in Allegheny County Water Systems	
Water System Name	**Number of Full LSL Replacements**
Braddock Water Authority	2
City of Duquesne	10
Coraopolis	3
Edgeworth	1
PWSA	6197

Chemical Report

The Effects and Implications of the Chemicals in Allegheny County Drinking Water

For the report, we chose the following chemicals for their prevalence in Allegheny County and Pennsylvania at large: barium, chlorine, PFOS, PFOA, radium, arsenic, nitrate, trihalomethanes, and haloacetic acids. Each of these chemicals correlates to specific industrial activities in the region. Correlation indicates that there is a relationship between two variables. This does not necessarily imply causality, but is an important step in determining causality.

The following charts show the chemical samples above 0.0 for trihalomethanes, haloacetic acids, nitrate, and chlorine for each water authority for a sampling period of 2017-2019. The database used to find these samplings—The Pennsylvania DEP Drinking Water Reporting System (DWRS)—did not show data for PFOS, PFOA, or radium for the sampling period. Though the database presented data for barium and arsenic, these samplings showed up infrequently, but when they did, they typically came up as 0. As such, it is important to focus on the origins and implications of trihalomethanes, haloacetic acids, nitrate, and chlorine because these are the chemicals which appear most consistently and in the highest concentrations in the data.

First, chlorine is utilized to treat oil and gas wastewater. Chlorine levels up to 4 milligrams per liter (mg/L or 4 parts per million (ppm) are considered safe in drinking water.[32] At this level, no harmful health effects are likely to occur. Trihalomethanes—possible carcinogens[33] —are the disinfection byproducts of oil and gas wastewater when chlorine is added during the treatment process after hydraulic fracturing has taken place.[34] Notably, the EPA has regulated that 8 milligrams per liter is the maximum allowable annual average in drinking water.[35] Haloacetic acids, by definition, are "chemical compounds that contain chlorine and bromine."[36] They are formed when the chlorine used to treat drinking water reacts with naturally occurring organic matter in water.[37] The maximum contaminant level for the group of five haloacetic acids, or HAA5 is 6 milligrams per liter.[38] Next, nitrate is a chemical found in most fertilizers, manure, and liquid waste discharged from septic tanks.[39] Natural

32 *CDC. (June 2015). Disinfection with Chlorine. https://www.cdc.gov/healthywater/drinking/public/water_disinfection.html*

33 *Cotruvo JA. and Heather A. "National Trends of Bladder Cancer and Trihalomethanes in Drinking Water: A Review and Multicounty Ecological Study," (January 2019) Dose-Response*

34 *Holsopple K. "New Report Finds Chemicals of Concern in Local Drinking Water," (November 2019). The Allegheny Front. https://www.alleghenyfront.org/new-report-finds-chemicals-of-concern-in-local-drinking-water/*

35 *Oram B. "Disinfection By-Products Trihalomethanes." (2020) Water Research Center https://water-research.net/index.php/about/13-in-drinking-water*

36 *Springwell. (April 2019). 3 Harmful Effects of Haloacetic Acids in Drinking Water. https://www.springwellwater.com/3-harmful-effects-of-high-haloacetic-acids-in-drinking-water/*

37 *Ibid 20*

38 *U.S. Environmental Protection Agency. (2014). Total Trihalomethanes & Haloacetic Acids - Maximum Contaminant Level Exceedances - Public Notification. https://www.epa.gov/sites/production/files/2014-04/documents/pn_tthm_haa5_mcl.pdf*

39 *Washington State Department of Health. (July 2016). Q&A: Nitrate in Drinking Water. https://www.doh.wa.gov/communityandenvironment/drinkingwater/contaminants/nitrate*

bacteria in soil can convert nitrogen into nitrate.[40] Rain or irrigation water can carry nitrate through the soil into groundwater.[41] The EPA has determined that water with 10 milligrams of nitrate (measured as nitrogen) per liter or less is considered safe.[42]

Chemical Sampling Data

Each of the chemicals accounted for in this report—other than nitrate which is naturally occurring and chlorine which is a disinfectant itself —are considered disinfection byproducts. Once the data collection process was complete, we evaluated whether or not each water system was actually meeting the sampling and concentration requirements in DEP Chapter 109 Section 301. The following table describes the frequency with which monitoring should occur.

Monitoring of Community Water Systems and Non-Transient Non-Community Water Systems Using Surface Water or GUDI Sources

Population size	Monitoring frequencies	Distribution system monitoring location total per monitoring period
‹ 500	Annually	2
500—3,300	Quarterly	2
3,301—9,999	Quarterly	2
10,000—49,999	Quarterly	4
50,000—249,999	Quarterly	8
250,000—999,999	Quarterly	12
1,000,000—4,999,999	Quarterly	16
›= 5,000,000	Quarterly	20

40 *Ibid 23*
41 *Ibid 23*
42 *Minnesota Department of Health. (August 2019). Nitrate in Drinking Water. https://www.health.state.mn.us/communities/environment/water/contaminants/nitrate.html*

Monitoring of Community Water Systems and Non-Transient Non-Community

Community water systems and non-transient non-community water systems using groundwater sources shall monitor as follows:

Population size	Monitoring frequencies	Distribution system monitoring location total per monitoring period
‹ 500	Annually	2
500—9,999	Annually	2
10,000—99,999	Quarterly	4
100,000—499,999	Quarterly	6
›= 500,000	Quarterly	8

Using the consumer numbers which systems provided to us in their completed Right to Know and considering their water source (groundwater or surface water) we were able to determine whether or not each water system has been monitoring with the necessary frequency. Ultimately, we found that the sampling numbers of haloacetic acids, trihalomethanes, chlorine, and nitrate are consistent with DEP requirements based on consumer size. Beyond evaluating whether or not water systems monitor as much as needed, we also analyzed whether or not the water systems monitoring results showed any exceedances or violations. For reference, we have listed the permitted levels in the chart below for each chemical.

Chemical	Chlorine	Haloacetic Acids	Trihalomethanes	Nitrate
Maximum contaminant level	4 milligrams per liter	0.06 milligrams per liter	0.08 millgrams per liter	10 milligrams per liter

The same database from which we obtained the chemical sampling data also provided a list of chemical violations for each water system. Four types of violations were included for analysis: Total Violations, Maximum Contaminant Level Exceedance, Failure to Monitor, Consumer Confidence Report Not Submitted, and Failure to Issue Public Notice. Most violations were failures to monitor, meaning the minimum number of water samples required for any one contaminant was not obtained. Other violations were due to a failure to submit an annual Consumer Confidence Report and a failure to notify ratepayers of potential threats to drinking water quality. A summary of those water systems with violations since 2016[43] in our selected categories is listed below:

43 Violations accounted for in this report are from 2016 through the conclusion of data collection on March 25, 2020.

Water Systems Violations since 2016[44]					
System Name	Total Violations	Maximum Contaminant Level Exceedance	Failure to Monitor	Consumer Confidence Report Not Submitted	Failure to Issue Public Notice
Aspinwall Borough Water Department	4		4		
Blawnox Borough	2		2		
Brackenridge Borough Water	33	2	25		
Braddock Borough Water Authority	1		1		
Cheswick Borough Water Department	11		2	2	
Coraopolis Water and Sewer Authority	1		1		
City of Duquesne Water Department	25	4	7	2	4
East Deer Township Waterworks	10		10		
Edgeworth Borough Municipal Authority	2		2		
Hampton-Shaler Township Municipal Authority	4		2		
Harmar Township Municipal Authority	3		2		
Monroeville Municipal Authority	2	2			
Oakmont Borough Municipal Authority	2		2		
Pennsylvania American Water Company	3				1
Pittsburgh Water and Sewer Authority	15		12		
Plum Borough Municipal Authority	8				
Robinson Township Municipal Authority	4		2		
Springdale Township	12		5		2
West View Borough Municipal Authority	17		12	1	
Western Allegheny County Municipal Authority	1		1		

As the table above demonstrates, there are a few water systems that stand out because of their violation number and violation type. These include: City of Duquesne, Brackenridge Borough, Cheswick Borough, PWSA, West View Borough, Springdale Township, and East Deer Township.

44 Violations accounted for in this report are from 2016 through the conclusion of data collection on March 25, 2020.

Transparency Report

Methodology and Overview

In addition to assessing how water systems perform on actual chemical content, it is also important to know how much of this information consumers have access to. As such, we have considered how these systems perform on the dimensions of transparency, affordability, and accessibility. These categories are further broken down into the extent of billing type and privacy, methods of water shut off notices, listing of board members and public meeting schedules (if applicable), risk communication of lead and other water quality issues, water quality education materials available to consumers, consumer grievance procedures, and information regarding lead service lines.

To obtain this information, we first conducted a thorough investigation of each authority's website to determine whether or not ratepayers could easily contact the appropriate official or simply glean information from the resources provided by the website. This method provided a significant amount of information; however, to fill in the remaining gaps we sent Right to Know requests to each water system. We received all of the Right to Know requests included in this report by July 13, 2020.

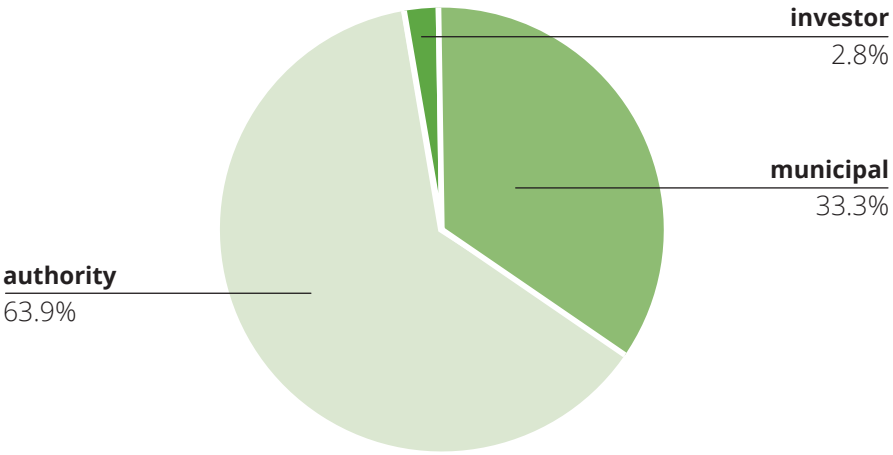
Aggregate Results

The Right to Know requests that we issued to water systems included several questions specific to how consumers can reach the leadership in the water system and how much consumers can access on their own. As with other sections, not every question applied to every water system and even where applicable. Not all water systems provided full responses.

Question	Yes	No	N/a	No response
Do you provide CCR reports on your system website?	94%	6%		
Do you have a formal grievance form or procedure?	28%	53%		19%
Do you issue boil advisories?	34%	31%	6%	29%
Do you provide advisories for poor water quality?	31%	22%	6%	41%
Are bills enclosed in billing notices for consumers?	38%	28%		34%

Water System Oversight Type

System Ownership



Local municipalities have oversight of 33.3 percent of the community water systems in Allegheny County. This means these systems are managed by a water department within the municipalities and elected officials provide the highest level of oversight. 63.9 percent of community water systems in Allegheny County are overseen by a Board of Directors, often appointed by local elected officials. In these cases, water systems are referred to as "water authorities." Finally, 2.8 percent of community water systems in Allegheny County are investor owned, meaning they do not have a public facing body providing oversight.

The below chart outlines the minimum, maximum, and averages of the employee to consumer ratios across Allegheny County systems. While there is no industry standard for the proper ratio, it is important to note the variation in employee capacity across systems.

Employee : Consumer Ratio

min	6 : 833
max	1 : 1960
avg	1 : 841

In terms of service connections, there were four main ranges which emerged 0-1,000; 1,001-5,000; 5,001-10,000; and 10,001+. The chart below shows how these ranges were distributed across systems.

Range of Service Connections	Water Systems Within That Range
0-1,000	7
1,001-5,000	14
5,001-10,000	4
10,001+	8

The largest number of service connections was Pennsylvania American Water Company with 210,0964 and the smallest number of service connections was Neville Township with 617. The average was 15,433.

In terms of annual shutoff notices, the average number throughout Allegheny County was 3,927 and the highest number was 48,852. It is important to note that this is the number of notices, not the number of actual shutoffs.

Water Shut-Off Notices in 2019

The average number of water-shut-off notices in Allegheny County community water systems in 2019 was 3,927, with a maximum of 49,852. These numbers do not reflect the total number of completed shut offs, but rather notices to ratepayers (including reminders to the same ratepayers). The total number of shut-off notices from 2019 for each water system is listed later in this report. These numbers are an indication of affordability and must be further analyzed for consumer specific trends.

The chart below shows the average, maximum, and minimum of water shutoffs across all systems.

average	3927.92
max	49852
min	0

Discussion

Across the assessed dimensions of transparency and accessibility to the public, operational capacity, drinking water quality standard violations, and strategies to reduce lead in drinking water levels, community water systems in Allegheny County vary greatly. Yet, among more than half of these systems, water quality related violations occurred in 2019; and more than 80 percent of these systems have detectable levels of lead in their drinking water.

While information collected in this report on water quality violations and lead in drinking water levels are publicly available online, locating and interpreting can be quite burdensome for ratepayers without prior knowledge of this type of data. For example, the system websites do not always provide simple navigation to water quality information; rather, individuals may have to know to search "Consumer Confidence Report," in the site's search bar.

Beyond these online challenges, water systems at large lack consistency in language in how they define themselves. This, in turn, translated into a confusion about which water systems we ought to include in the report. More specifically, some water systems' information appeared on the state databases; however, those systems also reported to us that they are no longer in operation, merged with another system, or did not qualify for this report for some other reason. With all this in mind, there is an apparent need for consistency across water systems in Allegheny County.

Nearly every water system offers opportunities for ratepayers to publicly voice concerns at monthly water authority board meetings or monthly municipal meetings, depending on the system's type of oversight. In addition to these opportunities for public transparency and communication, formal grievance procedures can be followed by consumers in more than half of the systems. Overall, water systems could take further opportunities to strengthen their operational capacity in order to improve the quality of both their drinking water and communications with consumers.

The intent of this report was to better understand how each water system in the county operates and performs. Further analysis through a racial equity lens is needed to explore disparities that may be playing out in consumer populations who are disproportionately communities of colo This report is intended to be the first step of a multi-phase project, with the initial analysis focused on painting the landscape of community water systems in Allegheny County and equipping the public with information on their individual suppliers.

At present, there is not enough data to analyze the demographics of consumers each water system serves across the measures of transparency and chemical exceedances reported in this document. Our hope is that the information in this report can guide water systems to reassess their performance and can encourage consumers to hold them accountable for providing equitable access to safe, clean and healthy drinking water.

The average ratio of consumers to employees in Allegheny County is roughly 1000 consumers for every full-time employee. Given that Allegheny County is unique in the amount of water authorities it has, this seemingly reduced capacity as verified by conversations with staff in the data collection process may be attributed to a lack of collaboration among water systems. As such, some of these capacity problems may be solved, in part, by centralizing or at least merging water systems.

This report lays out the new PennVest funding opportunities. Through this process we learned that each water system is subject to the same set of regulations regardless of size, so long as they meet the 25-person threshold. In terms of transparency at large, the report found that, of the water systems that elaborated on their risk communication schema, about half do not issue boil advisories and more than half do not have a formal grievance procedure in place for concerned residents. This is a problem because residents have no clear mechanism to voice complaints. This could easily be resolved by placing a link to a grievance form on each system website.

Specific to lead, this report indicates that most water systems do not have a lead service line inventory, and a minority have the ability to conduct full lead service line replacements. In addition, most water systems do not offer lead testing, and of those that do, only three systems confirmed they can do it free of charge. This, again, points to an issue of capacity and resources within each water system.

With all of this in mind, a notable barrier facing most water systems is the capacity to integrate public health best practices, such as risk communication to consumers that is easily understood and promptly disseminated or primary prevention of problems such as lead exposure through proactive lead service line replacements.

A regional conversation between Allegheny County water systems, ratepayers, and public health entities must occur in order to develop sustainable solutions that will increase capacity and transparency of water systems and protect the health of community drinking water.

Key Recommendations

Community Water Systems

- Boost collaboration across water systems, promoting the sharing of resources, technical expertise and best practices across the region.
- Provide education on water contaminants and their public health impacts to water system leadership and board members (if applicable).
- Consult with at least one public health representative in all executive decisions pertaining to water quality and have at least one public health representative serving on the board (if applicable).
- Improve internal record keeping systems, such as asset management systems.
- Build lead service line inventories, and publicly track replacements as part of broader projects to electronically map and record all system assets, utilizing state organizations such as the Department of Environmental Protection Capability Enhancement Program. that offers services free of cost.
- Strengthen technical, financial, and managerial capacities into order to ensure eligibility for PennVest and other funding sources that would cover the cost of full lead service line replacements with technical support from regional organizations such as Resources for Communities and People (RCAP) and the Pennsylvania Rural Water Association (PRWA).
- Create a robust community engagement plan that includes the following:
  - public website with educational resources on lead and other drinking water contaminants, and public meetings posted with information on how to attend.
  - formal customer grievance procedure available in-person and online.
- Commit to ceasing all partial lead service line replacements.

The Commonwealth of Pennsylvania:

- Require full replacements of lead service lines and
- Increase financial investments in public infrastructure.

Ratepayers in Allegheny County:

- Search **"[water system name] CCR Report [year]"** online to find the most recent water quality monitoring results. The level of lead in the "90th percentile" of the samples taken will be reported in parts per billion (ppb). This number is compared to the action level (AL) of 15 ppb in order to determine whether the system is in violation of state and federal standards. The number of samples above the action level will be found in "Site above AL."
- Request a water quality test on your drinking water. The following systems offer residential testing, some with an associated cost:
  - Borough of Aspinwall
  - Braddock Borough Water Authority (limited)
  - East Deer Township Waterworks
  - Edgeworth Borough Municipal Authority
  - Fawn-Frazer Joint Water Authority
  - Hampton-Shaler Township Municipal Authority
  - Harmar Township Municipal Authority
  - Pittsburgh Water and Sewer Authority
  - Sewickley Borough Water Authority
  - Westmoreland County Municipal Authority
- Voice your concerns at your water system's next board meeting. Bring a neighbor or two to amplify your message.
- Purchase an NSF (National Sanitation Foundation) certified home water pitcher or faucet-mount filter to reduce lead from water. Always used cold tap water when preparing food, beverages and infant formula. The NSF has an online guide[45] that lists all NSF-certified filters for lead reduction in drinking water, explains their water treatment standards and the process by which they verify a filter's ability to reduce lead in drinking water. In addition, reverse osmosis filtration systems are a more comprehensive solution to filter all sources of water in your home. More information on all water filtration options can be found on NSF's *Lead in Drinking Water* webpage[46].
- Submit a grievance report if you have water quality or system process concerns by contacting your water system by phone or email, or by visiting their office.

45 *NSF International. (2016). Certified Product Listings for Lead Reduction. https://info.nsf.org/Certified/DWTU/listings_leadreduction.asp?ProductFunction=053%7CLead+Reduction&ProductFunction=058%7CLead+Reduction&ProductType=&submit2=Search*

46 *NSF International. (2020). Lead in Drinking Water. https://www.nsf.org/knowledge-library/lead-in-drinking-water*

Appendix

Individual System Results

The following list details the results from each individual water system. Some authorities did not reply to our requests in full—or at all—and therefore lack complete information under their profiles.

Aleppo Township Water Authority:
100 North Drive, Sewickley, PA 15143

- Contact: nharris@aleppoauthority.org or 412-741-7755
- Oversight Type: Board
- Meeting Schedule: 4th Thursday of the month
- Ratio of full-time employees to consumers: 3:743
- Number of Service Connections: 732
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 0
- Website: http://aleppoauthority.org/

Borough of Aspinwall:
217 Commercial Avenue, Pittsburgh PA 15215

- Contact: 412-781-0213
- Oversight Type: Borough Council
- Meeting Schedule: 2nd Wednesday of the month, 7:00pm
- Ratio of full-time employees to consumers: 7:2800
- Number of Service Connections: 1208
- Type of water: purchased surface
- Number of shutoff notices in the past calendar year: 11
- Website: https://www.aspinwallpa.com/water-quality-report-

Blawnox Borough:
376 Freeport Road, Pittsburgh, PA 15238

- Contact: 412-828-4141
- Oversight Type: Borough Council
- Meeting Schedule: 2nd Thursday of the month, 6:30pm, 2nd floor Council Chambers
- Ratio of full-time employees to consumers: 0:1404
- Number of Service Connections: 727
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 0
- Website: https://www.blawnox.com/water-division

Brackenridge Borough Water:
1000 Brackenridge Avenue, Brackenridge PA 15014

- Contact: 724-224-0800
- Oversight Type: Borough Council
- Meeting Schedule: 1st Thursday of every month, 6:00pm
- Ratio of full-time employees to consumers: 10: 3,243
- Number of service connections: 1,363
- Water type: surface
- Number of shutoff notices in the past calendar year: 240
- Website: http://brackenridgeboro.com/

Braddock Borough Water Authority:
415 6th St, Braddock, PA 15104

- Contact: info@braddockwater.com or 412-351-2272
- Oversight Type: Board
- Meeting Schedule: 2nd Monday of the month, 5:45-6:45pm
- Ratio of full-time employees to consumers: 2:650
- Number of service connections: 688
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 456
- Website: http://www.braddockborough.com/water-authority

Cheswick Borough Water Department:
220 S Atlantic Ave, Cheswick, PA 15024

- Contact: boroughsecretary@cheswick.us or 724-274-5125
- Oversight Type: Borough Council
- Meeting Schedule: 3rd Tuesday of the month, 7:00pm
- Ratio of full-time employees to consumers: 0: 910
- Number of service connections: 907
- Water type: purchased ground
- Number of shutoff notices in the past calendar year: not provided
- Website: https://www.cheswick.us/home

Coraopolis Water and Sewer Authority: 1301 4th Ave Suite 1, Coraopolis, PA 15108

- Contact: 412-264-3009
- Oversight Type: Board
- Meeting Schedule: 3rd Wednesday of the month, 6:30pm, Coraopolis Municipal Building
- Ratio of full-time employees to consumers: 9: 2,400
- Number of service connections: 2615
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 0
- Website: https://coraopoliswater.org/

Creswell Heights Joint Authority:
3961 Jordan St, South Heights, PA 15081

- Contact: info@creswellwater.net or 724-375-1303
- Oversight Type: Board
- Meeting Schedule: 3rd Monday of the month
- Ratio of full-time employees to consumers: 11: 15,000
- Number of service connections: Not provided
- Water type: Not provided
- Number of shutoff notices in the past calendar year: 360
- Website: http://www.creswellwater.net/

City of Duquesne Water Department:
12 S 2nd Street, Duquesne, PA 15110-1148

- Contact: 412-466-8535
- Oversight Type: City Council
- Meeting Schedule: 4th Tuesday of the month, 6:30pm
- Ratio of full-time employees to consumers: 3: 1,927
- Number of service connections: 1938
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 4289
- Website: http://duquesnepa.us/utilities_

East Deer Township Waterworks:
927 Freeport Rd, Creighton, PA 15030

- Contact: 724-224-3434
- Oversight Type: Township Board of Commissioners
- Meeting Schedule: 1st and 2nd Thursday of the month, 7:30pm
- Ratio of full-time employees to consumers: 4: 673
- Number of service connections: 668
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 200
- Website: http://eastdeertownship.org/

Edgeworth Borough Municipal Authority:
301 Beaver Rd, Sewickley, PA 15143

- Contact: churni@edgeworthwater.com or 412-741-5100
- Oversight Type: Board
- Meeting Schedule: 2nd Tuesday of the month, 6:00pm
- Ratio of full-time employees to consumers: 6: 2344
- Number of service connections: 2341
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 10
- Website: http://www.edgeworthwater.com/

Fawn-Frazer Joint Water Authority:
326 Donnellville Rd, Natrona Heights, PA 15065

- Contact: 724-224-6562
- Oversight Type: Board
- Meeting Schedule: 3rd Monday of the month, 7:00pm
- Ratio of full-time employees to consumers:
- Number of service connections: 1920
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: no provided
- Website: https://www.fawntownship.com/board.html; http://frazertownship.net/

Appendix

Findlay Township Municipal Authority:
PO Box 409, 90 Strouss Road, Clinton, PA 15026
- Contact: 724-695-3108
- Oversight Type: Board
- Meeting Schedule: 4th Monday of the month, 6:00pm
- Ratio of full-time employees to consumers: 12: 2513
- Number of service connections: 2110
- Water type: Purchased surface
- Number of shutoff notices in the past calendar year: 19
- Website: https://www.ftmawatersewer.com/

Fox Chapel Authority:
255 Alpha Dr, Pittsburgh, PA 15238
- Contact: info@foxchapelwater.com or 412-963-0112
- Oversight Type: Board
- Meeting Schedule: last Tuesday of the month, 7:00pm
- Ratio of full-time employees to consumers: 11: 5265
- Number of service connections: 5488
- Water type: Purchased surface
- Number of shutoff notices in the past calendar year: 700
- Website: http://www.foxchapelwater.com/

Hampton-Shaler Water Authority:
P.O. Box 66 3101 McCully Rd, Allison Park, PA 15101
- Contact: info@hswa-pa.org or 412-486-4867
- Oversight Type: Board
- Meeting Schedule: 4th Monday of the month, 7:00pm
- Ratio of full-time employees to consumers: 41: 25,762
- Number of service connections: 24,021
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 4,600
- Website: https://hswa-pa.org/

Harmar Township Water Authority:
200 Pearl Ave, Cheswick, PA 15024
- Contact: postmaster@harmarwater.com or 724-274-8028
- Oversight Type: Board
- Meeting Schedule: 3rd Tuesday of the month, 5:30pm
- Ratio of full-time employees to consumers: 5: 2921
- Number of service connections: 1087
- Water type: groundwater
- Number of shutoff notices in the past calendar year: 15
- Website: http://harmarwater.com/

Harrison Township Water Authority:
1705 Freeport Rd, Natrona Heights, PA 15065
- Contact: 724 226-2500
- Oversight Type: Board
- Meeting Schedule: 3rd Monday of the month, 6:00pm
- Ratio of full-time employees to consumers: 12: 4827
- Number of service connections: 2889
- Water type: surface
- Number of shutoff notices in the past calendar year: 832
- Website: http://harrisontwpwater.com/

Monroeville Municipal Authority:
219 Speelman Ln, Monroeville, PA 15146
- Contact: info@monroevillewater.org or 412-372-2677
- Oversight Type: Board
- Meeting Schedule: 3rd Monday of the month, 7:00pm
- Ratio of full-time employees to consumers: 26: 10,450
- Number of service connections: 10582
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: 4389
- Website: https://www.monroevillewater.org/

Moon Township Water Authority:
1700 Beaver Grade Rd, Coraopolis, PA 15108
- Contact: rcouse@moontma.com or 412-264-4300
- Oversight Type: Board
- Meeting Schedule: 3rd Wednesday of the month, 5:00pm
- Ratio of full time employees to consumers: 36: 8,674
- Number of service connections: 7938
- Water type: Surface
- Number of shutoff notices in the past calendar year: fewer than 10 per year
- Website: http://moontma.com/

Neville Township:
5050 Grand Avenue, Neville Island, PA 15225
- Contact: 412-264-1977
- Oversight Type: Township Board of Commissioners
- Meeting Schedule: 2nd Thursday of the month, 7:00pm
- Ratio of full-time employees to consumers: not provided
- Number of service connections: 617
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: not provided
- Website: https://nevilletownship.us/water-sewer/

Oakdale Borough:
6115 Noblestown Road, Oakdale, PA 15071
- Contact: kaine@oakdaleborough.com or (724) 693-9740
- Oversight Type: Borough Council
- Meeting Schedule: Not provided
- Ratio of full-time employees to consumers: Not provided
- Number of service connections: 691
- Water type: purchased surface
- Number of shutoff notices in the past calendar year: Not provided
- Website: http://www.oakdaleborough.com/borough-documents.html

Oakmont Water Authority:
721 Allegheny Ave P.O. Box 73 Oakmont, PA 15139
- Contact: staff@OakmontWater.com or 412-828-7200
- Oversight Type: Board
- Meeting Schedule: Not provided
- Ratio of full-time employees to consumers: Not provided
- Number of service connections: 16779
- Water type: surface
- Number of shutoff notices in the past calendar year: Not provided
- Website: http://www.oakmontwater.com/

Pennsylvania American Water Company:
380 Becks Run Rd, Pittsburgh, PA 15210
- Contact: 1-800-565-7292
- Oversight Type: Privately-Owned (PA Dept of Environmental Protection only)
- Meeting Schedule: N/A
- Ratio of full-time employees to consumers: not provided
- Number of service connections: 210964
- Water type: surface
- Number of shutoff notices in the past calendar year: not provided
- Website: https://www.amwater.com/paaw/water-quality/water-quality-reports/

Pittsburgh Water and Sewer Authority:
1200 Penn Ave, Pittsburgh, PA 15222
- Contact: info@pgh2o.com or 412-255-2423
- Oversight Type: Board
- Meeting Schedule: 4th Friday of every month, 10:00am
- Ratio of full-time employees to consumers: 332: 111,998
- Number of service connections: 74030
- Water type: surface
- Number of shutoff notices in the past calendar year: 49852
- Website: https://www.pgh2o.com/

Plum Borough Municipal Authority:
4555 New Texas Rd # B, Pittsburgh, PA 15239
- Contact: 412-793-7331
- Oversight Type: Board
- Meeting Schedule: not provided
- Ratio of full-time employees to consumers: not provided
- Number of service connections: 9765
- Water type: purchased surface
- Number of water shutoff notices in the past calendar year: not provided
- Website: https://www.plumboroughma.com/

Richland Township Municipal Authority:
2012 Kramer Rd, Gibsonia, PA 15044
- Contact: rtmaac@richlandwaterauthority.com or 724-443-9100
- Oversight Type: Board
- Meeting Schedule: 2nd Monday of the month, 6:00pm
- Ratio of full-time employees to consumers: 5: 3,975
- Number of service connections: 3780
- Water type: Purchased surface
- Number of shutoff notices in the past calendar year: 20 per month
- Website: http://richlandwaterauthority.com/

Reserve Township Water Department:
33 Lonsdale St, Pittsburgh, PA 15212
- Contact: (412)322-1551
- Oversight Type: Board of Commissioners
- Meeting Schedule: 2nd Tuesday of the month
- Ratio of full-time employees to consumers: not provided
- Number of service connections: not provided
- Water type: not provided
- Number of shutoff notices in the past calendar year: not provided
- Website: https://reservetwp.com/to-view-the-annual-drinking-water-quality-report-for-year-2017-click-here-2-2/

Robinson Township Municipal Authority:
4200 Campbells Run Rd, Pittsburgh, PA 15205
- Contact: 412-923-2411
- Oversight Type: Board
- Meeting Schedule: 2nd Wednesday of the month, 7:00pm
- Ratio of full-time employees to consumers: not provided
- Number of service connections: 4953
- Water type: surface
- Number of shutoff notices in the past calendar year: not provided
- Website: https://www.robinsonwater.com/

Appendix

Sewickley Borough Water Authority:
900 Ohio River Boulevard, Sewickley, PA 15143

- Contact: 412-741-9180
- Oversight Type: Board
- Meeting Schedule: 3rd Thursday of the month, 7:00pm at 601 Thorn Street, Sewickley, PA 15143
- Ratio of full-time employees to consumers: 8: 2182
- Number of service connections: 2411
- Water type: groundwater
- Number of shutoff notices in the past calendar year: 116
- Website: https://www.sewickleywater.org/

Springdale Borough Water Department:
325 School Street, Springdale, PA 15144

- Contact: springdaleboro@hotmail.com or 724-274-9414
- Oversight Type: Borough Council
- Meeting Schedule: 3rd Tuesday of the month, 6:00pm
- Ratio of full-time employees to consumers: 12: 1,766
- Number of Service connections: 1680
- Water type: groundwater
- Number of shutoff notices in the past calendar year: 218
- Website: https://springdaleborough.wixsite.com/site/additonal-information

Springdale Township:
100 Plate Drive Harwick, PA 15049

- Contact: 724-274-4034
- Oversight Type: Township Board of Commissioners
- Meeting Schedule: 3rd Thursday of the month, 7:00pm
- Ratio of full-time employees to consumers: not provided
- Number of service connections: not provided
- Water type: N/A
- Number of shutoff notices in the past calendar year: not provided
- Website: https://goh2o.net/stwd/profile

Tarentum Borough Water Department:
318 E 2nd Ave, Tarentum, PA 15084

- Contact: jadams@tarentumboro.com or 724-224-1818 x202 or 724.224.9688
- Oversight Type: Borough Council
- Meeting Schedule: 1st Tuesday of the month, 6:00pm
- Ratio of full-time employees to consumers: 10: 2300
- Number of service connections: 1978
- Water type: surface
- Number of shutoff notices in the past calendar year: 350
- Website: http://tarentumboro.com/water

West View Borough Municipal Authority:
210 Perry Hwy, Pittsburgh, PA 15229

- Contact: customerservice@westviewwater.org or 412-931-3292
- Oversight Type: Board
- Meeting Schedule: 3rd Wednesday, 4:00pm, 210 Perry Highway
- Ratio of full-time employees to consumers: 126: 60,408
- Number of service connections: 54,118
- Water type: Surface
- Number of shutoff notices in the past calendar year: 6,675
- Website: https://westviewwater.org/

Western Allegheny County Municipal Authority:
403 Virginia Dr, Oakdale, PA 15071

- Contact: nadine@wacmawater.com, info@wacmawater.com or 412-788-4337
- Oversight Type: Board
- Meeting Schedule: 3rd Tuesday of the month, 7:30 pm
- Ratio of full-time employees to consumers: 9:7196
- Number of service connections: 6802
- Water type: Purchased surface
- Number of shutoff notices in the past calendar year: not provided
- Website: https://www.wacmawater.com/

Westmoreland County Municipal Authority - McKeesport: 124 Park and Pool Rd, New Stanton, PA 15672

- Contact: 724-755-5800
- Oversight Type: Board
- Meeting Schedule: 2nd Wednesday of the month, 12:00pm
- Ratio of full-time employees to consumers: Not provided
- Number of service connections: Not provided
- Water type: surface
- Number of shutoff notices in the past calendar year: Not provided
- Website: https://www.mawc.org/

Wilkinsburg-Penn Joint Water Authority:
2200 Robinson Blvd, Pittsburgh, PA 15221

- Contact: 412-243-6200
- Oversight Type: Board
- Meeting Schedule: 4th Tuesday of the month, 6:30 workshop; 7:00pm meeting
- Ratio of full-time employees to consumers: 93: 38,584
- Number of service connections: 39,302
- Water type: Surface
- Number of shutoff notices in the past calendar year: 22,354
- Website: https://www.wpjwa.com/

FEDERAL

Reducing Lead in Drinking Water Grant

- Eligible entities include community water systems, non-governmental organizations, tribal water systems, nontransient noncommunity water systems, and municipality or state, interstate, or inter-municipal agencies.
- Eligible projects include projects or activities where the primary purpose of which is to reduce the concentration of lead in water for human consumption. Priority will be given to disadvantaged communities with an action level exceedance in the last three years or to address lead levels in school, daycare, or other facilities that primarily serve children.
- **Contact**: WIINDrinkingWaterGrants@epa.gov

LSLR Funding Sources

Water Infrastructure Finance and Innovation Act

- The WIFIA program accelerates investment in our nation's water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects.
- Contact page

Assistance for Small and Disadvantaged Communities Drinking Water Grant

- This program assists public water systems in underserved, small, and disadvantaged communities in meeting Safe Drinking Water Act (SDWA) requirements. The grant will include approximately $42.8 million in funding for 2019.
  - For the purposes of this Grant Program, a disadvantaged community is one determined by the state to be disadvantaged under the affordability criteria established by the State under section 1452(d)(3) of the SDWA, or may become a disadvantaged community as a result of carrying out a project or activity.
  - A project in a small community is eligible for assistance if the community served has a population of less than 10,000 individuals and lacks the capacity to incur debt sufficient to finance a project to comply with the SDWA.
  - Eligible projects include:
    - Investments necessary for a public water system to comply with SDWA
    - Assistance that directly and primarily benefits a disadvantaged community
    - Programs to provide household water quality testing, including testing for unregulated contaminants
    - Activities necessary and appropriate for a State to respond to a contaminants:
  - Example project and activity categories include:
    - Treatment
    - Transmission and Distribution
    - Storage
    - Consolidation
    - Household water quality testing, including for unregulated contaminants
    - Assistance to increase technical, managerial, and financial capacity
    - Drinking water contamination response efforts
  - **Apply**: www.Grants.gov CFDA 66.442

HUD Community Development Block Grant (CDBG)

- This program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at HUD. The CDBG program provides annual grants on a formula basis to 1209 general units of local government and States.
- Eligible grantees:
  - Principal cities of Metropolitan Statistical Areas (MSAs)
  - Other metropolitan cities with populations of at least 50,000
  - Qualified urban counties with populations of at least 200,000 (excluding the population of entitled cities)
- Eligibility for participation as an entitlement community is based on population data provided by the U.S. Census Bureau and metropolitan area delineations published by the Office of Management and Budget. HUD determines the amount of each entitlement grantee's annual funding allocation by a statutory dual formula which uses several objective measures of community needs, including the extent of poverty, population, housing overcrowding, age of housing and population growth lag in relationship to other metropolitan areas.
- Eligible activities:
  - Acquisition of real property
  - Relocation and demolition
  - Rehabilitation of residential and non-residential structures
  - Construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes
  - Public services, within certain limits
  - Activities relating to energy conservation and renewable energy resources
  - Provision of assistance to profit-motivated businesses to carry out economic development and job creation/retention activities
- Each activity must meet one of the following national objectives for the program: benefit low- and moderate-income persons, prevention or elimination of slums or blight, or address community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community for which other funding is not available
- Apply: To apply for funding, applicants must submit the DCED Single Application for Assistance at: https://www.esa.dced.state.pa.us/Login.aspx

Drinking Water State Revolving Fund

- Through October 4, 2020, states may transfer funds from their Clean Water State Revolving Fund (CWSRF) to their DWSRF to address lead-related threats to public health in drinking water. These funds must be used for DWSRF-eligible, lead-related projects and must be used for loans with principal forgiveness, negative interest rates, and/or grants.
- This additional transfer flexibility can help states and local governments finance important projects at lower cost. Details about this temporary authority are located in this memorandum: One Year Inter-SRF Transfer Authority to Address Lead in Drinking Water (PDF).
- Eligible projects:
  - **Infrastructure Replacement:** Complete service line replacement is an eligible DWSRF expense, regardless of pipe material and ownership of the property on which the service line is located. The entire service line from the public water main to the point at which it connects with premise plumbing is DWSRF-eligible.
  - **Corrosion Control Optimization:** Corrosion control planning and design, as well as associated capital infrastructure projects, are eligible for DWSRF loan funding. States may also use set-aside funds to assist water systems' development of corrosion control strategies (e.g. adding chemicals to modify drinking water chemistry).
  - **Lead Testing and Education:** States can use set-aside funds to present workshops, seminars, and other training events that provide operators with ongoing educational opportunities. Set-aside activities for educational purposes may include training school staff members or small system operators on how to perform lead monitoring and testing. Pilot testing and lead sampling (if not for compliance purposes) may also be eligible for set-aside funding.
  - **Interim/Emergency Protocols:** In the case of a "do not drink" order or other lead emergencies, states may use set-aside funds for limited infrastructure that is necessary for trucked-in water (i.e., storage tank and associated piping). This infrastructure must belong to the water system and ownership must continue after the emergency has concluded. Trucked-in water and bottled water are ineligible for DWSRF assistance.
  - To apply, contact Brion Johnson at 717-783-6798 // bjohnson@pa.gov or Richard Wright at 717-772-4059 // rwright@pa.gov

STATE

Pennvest Lead Line replacement

- Eligible projects
  - All drinking water projects otherwise eligible under the Act with adequately mapped and designated high-need lead line replacement areas that exceed the levels established by the Lead and Copper Rule shall be eligible for this Incentive. For such lead line replacement projects, PENNVEST will consider the rate impact on the specific service areas or neighborhoods within the larger system in lieu of overall system users.
- Projects must:
  - Be drinking water lead line replacement projects
  - Have adequately mapped and designated high need lead line replacement areas that exceed the levels established by the LCR
  - To apply, use the Pennvest portal

Schools and Childcare Centers

Appalachian Regional Commission

This program provides *grants* to improve *critical infrastructure*. Applicants must be a non-profit organization, school, faith-based organization, tribal entity, or government entity in the region of Appalachia.

- Opportunities are issued as a request for proposal
- Contact
  - 202-884-7700
  - info@arc.gov

Blue Hub Capital

This program is a community development *loan* fund that supports private businesses, including childcare facilities and private schools.

- Contact
  - 617-933-5858
  - jangarita@bluehubcapital.org

Harry and Jeanette Weinberg Foundation

The Foundation provides grants to programs promoting a variety of broad categories, including health. Eligible applicants must be within a rural community and submit a Letter of Intent (LOI) to apply.

- Contact
  - 410-654-8500
  - 808-924-1000

Leona Gruber Trust

The Foundation provides grants to organizations like educational institutions for programs that improve health. Organizations in Lehigh and Northampton Counties will receive priority, but outside areas are eligible.

Northside Community Development Fund
This program provides loans for construction, repair, and modernization. Eligible applicants must be private businesses in the zip codes 15212, 15214, or 15233 within the City of Pittsburgh, PA.

Pennsylvania Drinking Water State Revolving Fund
This program, created by the 1996 Amendments to the Safe Drinking Water Act (SDWA), provides financial support to help water systems and states achieve public health protection. States rank the project applications they receive from water systems and produce a project priority list for funding.

Planning and Construction Workbook
This program is administered by the Pennsylvania Department of Education, and funding is in the form of reimbursement to public schools that undertake large construction or renovation projects. The program uses factors such as classroom capacity to calculate the level of reimbursement offered.

The Boeing Company
The Foundation provides grants to community projects. Eligible projects must be in a community with a Boeing location.
- Contact
  - 972-705-8100

The Charles Stewart Mott Foundation
The Foundation provides grants for securing clean water. Eligible projects must be in the Great Lakes basin, and a Letter of Intent (LOI) must be submitted.

The Joyce Foundation
The Foundation provides funding to projects that address issues related to education and the environment. The Foundation funds institutions and organizations that strive to improve education in public schools. The Foundation does not directly fund individual schools or school districts
- Contact
  - 312-782-2464
  - info@joycefdn.org

Carnegie Corporation of New York
The Foundation provides grants to 501(c)(3) tax exempt or equivalent organizations for non-construction related spending. Grants are given by invitation only.

Cedar Tree Foundation
The Foundation provides grants to programs designed to reduce children's exposure to toxic chemicals in their environment. Funding opportunities are issued with a request or proposal.
- Contact
  - 617-695-6767

Centers for Disease Control (CDC) Prevention and Public Health Funds (PPHF)
PPHF is administered by CDC and funding is allocated to a select grouping of states every year. A portion of the PPHF is used to fund lead poisoning prevention programmatic activities. To learn if your state is currently slotted to receive PPHF funding and to find contact information for the program's administrators, visit the organization's website.

Charles Lafitte Foundation
The Foundation provides grants to projects focused on children's advocacy. Applicants must be a certified 501(c)(3) organization.
- Contact
  - jennifer@charleslafitte.org

Charter Impact Fund
This program provides loans to charter schools. Qualified charter schools must have strong academic and operating performance.
- Contact
  - charters@charterimpactfund.org

Charter Schools Development Corporation Direct
This program provides loans to public charter schools with 501(c)(3) designation.
- Contact
  - info@csdc.org

Citigroup Foundation
The Foundation provides grants to projects focused on improving cities facing challenges. Eligible applicants must be a registered 501(c)(3), a registered school, university, or a government entity to apply.

Civic Builders
This program provides loans to charter schools to cover up to 90% of renovation costs.

Cornell Douglas Foundation
The Foundation provides small grants to promote environmental health and justice. Eligible applicants must be a registered non-profit organization.
- Contact
  - 301-229-3008
  - cdf@cornelldouglas.org

LSLR Funding Sources

Corning Incorporated Foundation

The Foundation provides grants to a variety of programs, including programs that target at-risk youth. Eligible projects must be community-based programs where Corning has a strong presence.

- Contact
  - 607-974-3719
  - knowlesal@corning.com

Cruise Industry Charitable Foundation

The Foundation provides grants to a variety of programs, including programs improving public health. Eligible applicants must be a registered non-profit organization.

- Contact
  - 202-759-6769
  - cicfrequest@cruising.org

Farmer's Insurance Thank America's Teachers

This opportunity provides grants to programs that help educate students. Applicants must be a teacher at the respective school holding the program.

- Contact
  - ThankAmericasTeachers@farmersinsurance.com

Ford Foundation

The Foundation provides a variety of grant opportunities with unique priorities.

Halliburton Foundation

The Foundation provides grants to projects that promote health and education. Eligible applicants must be a registered 501(c)(3) or a political subdivision (schools, municipal foundations, etc.).

Highmark Foundation

The Foundation provides grants for lead testing but not remediation. Eligible applicants must be a registered non-profit organization.

- Contact
  - 1-866-594-1730
  - info@highmarkfoundation.org

International Paper Company Foundation

The Foundation provides grants for a variety of projects, including the promotion of health and wellness. Eligible projects must be in proximity of an International Paper location.

- Contact
  - phyliss.epp@ipaper.com

Kopp Family Foundation

The Foundation provides grants to programs that promote education and youth development.

- Contact
  - 952-841-0438
  - foundation@koppinv.com

Lowe's Toolbox for Education

This program provides grants to schools for a variety of projects, including facility renovations and safety improvements. Grants are given by invitation only.

- Contact
  - 1-800-644-3561 ext. 7
  - schools@tooboxforeducation.com

Omron Foundation, Inc.

The Foundation provides grants to a variety of programs, including ones improving education and health. Eligible applicants must be a registered non-profit organization.

- Contact
  - 224-520-7650
  - OFI@omron.com

Reiman Foundation

The Foundation has a variety of funding priorities, including education and health. Eligible applicants must be a registered non-profit organization.

- Contact
  - 262-696-4455
  - reimanfoundation@hexagoninc.com

Robert Wood Johnson Foundation

The Foundation provides a variety of grants for projects that promote health.

- Contact
  - 877-843-7953
  - mail@rwjf.org

SC Johnson Fund, Inc.

The Foundation provides grants for a variety of priorities, including health and well-being. Eligible applicants must be a registered 501(c)(3) or government entity.

- Contact
  - USCommu@scj.com

Sony USA Foundation

The Foundation provides grants for a variety of project types. Applicants must have 501(c)(3) non-profit status and submit a written proposal.

- Contact
  - 858-842-8565
  - SELCommunityAffairs@am.sony.com

The Harry Chapin Foundation
The Foundation has a wide variety of funding opportunities, including education and community. Applicants must be designated as a 501(c)(3) to apply for funding.
- Contact
  - 631-423-7558
  - harrychapinfound@aol.com

The Home Depot
This program offers support in the form of Home Depot gift cards to supplement capital improvement projects. Applicants must be designated as 501(c) or tax-exempt public service agencies to qualify for funding.
- Contact
  - thdf_cig@homedepot.com

The Kresge Foundation
The Foundation offers grants in six core areas, including health, environment, and education. Applicants must be a non-profit organization, government entity, or faith-based organization to be eligible for funding.

The Lawrence Foundation
The Foundation has a wide variety of funding priorities, including the environment, and offers grants to non-profit organizations and public schools.

The Max and Victoria Dreyfus Foundation
The Foundation makes small to medium-sized grants available to non-profit organizations and schools located within the US.
- Contact
  - 202-337-3300
  - info@mvdreyfusfoundation.org

The Michael and Susan Dell Foundation
The Foundation has a wide variety of funding opportunities in areas related to youth education, health, and the environment. Applicants must be designated as a non-profit to qualify for funding.
- Contact
  - info@msdf.org

The Ronald W. Burkle Foundation
The Foundation has a wide variety of funding priorities, including education. Eligible organizations must be designated as 501(c)(3) and must submit a Letter of Intent (LOI) before applying.

The Standard Charitable Foundation Grants
The Foundation has multiple funding priorities, including healthy communities and education. Funding can be used to support a wide variety of programs, including capital and program support. Applicants must be a designated non-profit to be eligible for funding.

The Tony Robbins Foundation
The Foundation has a wide variety of funding priorities, including youth. To be eligible for funding, applicants must be designated as a 501(c)(3).
- Contact
  - 800-554-0619
  - foundation@thetonyrobbinsfoundation.org

The William Bingham Foundation
The Foundation makes grants available exclusively to US public charities. Most grants are given by invitation only.
- Contact
  - 216-759-9142
  - info@wbinghamfoundation.org
  - dh@wbhamfoundation.org

US Department of Agriculture (USDA) Rural Development Community Facilities Direct Loan & Grant Program
This program is administered by the USDA and is targeted at community facilities in small to mid-sized communities throughout the country. Any public entity that operates a community facility, as defined by the program, can apply to receive funding for up to 75% of costs for construction and renovation-related projects.

W.K. Kellogg Foundation
The Foundation offers a variety of grants that each have varying funding priorities. Visit the Foundation's website to learn more about each grant opportunity and if your organization is eligible for funding.
- Contact
  - 888-606-5905
  - conciergedesk@wkkf.org

Wells Fargo (Formerly Wachovia Foundation, Inc.)
The Foundation offers environmental grants to both non-profits and universities. The Foundation's funding priorities vary by state, and information about specific funding priorities in your state can be found by visiting their website.

Westinghouse Charitable Giving Program
This program offers funding support to projects related to education with a focus on STEM, environmental sustainability, or community safety.

WOMEN *for a Healthy* ENVIRONMENT

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