Lead in School Drinking Water

How Pennsylvania school districts and the commonwealth are failing to protect children's health

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Written by:

James Horrox, Frontier Group
David Masur, PennEnvironment Research & Policy Center

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Executive summary

For our children to stay healthy, they need access to safe, clean drinking water.

Every parent should be able to expect that their child's school district and school board are doing everything in their power to meet that need. And this includes protecting them from exposure to toxic substances that may be found in the drinking water supplied on school premises.

Recent research in Pennsylvania and across the country has indicated that children are ingesting lead via the drinking water provided in schools. A 2021 review of statewide data for Pennsylvania by the non-profit Women for a Healthy Environment, for example, showed that more than 90% of school districts in the commonwealth that tested for lead in their schools' drinking water were reporting lead contamination.[1]

Lead is a powerful neurotoxin, and especially harmful to children.

- The World Health Organization states that there is no safe level of lead exposure for children. Even tiny amounts of lead in children's blood have been linked to cognitive impairment, behavioral problems and learning difficulties.[2]
- The U.S. Environmental Protection Agency (EPA) likewise states that even low levels of lead exposure in children can lead to nervous system damage, learning disabilities, hearing problems, impaired blood cell formation and function, and a range of other impacts.[3]
- A 2022 study found that childhood lead exposure has shaved an average of 2.6 points off the IQ of every American alive today. That's around 824 million IQ points lost nationwide due to lead exposure.[4]

Despite a growing awareness of the dangers of lead, school districts across Pennsylvania and nationwide have been slow to act. The absence of strong policies at the local, state and federal levels is allowing school districts to continue with a business-as-usual approach that leaves our children at risk.

Strong action at the state and local level is essential in addressing the threat of lead in school drinking water, not least because even the weak federal standards regarding lead in water do not apply to most school districts.

Pennsylvania's only statewide policy designed to address the problem of lead in school drinking water – Act 39 of 2018 – unfortunately provides little to no protection for Pennsylvania's children. The law contains glaring loopholes that make it easy for school districts to avoid testing and remediating problems that may exist, or even informing parents, teachers or others about lead found in school drinking water.

Evidence uncovered through a series of Right-to-Know requests submitted to nine of the largest school districts in Pennsylvania indicates that, when it comes to lead in drinking water, school districts are failing in their responsibility to protect children in a number of ways. These include:

- **The "public meeting" exemption.** A loophole in Act 39 of 2018 allows school districts to opt out of testing for lead altogether, provided they simply discuss lead-related issues in their school facilities

at a public meeting at some point during the school year. The Altoona Area School District, Norristown Area School District and West Chester Area School District are among those who appear to have used this provision to avoid annual testing for lead in drinking water, potentially putting the health of children at risk while still complying with the law.

- **Failing to test or discuss lead issues in a public meeting.** While discussing lead issues at a public meeting is enough to exempt a school district from testing under current Pennsylvania law, several districts appear not even to be doing that. The Altoona Area School District, Bethlehem Area School District and Hazleton Area School District, for example, have had years when they neither conducted testing nor discussed lead at a public meeting.

- **Testing only a few outlets.** Testing just a few outlets rather than all drinking water taps virtually guarantees that some lead in a school's water system will go undetected. Yet even a school district that tests just a single outlet in each of its schools is technically in compliance with Pennsylvania's current law. We found that the Bethlehem Area School District has reported testing just three outlets in each of its 22 schools, York School District one outlet in each school building in its nine schools, and West Chester one outlet from each of its 17 schools.

- **Making water testing results difficult or impossible to find.** Any parent should be able to easily access the results of lead testing at their child's school. Some districts we assessed, however, make it difficult or nearly impossible to do so. We were unable to find any discussion of lead in drinking water on the websites of the Altoona, Bethlehem, Upper Darby, Harrisburg, Hazleton, Norristown or York school districts, for example. In some cases, we found references to lead testing buried in board meeting minutes, but in only a small number of those cases did minutes also include results of testing. While these are technically publicly available, they are not easily locatable. Some testing results were only accessible to us through legal avenues, through Right-to-Know requests.

- **Failing to publish results showing lead from school taps on the Department of Education website.** The lead testing requirements under Act 39 of 2018 mandate that test results showing the presence of lead in school drinking water be reported to the Pennsylvania Department of Education (PDE) and posted on the department's website. Our research found that this does not appear to be consistently happening. Several of the test results obtained through our Right-to-Know requests coming back positive for lead contamination are missing from the list on PDE's website.[5]

- **Failing to provide sufficient access to drinking water.** Kids need adequate access to drinking water throughout the day, so they can stay healthy and hydrated. Since 2018, Pennsylvania law has required that school buildings must provide one drinking water source for every 100 students, teachers and other occupants, yet only one of nine school districts surveyed – York – was able to demonstrate compliance with this requirement.

Pennsylvania's lax requirements around lead in school drinking water, combined with apparent noncompliance with those standards by many school districts, are putting the commonwealth's children at risk.

To properly protect Pennsylvania's children from the threat of lead contamination in water, policymakers must replace the state's current "test and fix" law with one that requires prevention at every tap used for drinking, cooking and beverage preparation in our schools.

Statewide policies to stop the widespread lead contamination of school drinking water should include:

- Mandating the replacement of all schools' drinking fountains with lead-filtering water bottle filling stations and the installation of lead-capturing filters on all other taps used for drinking, cooking and beverage preparation. Fountains beyond the 1:100 water source: building occupants requirement should either be replaced with lead-filtering water bottle filling stations or be shut off and/or removed.

- Mandating the installation of at least one such filtered outlet for every 100 students and/or school staff members in the building in line with current requirements under Pennsylvania law stipulating a 1:100 ratio of drinking water sources to building occupants.
- Requiring the full replacement of all lead service lines and establishing policies to ensure that schools are no longer purchasing or installing plumbing and fixtures that leach lead into water.
- Allocating funding to pay for these replacements.
- Mandating that all drinking outlets in every school district across the commonwealth meet the American Academy of Pediatrics' recommended limit on lead in schools' drinking water of 1 ppb.

In addition, the federal government should:

- Update the Lead and Copper Rule to require water utilities to install water stations with filters certified to remove lead and such point of use filters at all other drinking water and cooking taps at schools and childcare centers. At the very least, this requirement should apply to the relatively few schools and childcare centers that are federally regulated as public water systems.
- Finalize the U.S. Environmental Protection Agency's proposed 10-year deadline for water utilities to fully replace all lead service lines.
- Provide additional funding needed to help states and school districts to install filters and remove lead in water infrastructure, including lead service lines and plumbing/fixtures in schools.
- Marshal the authority of all relevant federal agencies – including the Department of Housing and Urban Development, the Department of the Interior and the Department of Agriculture – to protect public health from contamination of drinking water.

Introduction

In the ten years since the Flint, Mich., drinking water catastrophe, Americans have become increasingly aware that the presence of lead in drinking water threatens the health of millions of people across the country – especially children.

One way in which children can be exposed to lead is through the water they consume while at school.

Research conducted in Pennsylvania and elsewhere has shown widespread lead contamination in schools. A 2022 study by the PennEnvironment Research & Policy Center and the PennPIRG Education Fund, for example, revealed lead contamination at 98% of Philadelphia schools that tested their drinking water for lead.[6] A 2021 review of statewide data by the non-profit Women for a Healthy Environment showed that more than 90% of Pennsylvania school districts that tested for lead found lead contamination in their schools' drinking water.[7] Elsewhere in the country, states with more comprehensive testing data likewise show widespread contamination of schools' water.[8]

In some ways, this should come as no surprise. Most schools have at least some lead in their plumbing systems – even those built relatively recently. Until 2014, national codes allowed significant amounts of lead in new pipes, pipe fittings, plumbing fittings and fixtures.[9] Even some faucets that meet the current "lead-free" standard – having an average of less than 0.25% lead in contact with wet surfaces – can leach significant amounts of lead into drinking water.[10]

America has long recognized the need to get the lead out of everyday products, and growing awareness of the seriousness of the health risks of lead exposure has led to bans on lead in gasoline, paint and other products. But when it comes to water, instead of legislating to remove the threat at its source, national and state policies have embraced the illusion that it is possible to test our way out of the problem – only remediating where sampling confirms the presence of lead.

The nature of lead as a "moving contaminant," however – that is, a toxin that contaminates water via pipes, fittings and fixtures rather than being present in the original source – means that this "test and fix" approach provides little to no protection.[11] Due to factors such as chemistry, temperature and vibration, concentrations of lead in water are so wildly variable that even when several tests of a single tap do not detect lead, water from that tap could still be "highly hazardous."[12]

And yet, this approach is standard practice for dealing with the threat of lead contamination in drinking water – including the water provided in our schools. Its profound flaws are magnified when only a few taps are tested, and infrequently at that.

Despite growing awareness of the threat of lead in drinking water, and the growing body of science confirming the inadequacy of the "test and fix" approach to addressing it, school districts in Pennsylvania and across the country have been slow to act, largely because of the absence of policies at the local, state and federal levels to ensure that the issue is addressed and remediated. Most schools are exempt from standards in the federal Lead and Copper Rule, intended to address lead in drinking water, and a recent report by the PennEnvironment Research & Policy Center gave Pennsylvania an "F" for its state-level policies for protecting children from this threat.[13]

While a small number of Pennsylvania school districts, such as Philadelphia and Pittsburgh, have taken strong action to stop this contamination, across the commonwealth there is little evidence of such protections.[14]

Currently, Pennsylvania's only statewide law relating to lead in school drinking water is Act 39 of 2018, which amended the state's Public School Code to include certain lead testing protocols. This statute, however, provides little to no protection from the threat of lead in school drinking water. On the contrary, it simply magnifies the flaws inherent in the "test and fix" approach, containing glaring loopholes that enable school districts to avoid testing and remediation. So egregious are these loopholes that the lead in drinking water policy laid out in the law is, to all intents and purposes, useless.

Given the extensive research showing the seriousness of the health impacts of lead exposure, especially for children, one would naturally assume that school districts and elected officials would be doing everything in their power to ensure the highest safety standards are in place to protect our children from the threat of lead in school drinking water. Current rules, however, mean that Pennsylvania schools are legally able to circumvent their obligation to fulfill even basic duties of testing for lead in drinking water – much less properly and fully remediating any problems identified – leaving school students across the commonwealth vulnerable to lead exposure.

In late 2023 and early 2024, the PennEnvironment Research & Policy Center submitted Right-to-Know requests to nine Pennsylvania school districts and analyzed the documents they provided to illuminate the ways in which current lead testing requirements are enabling school districts to skirt their responsibility to ensure the health and safety of the students under their care, while in almost all cases still being in compliance with Act 39 of 2018.

The bottom line is that even with the current law in place, our children are not being protected from lead in school drinking water. Even those districts acting completely within the law may still, thanks to shortcomings in the law itself, fail in their obligation to protect their students from lead. And other districts appear to be violating the law. The absence of enforcement mechanisms means that for those latter districts, there are no repercussions. In short, there is an urgent need for new, strong, enforceable regulations capable of doing the job they are designed to do: keep our children safe.

Lead in school drinking water is endangering our kids

Lead is a powerful neurotoxin and is especially harmful to children. Research suggests that children absorb as much as five times more lead into their bodies than adults from any given source.[15] Since their bones and organs are still developing, they are more vulnerable to lead contamination than adults, leading to behavioral and learning problems and a range of other impacts.

Experts now agree that there is no safe level of lead in children's blood. Even tiny blood-lead concentrations in children have been associated with decreased intelligence, behavioral problems and learning difficulties, according to the World Health Organization, and the EPA likewise states that even at these low levels, lead exposure in children can lead to nervous system damage, learning disabilities, hearing problems and impaired blood cell formation and function, among other impacts.[16] The EPA has for this reason set a maximum contaminant level goal (MCLG) of 0 ppb for lead in drinking water.[17]

As well as being a powerful neurotoxin, lead is a persistent one, meaning that once it is in the body, it can stay there for years after direct exposure has stopped. Even if a child drinks from a lead-contaminated water source only periodically, any neurological harm that results may be long-lasting. A 2012 study in Wisconsin found that fourth graders with low levels of lead in their blood scored "significantly lower" on reading and math tests than those without, and that this damage was still in evidence up to eight years later.[18] Another study, published in 2022, found that childhood lead exposure is responsible for the loss of 2.6 IQ points in every American alive today. That's around 824 million IQ points lost nationwide due to lead exposure.[19]

The "test and fix" approach doesn't work

America has long recognized the need to "get the lead out" of everyday products and our environment. As a result, lead is now legally banned from products such as gasoline and paint. But national policies to address the problem of lead contamination in drinking water have instead embraced the illusion that we can test our way out of the problem, only remediating in instances where sampling confirms the presence of lead.

Accordingly, standard practice for schools has been to test for lead in drinking water and treat only those drinking outlets that tested positive for lead contamination. However, this "test and fix" approach is now known to be wholly inadequate for protecting children's health.

In part, this is due to the specific nature of lead contamination itself. Lead is a "moving contaminant." In other words, because it is absorbed into the water from pipes and fixtures rather than being present in source water itself, with various environmental factors affecting the rate of absorption, an outlet tested one week and found to show no signs of lead contamination might the following week show high levels of lead.[20] It is also a highly variable contaminant, both spatially and temporally. Lead contamination in a building's water system at any given place and time is the result of a combination of several different factors, including water chemistry, water use patterns and the presence of lead plumbing materials.[21] These characteristics mean that testing only intermittently and/or testing just a few outlets in a given building will not give an accurate picture of whether that building's plumbing system contains lead contamination, making it impossible to obtain data capable of providing a reliable basis on which to estimate potential exposure.[22]

Lead concentrations in water are so highly variable that even the most rigorous testing can fail to detect it. Research has shown that water from a given fountain or faucet can be "highly hazardous" even after multiple samples indicate that it is safe to drink.[23] And certain sampling methods can compound the problem even further, leading to even greater inaccuracy in results and therefore potentially obscuring the presence of contamination. For example, "pre-stagnation flushing," where taps are run for prolonged lengths of time before test samples are drawn, tends to result in "false negatives" or results with lower lead levels in testing because samples no longer contain water that has been sitting stagnant in contact with lead-bearing pipes, plumbing or fixtures.[24]

So wildly inadequate is this "test and fix" approach as a means of identifying and remediating lead contamination in drinking water that one expert has likened current lead testing policy to Russian roulette.[25] And yet, it is this approach that has to date been the backbone of the few existing state policies meant to protect schoolchildren from the threat of lead in school drinking water.

Pennsylvania's lead testing requirements are inadequate for protecting children from lead in water

Pennsylvania's only statewide policy related to lead in school drinking water is known as Act 39 of 2018. This act amended the Pennsylvania Public School Code in an effort to prevent exposure to lead contamination in the drinking water of Pennsylvania's schools by attempting to require districts to test for lead and report their findings.

Lead testing requirements are covered in Section 742 of the statute, which states that from the 2018-2019 school year onwards, "school facilities… may be tested for lead levels in the drinking water."[26] Any facility where tests show "lead levels in excess of the maximum contaminant level goal or milligrams per liter" set by the EPA's "National Primary Drinking Water Regulations shall immediately implement a plan to ensure no child or adult is exposed to lead contamination [in] drinking water and that alternative sources of drinking water are made available."[27] Elevated test results must be reported to the Pennsylvania Department of Education (PDE) and made publicly available on PDE's website.[28]

Instead of solving the problem, however, this law in fact amplifies the inherent shortcomings of the "test and fix" approach, containing major loopholes that make it easy for school districts to avoid testing and avoid remediating problems that may exist.

Most notably, the law doesn't actually require schools to test for lead in their drinking water at all. Subsection (b) states that "[i]f a school entity does not test lead levels… the school entity shall, at a public meeting, discuss lead issues in the school facilities."[29] In other words, all a district has to do to exempt itself from having to test for lead in its schools' drinking water is to hold a public meeting at some point during the school year discussing the subject of lead in its schools.

Also notable is the fact that the law does not set any requirements for how many outlets in a school or school district must be tested, nor does it contain any requirement that results be shared directly with parents or others in the school district.

Many Pennsylvania school districts are failing to protect children from lead

Every parent should reasonably be able to expect that their child's school district is doing everything in its power to keep their child safe. This includes protecting them from exposure to toxic substances in the drinking water supplied on school premises. It should be a given that districts are removing potential lead threats, especially in light of the mountains of data demonstrating its extreme health risks, as well as recent high-profile drinking water contamination scandals such as Flint, Michigan.

The only legal tool Pennsylvania parents currently have related to lead contamination in school drinking water – Act 39 of 2018 – is demonstrably failing at the task it was designed to do. Not only does this law rely on antiquated practices that are no longer believed to protect children from this harmful contaminant, it also contains major loopholes that make it even more difficult to know the extent of the problem or empower parents, community leaders and elected officials to properly address risk where it does exist.

Based on evidence uncovered through a series of Right-to-Know requests submitted to nine school districts across the state, the following case studies show a number of ways in which school districts in Pennsylvania are failing to take adequate steps to protect the commonwealth's kids, leaving children throughout the Keystone State vulnerable to lead exposure through their schools' drinking water.

Failure to test for lead

Given the well-documented health risks of lead in drinking water and increasing awareness of the potential extent of this problem in America's schools, it would be logical to assume that schools that have not yet replaced pipes and fixtures with lead-free versions are at least conducting regular and comprehensive tests of their drinking water. From documentation obtained from Pennsylvania school districts through our Right-to-Know requests, however, it is clear that a number of districts are not doing this. In some cases, districts that do not conduct regular testing may be failing to comply with Act 39 of 2018. Others may be technically in compliance with the law, even though the testing they conduct is insufficient to provide any real protection against lead exposure.

The "public meeting" exemption for lead testing

The most glaring loophole in the 2018 water testing statute is the provision that "[i]f a school entity does not test lead levels … the school entity shall, at a public meeting, discuss lead issues in the school facilities."[30] In other words, school districts are legally free to choose simply to not test for lead at all, provided they discuss lead-related issues in their school facilities at a public meeting at some point during the school year. This provision is the most obvious example of how school districts can comply with Pennsylvania's inadequate law

but still put children at a potentially significant risk of tap water contaminated with lead.

The Altoona Area School District, for example, in response to our Right-to-Know request, produced test results from 2020 and 2022, but in 2023 held a meeting about lead testing and thus absolved themselves from having to test that year (there appeared to be no meeting discussing lead testing in 2021, however, see below).[31] Each year since the passage of Act 39 of 2018 except one (2019), the Norristown Area School District in Montgomery County has chosen not to test for lead in school drinking water and instead simply held the required meeting in which they stated their intent not to test, thus satisfying the requirements of the law. Based on their May 2023 Facilities-Finance Committee meeting, Norristown appears to be planning to test during the 2024-2025 school year.[32]

Documentation provided to the PennEnvironment Research & Policy Center in response to our Right-to-Know request indicates that the West Chester Area School District appears to be on a two- to three-year testing cycle. In the 2020-2021 school year, no testing was performed, and all drinking fountains in all buildings were closed per the district's adopted Health and Safety Plan. Testing was conducted in 2021-2022, and in 2022-2023 no testing was carried out, but the subject was discussed in a meeting of the Property & Finance Committee on March 20, 2023. Minutes from that meeting provided to us state simply that "a water quality testing update in accordance with Act 39 of 2018" was given, in which the committee was advised that "testing was completed last year and would continue to be tested on a 2-3-year cycle."[33]

While this is technically in compliance with Act 39, testing so infrequently provides no real protection. The nature of lead as a "moving contaminant" (see p.10) means that the more infrequent the testing, the less useful the results will be in providing an accurate picture of lead contamination in a building's water supply. Hence, while testing every two years and simply holding a meeting in the other years may be enough to comply with the letter of the law, it does not fulfill the *purpose* of the law, which is to ensure that children are not exposed to lead in their schools' drinking water.

Ignoring state requirements to test or discuss lead issues in a public meeting

While simply discussing lead issues at a public meeting is enough to legally exempt a school district from Pennsylvania's testing requirements for lead in school drinking water, several of the districts we assessed neither carried out annual testing *nor* appear to have discussed lead issues at a public meeting.

The Altoona Area School District, for example, in response to our Right-to-Know request, produced testing results from 2020 and 2022, but we were unable to find any record of a meeting discussing lead testing having been held in 2021, nor any test results posted on PDE's website for that year.[34] The York City School District, similarly, did not report testing in 2020, 2021 or 2022 and does not appear to have held meetings relating to lead issues in those years.[35] The Bethlehem Area School District and Hazleton Area School District do not test every school year, and in years when no testing is carried out, neither district appears to hold meetings discussing testing.[36]

While some school districts have had individual years when they have neither tested for lead nor held a meeting on the subject, one school district appears never to have tested for lead at all or held any meeting on the subject. Headquartered in Hazle Township and serving around 12,000 students across Luzerne, Schuylkill and Carbon counties, the Hazleton Area School District only tests water in one school, which is on well water, and these tests do not appear to include tests for lead.[37] District officials informed us that all water testing is done by the city, and that the school district itself does not do any testing, suggesting confusion over the requirements of the law.[38]

Having found no lead testing results for the school among the test results produced for the school building on well water in response to our Right-to-Know request, and having searched Hazleton's publicly available board meeting minutes from the 2017-2018 school year to the 2022-2023 school year and found that no discussion of lead in water testing had taken place at any point during those years, we contacted

the district for further clarification regarding whether lead testing had been conducted at any of the district's schools. At the time of writing, no such clarification has been received.

Not testing enough outlets to provide meaningful health and safety assurances

In some cases, even those school districts that conduct testing include so few drinking outlets in their sampling that any assurances that the health of the students are being protected are essentially meaningless. Because of the nature of lead as a moving and highly variable contaminant, data derived from testing just a few outlets rather than outlets from across a building's entire plumbing system is useless as a basis for determining whether that system contains lead contamination.[39] Nevertheless, since the law does not stipulate a minimum number of outlets that must be tested in a school or school district, even a school district that tests just a single outlet in each of its schools is technically in compliance with the law.[40]

From our Right-to-Know requests it emerged that the Bethlehem Area School District's tests are limited to a kitchen faucet and two water fountains in each of its schools, for example, with certain buildings testing just one water fountain.[41] The Upper Darby School District tests two fountains, the nurse's office and the kitchen in each school; the York City School District tests one outlet in each building (and is not testing annually), and the West Chester Area School District just one outlet from each of its schools.[42] While not nearly sufficient to protect the health of students, this is nonetheless enough to satisfy the requirements of the law.

Making water testing results difficult or impossible to find

Any parent should be able to easily access the results of lead testing at their child's school if such testing has been carried out, and in particular if that testing has shown the presence of lead. Most school districts we assessed, however, do not make it easy to access lead in water testing information, either by not posting the results on their website or by burying them in board meeting minutes, which, while technically publicly available, tend to be very difficult to find.

We were unable to find any discussion of lead in water testing, or test results, on the websites of the Altoona, Bethlehem, Harrisburg, Hazleton, Norristown, Upper Darby or York school districts, for example. For three of these districts – Altoona, Bethlehem and Upper Darby, all of which have done at least some testing – we did find some references to lead testing in board meeting documents.[43] In the case of Bethlehem, some results of lead testing were accessible in, or via links contained in, these meeting minutes – technically publicly available, but very hard to find.[44] Altoona and Upper Darby meeting minutes showed discussion of lead testing but as far as we could tell did not contain any testing results.[45]

In some cases, including Altoona, we were only able to gain access to the results of lead testing after filing Right-to-Know requests. In response to our requests, Altoona produced testing results that appear not to be included in their board meeting documents.

Failing to publish lead contamination on the Department of Education website

Under the 2018 law, test results showing elevated lead levels must be reported to the Pennsylvania Department of Education and posted on the department's website. Our research, however, found that this is not consistently happening.

We found that several of the positive test results obtained through our Right-to-Know requests are missing from the list published on the PDE website.[46] For example, results for a location in the William P. Kimmel School in the Altoona Area School District that tested positive for lead contamination in 2019, both in an initial test and a subsequent retest, do not appear in the PDE report.[47] Other examples of positive test results that were disclosed to us as a result of our Right-to-Know requests but which were absent from the list published on PDE's website include four samples from the Harrisburg School District in 2021, four outlets from the Norristown Area School District from the 2018-2019 school year,

and various results for Ferguson K-8 (York) from tests carried out in March 2023.[48]

In response to our request for clarification, PDE staff reviewed the data submissions for lead testing results and found no communications relating to these specific samples with any of the three school districts involved.[49]

Failing to meet the required standard of a 1:100 ratio of water fountains to building occupants

Over the course of our research, it became clear that the ineffectiveness of Act 39 of 2018 isn't the only way Pennsylvania schools are failing the commonwealth's children when it comes to the drinking water they provide. For example, healthy hydration for kids doesn't just require safe drinking water – it also requires that children have *access* to that water, and we found that in many cases school districts were either in violation of current drinking water requirements designed to ensure that access, or unable to demonstrate compliance.

The International Building Code, adopted by Pennsylvania, which provides the minimum number of plumbing fixtures based on the International Plumbing Code, stipulates that educational facilities must have one water fountain for every 100 occupants.[50] While determining exactly how many school districts are meeting this standard has proved impossible, since many of the districts we assessed were unable to produce documentation showing the number of fountains or water bottle filling stations in each school building, it is clear that this requirement is not always being adhered to.

In at least three districts it was certain that the 1:100 ratio requirement was not being met. The Scranton School District, for example, confirmed that they do not have enough hydration stations to satisfy the 1:100 ratio (the district has taken almost all their fountains offline and now provides spring water where they have not yet installed hydration stations).[51] At the time of our requests, at least one school in the West Chester Area School District (Peirce Middle School) and at least two schools in the Altoona Area School District (Juniata and Logan) appeared not to meet the standard of a 1:100 ratio (though a "bottle filler installation project" was discussed in various Altoona facilities committee meetings in 2022 and 2023).[52]

The Bethlehem, Hazleton and Norristown school districts informed us that they did not have documentation showing the total number of fountains/hydration stations in each school building.[53] The Harrisburg School District produced purchase orders for 83 bottle filling stations but told us that they did not have any documents showing where or when they were installed, and the Upper Darby School District produced a document showing the number of hydration stations in each building but had no similar document for fountains.[54] Of the nine districts surveyed in our research, only one – York – was able to produce documentation demonstrating compliance with the 1:100 ratio.[55]

Pennsylvania's schools are failing in multiple ways to provide access to safe sources of drinking water

The categories we identify here are not mutually exclusive. In fact, all but one of the school districts we assessed for the purposes of this research appear to be failing to ensure their students have access to safe drinking water in more than one way. Every district we assessed fails on at least one of the categories we identify, with one school district – Altoona – at one time or another failing in every category.

Table 1.

Category	Altoona	Bethlehem	Harrisburg	Hazleton	Norristown	Scranton	Upper Darby	West Chester	York
Used the public meeting exemption	X				X			X	
No annual testing or meeting	X	X		X					X
Few outlets tested	X	X					X	X	X
Test results hard or impossible to find	X	X	X	X	X		X		X
Elevated lead levels not published on PDE site	X		X	N/A †	X				X
1:100 ratio not met	X	Unk.*	Unk.*	Unk.*	Unk.*	X	Unk.*	X	

** Unknown–denotes districts that informed us that they were unable to produce documentation proving the total number of fountains and/or hydration stations in each school building, and for which we were therefore unable to establish whether or not they met the 1:100 standard.*

† No evidence of testing, therefore no results to publish.

Conclusion and policy recommendations

The threat of lead contamination from school drinking water puts children all across Pennsylvania at risk. To properly protect our kids' health, the state's existing laws, demonstrably inadequate in mitigating these risks, must be replaced with strong, enforceable lead remediation and testing requirements.

Policymakers must replace the state's current "test and fix" approach, as enshrined in the poorly designed Act 39 of 2018, with one that requires prevention at every tap used for drinking, cooking and beverage preparation in our schools. Philadelphia and Pittsburgh are now implementing this much more health-protective approach on their own. Now we need to protect drinking water for the rest of Pennsylvania's kids.

Statewide policies to stop the widespread lead contamination of school drinking water should include:

- Mandating the replacement of all schools' drinking fountains with lead-filtering water bottle filling stations and the installation of lead-capturing filters on all other taps used for drinking, cooking and beverage preparation. Fountains beyond the 1:100 water source: building occupants requirement should either be replaced with lead-filtering water bottle filling stations or be shut off and/or removed.
- Mandating the installation of at least one such filtered outlet for every 100 students and/or school staff members in the building in line with current requirements under Pennsylvania law stipulating a 1:100 ratio of drinking water sources to building occupants.
- Requiring the full replacement of all lead service lines and establishing policies to ensure that schools are no longer purchasing or installing plumbing and fixtures that leach lead into water.
- Allocating funding to pay for these replacements.
- Mandating that all drinking outlets in every school district across the commonwealth meet the American Academy of Pediatrics' recommended limit on lead in schools' drinking water of 1 ppb.

Until such time as Pennsylvania state officials enact such policies, school districts should adopt them independently, as Philadelphia and Pittsburgh have done with filtered hydration stations.

In addition, the federal government should:

- Update the Lead and Copper Rule to require water utilities to install water stations with filters certified to remove lead and such point of use filters at all other drinking water and cooking taps at schools and childcare centers. At the very least, this requirement should apply to the relatively few schools and child care centers that are federally regulated as public water systems.
- Finalize the U.S. Environmental Protection Agency's proposed 10-year deadline for water utilities to fully replace all lead service lines.
- Provide additional funding needed to help states and school districts to install filters and remove lead in water infrastructure, including lead service lines and plumbing/fixtures in schools.
- Marshal the authority of all relevant federal agencies – including the Department of Housing and Urban Development, the Department of the Interior and the Department of Agriculture – to protect public health from contamination of drinking water.

Methodology

The information in this report comes primarily from documentation provided to us by Pennsylvania school districts through the Right-To-Know process and through follow-up correspondence with district officials.

We began by filing Right-to-Know (RTK) requests with school districts. We sent RTK requests in phases: Altoona, Harrisburg, Scranton and Upper Darby on October 12, 2023; Hazleton, Norristown and West Chester on October 31, 2023; and Bethlehem and York on January 9, 2024. Every school district took a 30-day extension as permitted by the RTK law and produced documents within 30 days.

We then reviewed the documents received to determine whether there were any missing documents or categories of documents. Documents received electronically were saved to our system and those received in hard copy scanned and saved. We sorted through the documents page by page to establish which request they had been produced in response to and, where necessary, followed up with school districts to obtain further clarification regarding the documents received – for example, on whether they constituted the complete universe of documents or whether the school was not in possession of any materials responsive to a specific request.

If a district responded that there were no further documents they could produce that would be responsive to the RTKs, this concluded our RTK process with that district. If, on the other hand, school districts did not respond with such confirmation, we filed an appeal with the Office of Open Records. In each appeal based on possibly missing documents we were able to reach an agreement with the school district, as they confirmed that the documents they had shared with us were all that they had that were responsive to the RTKs, at which point we withdrew our appeals.

Appendix

Template cover email accompanying RTK requests:

Dear ...,

Our office represents the PennEnvironment Research & Policy Center (PAERPC), a Pennsylvania-based 501(c)(3) non-profit environmental organization. PAERPC is in the process of researching the testing and remediation methods used by school districts throughout the Commonwealth to address the potential threat of lead in school drinking and cooking water. Thus, PAERPC is collecting information about the current practices of school districts to tackle the threat of lead in water. PAERPC plans to use this information to develop an analysis of current practices being implemented and funding needs for clean drinking water infrastructure in school districts across the Commonwealth.

To this end, we enclose the attached right-to-know request. We have already gathered as much information online as possible to assist in this effort, and the attached request covers the remaining information PAERPC requires to complete their analysis. PAERPC's goal is not to create busy work for you and your district, so therefore, PAERPC is willing to work in a collaborative manner with you to receive the requested information outside of the right-to know process and will consider withdrawing this request if the requested information is provided voluntarily. PAERPC is also available to work directly with you to identify best practices that can be implemented across your district as it relates to lead in school drinking and cooking water, and would coordinate with your staff to publicly promote this leadership to protect the health of Pennsylvania children.

Finally, as you know, lead in drinking water is not a new problem in Pennsylvania schools.

Pennsylvania's Public School Code requires schools to annually test their drinking water for lead, or in the alternative, hold a public meeting discussing lead issues in the schools. See 24 P.S § 7-742. If the "testing shows lead levels in excess of the maximum contaminant level goal or milligrams per liter as set by the United States Environmental Protection Agency's National Primary Drinking Water Regulations," the school must immediately report this information to the Department of Education. *Id.* The school must also ensure that no one in the school building has continued exposure to the contaminated drinking water and make available alternative drinking water sources. See id. The EPA has set its maximum contaminant level goal for lead at zero. See https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#one. With the help of school districts across the Commonwealth, PAERPC ultimately hopes to create a clean drinking water infrastructure in schools that would prevent school districts from having to waste resources as they repeatedly test, report, and retest because of unsafe levels of lead in school drinking and cooking water.

Please let me know whether you would like to discuss this further. Otherwise, we look forward to receiving your response.

Sincerely,

Notes

1 Kara Rubio, *The State of Environmental Health in Pennsylvania Schools: A Summary Report by Healthy Schools PA, a Program of Women for a Healthy Environment*, June 2021, p.3, archived at http://web.archive.org/web/20221206183251/https://womenforahealthyenvironment.org/wp-content/uploads/2021/08/SOSexecsummaryREV-002.pdf.

2 World Health Organization, *Lead Poisoning and Health*, archived at https://web.archive.org/web/20240611032243/https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health. Council on Environmental Health, "Prevention of childhood lead toxicity," *Pediatrics* (2016) 138 (1): e20161493, https://doi.org/10.1542/peds.2016-1493.

3 U.S. Environmental Protection Agency, *Basic Information about Lead in Drinking Water*, accessed June 16, 2024 archived at http://web.archive.org/web/20240530022502/https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

4 Michael J. McFarland et al., "Half of US population exposed to adverse lead levels in early childhood," *Proceedings of the National Academy of Sciences*, 119(11), 2022. https://doi.org/10.1073/pnas.2118631119.

5 The spreadsheet actually includes reporting back to 2018, for reasons that are unclear. It is also not clear whether it contains *all* results back to 2018.

6 Emma Horst-Martz et al., *Lead in the Water*, Environment America and US PIRG Education Fund, February 16, 2022, archived at http://web.archive.org/web/20240322193556/https://pirg.org/pennsylvania/resources/lead-in-the-water/.

7 Kara Rubio, *The State of Environmental Health in Pennsylvania Schools*.

8 Environment America, *Lead in Schools' Water* (data visualization), accessed June 1, 2024, at https://environmentamerica.org/resources/lead-in-schools-water/.

9 *Reduction of Lead in Drinking Water Act*, National Service for Environmental Publications U.S. Environmental Protection Agency, December 19, 2013, https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100M5DB.txt. California adopted stricter standards for plumbing lead content in 2010.

10 Tom Neltner, Environmental Defense Fund, "Lead from a new 'lead-free' brass faucet? More common than you'd hoped," November 6, 2018, archived at http://web.archive.org/web/20240416050928/https://blogs.edf.org/health/2018/11/06/nsf-61-lead-from-a-new-lead-free-brass-faucet/.

11 Lead as moving contaminant: Kate Holsopple, "How a state bill and a federal rule change could protect kids from lead in water," *The Allegheny Front*, December 8, 2023, archived at http://web.archive.org/web/20240223030312/https://www.alleghenyfront.org/pennsylvania-epa-lead-copper-rule-drinking-water-schools/.

12 Sheldon Masters et al., "Inherent variability in lead and copper collected during standardized sampling," *Environmental Monitoring and Assessment* 188 (3), 2016, p. 12. https://doi.org/10.1007/s10661-016-5182-x.

13 John Rumpler, Environment America Research & Policy Center, and Matt Casale, US PIRG Education Fund, *Get the Lead Out*, February 2023, archived at http://web.archive.org/web/20240125035802/https://environmentamerica.org/pennsylvania/center/resources/get-the-lead-out/.

14 In 2022, Philadelphia City Council unanimously passed a citywide ordinance that requires the School District of Philadelphia to replace all of their drinking fountains with lead-filtering hydration stations by the end of 2024; see *Philadelphia City Council passes one of the strongest local protections from lead in school drinking water in the nation* (press release), PennPIRG Education Fund, June 16, 2022, archived at http://web.archive.org/web/20221202130458/https://pirg.org/pennsylvania/media-center/philadelphia-city-council-passes-one-strongest-local-protections-lead-school-drinking-water/. Pittsburgh: see PennEnvironment Research & Policy Center, *Pittsburgh Public Schools Completes Groundbreaking Project to Minimize Threat of Lead in Water* (press release), May 7, 2024, archived at https://web.archive.org/web/20240613182117/https://environmentamerica.org/pennsylvania/center/media-center/pittsburgh-public-schools-completes-groundbreaking-project-to-minimize-threat-of-lead-in-water/.

15 World Health Organization, *Lead Poisoning and Health*.

16 World Health Organization, *Lead Poisoning and Health*. See also Council on Environmental Health, "Prevention of childhood lead toxicity." U.S. Environmental Protection Agency, *Basic Information about Lead in Drinking Water.*

17 U.S. Environmental Protection Agency, *Basic Information about Lead in Drinking Water.*

18 Cara Lombardo and Dee Hall, "'Regulatory vacuum' exposes Wisconsin children to lead in drinking water at schools, day care centers," *WisconsinWatch.org*, December 18, 2016, archived at http://web.archive.org/web/20230605104952/https://wisconsinwatch.org/2016/12/regulatory-vacuum-exposes-wisconsin-children-to-lead-in-drinking-water-at-schools-day-care-centers/.

19 Michael J. McFarland et al., "Half of US population exposed to adverse lead levels in early childhood."

20 Kate Holsopple, "How a state bill and a federal rule change could protect kids from lead in water."

21 Simoni Triantafyllidou et al., "Variability and sampling of lead (Pb) in drinking water: Assessing potential human exposure depends on the sampling protocol," *Environment International*, 146 (January 2021): 106259. https://doi.org/10.1016/j.envint.2020.106259.

22 Simoni Triantafyllidou et al., "Variability and sampling of lead (Pb) in drinking water."

23 Sheldon Masters et al., "Inherent variability in lead and copper collected during standardized sampling," cited in John Rumpler et al., *Get the Lead Out*.

24 See D.A. Lytle and M.R. Schock, "Impact of stagnation time on metal dissolution from plumbing materials in drinking water," *Journal of Water Supply: Research and Technology-Aqua*, 49 (5) (October 2000), 243–57. https://doi.org/10.2166/aqua.2000.0021, cited in John Rumpler et al., *Get the Lead Out*.

25 Dr. Marc Edwards, Virginia Tech, quoted in Michael Wines et al., "Schools nationwide still grapple with lead in water," *New York Times*, March 26, 2016, available at https://www.nytimes.com/2016/03/27/us/schools-nationwide-still-grapple-with-lead-in-water.html.

26 Pennsylvania General Assembly, *2018 Act 39*, Section 742, accessed May 1, 2024 at https://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?txtType=HTM&yr=2018&sessInd=0&act=0039.&chpt=000.&subchpt=000.&sctn=003.&subsctn=001.

27 Pennsylvania General Assembly, *2018 Act 39*, Section 742.

28 Pennsylvania General Assembly, *2018 Act 39*, Section 742.

29 Pennsylvania General Assembly, *2018 Act 39*, Section 742.

30 Pennsylvania General Assembly, *2018 Act 39*, Section 742.

31 Altoona: 2020 and 2022: Open Records Office, Altoona Area School District, Personal communication (re. Re: Right to Know Request), December 5, 2023. 2023: Altoona Area School District Facilities Committee Agenda, November 28, 2023.

32 Norristown Area School District Facilities-Finance Committee Meeting-6:00pm (Wednesday, May 10, 2023) Generated by Anne Marie Rohricht on Thursday, May 11, 2023, p.1.

33 2022-2023: West Chester Area School District Property & Finance Committee Meeting Minutes, March 20, 2023, p.2. Summary of all years: Carol DeLuca, Secretary, West Chester Area School District, Personal communication, December 14, 2023.

34 2020 and 2022: Open Records Office, Altoona Area School District, Personal communication (re. Re: Right to Know Request), December 5, 2023. Absent discussion of lead testing in 2021: Altoona Area School District Facilities Committee Meeting Summary, November 4, 2021.

35 Lori Ferrell, Right-to-Know Officer, School District of the City of York, Personal communication, March 5, 2024.

36 Bethlehem: Arutyun Aristakesian, Open Records Officer, Bethlehem Area School District, Personal communication, February 14, 2024. Hazleton: Anthony L. Lamanna, Hazleton Area School District, Personal communication, December 18, 2023.

37 One school on well water: Anthony L. Lamanna, Hazleton Area School District, Personal communication, December 18, 2023. Does not test for lead: Hawk Mtn Labs, results of testing at Drums Elementary School, report date April 5, 2022. Hawk Mtn Labs, results of testing at Drums Elementary School, report date January 3, 2023.

38 Anthony L. Lamanna, Hazleton Area School District, Personal communication, December 18, 2023.

39 Simoni Triantafyllidou et al., "Variability and sampling of lead (Pb) in drinking water."

40 The law is unclear on who exactly needs to test and what exactly needs to be tested. It states "*school facilities where children attend school* may be tested for lead levels in the drinking water" [italics added], but elsewhere, Subsection B says "if a *school entity* does not test lead levels [...] the school entity shall, at a public meeting, discuss lead issues in the school facilities" [italics added.] "School entity" is defined rather broadly in the Public School Code as "a school district, intermediate unit, joint school, area vocational-technical school, charter school, regional charter school or cyber charter school." (See https://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2018&sessInd=0&act=39.) The law therefore does not explicitly specify whether by "school entity" it means that every school in each district must be tested (if they even do decide to do so). However, given that it does state that "school facilities where children attend school" may be tested for lead, it is reasonable to infer that this means each school must be tested, and that the school district is responsible for complying with the statute. In other words, the law requires testing of a minimum of one outlet in each of a school district's schools if the district is conducting lead testing.

41 *BASD Water Testing Results* 2022, p.1, and Bethlehem Area School District 2020 Water Quality Test Plan and Results, p.1.

42 Upper Darby: See e.g., Upper Darby School District, *Report on Annual Water Testing – Informational*, February 28, 2023, p.1. York: Data received via personal communication from Fred Richstien, Laboratory, Analytical & Biological Services to Richard E. Muldrow Jr., York City Schools, March 13, 2023. West Chester: Eric Wysocki, Criterion Laboratories, to Mark Groves, Assistant Director of Facilities and Operations, Personal communication, March 29, 2022.

43 Bethlehem: Bethlehem Area School District, *Apr 08, 2019 – Board Facilities Committee Meeting* minutes. Bethlehem Area School District, *Jan 19, 2021 – Board Combined Committee Meeting* minutes (contains a link to test results). Bethlehem Area School District, *Jan 09, 2023 - Board Combined Committee Meeting* minutes (contains a link to test results). Norristown, too, discussed lead testing in board meeting minutes, but these minutes were only provided to us as a result of our Right-to-Know requests.

44 Bethlehem: Bethlehem Area School District, *Apr 08, 2019 – Board Facilities Committee Meeting* minutes. Bethlehem Area School District, *Jan 19, 2021 – Board Combined Committee Meeting* minutes (contains a link to test results). Bethlehem Area School District, *Jan 09, 2023 - Board Combined Committee Meeting* minutes (contains a link to test results).

45 While most of the school districts we assessed did not have a section on their website clearly discussing lead testing, most did have some board meeting minutes that discussed lead. These minutes were accessible through the districts' websites and therefore technically available online, but not in an easy or intuitive way. Mostly, to access these minutes, the district's website redirects to a separate board meeting minutes website where minutes are organized by date (rather than by subject area). We sorted through many of these board meeting minutes and clicked on numerous links in an attempt to find any meetings where lead in school drinking water was even discussed. Testing results themselves are not routinely included in these minutes.

46 See Pennsylvania Department of Education: https://www.education.pa.gov/. The spreadsheet includes reporting back to 2018, for reasons that are unclear. Also unclear is whether it contains *all* results back to 2018.

47 Doug J. Endler, Director of Buildings and Grounds, Altoona Area School District, Personal communication to RA-ED, Charles Prijatelj, Trevor Robinson and Jessica Oswald, January 17, 2020. Not in PDE report as of May 2024.

48 Four elevated samples: Daniel Gensemer, Element Environmental Solutions, to Mr. Craig Glass, Director of Operations Harrisburg School District, Personal communication, August 18, 2021, p.3.

49 Eric Levis, Deputy Policy Director, Pennsylvania Department of Education, Personal communication, June 20, 2024.

50 *2018 International Building Code*, "Chapter 29: Plumbing Systems," section 2902, accessed June 17, 2024, at https://codes.iccsafe.org/content/IBC2018P6/chapter-29-plumbing-systems#IBC2018P6_Ch29_Sec2902, Table 2902.1.

51 Robert Rucker, Director of Operations, Scranton School District, Personal communication, December 5, 2023.

52 West Chester: Peirce Middle School: *Attachment to RTKL Request Form to West Chester Area School District*. Altoona: Juniata and Logan: Attachment to RTKL Request Form to Altoona Area School District. Pennsylvania Department of Education, Office of Administration, *Enrollment in Public Schools 2022-23* (Excel workbook). Bottle filler installation project: Altoona Area School District Facilities Committee minutes: 9/29/22, 11/3/22, 12/1/22, 2/9/23, 4/6/23.

53 Bethlehem: Harry Aristakesian, Open Records Officer, Bethlehem Area School District, Personal communication, January 26, 2024. Hazleton: Robert J Krizansky, Hazleton Area School District, Personal communication (Right to Know Response Form), December 7, 2023. Norristown: Tanya Festa-Piedra, Open Records Officer, Norristown Area School District, Personal communication (re. Right to Know Request Received, October 31, 2023, December 1, 2023.

54 Harrisburg: Jatoya Drayton, Open Records Officer, Harrisburg School District, Personal communication (RE: Right to Know Request), December 8, 2023. Upper Darby: Craig Rogers, Chief Financial Officer and School Board Secretary, Upper Darby School District, Personal communication, November 20, 2023.

55 We conducted this analysis based on a document listing the fountains, a document showing the number of staff and a document showing student enrollment, provided to us by the school district. School District of the City of York, *Attachment to RTKL Request Form to the School District of the City of York*.