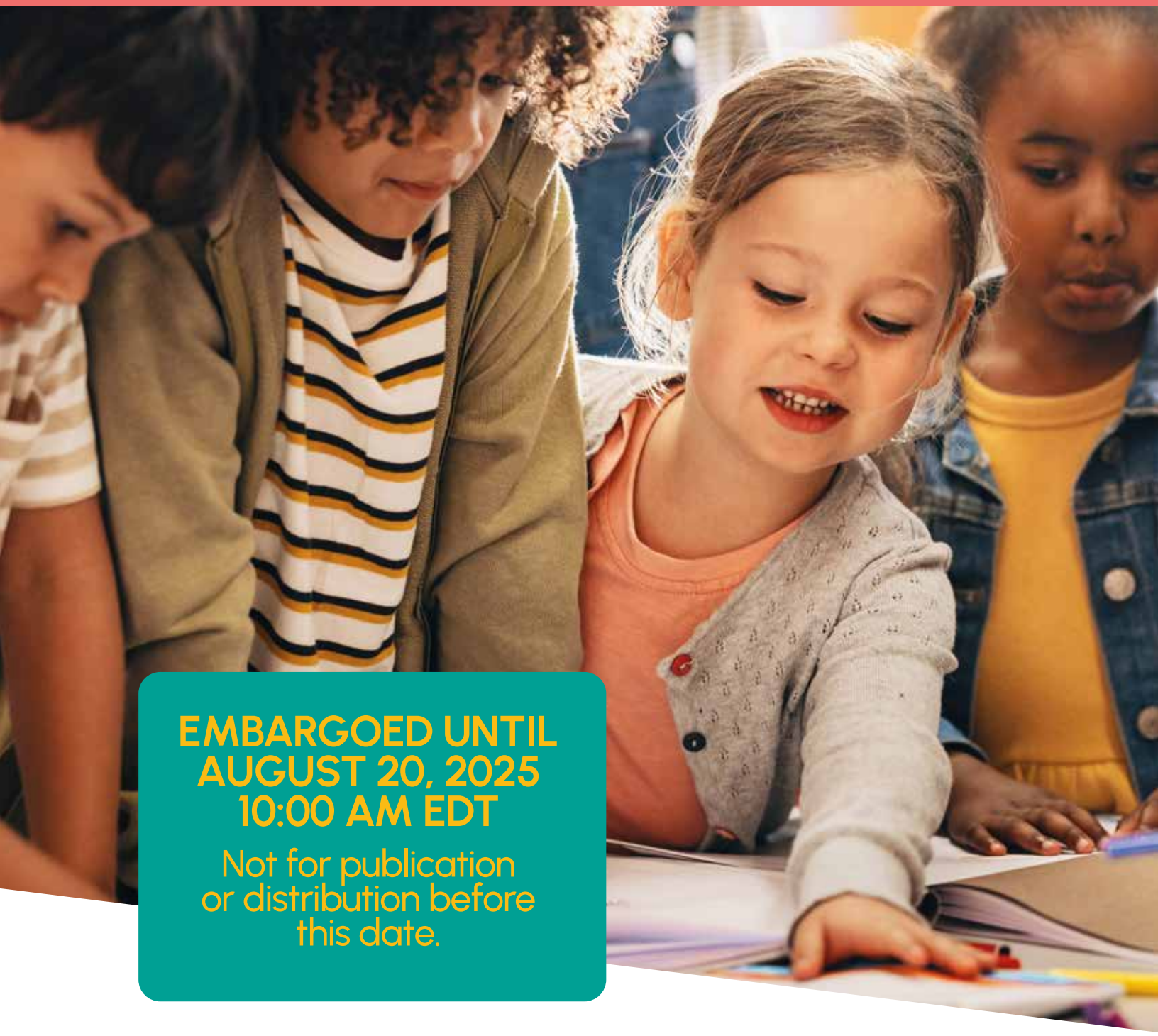
HEALTHY SCHOOLS



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State of Environmental Health in Pennsylvania Schools 2025

Women for a Healthy Environment

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About Women for a Healthy Environment

Women for a Healthy Environment (WHE) uses a scientific approach to achieve equitable lives free of environmental hazards through advocacy and community-based programs.

About Healthy Schools

Healthy Schools is a program of WHE and was created to act as a resource-rich information hub for the school community, including parents, teachers, staff and administrators. Since 2010, WHE has delivered curricula in the classroom to schools across Southwestern Pennsylvania (SWPA). Through technical assistance, Healthy Schools ensures that environmental risk factors are identified and eliminated in school buildings. The program provides information, support and hands-on assistance so that the region's children can thrive and learn to their fullest potential in a healthy, sustainable, toxic-free learning environment. Healthy Schools is designed to empower the school community to take an active role in creating healthy learning environments. By providing tools, guides and other resources, our program acts as a bridge between communities and their schools, effectively creating an advocacy network capable of bringing about social and policy change throughout the school system. Healthy Schools increases awareness in the school systems about environmental health factors and supports policies that directly correlate to improved health outcomes and academic performance by engaging the school community.

The goals of the program are:

- To serve as a central voice and hub for information across the region by engaging students, parents, community leaders and school district personnel;
- To increase awareness in the school systems about environmental health factors;
- To provide samples of policies that directly correlate to improved health outcomes and academic performance;
- To advocate for policy solutions that better protect the health of the school community; and
- To develop a platform that connects organizations such as parent-teacher associations, state agencies and non-government organizations to encourage collaboration.

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When children have a healthy and safe learning environment, children not only have a greater opportunity for healthy development and improved absenteeism, but research shows there is a greater ability to achieve academic potential.

Executive Summary

Children spend over 1,000 hours per year in school, which emphasizes the importance of a healthy indoor school environment free of environmental hazards. Even on school grounds, certain environmental threats still exist such as pesticide exposure and diesel fuel fumes. Children are especially vulnerable to environmental hazards due to their developing bodies. Environmental hazards in the built environment are not always apparent, and invisible hazards such as radon, lead (Pb) and poor indoor air quality can have detrimental effects on health. The COVID-19 pandemic brought to light the importance of actionable containment measures such as air ventilation and cleaning, sanitizing, and disinfecting in an environmentally friendly manner.

Sustaining healthy schools is a public health issue and demands the attention and collaboration of the entire school community (e.g., parents and school personnel), including entities invested in the school community (e.g., local, state, and federal agencies, as well as elected leaders). When children have a healthy and safe learning environment, children not only have a greater opportunity for healthy development and improved absenteeism, but research shows there is a greater ability to achieve academic potential [1].

The goal of this report is to collect and summarize data related to potential environmental hazards in school buildings and to draw comparisons between previous reports. We also identified trends among a statewide random sample of all schools in PA, in addition to southwestern PA school districts (SD). Additionally, we summarized data for total respondents (i.e. all school districts who responded to our request for information). We requested information from PA public school districts for a four-year period between July 2018 and June 2022. For consistency in comparison, answers to 21 questions (including detailed laboratory reports and results, when applicable) were obtained concerning topics addressed in previous reports [i.e., radon, lead in drinking water, water quality, indoor air quality (AQ), asthma prevalence, mold, green cleaning, polychlorinated biphenyls (PCBs), lead in dust/paint, artificial turf fields, pesticides, and anti-idling signage]. In this report, we asked new questions related to emergency preparedness; per- and polyfluoroalkyl substances (PFAS); electric vehicle (EV) buses; heating, ventilation and air conditioning (HVAC) updates; and American Rescue Plan Act (ARPA) and the Coronavirus Aid, Relief, and Economic Security Act (CARES) funding.

A common trend we saw in this report was that while some schools slightly improved in some environmental hazard areas, most schools in SW PA and the statewide sample had a lower rate of environmental testing/remediation and lower compliance with recommended best practices compared to previous reports. The reasons are outside of the scope of this report, but it can be surmised that schools have competing priorities when it comes to how they spend their limited funding. During the 2018-2022 period for this report, new funding opportunities opened for schools, but schools are not taking full advantage of these programs.

Each section in this report includes Recommended and Required Actions, where we reference existing or recommended policy actions, as well as strategies schools can adopt to address environmental health. We reference industry standards like American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and best practices from federal agencies such as the Environmental Protection Agency (EPA) and the Centers for Disease Control and Prevention (CDC), and state agencies such as the Pennsylvania Department of Education (PDE) and the Pennsylvania Department of Environmental Protection (PA DEP). We have also included a "Success Story" to recognize school districts that utilized available funding or implemented best practices with the goal that school districts will follow their lead.

This report is a call to action for school administrators and stakeholders invested in the school community to prioritize funding and public health-focused responses for existing environmental hazards. Pennsylvania is a unique hazard zone due to aging school infrastructure, geology, and the siting of school buildings near industrial pollution. For these reasons alone, Pennsylvania schools must address hazards in their school buildings to ensure a healthy school environment for every child to learn, grow, and play.

Key Findings

Key Findings Randomized Sample n=80

Environmental hazards testing reveals environmental health risks exist in PA schools.

The most tested environmental hazards are lead in drinking water (71% of SDs in sample), water quality (52.5% of SDs in sample) and mold (48.8% of SDs in sample). Testing for radon (5% of SDs in sample), lead paint (13.8% of SDs in sample), PFAS in water (5% of SDs in sample), and PCBs (6.3% of SDS in sample) were less common in the statewide sample. Though testing occurred, it was not consistent: some districts tested only a single building, a handful of classrooms or specific outlets; or tested buildings in different years; or a combination of the above.

Despite identifying hazards, not all school districts are taking action to remove or remediate these hazards. Remediation was recommended for the majority of SDs testing for environmental hazards. However, not all SDs took action to remove or remediate hazards, putting the health of students and staff at risk. Of public school districts who tested, 94.8% found lead in drinking water, 61.5% reported mold in their buildings, 54.6% reported lead in paint exceedances, 75% reported radon exceedances, and 19% reported exceedances for water quality standards (i.e., water standards for lead, copper, PFAS, and bacteria). Remediation was noted for only 29.2% of school districts with mold, 11.3% of school districts with lead in drinking water, and 0% of school districts with radon – a major health concern given PA's high radon potential. Remediation was not noted in any of the schools who found lead in paint or water quality issues.

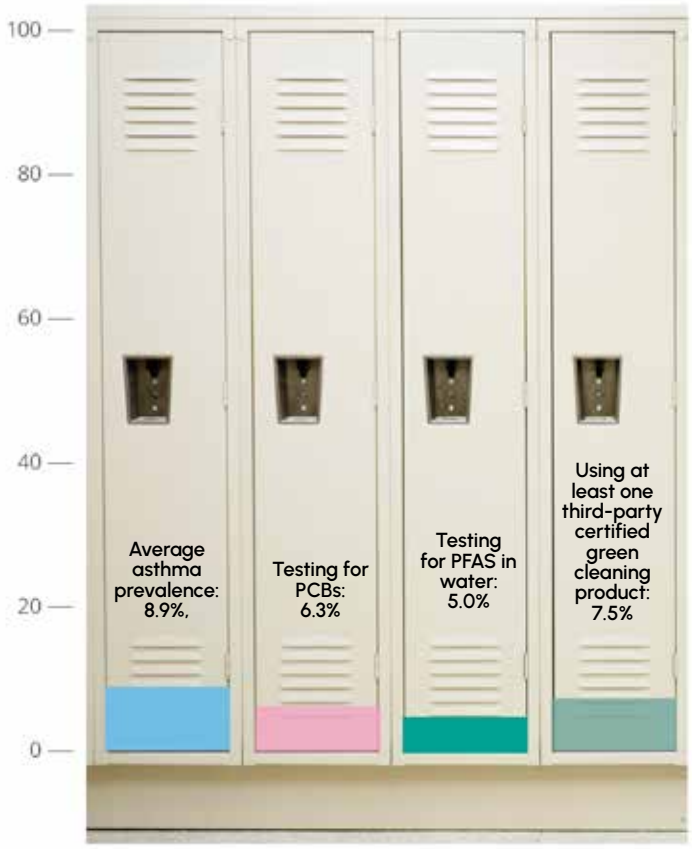
There are two state regulations that guide school health and safety under the Pennsylvania Public School Code – 1) Integrated Pest Management (IPM) and 2) Diesel idling. In addition, school districts have the flexibility and ability to pass and implement school policies that foster improved health for its school occupants. While some healthy school policies are present, they are not uniformly or consistently enforced. With the development of this report, our goal is to highlight and showcase examples of policies for schools to adopt, as well as the commonwealth, that achieve a healthier learning environment for all.

During school year 2023-2024 the state budget included funding to create the Public-School Environmental Repairs Program, established by Act 33 of 2023. This provided grant funding for decreasing environmental hazards in school buildings. This led to an investment of $75 million in grant funding that went to 109 schools for environmental repairs including lead, mold, and asbestos.

Key Findings n=80

- The presence of an IPM policy (78.8% of SDs) does not indicate that the majority of schools are using IPM principles meant to decrease chemical pesticide use. Approximately half of the schools in the overall study sample (50%) still contract with a pesticide company to apply chemical pesticides on school grounds.
- Despite a state law requiring anti-idling signs be posted at school buildings, less than half (46.3%) of school districts surveyed had any anti-idling signs.

- Average asthma prevalence across sampled districts is approximately 8.9%, with some districts reaching as high as 24%. Low-income SDs tend to see higher asthma rates and fewer remediation efforts in their building that address asthma triggers.
- Many schools pre-date 1978 (year lead paint was banned) or 1979 (year PCB banned), significantly raising the risk of older hazardous materials still present in walls, caulk, or lighting fixtures. Only 6.3% of SDs reported testing for PCBs, despite older infrastructure. Testing or remediation for PCBs is not mandated in PA, unlike in other states (e.g., Vermont).
- 5% of SDs tested for PFAS in water, often relying on municipal reports. PFAS are 'forever chemicals' linked to certain cancers, as well as immune system suppression, developmental impacts, and other health risks.
- Only 7.5% of districts reported using at least one third-party certified green cleaning product—down significantly from prior years and contrary to recommended 'safer' disinfecting.
- 60–65% of districts reported receiving ARPA/CARES funds for COVID-19 relief. Although some directed it toward HVAC upgrades, many did not allocate resources specifically to environmental remediation.
- 56.2% of districts in the statewide sample reported having synthetic fields, up from 38.5% in the previous report—raising questions about heat risks, chemical exposure, and maintenance costs.

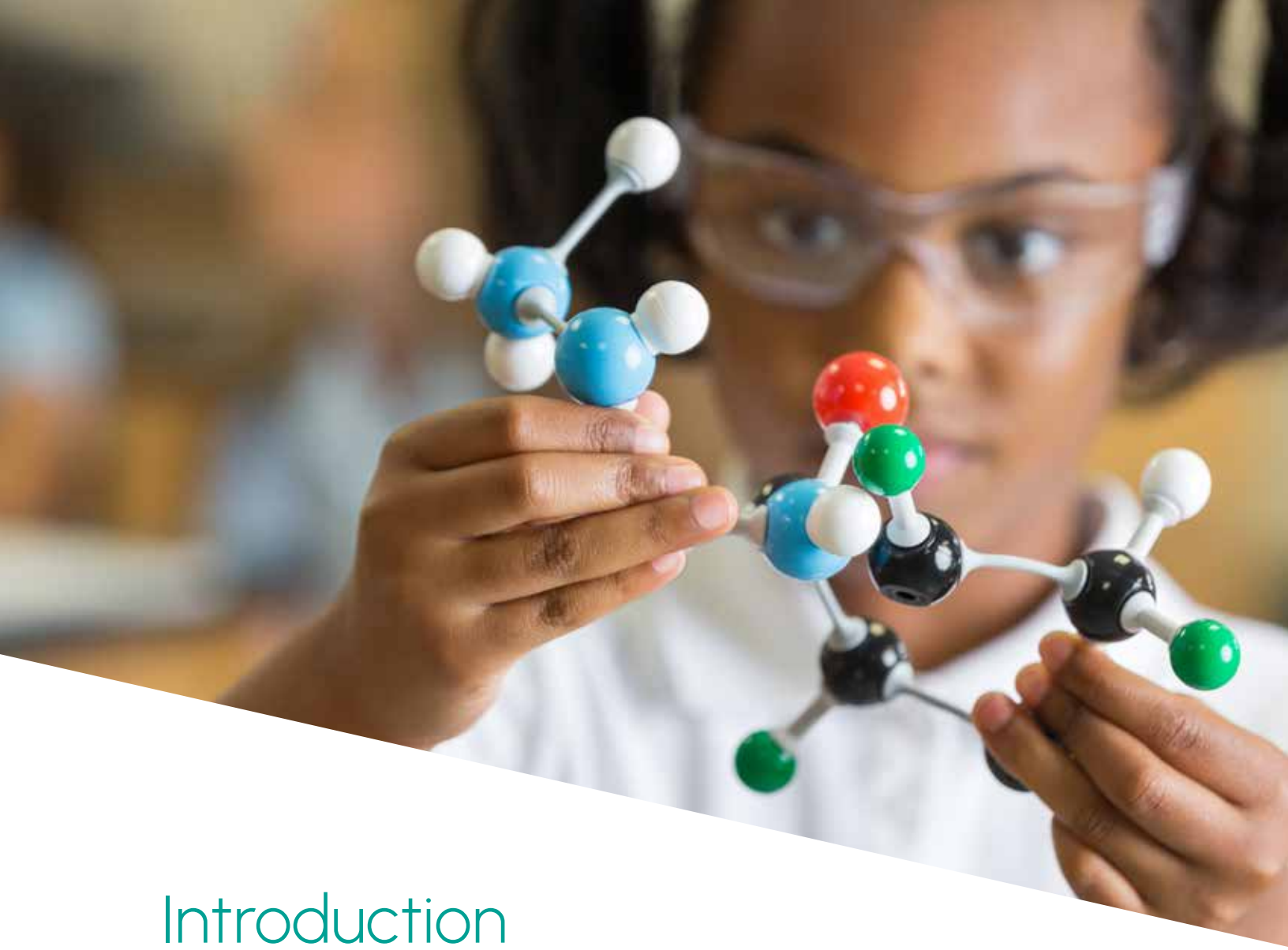


Key Findings Summary (n=166)

Environmental Tests Reported RTK 2022	Water Quality	Paint Lead	Mold test	AQ policy	AQ communication	Radon testing	PFAS testing	Water lead testing	PCB test
Yes	76	18	71	3	3	18	7	118	6
No	14	0	0	163	163	0	149	0	0
Missing	76	149	77	0	0	148	10	48	160
Total sample	166	166	166	166	166	166	166	166	166
Effective percentage	84.4	100.0	100.0	1.8	1.8	100.0	4.5	100.0	100.0
Percentage of 166	45.8	10.8	42.8	1.8	1.8	10.8	4.2	71.1	3.6

Key Recommendations

1. **Indoor Air Quality (IAQ)** – Mandate an IAQ plan for schools, improve ventilation/filtration, and leverage grants for HVAC upgrades.
2. **Asthma Management** – Educate the state legislature on the need to have stock asthma medication in schools and reduce the nurse-to-student ratio.
3. **Mold Prevention** – Implement policies for mold remediation, control moisture, and utilize the EPA IAQ Tools for Schools guide.
4. **PCB Testing** – Require PCB testing in school buildings constructed before 1980.
5. **Lead in Paint/Dust** – Develop a school policy that ensures inspection by facility staff for chipping, cracking, peeling paint in school buildings constructed prior to 1978. If remediation is needed, require a Renovation, Repair, and Painting (RRP) certified contractor to address. In addition, implement HEPA vacuuming and damp cleaning of all surfaces.
6. **Lead in Drinking Water** – Adopt a filter first approach for all drinking water outlets and sinks/kettles used for food preparation and ensure funding availability at the state level for water fountain upgrades.
7. **PFAS in Water** – Monitor the school district's water system's approach to testing and reporting of PFAS presence in drinking water. Review the local water system's Consumer Confidence Report drinking water data.
8. **Radon Testing** – Require testing for radon in school buildings every five years, follow EPA guidelines for mitigation, and require radon-resistant construction for all new school buildings.
9. **Green Cleaning** – Use third-party certified green cleaning products, ensure school facility staff are properly trained, and require the adoption of a formal green cleaning program and procurement policy that supports safer, environmentally friendly products.
10. **Pesticides** – School districts must adopt an IPM policy that follows the new guidelines provided by PA Department of Agriculture (PDA) and the Penn State College of Agricultural Sciences. This guidance ensures the least amount of chemicals are used inside and outside the school building, limiting the need for regular pest management application. In addition, offer training for facility staff on IPM management to reduce the need for any chemical applications.
11. **Anti-idling Signage** – Make certain school districts post anti-idling signs and develop school bus idling policies in accordance with the state regulation.
12. **Artificial Turf Fields** – A growing body of scientific literature has raised concerns about potential environmental and health risks associated with artificial turf fields, particularly related to chemical exposure and heat retention. In May 2025, the Burrillville Planning Board (Rhode Island) voted down a proposal for a high school artificial turf field. Schools can utilize educational materials from the Partnership for Healthy Playing Surfaces, a partnership of medical, scientific, and environmental organizations, to help them make informed decisions about their playing fields.



Introduction

The State of Environmental Health in Pennsylvania Schools report follows the 2021 effort [2], taking an even deeper dive into the environmental quality of schools, while assessing the impact of CARE funds received to benefit school infrastructure. To gain a better understanding of environmental health hazards potentially facing more than 1.7 million children enrolled in 500 public school districts across Pennsylvania, Healthy Schools— a program of Women for a Healthy Environment—requested information from the 2018-22 school year from 166 public school districts across the state. Public schools are defined as primary and secondary schools that are operated and funded under the authority of the General Assembly and locally elected school boards. The goal of this request and subsequent analysis was to determine to what extent districts are adhering to recognized environmental standards and to determine if conditions have improved since the 2020-21 evaluation (2019-2020 school year). The expected outcome is identifying opportunities for school districts to prioritize funding and public health-focused responses, as well as providing policy recommendations to the state legislature and local school boards.

Methods

Approach

For the 2021-2022 school year, Women for a Healthy Environment requested information from public school districts through the Right-to-Know (RTK) process to collect and summarize data related to potential environmental hazards in school buildings. In Pennsylvania, the RTK law is an act that provides access to public information from state-related institutions. The RTK law is applicable to public school buildings operating in the commonwealth. In a school district, the Agency Open Records Officer duties often fall under the auspices of the administration or the district's solicitor.

Data Collection for the Statewide Sample

In order to ensure representativeness, 10% of all school districts in each of the PDE's six region areas were sent RTK requests. These districts were randomly sampled from the PDE public school district database. Requests were distributed between 'large' school districts (five buildings or more) and 'small' school districts (four buildings or less).

WHE program staff sent 166 RTK requests to AORO (Agency Open Records Officer) staff via email and/or paper letters through the U.S. Postal Service. Data was compiled and analyzed for the 2018-2022 school years except for the questions relating to COVID-19 which used the period 2020-2022. Of those who responded, 80 school districts across the commonwealth were randomly selected to represent the statewide sample.

We included data from all school districts (SD) surveyed in this report. Of the 166 school districts surveyed, 159 responded. Ninety-eight (59%) of the 166 SDs surveyed were in the SW PA. There was an overall response rate of 97% for SW and 94% for those outside the SW PA region.

We chose to include a statewide random sample from six regions to counterbalance the 98 school districts in SW PA. The statewide sample (n=80) includes seven school districts in Northcentral PA, 15 school districts from Northeastern PA, 6 districts from Northwestern PA, 8 districts from Southcentral PA, 32 districts from Southeastern PA, and 12 districts from Southwestern PA. The student demographics of the districts represented in this study are representative of the student demographics across the commonwealth.

Throughout this report the n=80 refers to the statewide randomized sample of school districts.

n=166 refers to the number of surveyed school districts.

Additional data sources used in our analysis include the Pennsylvania Department of Health (PA DOH) for school asthma data and the PDE for school enrollment data.

A Special Note on Southwest Pennsylvania Schools

For this report, Southwest PA (SWPA) is defined by the Southwestern Pennsylvania Commission's 10-county area which includes Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington and Westmoreland counties.

Data Analysis

If districts answered the request even in part, they were included in the analysis. Where schools did not submit complete records in response to the RTK request, that is indicated in the results. The RTK request contained 21 specific questions focused on how school districts approach various environmental health issues or concerns in their buildings. The request was phrased "Provide any/all records pertaining to" the general data questions below:

1. Provide any/all records for radon testing and remediation for the period of July 2018 to June 2022.

2. Provide any/all records for lead testing and remediation in drinking water for the period of July 2018 to June 2022.
3. Provide any/all records for water quality testing for the period of July 2018 to June 2022.
4. Provide any/all records for testing for Per- and Polyfluorinated Substances (PFAS) in the water for the period of July 2018 to June 2022.
5. Provide any/all test results for lead in paint or dust for the period of July 2018 to June 2022.
6. Provide any/all test results for air quality and mold for the period of July 2018 to June 2022.
7. Provide any/all test results for PCB (polychlorinated biphenyls) for the period of July 2017 to June 2022.
8. Provide any/all record reflecting the number of artificial playing surfaces (playground or fields) and locations for the period of July 2018 to June 2022.
9. Provide any/all record reflecting the number of natural grass playing spaces owned or leased by the school district for the period of July 2018 to June 2022.
10. Provide any/all record reflecting the number of anti-idling signs posted for the period of July 2018 to June 2022.
11. Provide a copy of the pest management policy in place and copy of any/all contracts within the pest management policy for the period of July 2018 to June 2022.
12. Provide record(s) of all cleaning products used in the public-school buildings in the most recent school year and a copy of the contracts with all the vendors in the most recent school year.
13. Provide record(s) of the construction date of each public-school building.
14. Provide record(s) of the year(s) of any/all renovations that have taken place in each public school.
15. Provide record(s) detailing the percentage of children with asthma (per public school building if available).

For this report, we asked additional questions relating to COVID-19 that were not asked in previous reports, for the period March 2020 to June 2022.

16. Provide any/all policies created or revised in response to the Covid-19 pandemic for the period of March 2020 to June 2022.
17. Provide record(s) of any/all updates to HVAC systems and descriptions of work for the period of March 2020 to June 2022.
18. Provide any/all accounting of American Rescue Plan Act (ARPA) and/or Coronavirus Aid Relief and Economic Security Act (CARES) funding and expenditures made therefrom for the period of March 2020 to June 2022.
19. Provide records of when air conditioning was installed in each of the school buildings in your district, if applicable for the period of March 2020 to June 2022

Additional questions relating to climate were asked in this report for the period July 2018 to June 2022, the same period as the general data questions (questions 1-15).

20. Provide any/all emergency preparedness plans related to environmental emergencies or natural disaster emergencies for the period of July 2018 to June 2022.
21. Provide any/all contracts or purchase agreements, board minutes and any/all grants received regarding electric school buses or other electric vehicles owned or leased by the school district for the period of July 2018 to June 2022.

In this report, since it is the second time using a statewide sample, we aim to show data comparisons or trends through the years while drawing comparisons to the 2021 report.

Demographics

Overall Sample: n=80 school districts, n= 335,714 students (21-22 SY)

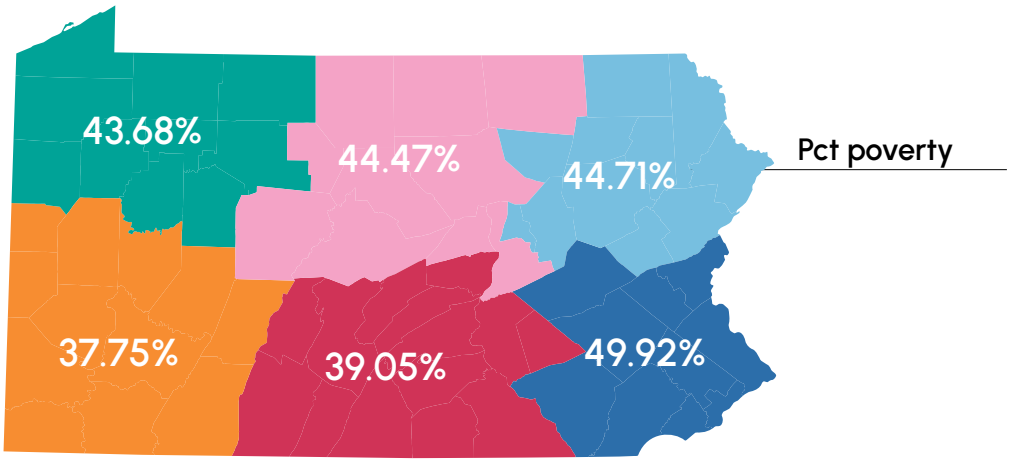
The state sample represented more students than the SW respondents, 335,714 to 234,660. The state represented a more ethnically diverse group, too, with just 55% White compared to SW, who were 76% White. Most notably, the state sample was 20% Black and 15% Hispanic, compared to 11% Black and 3% Hispanic in SW PA.

n=166:

Race by region was evaluated for the 166 school districts surveyed. There were 324 instances of censored data, indicating that there are between 1 and 5 students of a single race. A random number generator was used to fill in the blanks to avoid undercounting nonwhite people across the PA districts.

Region	NH/PI	Multi-racial	AI/AN	Asian	Black/ AA	Hispanic	White	NC
	0.223713647	4.101416853	0.268456376	1.357196122	2.341536167	2.147651007	89.5600298	
NE	0.217137672	3.542260824	0.21065595	1.260694841	7.807233601	2.761213378	84.2008037	
NW	0.199185936	3.966398199	0.216506452	0.562916775	1.861955486	1.697410583	91.4956266	
SC	0.189975157	2.403916411	0.16074821	1.117930732	4.03331872	2.111646938	89.9824638	
SE	1.020383323	4.346873529	0.210973888	7.347977085	17.76521852	29.34362778	39.9649459	
SW	0.124957072	5.411220483	0.173367593	3.613824721	2.717195665	11.09966361	76.8597709	
Total	0.535072865	4.709476126	0.19402744	4.999156008	9.74438836	18.26507887	61.5528003	

Poverty was also evaluated by region for the 166 school districts surveyed.



Grand Total: 43.65

Indoor Air Quality

HVAC System Updates

Outdated HVAC systems often fail to adequately control indoor air pollution, which the EPA ranks as one of the top five environmental risks to public health [3]. Poor indoor air quality (IAQ) can lead to various health issues, including skin and eye irritation, allergy symptoms, and asthmatic episodes. These health risks can directly impede student learning and achievement. Furthermore, schools serving predominantly students of color and students from low-income families are more likely to have outdated and poorly functioning HVAC systems [4]. Updating HVAC systems in schools is not just about comfort; it's a critical investment in student and staff health, academic performance, and overall well-being. With proper upgrades, schools can create safer, healthier, and more conducive learning environments for students and staff alike.

With regard to IAQ, schools should be mindful of carbon dioxide (CO2), humidity, particulate matter (PM) 2.5, volatile organic compounds (VOCs), and temperature regulation, which can all be addressed by upgrading HVAC systems. The elevated presence of each of these has the ability to negatively impact a student's academic performance and health. High CO2 levels in classrooms can lead to drowsiness and reduced cognitive function. Improved ventilation helps maintain lower CO2 concentrations, supporting better focus and learning outcomes. HVAC systems play a crucial role in maintaining an optimal relative humidity range (30-50% for a temperature range of 20-24 degrees C, according to the EPA Tools for Schools Action Kit) in school buildings. Proper humidity control is essential for reducing mold and bacteria growth, improving overall indoor air quality, and enhancing student performance on mental tasks. Modern HVAC systems with high-efficiency filters can effectively remove fine particulate matter and VOCs from the air, reducing exposure to these potentially harmful substances. Maintaining comfortable temperatures (68-74°F) is crucial for both student performance and teacher effectiveness. Outdated systems often struggle to maintain consistent temperatures throughout school buildings.

At the onset of the COVID-19 pandemic, the importance of air flow and proper filtration became emphasized more than ever, as evidence of early COVID outbreaks could be traced to the direction of air flow [5]. Although there existed a great deal of confusion regarding COVID transmission early in the pandemic, with touch surfaces being highlighted as a likely source of transmission, proper HVAC turnover and filtration guidelines have continued to be demonstrated as an effective strategy to minimize the transmission of COVID and other infections transmitted by droplet and airborne mechanisms. Current ASHRAE guidelines indicate three to six air changes (ACH) minimum during occupied periods [6]. The maximum should be based on the design loads of HVAC systems. ASHRAE has specified the minimum value of 5 cubic feet per minute of outdoor air per person [7]. This is necessary to deliver clean air and dilute virus concentrations. In addition to adequate flow rates, air recirculated within the space should be filtered through filter media with a

Rising temperatures along with old and outdated air conditioning (AC) systems has created unsafe learning environments for children and educators, leading to school closures and more days with remote learning.

minimum MERV rating of 13. Portable air cleaners using a high-efficiency particulate air (HEPA) filter can reduce the concentration of droplets by 65% [8], and over 99% [9] of dust and mold, and can also increase ACH by 2 in small spaces like bathrooms.

We asked schools to provide record(s) of any/all updates to HVAC systems and descriptions of work for the period of March 2020 to June 2022 and to provide records for when air conditioning installation occurred in each of the school buildings across a school district. Upgrades to HVAC systems can include but aren't limited to new boilers and chillers, MERV-13 filters, rooftop units, ductwork, thermostats and more were reported as being updated throughout PA schools.

Oftentimes, as HVAC systems were being upgraded, the school district utilized this opportunity to also install LED lighting, another means to improve energy usage. It is important to note that many of the schools referenced a real or anticipated (based on calculations) energy savings upon completion of their HVAC upgrades. This included reduced maintenance, system reliability and occupant comfort. Additional information regarding HVAC system trends noted in the analysis is provided below.

AC Installations

Over the years, Pennsylvania has seen an increase in days with temperatures above 90 degrees Fahrenheit as a result of climate change [10]. Rising temperatures along with old and outdated air conditioning (AC) systems has created unsafe learning environments for children and educators, leading to school closures and more days with remote learning. In June 2023, Pittsburgh Public Schools established a new protocol in which forecasted temperatures of 85 degrees or higher and/or a heat index of 90 degrees or higher mandates a temporary shift to remote learning. In the same period, 90 schools in the Philadelphia School District in significant need of AC upgrades called for two-hour early dismissal days due to the extreme heat [11]. In Pennsylvania, it is not uncommon for many schools to have no AC. Students impacted by school closures are often those residing in poor communities and are thus put at greater academic risk [12]. As global temperatures rise, there is a greater urgency for Pennsylvania schools to install or upgrade their AC systems.

Direct Digital Controls

Direct Digital Controls (DDC) were installed by many school districts. Direct Digital Control (DDC) systems offer precise, real-time management of building functions like HVAC, lighting, and security, leading to improved energy efficiency and lower operational costs. They enable seamless integration of multiple systems, remote monitoring, and customizable scheduling, which enhances occupant comfort and reduces maintenance needs. DDC systems also provide valuable data for performance analysis and energy audits, support scalability for growing facility demands, and contribute to proactive fault detection. Overall, DDC improves building performance, reduces waste, and enhances control flexibility.

Bipolar Ionization Units

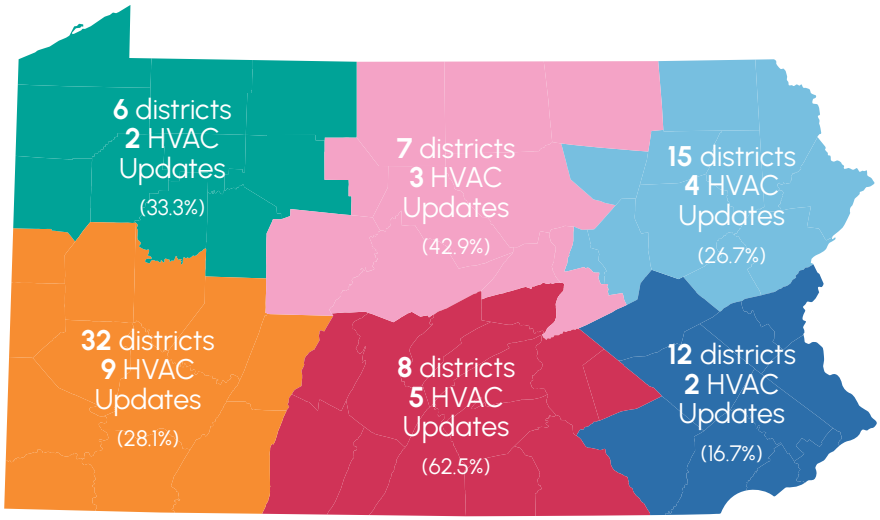
Multiple school districts installed bipolar ionization units. Bipolar ionization is a new air cleaning technology that may help reduce indoor air pollutants, but there is limited evidence showing how well it works in real-world settings. The EPA and medical community advise caution with bipolar ionization, as it is a new technology and more research is needed. Furthermore, bipolar ionization can cause harmful byproducts if not properly designed or maintained. The EPA recommends only using devices that are certified to emit zero ozone (UL 2998 standard) [13].

March 2020- June 2022

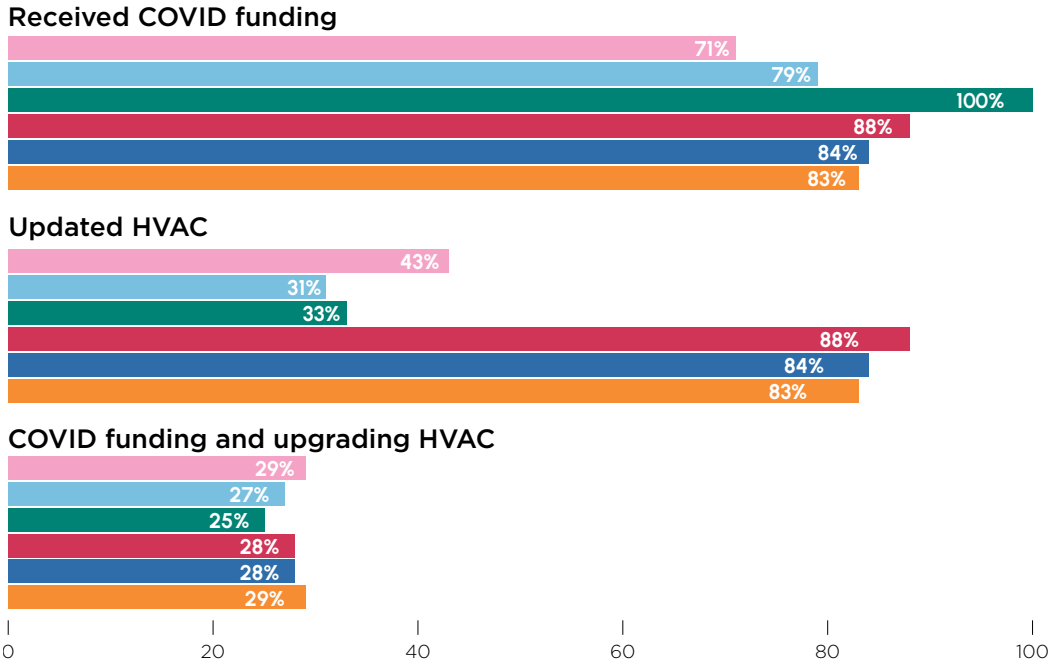
SW PA
n=98
HVAC system updates were reported by 81 school districts (82.7%).

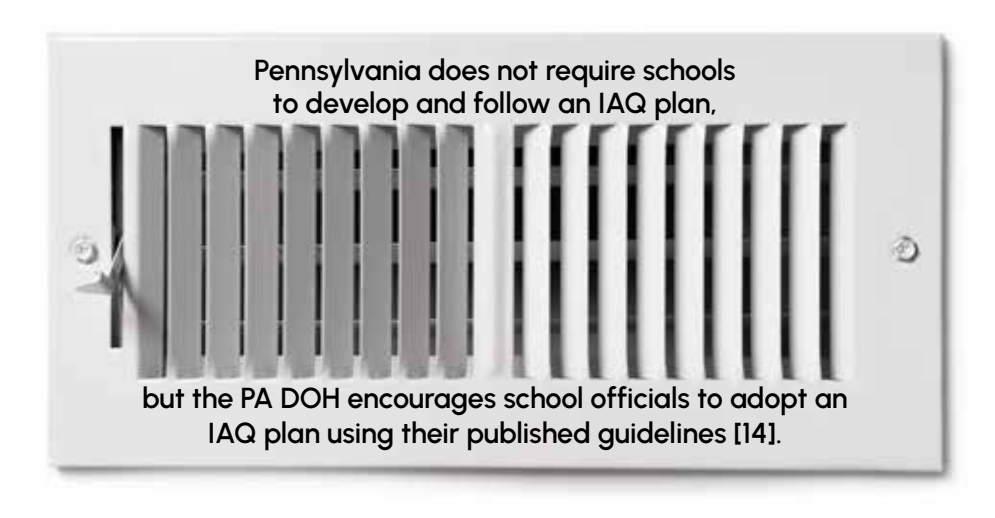
Overall sample
n=80
HVAC system updates were reported by 25 school districts (31.3%).

HVAC System Updates
n=166 SD Surveyed:



Eight of 19 (42%) responding districts that reported that they did not receive COVID funds indicated that they had done recent HVAC updates. Three updates were made in 2020, two in 2021, and three in 2022. A total of 137 districts reported receiving COVID funding of which 106 districts reported a non-zero amount ranging between $13,746 and $112,092,967. Fifty of the 137 (28%) districts that reported receiving COVID funding reported upgrading their HVAC between 2020-2022.





SCHOOL SUCCESS STORY:

Beginning in 2020, Beaver Area School District replaced their Univents (wall-mounted AC systems used in classrooms) and rooftop units with DOAS (dedicated outside air system) units that bring in continuous outside air and conditions it before it enters the building. The district also installed humidistats (a device that automatically adjusts the amount of moisture in the air to maintain a specific indoor humidity level) and began monitoring CO2 in those areas. DDCs (direct digital control systems, computer-based systems that monitor and regulate a building's HVAC system) in these areas were also upgraded. Similar updates were made in the middle school in 2021 and the high school in 2022.

Recommended and Required Action:

Pennsylvania does not require schools to develop and follow an IAQ plan, but the PA Department of Health encourages school officials to adopt an IAQ plan using their published guidelines [14].

The EPA, in collaboration with other federal agencies, has published best practices for improving indoor air quality in buildings, including schools. Key recommendations include improving ventilation and filtration, enhancing HVAC controls, and conducting regular HVAC commissioning and retrofits.

In April 2022, the Biden-Harris Administration announced a $500 million program through the US Department of Energy (DOE) for energy updates for America's public school facilities [15]. This program made schools eligible for upgrades in HVAC systems, among other energy improvements that would ultimately result in a direct reduction in school energy costs. Additionally, the Pennsylvania Department of Community & Economic Development (DCED) created the Public School Facility Improvement Grant Program with funds available for HVAC equipment [16].

Racial and ethnic disparities in asthma prevalence among school-aged children in Pennsylvania remain a significant concern.

Asthma Prevalence

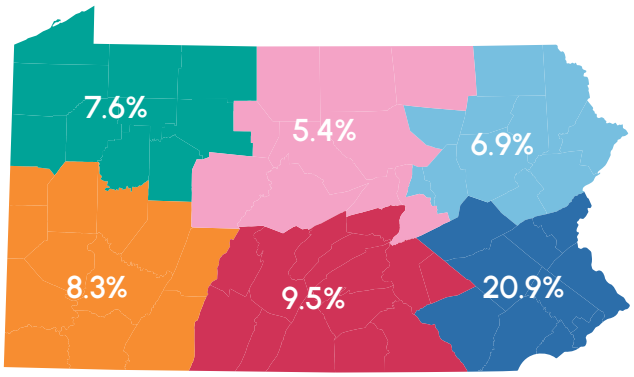
The asthma prevalence in Pennsylvania in 2022 for children ages 0-17 was 10% for boys and 11% for girls. By comparison, the national asthma prevalence in 2022 was 7% for boys and 5.4% for girls for those ages 0-17.

- Within Pennsylvania, approximately 11% of non-Hispanic White children, 17% of non-Hispanic Black children, and 17% of Hispanic children had lifetime asthma (having ever been diagnosed with asthma by a doctor) in 2019. By age, the prevalence was generally higher among older children [18]. Racial and ethnic disparities in asthma prevalence among school-aged children in Pennsylvania remain a significant concern. These disparities are linked to a complex combination of factors both within and beyond the school environment, including genetic predisposition and repeated exposure to environmental hazards. The quality of schools and the demographics of the students they serve should be considered in understanding the cumulative impacts contributing to these disparities.
- Survey results from the Commonwealth of PA estimate children's lifetime asthma prevalence at 14% (EDDIE, BRFSS) for 2022, up from 11% in 2021. Estimates for lifetime asthma were 12% and 8% among 0-11 year-olds in 2022 and 2021, respectively. For the 12-17 year-olds, the lifetime estimates were 18% in both 2022 and 2021. Current asthma prevalence among children was estimated at 10% for 2022, up from 7% in 2021. Current asthma for those aged 0-11 was estimated at 10% in 2022, up from 6% in 2021, while children aged 12-17 currently had 9% asthma in 2022 up from 8% in 2021.

Although the causes of asthma are multi-factorial, triggers of asthmatic episodes can be isolated and prevented. For example, the airways of an asthmatic child may become inflamed by airborne allergens, such as dust, pet dander, smoke, dust mites, mold, and pollen. Other triggers include exercise, extreme temperatures, stress, respiratory infections, and particulate matter due to air pollution. Children spend the majority of their time at home and at school; therefore, it is important to minimize the exposure to triggers where they spend their time. Older buildings, like schools, with outdated HVAC systems, may not have adequate air flow, allowing for the concentration of pollutants and/or transmission of the COVID-19 virus or other respiratory viruses.

Asthma Prevalence across State

Respondent SY 21-22 Data (n=166)



Statewide Asthma Prevalence

Respondent SY 21-22 Data (n=166)

- In the current report (21-22 SY), the average asthma prevalence across respondent districts (n=166) was 13.9%, with the highest asthma prevalence reported as 32.6%.
- 43 districts (25.9% of respondents) exceeded the 2021 state average of 10%. In SE PA, 50% of districts exceeded the 2021 state average.

Highlights:

Respondent SY 21-22 Data (n=166)

- **One district reported 839 albuterol doses for 280 students.**
- **One SE district report 1,218 albuterol doses for 151 students**

Between the previous and current reports, SE PA- encompassing 32 school districts and 244,130 students of which 26% are Black, 19% are Hispanic, and 43% are White within the statewide sample in the current report- remained the region with the highest percentage of school districts exceeding the state averages for asthma prevalence.

Between the previous and current reports, the average asthma prevalence across school districts in the state remained about the same. In the current report, a greater percentage of school districts exceeded the state averages for asthma prevalence. However, in SW PA, the average asthma prevalence decreased between school years 2016-2017, 2019-2020, and 2021-2022.

Asthma Prevalence for Surveyed School Districts

n=166

(highlights of schools not in sample)

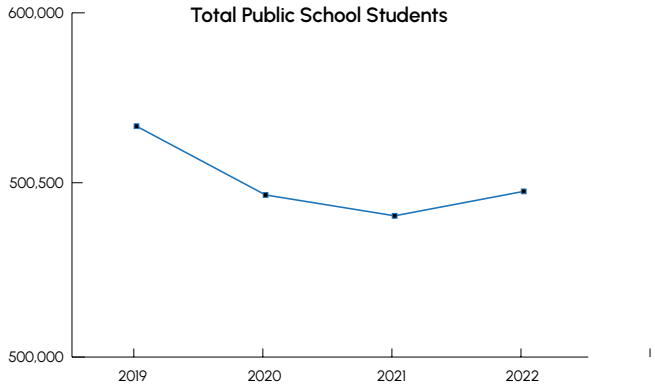
Of the total 166 sampled schools, there were 75,194 students with asthma in the 2021-22 school year, among 541,035 total enrolled, or 13.8%. The highest asthma prevalence for the 2021-22 school year was found in Southeast PA. The number of children with asthma has been increasing in all regions except SW PA between the years of 2019-2022. There was an overall decrease in the number of reported children with asthma in Southwest PA, largely due to a 15% decrease in the number of children with asthma between 2019 and 2022 in a large school district in SW PA. This could be due to asthmatic students not going to school in person during COVID-19. Asthma prevalence doubled in ten school districts, five were located in SW PA, with one suburban district having increased over 250%. It is unclear how this particular school district was previously reporting its asthma prevalence. The same district reported providing an average of 6 doses of medication per asthmatic student during the school year, the highest among all reporting districts.

Between school years 2019 and 21, rescue doses (defined as using an inhaler to relieve an asthma attack) administered by this district's school nurses increased from under 400 to nearly 2000. Six of the nine districts in which more than 5 doses of medicine were given per asthmatic during the school year were located in Southwest PA. In SW PA, there appears to be a decoupling of asthma prevalence which is decreasing at the population level, and asthma control which is increasing in frequency.

Overall, there were twelve districts in which the number of rescue doses per asthmatic child more than doubled. Of these, eight were in SW region, two in NW, and one each in NE and NC. Conversely, among 46 districts where the medication doses halved, 26 were in SW, five in SC, six in SE, six in NC, two in NE, and one in NW. These data may be confounded by the number of nurses per district. There was a high positive correlation between number of nurses and number of doses provided to asthmatics (R=.94). Significant correlations were also found between number of nurses and both number of asthmatics and number of total students.

COVID-19 and Attendance

During the time leading up to and during the COVID-19 pandemic, public school attendance was turbulent. Most PA public schools lost student population during this time [19]. Between 2019 and 2021, total public school enrollment decreased by nearly 24,000. Between 2021 and 2022, statewide enrollment increased (+2074) for the first time since the pandemic started. Change in the population at-risk can impact rates of disease. Most notably, people who withdrew their child from public school may have done so in a non-random fashion. Asthma status of a child may have impacted the parents' likelihood of a child continuing in public school through a respiratory virus pandemic. Additional factors may include in- or out-migration.



Nurse Data

School nurses play a crucial role in promoting the health and well-being of school-aged children in the school setting. As more children with special health care needs like asthma attend school, school nurses have an even greater importance as they help manage symptoms, often working closely with parents to provide treatment during the school day. More often, though, buildings within districts shared nurses, with a nurse spending a portion of their time at each building.

Across all regions, NE PA had the highest student to nurse ratio with an average of 765 students to one nurse. This is slightly above the American Academy of Pediatrics (AAP) guidelines for student to nurse ratio of 750 students to one nurse [20]. One school district in SW PA had a student to nurse ratio of 3,846 students to one nurse. This is more than double the PA School Code guidelines for minimum student to nurse ratio of 1500 students to one nurse [21]. In SC PA, all the schools

surveyed met the AAP guidelines for nurse to school ratio with an average of 474 students to one nurse. NE and SW PA had the lowest percentage of districts that complied with the AAP nurse guidelines. Across all regions, all school districts met the PA School Code guidelines except for SE and SW PA, but these two regions had more than 90% of their school districts meet the guidelines. During the 21-22 SY, 1:694 is the average nurse to student ratio for the SW PA region which meets the 1:750 recommendation by the AAP.

Recommended and Required Actions:

Asthma continues to be a major health concern impacting students throughout PA. Therefore, legislation that would allow schools to stock asthma medication and/or inhalers is necessary. This would provide easy access for the student to immediately address asthma attacks or respiratory distress.

While the PA average nurse-to-student ratio has improved to meet the AAP guidelines of 1:750, that guideline only addresses healthy students. If a student requires daily nursing services, the ratio drops to 1:225 [20].

Adding asthma screenings to the routine health checks conducted by school nurses for kindergarteners is recommended.

Mold

Mold, a known asthma and allergy trigger, may also lead to negative chronic health impacts. Mold exposure may irritate the eyes, skin, nose, throat, and lungs of both allergic and non-allergic people alike. For particularly sensitive individuals, touching or breathing mold (even dead mold) can trigger allergic reactions. Thus, mold must be removed entirely to address it completely and eliminate health risks. The best way to stay ahead of mold is to clean, dry and address wet areas as soon as they occur, keep relative indoor humidity between 30%-50%, have good ventilation, and conduct maintenance regularly.

SW PA Data Comparison:

In 16-17 SY *(n=93)*

- 34% of districts tested for mold in at least one building.
- When school districts tested for mold, it was frequently due to health complaints submitted to administration.

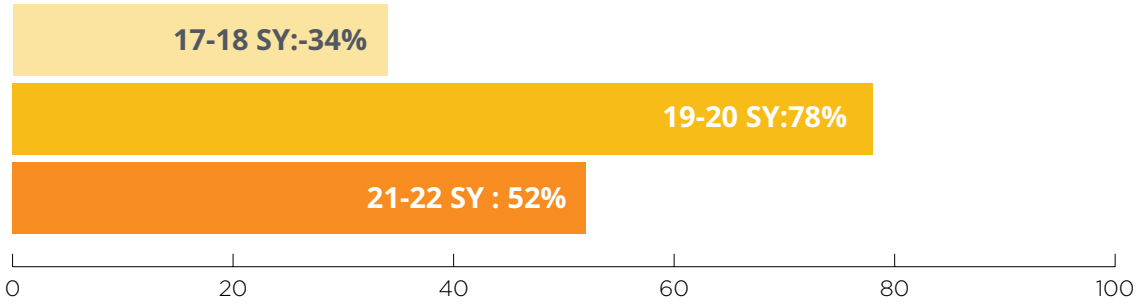
In 19-20 SY *(n=99)*

- 78% of districts tested for mold in at least one building.
- In the 59 districts tested, remediation was recommended in 77%. Of those, 52 completed remediation while seven did not have documentation of remediation being done.
- In 28% of districts that tested, the test was a result of visible signs of mold growth, health complaints, or odor complaints.
- 10% of districts that tested did so because of high humidity weather or a leak in building structure.
- At the beginning of the 2018-2019 school year, seven SW PA districts were forced to postpone the first day of school due to mold issues.

In 21-22 SY *(n= 98)*

- 52% of the districts tested for mold in at least one building.
- In the 51 districts tested, remediation was recommended in 51% (26). Of those 26 school districts, one of the 26 districts had documentation of remediation being done.
- Of those schools districts in which remediation occurred, none required school closures.

% SDs testing for mold in SWPA

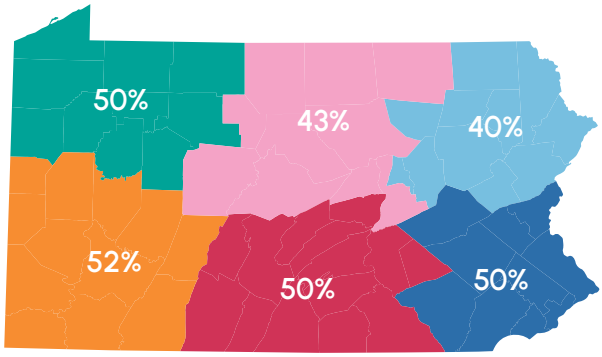


Overall Statewide Sample Data *(n=80)*

48.8% (39) of the districts in the overall statewide study sample tested for mold in at least one of their school buildings. In the 39 districts tested, remediation was recommended in 61.5% (24). Of those 24 school districts, 7 completed remediation while 17 did not have documentation of remediation being done.

Compared to the 2021 State of Environmental Health in PA Schools report, it was noted that testing for mold in school districts was down 26%.

% Mold testing in school districts within each region (21-22 SY)



% Mold remediation completed (21-22 SY)

- **NC: 0%** - 3/7 tested, 3/3 had remediation recommended, and 0 performed remediation
- **NE: 50%** - 6/15 tested, 2/6 had remediation recommended, and 1/2 remediated
- **NW: 0%** - 3/6 tested, 2/3 had remediation recommended, and 0/2 remediated
- **SC: 100%** - 4/8 tested, 1/4 had remediation recommended, and 1/1 remediated
- **SE: 35.7%** -16/32 tested, 14/16 had remediation recommended, and 5/14 remediated
- **SW: 0%** - 51/98 tested, 26/51 had remediation recommended, 1/51 did not know their remediation recommendation and 8/26 remediated without school closure.

Testing for mold in schools is usually conducted in response to a complaint or presentation of allergy or asthma symptoms by school occupants. However, half of the surveyed school districts tested for mold. It was the third most tested-for environmental contaminant, behind lead and other contaminants in water. In every region, about half of the districts sampled for mold.

SCHOOL SUCCESS STORY:

York County was one of the recipients of the state's grant funding for environmental repairs in schools. Four school districts in York County were awarded $4 million in grant funding to remove mold and asbestos including Red Lion Area School District which received almost $35,000, Southern York County School District which received almost $190,500, West Shore School District which received around $780,000 and York City School District which received more than $3 million through the Public Schools Environmental Repairs Program.

In October 2024, Northern York School District announced to parents and staff that mold had been found inside Northern Middle School behind posters in a classroom [22]. The class affected was temporarily relocated while measures were taken to contain the area and conduct a wider assessment of the entire building with remediation underway.

Recommended and Required Actions:

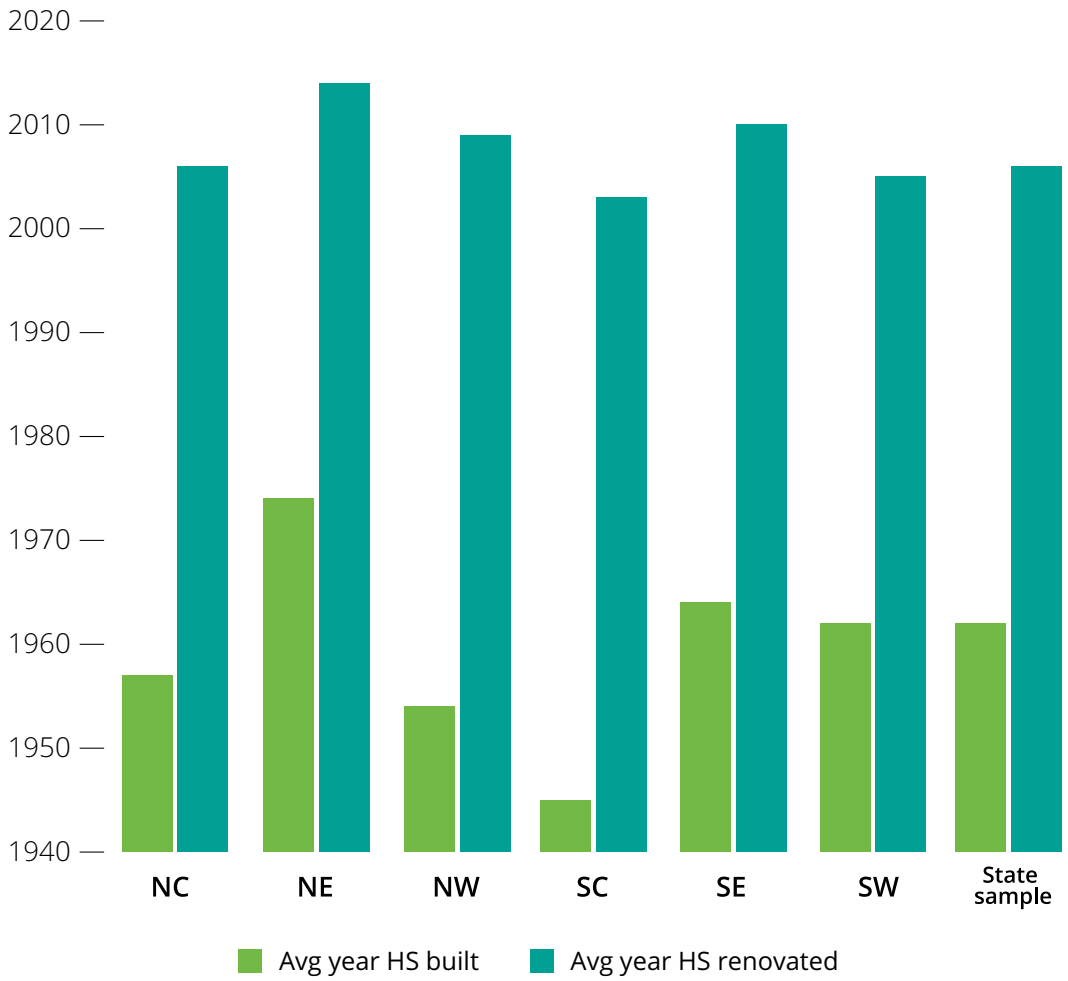
The best way to prevent mold inside school facilities is to prevent moisture from entering the building. There are currently no federal regulations concerning mold remediation in schools, and no state policy in Pennsylvania. Schools can take several steps to proactively protect their buildings and building occupants from mold exposure, including sealing building leaks and upgrading HVAC systems. The EPA's IAQ Tools for Schools Action Kit includes recommendations on how to clean mold and control moisture in school buildings.

School Building Materials

Construction and Renovation

Data for construction dates were abstracted for each of the 166 surveyed schools' websites in September 2024. According to the National Center for Health Statistics, the median build date for schools in the Northeast is 1953, so this year was used as the cutoff point for the analysis. The mean year built for the state sample was 1962, so this was used for subsequent evaluation. For ease of analysis, the construction date for the high school was used. The renovation date was collected when available from either the school website or an established news source. Data was available for 137 of the 166 high schools. The average built date for Pittsburgh Public Schools was used for their data point. The average year during which the 166 surveyed schools was 1962, with the earliest date of 1863 to the most recently built high school in 2019, both of which were located in SW PA.

Two district high schools without an available build date had renovation dates of 2008 and 2022, respectively.



Proportion of HSs built

On average, the oldest high school buildings were in the Southcentral region, with an average year built of 1945 and renovated in 2003. Among the SWPA, the average renovation date was 2005, just behind the statewide sample, with an average renovation date of 2006. Twenty-four of the 166 schools have been renovated between 2020-2023 (2 NC, 3 NE, 0 SC, 7 SE, 12 SW).

Two district high schools without an available build date had renovation dates of 2008 and 2022.

PA schools are on average 20 years older than the national average [23]. The average age of the main instructional building in US public schools is 49 years old, according to the National Center for Education Statistics. In Pennsylvania, the average age of a school building is 70 years old.

PCBs

Polychlorinated biphenyls (PCBs) are a group of man-made chemicals that persist in the environment. Developed in the 1920s, they were widely used in construction materials in the 1930s and 40s [24]. The PCB manufacturer was banned in the US in 1979. Due to properties that make them non-flammable, chemically stable, resistant to high heat, and ideal for electrical insulators, PCBs were used in many industrial and commercial applications, including pigments, dyes, carbonless copy paper, plastics, and rubber products. In buildings built before the 1979 PCB ban, PCBs may be present in caulk and in fluorescent light ballasts. People can be exposed to PCBs through breathing in contaminated air or dust when damaged fluorescent lighting fixtures leak PCBs into the air or when caulk spreads PCBs through the air/dust. PCBs can contaminate soil, water, and air when not disposed of properly. PCBs can take a long time to break down and are thus widespread in the environment.

PCBs can affect the immune system, reproductive system, nervous system, and endocrine system, and are potentially cancer-causing if they build up in the body over long periods of time. Although school testing is not required, it is a prudent measure to test when the presence of PCBs is suspected.

SWPA Data Comparison

In 16-17 SY *(n=93)*

- 6% of districts conducted PCB testing.

In 19-20 SY*(n=99)*

- 3% of districts conducted PCB testing.
- 7% did not respond to the question or indicated that no records were available, even though the average southwest PA school building was built in 1961 (well before the PCB ban.)

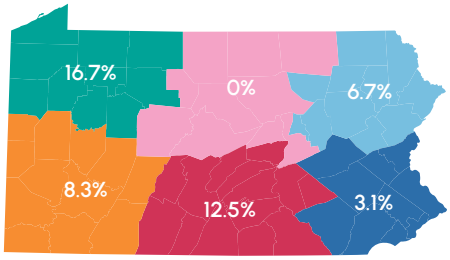
In 21-22 SY *(n=98)*

- 2% conducted PCB testing. Areas where schools tested for PCBs include interior and exterior window caulking and glazing, fluorescent light ballasts, hydraulic elevator oil, transformers, hydraulic lift pits, and hydraulic compactors.

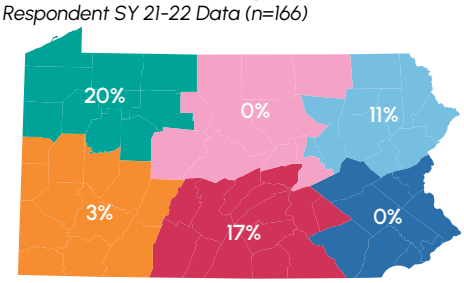
Overall State sample *n=80*

In the current report (21-22 SY), 6.3% of school districts in the statewide sample (n=80) completed testing for PCBs. In the previous report (19-20 SY), 7.7% of school districts in the statewide sample (n=65) completed testing for PCBs. Between the previous and current report, we saw a decrease in school districts completing testing for PCBs.

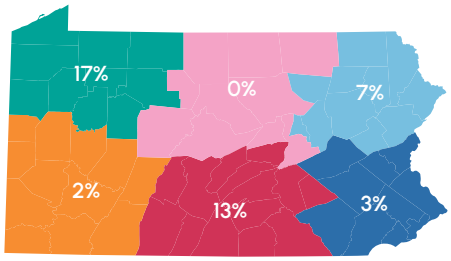
% of SDs testing for PCBs by region
(Overall Sample n=80



% of SDs with high schools built before 1979 testing for PCBs by region
Respondent SY 21-22 Data (n=166)



% of schools testing for PCBs by region
Respondent SY 21-22 Data (n=166)



SCHOOL SUCCESS STORY:

In 2018, Upper Dublin School District completed testing for PCBs in window caulking and glazing at Fort Washington Elementary School to support future renovations involving the windows in the building. PCB was not detected for all but one type, but it was below the EPA action level.

Recommended and Required Actions:

Manufacturing of PCB was banned in 1979; however, neither the federal nor state government mandates testing in schools. Vermont passed a law in June 2021 requiring the state's environmental conservation department to test all pre-1980 school buildings for PCBs [25]. Lawmakers also included $32 million in one-time fund to remediate PCB concerns that arise. PA lawmakers should consider a similar bill mandating testing in buildings built before the PCB ban.

Lead in Dust and Paint

Lead is a neurotoxin that negatively impacts a child's development and ability to learn, but exposure to lead is preventable. Young children, growing at a rapid rate of development, are particularly vulnerable to lead exposure because of the physical and behavioral effects that can occur at lower exposure levels than adults. Health effects in children include behavioral and learning problems, slowed growth, speech and hearing problems, and anemia. In rare cases, lead ingestion can cause seizures, coma, and even death [26].

Sources of lead exposure can be found in paint, dust, soil, lead service lines, premise plumbing fixtures, and consumer products. The most common source of lead exposure is dust from deteriorating lead-based paint, particularly in older buildings where paint can chip and flake and create dust that people can inhale or ingest, especially young children [27, 28]. Recent data indicate that over 72% of children born in Allegheny County in 2020 were tested for blood lead at one year [29]. In the commonwealth, about 35% of children under age 2 were tested in 2022 [30]. Lead-based paint was banned in 1978; therefore, older buildings may still have lead-based paint which can chip, peel or flake if not maintained properly. Those schools built before 1950 are likely to be more contaminated with lead, as lead was more commonly used at this time, and was in higher concentrations. Painted areas affected by friction, such as opening and closing door frames and windowsills are a common source of lead-contaminated dust. School maintenance staff are critical to preventing and mitigating these hazards. Addressing chipping paint is extremely important to prevent exposure to lead in dust which spreads quite easily. Common renovation activities such as sanding, cutting, and demolition can also create lead dust, which stresses the importance of having all contractors receive EPA RRP certification to address lead hazards properly and safely.

SWPA Data Comparison

In 16-17 SY *(n=93)*

- 22% of districts reported that lead testing was conducted.
- Of the 307 school buildings reported in the study, 83% (256) were originally built before 1978, the year that federal regulations prohibited lead from being used in paints.

In 19-20 SY *(n=99)*

- 13% of SW PA districts reported that lead testing was conducted.
- 50% of SW PA districts that tested found lead, but none of these districts provided any records of remediation.
- Of the SW PA schools that provided lead in paint testing records, none of them tested for lead in paint/dust in all district buildings.
- One district found lead paint levels as high as 170,000 ppm or 17%. The EPA's action level for lead-based paint is 5,000 ppm or 0.5%.

In 21-22 SY *(n=98)*

- 9% of SW PA districts reported that lead testing was conducted.
- Of the SW PA schools that provided lead in paint testing records, 3% of them tested for lead in paint/dust in all district buildings.
- 22% of SW PA districts that tested found lead, but only one of these districts provided records of remediation.
- One school district had lead-based paint above 3,000 ppm in one area.

Overall Statewide Sample Data:

In the current report, approximately 14% of schools in the statewide sample (n=80) conducted testing for lead in paint or dust in the 21-22 SY. Of the schools in the overall statewide sample that provided lead in paint testing records, none of them tested for lead in paint/dust in all district buildings. The median years since the last lead in paint test were completed for schools in the overall statewide sample was 2.5 years compared to 1.5 years for SW PA schools. Of the 27% of school districts in the overall statewide sample that tested for lead in paint and found lead, only one of them provided records of remediation.

In the previous report, approximately 9% of schools in the statewide sample (n=65) conducted lead testing for paint in the 19-20 SY. Of the schools in the overall statewide sample that provide records for lead in paint testing, none of them tested for lead in paint/dust in all district buildings. The median years since the last lead in paint test for schools were completed in the overall statewide sample was 1 year, compared to 4 years for SW PA schools. Of the 50% of school districts in the overall statewide sample that tested for lead in paint and found lead, none of them provided records of remediation.

Between the previous and current report, we saw more schools reporting lead in paint/dust testing. We saw a similar trend where schools did not test all of their buildings but select areas where lead in paint/dust was suspected. In the statewide sample, we found a longer gap between testing years. Fewer schools found lead in paint/dust levels above the EPA action level. It is important to note that in the absence of regulations requiring the testing of lead-based paint, schools often test only when needed as part of renovation and demolition projects.

SCHOOL SUCCESS STORY:

Connellsville Area School District completed lead testing inside of their football stadium in 2022 and when lead hazards were identified, the school successfully completed remediation.

Recommended and Required Actions:

In 2024, the EPA revised the EPA Lead-Based Paint Dust Rule which creates stronger requirements for identifying and cleaning lead-based paint hazards in homes built before 1978 and childcare facilities only [31]. Children are especially vulnerable to lead exposure due to the impact it has on the developing brain. Thus, the new EPA Lead-Based Paint Dust Rule recognizes that there is no safe level of lead in blood that has been found to be safe for children. The rule thereby lowered the lead clearance levels (i.e., the amount of allowable lead that can remain in dust on floors, window sills, and window troughs after a lead paint abatement occurs) to 5 μg/ft2 on floors, 40 μg/ft2 on window sills, and 100 μg/ft2 on window troughs.

Furthermore, the EPA rule introduces the terms "dust-lead reportable levels" and "dust-lead action levels" with recommended actions. When dust-lead loadings are at or above the dust-lead action level, the EPA recommends abatement. When dust-lead loadings are at or above the dust-lead reportable levels, but below the dust-lead action levels, the EPA recommends regular upkeep using a vacuum with a HEPA filter and cleaning hard surfaces with a damp cloth/sponge and a general all-purpose cleaner.

It is important to note that schools are only covered under the EPA's Renovation, Repair, and Painting (RRP) Rule as child-occupied facilities if they serve children under 6 years of age. In such cases, renovations in buildings constructed before 1978 must be conducted by an EPA Lead-Safe Certified firm. That said, schools are overlooked in potential exposure to lead in paint/dust for children above age 6. Although the new EPA Lead-Based Paint Dust Rule does not apply to schools, we recommend that schools adopt and implement these policies to safeguard children's health where they spend much of their time outside of home and childcare. During the data analysis period, PA public schools had the opportunity to utilize the Public School Environmental Repairs Program to apply for funding to remediate and/or abate lead hazards in school buildings.

While federal guidelines do not exist for required periodic testing of lead paint/dust in schools, the New York City Health Department recommends that schools and childcare centers with lead paint be tested for lead annually [32].

Water Quality

All districts were asked whether they had performed water quality tests and if so, accompanying results, for the following: lead (Pb), PFAS, and bacteria.

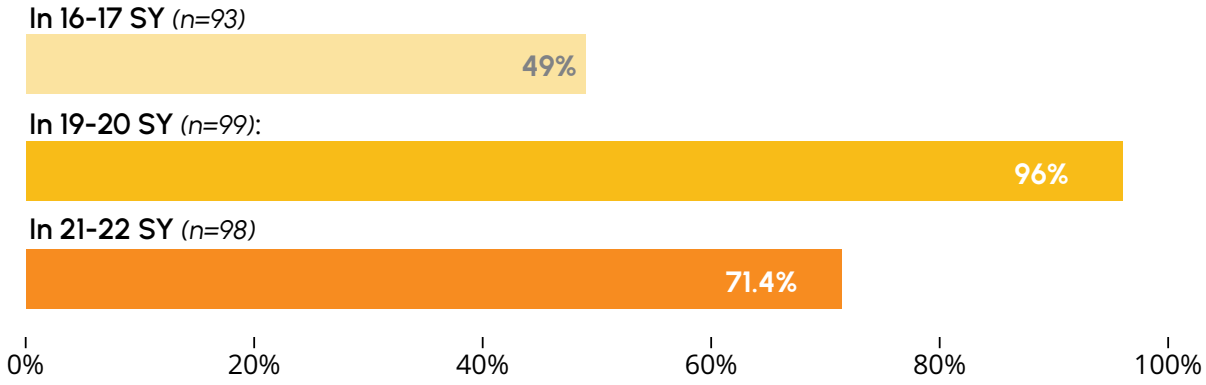
Lead in Drinking Water

It is important to note that there is no safe amount of lead in drinking water and exposure to lead in drinking water is completely preventable. This has been supported by the AAP, the CDC and the EPA. The EPA has set the maximum lead level in drinking water to zero because there is no safe level of exposure. Not only can a single dose severely impact children's health, but lead is also persistent and can bioaccumulate in the body over time. In the case of pregnant individuals, lead can pass the placental barrier and expose the fetus.

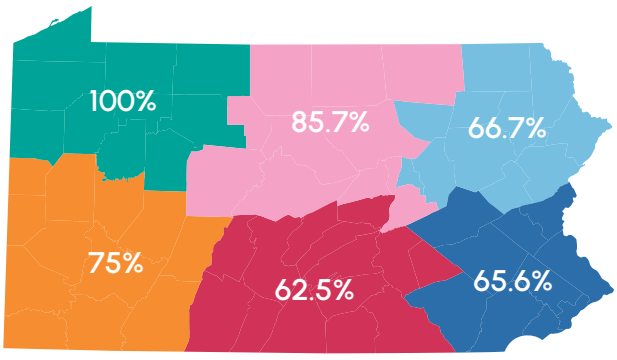
Water can be a source of lead when it passes through leaded service lines, premise plumbing, pipes with lead solder, or faucets and fixtures that contain lead. Lead pipes that connect to the main water line, also called lead service lines, are more likely to be found in buildings built before 1986 [38]. In response, the Safe Drinking Water Act (SDWA) has established guidelines for maximum allowable lead content in "lead-free" fixtures.

Lead cannot be seen, tasted, or smelled in drinking water. The EPA has developed the 3Ts – Training, Testing, and Taking Action- for Reducing Lead in Drinking Water to assist schools with drinking water testing [33]. Using a filter certified to remove lead is the best way to reduce lead exposure in drinking water.

Lead testing conducted in district in SWPA



% of SDs testing for lead in water by region *(RTK report, n=80)*



SWPA Data Comparison

In the 16-17 SY *(n=93)*

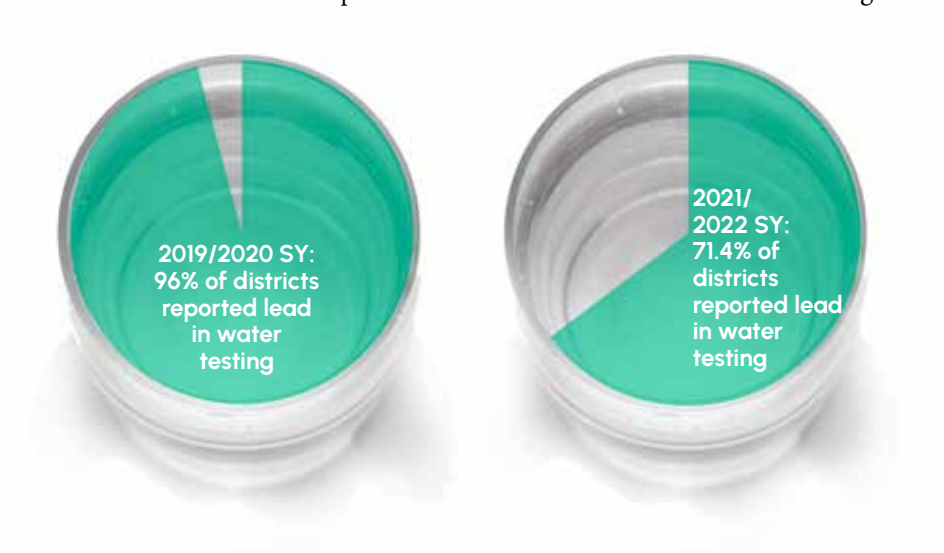
- 49% of school districts reported lead in water testing.
- 7% of school districts relied on municipal water testing.

In the 19-20 SY *(n=99)*

- 96% of districts reported lead in water testing.
- Only 66.7% of the districts who tested performed these tests in all their school buildings.

In the 21-22 SY *(n=98)*

- 71.4% of districts reported lead in drinking water testing.
- Only 63.3% of the districts who tested performed these tests in all their school buildings.



Overall statewide sample:

In the current report (21-22 SY), the overall study sample (n=80) reported that lead testing was conducted in 57 school districts, with 21.1% reporting levels between 5-15 parts per billion (ppb) while 31.6% exceeded the EPA threshold of which 11.3% remediated.

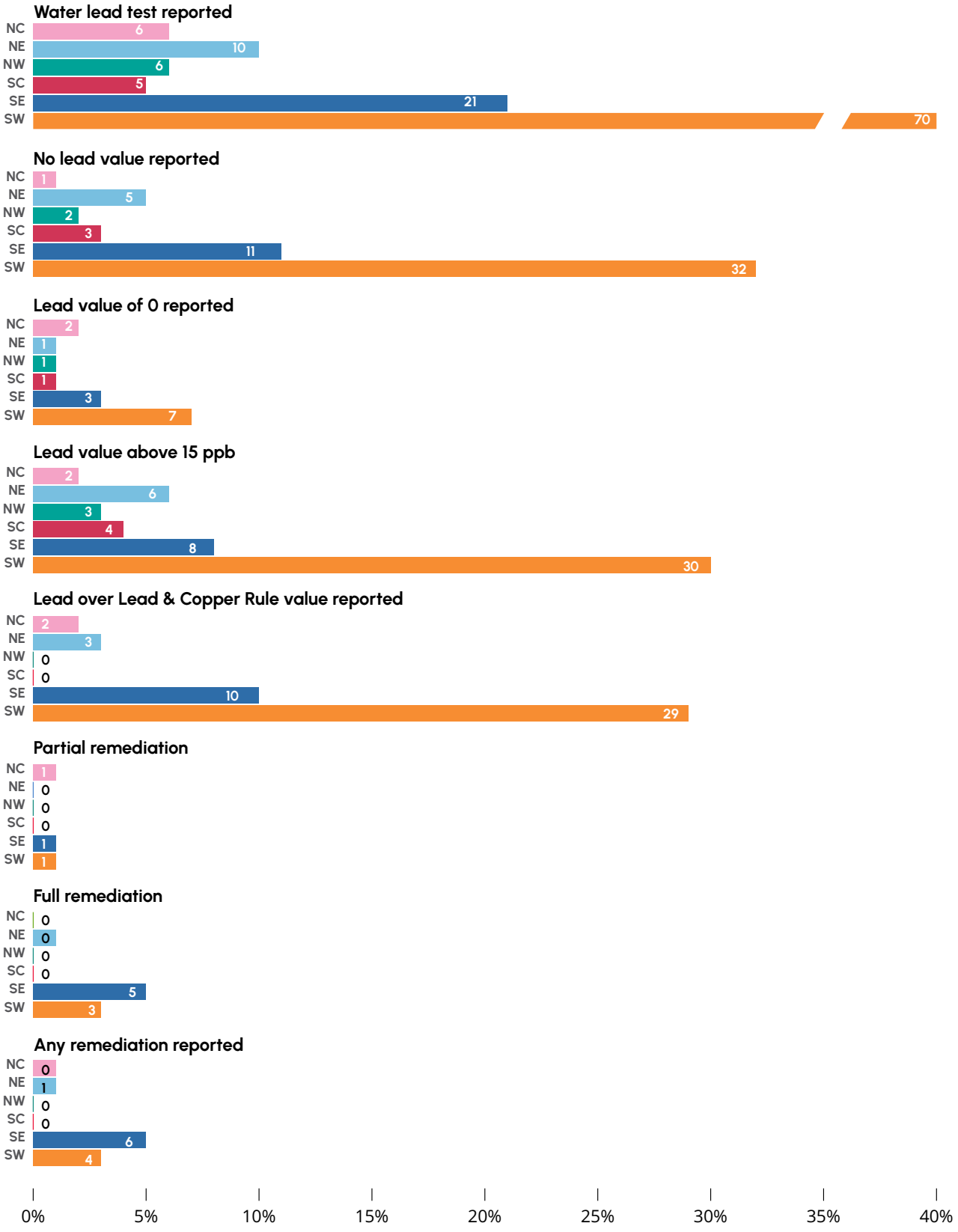
In the previous report (19-20 SY), the overall study sample (n=65) reported that lead testing was conducted in 58 school districts, with 56.9% reporting levels above 5 ppb between 5-15 ppb while 13.8% were above 15 ppb, of which 62.5% remediated.

Between the previous and current reports, we saw a lower proportion of schools conducting testing for lead in drinking water. Among schools that tested, in the current report we also found a greater proportion of schools with lead in drinking water and a fewer percentage of schools that remediated.

n=166 results:

Of the 166 schools queried, 118, or 71%, indicated that they had performed lead in water testing. One hundred and seventeen school districts reported that their most recent testing dates ranged from September 2016 to August 2023, with 74 districts (63%) last completing lead in water testing in January 2020. Seventy-six districts (65%) had performed lead in drinking water tests at all their buildings. Of the districts testing their water for lead in all buildings, four (57%) were among the sample of 7 NC districts, 2 (13%) among the NE districts, 1 (16%) among NW districts, two (25%) of all the SC districts, 7 (22%) of the 32 SE districts, and 52 (60%) of the 87 SW districts.

Water lead testing and reporting a result, by region



Test results from the 21-22 SY were reported by 112 districts; 15 districts (13%) did not detect lead in water. Fifty-three districts reported a non-zero level below 15 ppb, and the remaining 44 districts reported lead levels above 15 ppb. Among the 44 districts with lead levels above 15 ppb, eight districts indicated that they did not remediate, 3 indicated that remediation was performed, and 33 districts did not respond.

SCHOOL SUCCESS STORY:

Starting in 2016, Pittsburgh Public Schools committed to replacing every non-filtered water fountain in their school with lead-filtering bottle filling stations and lead-filtering water fountains after lead was identified in drinking water. Over eight years, the school district replaced the water fountains across 70 buildings for a total of 1,295 water fountains and bottle filling stations. In May of 2024, the school district celebrated this major achievement as a leader in the "Filter First" approach to managing lead in drinking water.

Recommended and Required Actions:

In October 2024 the EPA finalized the Lead and Copper Rule Improvements. This regulation requires that water systems across the country identify and replace lead service lines within 10 years [34].

Under the US SDWA which sets standards for lead in drinking water by regulating public water systems (PWS), EPA does not have the authority to require schools that are not regulated as PWS to comply with the standards [42]. However, community water systems (CWS) are obligated to provide public education and sampling requirements (i.e., the 3 Ts) for schools they serve (for those constructed or without full plumbing replacement before January 1, 2014) [43]. Schools that are regulated as PWS are not required to comply with the public education and sampling requirements for schools for lead in drinking water. Beginning November 1, 2027, CWS will be required to test at least 20% of elementary schools with no more than 5 samples at each school each year for the first five years, then as requested by the school. For secondary schools, CWS will only test by request.

Under Act 39 of 2018 of the Pennsylvania Public School Code, schools are encouraged (not required) to test for lead in drinking water annually and implement remediation plans if levels exceed the EPA threshold [36]. Schools that do not test must discuss their reasoning at a public meeting. It is likely the drop in school testing for lead in drinking water in this current report could be attributed to the influx in testing in 2019-2020 noted in the previous report as a result of Act 39. An amendment to this legislation has been discussed that would provide $30 million in funding for schools to replace outdated water fountains with those that filter for lead [43, 44] by 2026.

Currently, as of April 2025, the PA DEP is offering grant funding to eligible schools and childcare centers in Pennsylvania for lead in drinking water reduction activities. The primary goal of the grant is to reduce children's exposure to lead in drinking water using federal funding from the Water Infrastructure Improvements for the Nation (WIIN) Act. Schools are encouraged to apply for this program while supplies last.

Other Water Contaminants

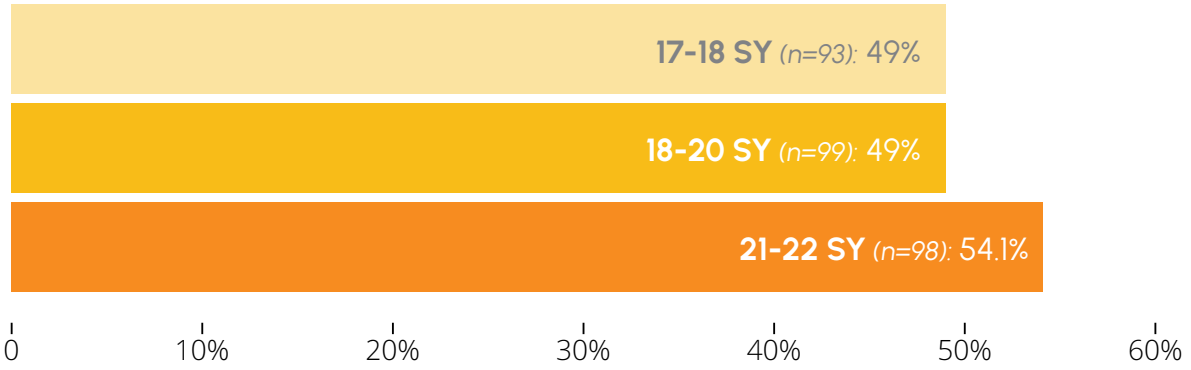
The Water Quality Standards (WQS) Regulation establishes requirements for states and tribes to have water quality standards while also establishing procedures for the EPA to review and either approve or disapprove water quality standards in compliance with the Federal Clean Water Act (CWA) [39]. WQS are important because they protect bodies of water used for recreation (e.g., swimming), fishing, and scenic enjoyment, as well as aquatic life that inhabit the waters [40]. WQS also protect human health because they form a legal basis for controlling pollutants from entering the waters that we consume and use as part of our daily living. The primary pollutants that are tested in water quality tests have been determined to be the most commonly used, persistent and toxic substances found in wastewater discharges that include many heavy metals and solvents [41].

The Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA) both aim to protect water, but they focus on different things. The CWA is mainly about keeping rivers, lakes, and streams clean and safe for activities like fishing and swimming. The SDWA, on the other hand, is about making sure the water people drink is safe and free from harmful contaminants. Even though their goals are different, the two laws often overlap, especially when it comes to how wastewater is treated and how utilities manage byproducts like biosolids. This overlap can sometimes cause conflicts, especially when state and local regulations prioritize public health over environmental concerns, or vice versa. In recent years, more water utilities have started using an integrated approach, called holistic water management. This means they are planning wastewater and stormwater systems together and using both traditional ("gray") and natural ("green") infrastructure to better meet CWA requirements and improve environmental outcomes. Copper and bacteria are both common water contaminants and can cause adverse health effects, including vomiting, diarrhea, stomach cramps, and nausea [35]. Similar to lead, copper can be found in plumbing pipes and is the leading source of copper in drinking water. Bacteria such as E. coli and coliform bacteria can enter drinking water from human or animal waste and failing septic systems.

All districts were asked whether they had performed the following water quality tests, when they had done so, and the results of the tests: copper, PFAS, and bacteria. A variety of water was tested by districts, including fountains, sinks, pools, and cooling towers. Substances exceeding limits varied, and included copper, xylene, coliform bacteria, total trihalomethanes (TTHM), free chlorine, and legionella.

n=98 SWPA

Water quality tests that included contaminants in SW PA



SW PA Data Comparison

In the 16-17 SY *(n=93)*

- Water quality tests that included contaminants were performed in 49% of districts.
- 7% of districts relied on municipal water testing.
- One school district had to close for several days because its schools tested positive for coliform bacteria, including E. coli.
- Water in the restroom in the administration building in one school district was found to have 2.35 mg/L of copper in a drinking water sample.

In the 19-20 SY *(n=99)*

- Water quality tests that included contaminants were performed in 49% of districts.
- 6% of school districts relied on the local water authority's Consumer Confidence Report.
- One school district was found to have a copper level of 16.1 mg/L in a drinking water sample.

In the 21-22 SY *(n=98)*

- Water quality tests that included contaminants were performed in 54% of districts.
- 14% of school districts relied on the local water authority's Consumer Confidence Report.
- In the 54 districts with results, 17% exceeded an allowable limit.
- One school district had 62 water samples screened for Legionella, of which 25 locations had elevated levels.

Overall Statewide Sample *n=80*

- In the current report (21-22 SY), 53% of school districts in the statewide sample (n=80) completed water quality tests for other contaminants. 10% of school districts in the statewide sample relied on the local water authority's report. In the 42 school districts with results, 19% exceeded an allowable limit.
- In the previous report (19-20 SY), 49% of school districts in the statewide sample (n=65) completed water quality tests for other contaminants. 11% of school districts in the statewide sample relied on the local water authority's report. In the 31 school districts with results, 23% exceeded an allowable limit of which 14% remediated.
- Between the previous and current report, we saw a greater percentage of schools completing water quality testing and fewer schools relying on their local water authority's Consumer Confidence Report. Concurrently, fewer districts exceeded an allowable limit for water contaminants.

Respondents *n=166 results*

- Thirty-nine districts independently performed water testing, and 15 monitored their water authority's Consumer Confidence Reports. Fifteen districts reported exceedances. Among those exceeding water quality standards, 8 were located in the SW, one each in Northcentral, Northeast, and Southcentral, respectively, and two in Northwest.

SCHOOL SUCCESS STORY:

Marion Center Area School District completed extensive water quality testing each year from 2018-2022 for each of their school buildings. Routine tests included screenings for lead and copper, pH levels, 5 haloacetic acids, arsenic, total and free chlorine, total coliform presence (including E. Coli), trihalomethanes, and approximately 46 other contaminants. There were no exceedances identified above the EPA action level for any of the contaminants tested; therefore, mitigation was not needed.

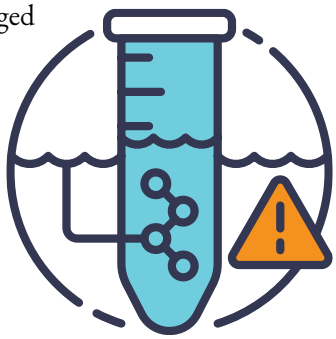
Recommended and Required Actions:

In Pennsylvania, there are three chapters under the Pennsylvania Code, Title 25 – chapters 16, 93, and 92a.51 -- that are in effect for Clean Water Act (CWA) purposes [41]. They include guidelines for the criteria developed for toxic substances, analytical methods and detection limits for toxic substances, water quality criteria, designated water uses, and compliance schedules for law enforcement.

Federal law under the EPA Surface Water Treatment Rule (SWTR) requires PWS to monitor disinfectant residual in and at the entry point of the water distribution system with a minimum disinfectant residual concentration of at least 0.2 mg/L at the point of entry and detectable in at least 95% of samples collected within the distribution system [44]. Effective April 2019, the PA DEP adopted the minimum disinfectant residual concentration level. Additionally, disinfectant residual measurements must continue to be collected at representative locations at the same time and location as coliform samples, at a minimum of once per week [45]. Maintaining adequate disinfectant residuals is important to minimize the growth and transmission of Legionella and other bacteria. State legislation was introduced in 2023 to include a minimum detectable residual disinfectant level of at least 0.5 mg/L of chlorine as a means for providing risk management for Legionnaires' disease.

PFAS

PFAS are a class of chemicals used since the 1960s, of which perfluorooctanoic sulfonate (PFOS) and perfluorooctanoic acid (PFOA) were the most widely used synthetic chemicals throughout the US [46]. PFAS are used in industry and consumer products because of their resistance to heat, stains, water, and grease. They are found in many applications and consumer products, such as firefighting foam, stain repellants, pesticides, and non-stick cookware. PFAS are known as "forever chemicals" because they can't break down easily in the environment (persistent, bioaccumulative, and toxic). These manufactured chemicals can accumulate in our bodies, leading to adverse health impacts, such as immune and thyroid problems, as well as certain cancers, developmental and reproductive effects. Widespread attention and concern have only emerged in recent years.



Scientists continue to study the health effects of human exposure to PFAS. The National Academies of Sciences, Engineering, and Medicine (NASEM) conducted an extensive review, concluding there is sufficient evidence for an association between PFAS exposure and kidney cancer, and limited or suggestive evidence for testicular and breast cancers. The review also highlighted associations with other health outcomes, such as increased cholesterol, changes in liver enzymes, decreased vaccine response, pregnancy-induced hypertension, and small decreases in birth weight [47].

People become exposed to PFAS when they consume contaminated water, food, and soil, and when they inhale aerosolized products that have PFAS chemicals in them. In February 2024, the Food and Drug Administration announced that grease-proofing materials containing PFAS are no longer being sold for use in food packaging in the U.S., thereby eliminating the major source of dietary exposure. [48]

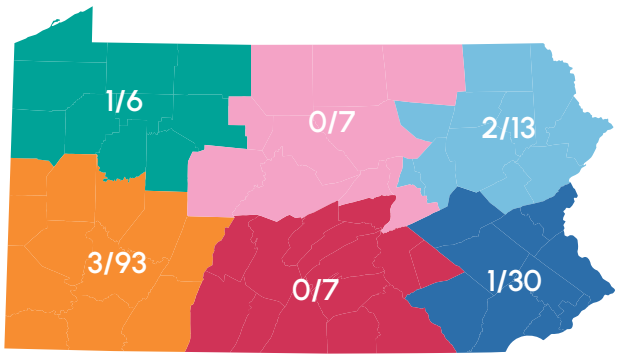
PFAS can get into drinking water and spread through the environment when products containing them are disposed of, used, or spilled onto the ground near water sources or into lakes and rivers, including those used for drinking water. In 2024, Women for a Healthy Environment published the report, Three Rivers, Fifteen PFAS, which assessed how wastewater treatment systems influence PFAS surface water contamination in Pittsburgh's three rivers [49]. Samples were collected upstream and in the mixing zone of three wastewater treatment plants (WWTPs). The study found that in all three WWTPs, PFAS levels were far higher in the samples from the mixing zone compared to those taken from upstream of the discharge site. This indicates that Pittsburgh's municipal wastewater systems are polluting the waterways with wastewater discharge that is not treated for PFAS.

Water is currently understood to be the primary exposure route of concern, especially when elevated levels are found in a drinking water supply [50]. This is a critical point for intervention because of waterways' potential to spread contamination through the environment. Thus, in this new report, we chose to ask schools about PFAS testing in water.

21-22 SY Highlights

- 3% of school districts in SW PA (n=98) had PFAS testing included in their water quality testing (compared to 5% of school districts in the overall study sample (n=80).)
- In almost all cases, school districts relied on municipal water testing for PFAS in water.
- One school acknowledged that they have obtained a waiver for their well water, while three schools indicated that they rely upon their municipal water authorities for information regarding PFAS concentrations.
- Two districts indicated that they have conducted independent testing for PFAS at their schools.

% of SDs testing for PFAS by region:
Surveyed School Districts: *n=166 SDs data*
21-22 SY Respondents



SCHOOL SUCCESS STORY:

In 2018, Upper Dublin School District tested for PFOA and PFOS in several of their school buildings for both drinking and non-drinking water outlets. All results were below the reporting limit except for the samples taken from the high school pool. It is not noted whether the school mitigated. However, it is important to note that the risk of exposure through swimming is generally considered lower than from drinking water or eating contaminated fish, as PFAS are not readily absorbed through the skin, and accidental swallowing during swimming is typically less than drinking water [51].

Recommended and Required Actions:

New EPA PFAS regulations require that water systems, including schools with private wells, must test for and mitigate the levels of six PFAS [47, 52]. EPA established legally enforceable levels, called Maximum Contaminant Levels (MCLs), for six PFAS in drinking water. Under the new regulation, the maximum contaminant levels (MCLs) for two of the common types of PFAS – PFOA and PFOS – are 4 parts per trillion, although the EPA has stated that there is no safe level of exposure. This requirement is stricter than Pennsylvania's MCL of 14 parts per trillion for PFOS and 18 parts per trillion for PFOA. Under the federal PFAS regulation, water systems will have five years to implement this plan, which includes mandated testing [53]. In addition, public water systems must monitor these PFAS and have three years to complete initial monitoring (by 2027), followed by ongoing compliance monitoring. Water systems must also provide the public with information on the levels of these PFAS in their drinking water beginning in 2027. Although schools with well water are required to test under the new EPA standard, there appears to be limited awareness of the need for PFAS testing. As of July 2024, more than 30 Pennsylvania schools have detected PFAS in their drinking water that exceeded the new EPA standard [54]. From the analysis of respondents' data (n=166), one school acknowledged that they have obtained a waiver for their well water, while three schools indicated that they rely upon their municipal water authorities for information regarding PFAS concentrations.

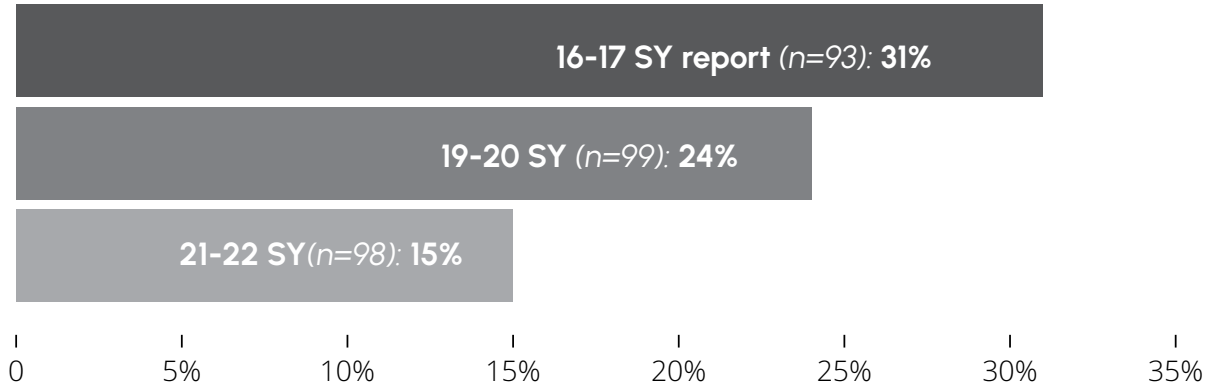
In Pennsylvania, Act 101 of 2019 (HB 1410) made changes to the Transit Revitalization Investment District Act to create a remediation fund for those who have been affected by PFAS in drinking water related to military installations [55]. During the data analysis period, schools had to opportunity to receive funding from the Public School Environmental Repairs Program to address PFAS. WHE's 1000 Hours a Year Program awards funding to schools in SW PA for water fountain upgrades that include PFAS filtration. Schools in SW PA are encouraged to take advantage of this program.

Radon

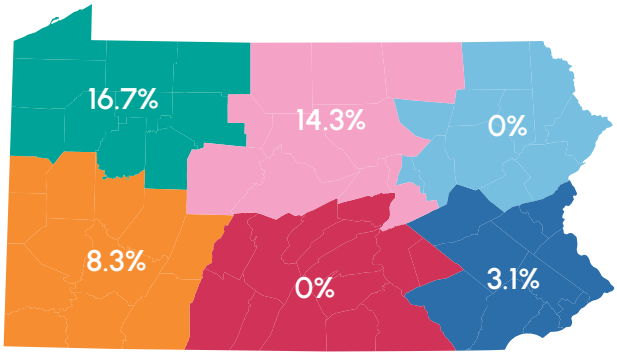
Radon is a serious health concern; it is an odorless, invisible gas and can only be detected by testing. Radon is the second leading cause of lung cancer (the leading cause of lung cancer for never-smokers) and is especially concerning for children due to their developing lungs and bodies. There is no safe level of radon exposure. Long-term exposure, even at low levels, can lead to cancer. Pennsylvania has a unique geology that puts residents at higher risk for radon exposure than in other states. 98.5% of PA counties are in the EPA-defined Zone 1 risk area, meaning their average levels are more than 4 pCi/L (the EPA action level).

n=98 SWPA

SW PA (% SDs testing for radon):



% of SDs testing for radon in at least 1 building:
(n=80 school districts)



98.5% of PA counties are in the EPA-defined Zone 1 risk area, meaning their average levels are more than 4 pCi/L (the EPA action level).

SW PA data comparison

In 16-17 SY *(n=93)*

- 31% of school districts conducted radon testing.
- Only one district with levels over 4 pCi/L reported mitigation and retesting.
- In one school district, 14 of 31 rooms tested had values that exceeded EPA's Action Level of 4 pCi/L for radon.

In 19-20 SY *(n=99)*

- 24% of school districts conducted radon testing.
- Of the districts that tested for radon, 63% tested all school buildings, 29% tested only some buildings, and 8% did not specify how many buildings had been tested.
- Of the school districts that tested for radon, 38% had results above 4 pCi/L.
- One district reported radon levels as high as 23.5 pCi/L. This district did not disclose any remediation efforts.
- Another school district found high radon levels in over 44 samples.
- Of the districts with elevated levels of radon, only three districts reported any kind of remediation efforts.

In 21-22 SY *(n=98)*

- 15.3% of school districts conducted radon testing.
- In 66.7% of the school districts that tested for radon, results were above 4 pCi/L.
- Of the districts that tested for radon, 10.2% tested all school buildings, 5.1% tested some school buildings, and 84.7% did not respond or did not specify how many buildings had been tested.
- Of the districts that tested for radon, 66.7% had results above 4 pCi/L.
- Of the districts with elevated levels of radon found, only two districts reported any kind of remediation efforts.
- In one school district, 44 areas were identified as having radon levels above 4 pCi/L. Through Women for a Healthy Environment's 1000 Hours a Year program, this school district was able to have radon mitigation systems installed in three locations.

Overall study sample

- In the current study sample of 80 districts throughout Pennsylvania, 5% (4) of the school districts tested for radon. Of those school districts that tested for radon, 75% (3) of them had radon levels above the EPA threshold and none of them remediated.
- In the previous 2019 report, among the overall study sample of 65 school districts from all regions of Pennsylvania, 20% (13) of the school districts tested for radon. Of those school districts that tested for radon, 38.5% (5) of them had radon levels above the EPA threshold of 4.0 pCi/L of which 40% (2) districts remediated.

In summary, significantly fewer school districts in the overall study sample and southwestern PA tested for radon in their school buildings compared to the 2019 report. The reasons for choosing not to remediate are outside of this report's scope, but cost could be a significant barrier for schools.

n=166:

Seventeen school districts tested for radon. Fourteen of these districts were in SW PA, and only one district in NC, NW, and SE PA tested for radon, respectively. In the 12 schools that responded with elevated radon levels, 10 of which were in SW PA, only two districts remediated, with both districts being in SW PA.

SCHOOL SUCCESS STORY:

Pine Richland School District had radon mitigation systems installed in 3 locations after they tested and retested for radon in the 2018-2019 school year through WHE's 1000 Hours a Year program [56]. The school remains an avid advocate for radon awareness in schools. In 2018, WHE established the Radon in Schools Work Group to advocate for stronger environmental health legislation that protects children from radon gas exposure in schools. In October 2024, one of their students, a member of the Phipps' Youth Climate Advocacy Committee, joined WHE staff to speak at a legislative briefing in Harrisburg regarding the need to require radon testing in school buildings [57].

Recommended and Required Actions:

The EPA estimates that 20% of schools nationwide have tested for radon. In most cases, Pennsylvania schools that test for radon have found areas in their schools with levels above the EPA threshold. Radon should be measured in schools as part of an Indoor Air Quality (IAQ) management plan. Effective December 1, 2023, schools must follow new protocol for 1) conducting radon measurements in accordance with ANSI/AARST MA-MFLB-2023 standards, and 2) implement soil gas control systems for existing buildings in accordance with ANSI/AARST SGM-MFLB-2023 standards, and for new construction in accordance with ANSI/AARST CC-1000-2018-0523 standards. [58].

The American Association of Radon Scientists and Technologists recommends that schools be tested every five years for radon levels.

While Pennsylvania does not currently require radon testing in schools, other states have set an example to follow: 13 states have passed laws related to radon exposure in schools, 6 require mitigation, 9 require schools to test for radon, and 4 states recommend testing [59]. However, this policy might change in the next coming years due engagement with PA House and Senate elected officials that have introduced legislation that would require radon testing and remediation measures in school buildings in Pennsylvania and require radon resistant construction for new school buildings [60].

WHE's 1000 Hours a Year Program awards mini grants to SW PA schools for radon testing and mitigation.

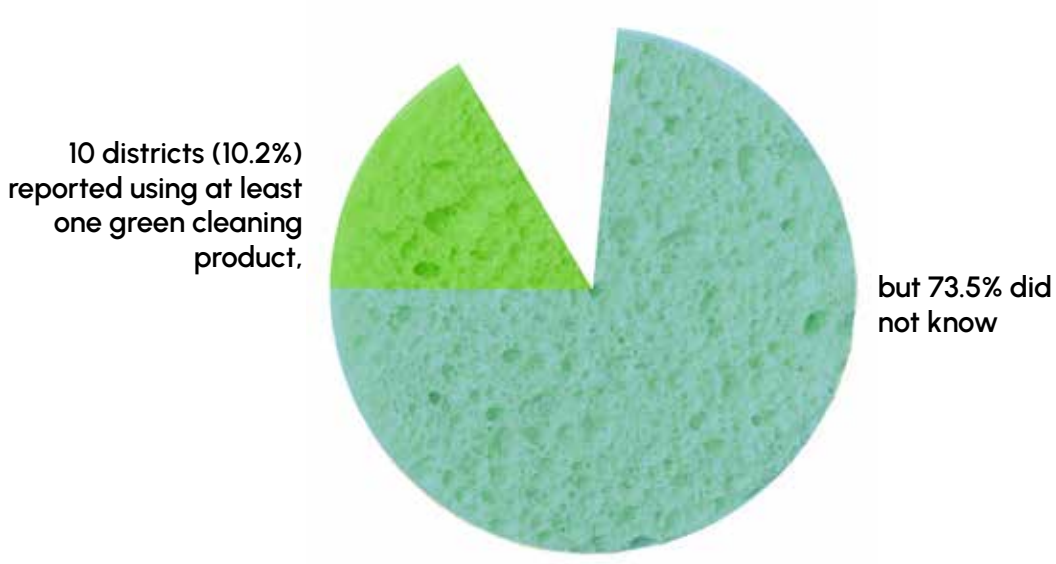
Green Cleaning

Green cleaning products and practices are less harmful to human health and the environment than traditional cleaning products. Traditional cleaning products contain high volatile organic compound (VOC) content that not only triggers poor indoor air quality, but also has adverse health effects including asthma, upper respiratory infection, fatigue, nasal congestion, nausea, and dizziness [61]. Asthma is a leading chronic disease in children and asthmatic episodes can be avoided by using green cleaning practices. Green cleaning products are meant to protect students and staff from harmful chemicals, prevent student and faculty absences, and improve the indoor school environment.

Third-party certified green cleaning products such as Green Seal, EPA Safer Choice, and UL ECOLOGO are recommended for use in schools because they meet rigorous environmental and health standards that traditional cleaning products don't require. Third-party certified green cleaning products ensure low toxicity, limited VOCs, no carcinogens, and a reduced carbon footprint. Schools should be cautious about false or vague claims known as "greenwashing" when identifying cleaning products for their schools. The EPA, for example, has an online search tool that schools could utilize for finding Safer Choice-certified products.

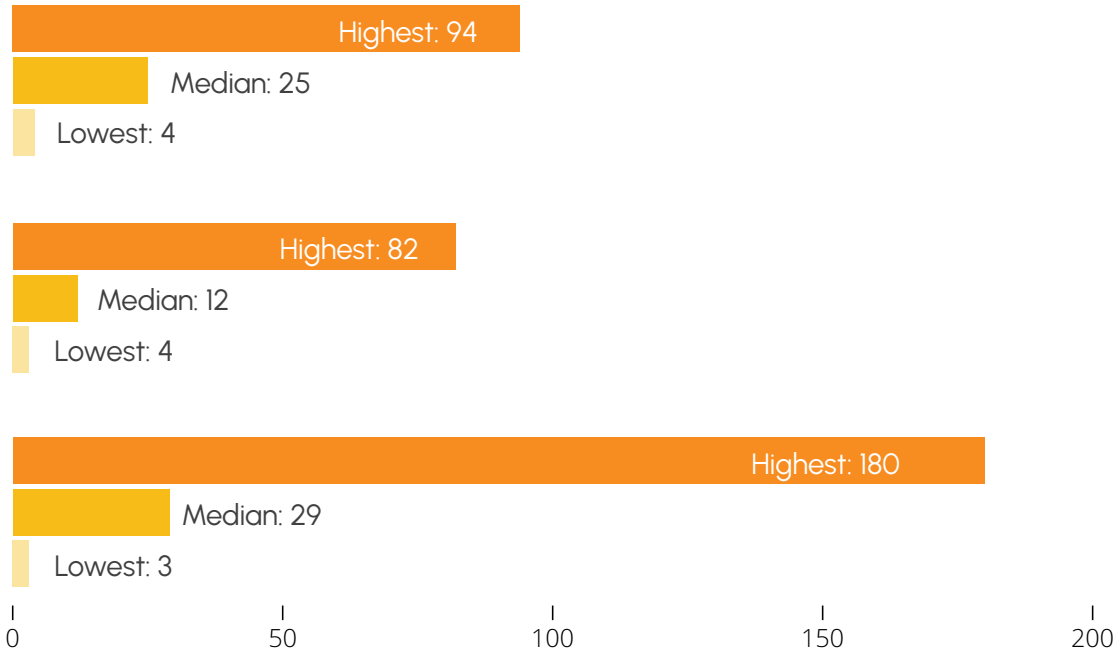
Green cleaning products also refer to its impact on the environment as far as biodegradability and less packaging, which could also increase cost savings by using fewer products. One study found that the price of green cleaning products is comparable to or even lower in cost than conventional counterparts, also accounting for the cost savings related to human health and the environment (i.e., medical expenses and lost wages) [62].

Since COVID-19, cleaning and disinfecting have had a greater emphasis in schools to control the spread of the virus. Schools should use caution when selecting cleaners and disinfectants and should always follow product label directions for ensuring the appropriate dwell time has been achieved [63]. The EPA has a list of disinfectants that meet its criteria for use against COVID-19. Aerosolized products can stay in the air for long periods of time and contribute to poor indoor air quality, and should thus be avoided. They can also irritate the skin, eyes, or airways and cause respiratory irritation. The EPA has created the Schools Chemical Cleanout Campaign (SC3) to encourage schools to use green cleaning practices and develop a green cleaning program. The Pennsylvania DEP, as part of SC3, provides training at no cost for teachers and administrators in Pennsylvania schools [64].



of cleaning products used per SWPA district

In 17-18 SY *(n=93):*



SWPA DATA Comparison:

In 16-17 SY *(n=93)*

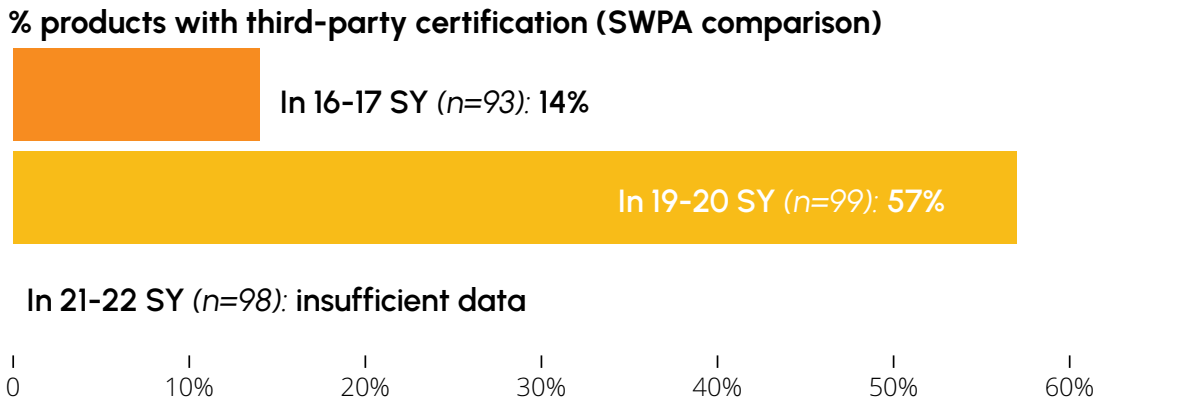
- The lowest number of cleaning products used in one district was four.
- The median number of cleaning products used per district was 25.
- 94 was the highest number of cleaning products used in one district.
- 14% of school districts use at least one green cleaning product.

In 19-20 SY *(n=99)*

- The lowest number of cleaning products used in one district was three.
- The median number of cleaning products used per district was 12.
- 82 was the highest number of cleaning products in one district.
- School districts use an average of two environmentally friendly products.
- 56 districts (57%) reported using at least one green cleaning product.

In 21-22 SY *(n=98)*

- The lowest number of cleaning products used in one district was three.
- The median number of cleaning products used per district was 29.
- The highest number of cleaning products used in the southwest sample was 180.
- 10 districts (10.2%) reported using at least one green cleaning product, but 73.5% did not know.
- 16 schools reported no environmentally friendly cleaning products, while 72 did not respond or did not know.
- Due to an insufficient number of responses to the question about green cleaning products in the overall sample, we cannot determine the average number of green cleaning products used in SW PA. Less than 1% of schools reported use of green cleaning products in their schools. .
- EPA provides List N (disinfecting products that kill COVID-19). Currently, there are approximately 690 products on the list; most are not third-party certified, and the information is not readily available without further exploration. An analysis performed by WHE staff found that only 12 (1.7%) of the disinfectants on List N are EPA Design for the Environment (DfE)-certified as safer for health and the environment.



Statewide data comparison

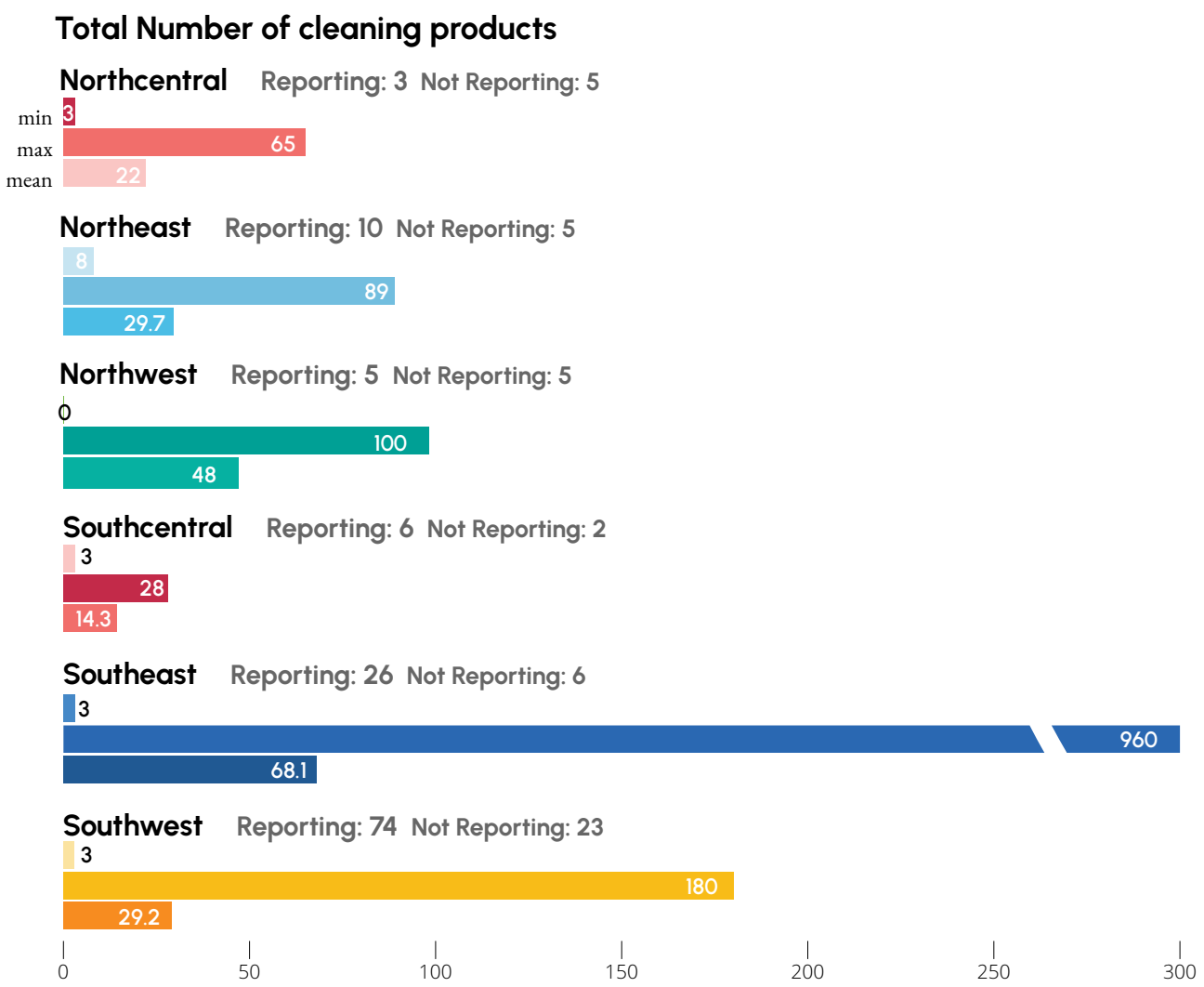
- In the current report (21-22 SY), 7.5% of school districts in the statewide sample (n=80) used at least one green cleaning product. School districts used a median of 16 cleaning products.
- In the previous report (19-20 SY), 55.4% of school districts in the statewide sample (n=65) used at least one green cleaning product. School districts used a median of 17 cleaning products and a median of 3 green cleaning products.
- Between the previous and current report, we saw a significant decline in the number of school districts in the statewide sample that reported using green cleaning products.

Respondent Data: n=166

- Only 32 of the 166 districts provided an answer to the question – how many green cleaning products does your district use -- and only 12 districts reported a non-zero number of green cleaning products. Non-zero answers ranged between 2 and 16.

SCHOOL SUCCESS STORY:

North Hills School District reported using as little as three cleaning products in their schools – a hard surface ready-to-use sanitizer, a disinfectant, and a multi-purpose cleaner for different surfaces including floors. The district does not have a contract with a cleaning product vendor. One of three of their cleaning products is third-party certified by Green Sean and UL ECOLOGO.



Recommended and Required Actions:

As of writing this report, 10 states and the District of Columbia have a variety of green cleaning legislation for schools [65]. Most require schools to use green cleaning products, but states vary on how they define "green cleaning" and the criteria they use for meeting the requirement. In the case of New York and Illinois, the state is responsible for setting guidelines that schools must follow in purchasing green cleaning products. In Connecticut and Iowa, schools must use products that meet state-approved third-party certification for green cleaning. Until there are more federal and/or state guidelines for green cleaning in schools, schools are encouraged to use third-party certified green cleaning products.

The legislation was previously introduced that would require school districts to establish policies for the procurement and use of green cleaning products.

The EPA offers resources for schools looking to adopt green cleaning practices including a toolkit for school staff to remove unnecessary cleaning chemicals, training on how to prevent future chemical mismanagement issues, and education on chemical issues in schools with suggestions for sustainable solutions [66].

WHE's Healthy Schools Recognition Program (HSRP) is another free resource for all K-12 schools in Pennsylvania. As part of the HSRP, WHE staff will assist school personnel with acquiring third-party certified green cleaning products, share suggestions on how to store cleaning products, and deliver professional development opportunities to implement green cleaning programs.

Pesticides on School Grounds

Pesticides are inherently toxic and can severely harm all individuals, especially children, if stored or used improperly [67, 68]. When exposed, children ingest, inhale and absorb greater amounts of pesticides than adults and their developing organ systems are more sensitive to toxic exposure. Pesticide exposure can adversely affect a child's neurological, respiratory, immune, and endocrine systems, even at low exposure levels. Furthermore, a recent study found an increased risk of acute childhood leukemia with increased exposure to pesticides used on vines [69, 70]. According to the AAP, "Epidemiologic evidence demonstrates associations between early life exposure to pesticides and pediatric cancers, decreased cognitive function, and behavioral problems." [71]

Integrated pest management (IPM) provides a safer alternative to pesticide application by using a strategic approach to managing pests. IPM plans use a sustainable, environmentally friendly approach to preventing pests and provide ways to eliminate them with pesticides only when necessary, by using the least harmful and least toxic products. On the contrary, a conventional pest management plan/ policy often responds to pest problems after they occur and sets a schedule for chemical treatments from a contracted pest management company Penn State and the PDA have created the Pennsylvania Integrated Pest Management Program (PA IPM) that schools can contact for educational training and assistance with creating an IPM policy and/or plan for their schools [72]. School IPM policies and plans provide a way for schools to proactively manage pests without relying on pesticides. Schools can adopt an IPM plan by first creating a school IPM committee to develop a policy and then implementing a pilot program with continuous education and training available for all school employees.

SWPA Data Comparison

In 16-17 SY *(n=93)*

- 78% of school districts use at least one pest management contractor or perform services in-house.
- 6% indicated they do not contract with a pest management company.
- 16% did not respond to the question.

In 19-20 SY *(n=99)*

- 94% of school districts had a pest management policy.
- 73% specified a pest management contractor, while 21.2% did not specify a contractor.

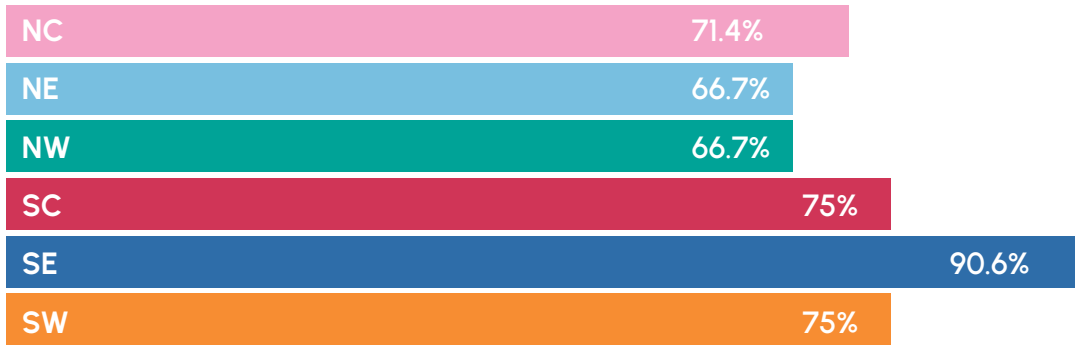
In 21-22 SY *(n=98)*

- 84.7% of school districts had a conventional pest management policy .
- 49% specified a pest management contractor, while 35.7% did not specify a contractor.

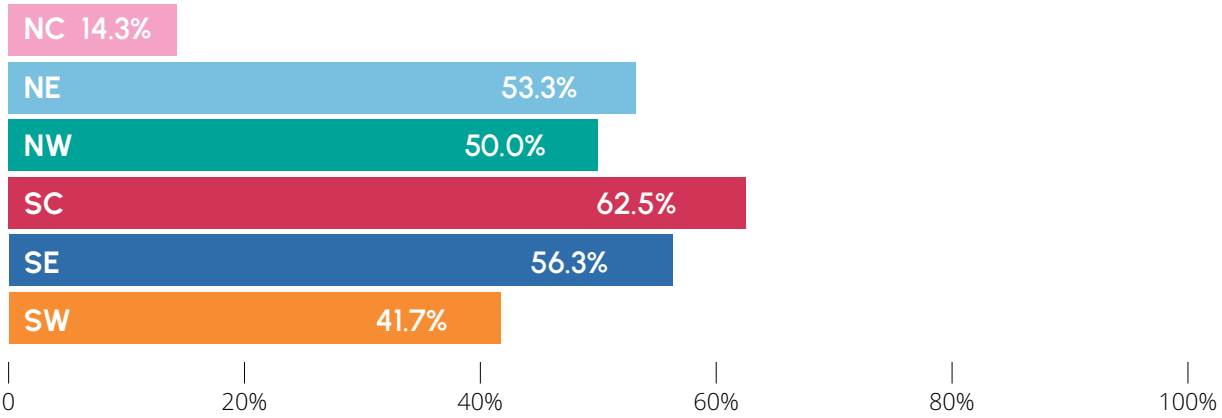
Overall Sample Data Comparison

In the current report (21-22 SY) 78.8% of school districts in the statewide sample (n=80) had a pest management policy. 50% of districts specified a pest management contractor while 28.7% did not specify a contractor. In the previous report (19-20 SY), 93.8% of school districts in the statewide sample (n=65) had a pest management policy. 72.3% of districts specified a pest management contractor while 21.5% did not specify a contractor. Between the previous report and the current report, we saw a decrease in schools throughout the state with pest management policies and a decrease in schools that specified a pest management contractor.

% Pest Management Policy Provided by District, 21-22 SY, *n=80 districts*



% Pest management contractor specified by district 21-22 SY *n=80 districts*



SCHOOL SUCCESS STORY:

Coudersport Area School District has a detailed IPM plan with a designated coordinator and IPM committee, each with roles assigned to them. The IPM plan includes a notification letter to parents that invites them to enter the school's notification registry if pesticides are necessary. Their IPM plan includes a pest control report and a description of the school's previous pest problems with locations of pest report sheets in the school.

Recommended and Required Actions:

Schools should refer to the "IPM triangle" which has the three fundamental elements that contribute to pest infestations: food, water, and shelter. Schools should work with teachers and staff to reduce clutter, properly seal and store food away, repair leaks and screens, and seal openings in the building.

Pennsylvania schools are required to use IPM, but many do not [73]. The PA IPM Program has a program assistant available to help support schools implement their state-mandated IPM plans [74]. Schools are encouraged to take advantage of PA IPM's free resources and consulting services.

One way to reduce human exposure to pesticides is to buy/ grow organic produce and support organic land management practices. Not only does it have health benefits, but it also benefits the environment and wildlife by reducing soil and water contamination. Schools are encouraged to utilize gardens on school grounds to teach students to grow, cook and eat fresh food free of chemicals. Schools can also source fruits and vegetables from local farms that use organic practices.

Anti-Idling Signage

Buses produce diesel exhaust every time they idle (sit with the engine running). This releases high levels of toxic particulate matter that travel to the lungs. According to the EPA, diesel exhaust is among the most dangerous form of air pollution [75]. Not only does diesel exhaust pollute the air, it can also enter school buildings through air intakes, doors, and open windows. Children, as well as individuals with existing cardiac and respiratory diseases, are especially vulnerable. Children are highly susceptible because their respiratory systems are still developing, and they breathe at a more rapid rate than adults. Those individuals routinely exposed to diesel exhaust face higher risks of stroke, cancer, asthma, heart attacks, and other chronic illnesses.

Reducing idling has been found to be an effective policy tool for improving outcomes for asthmatic children in schools. The American Lung Association (ALA) and the Asthma and Allergy Foundation of America (AAFA) recommend anti-idling policies as one of many ways schools can improve asthma outcomes in school-aged children, yet it is not known the percentage of states that have adopted it. When a school district in North Carolina partnered with their county health department to implement an Asthma Education Program, they found that prohibiting bus idling improved asthma outcomes [76].

Bus idling has harmful environmental impacts as well. Particulate matter from diesel exhaust depletes the soil of vital nutrients and contributes to acid rain. In addition, it absorbs other toxins and heavy metals in the air. Idling also puts great stress on bus engines. A bus idling for one hour a day during the school year adds the equivalent of 1,260 miles of wear on the engine. Additionally, one hour of idling burns approximately ½ a gallon of fuel [77]. Reducing idling could also save schools thousands of dollars on fuel costs. If a school bus fleet has 100 buses and each bus reduces its idling time by 30 minutes a day, at $3 per gallon of diesel fuel, the fleet would save over $13,500 per school year in fuel costs [78].

School officials must adopt and implement a School Bus Idling Policy to reduce idling times and ensure understanding and cooperation on all levels. Posting anti-idling signs around school grounds, as well as enforcing this prohibition, will remind school bus drivers and parents to shut off their engines during student drop off and pick up times.

If a school bus fleet has 100 buses and each bus reduces its idling time by 30 minutes a day, at $3 per gallon of diesel fuel, the fleet would save over $13,500 per school year in fuel costs.

SW PA Data Comparison *(n=98)*

In 16-17 SY

- 54% of schools did not have anti-idling signs.
- The average number of anti-idling signs was 5.

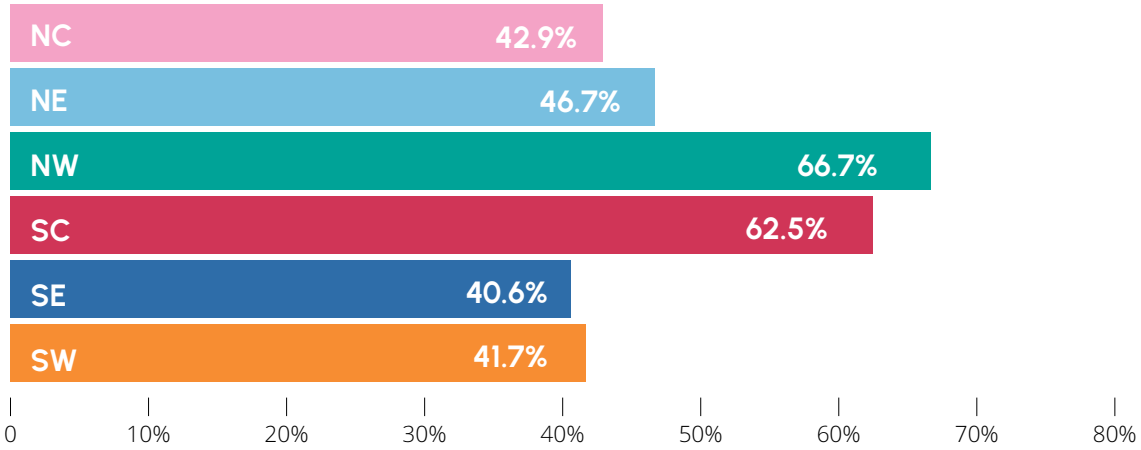
In 19-20 SY

- 48% of schools reported anti-idling signs. Of those with signs, 41% had at least one anti-idling sign per school building.

In 21-22 SY

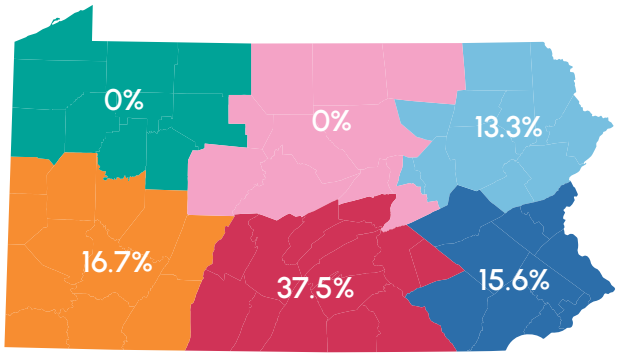
- 53% of schools reported anti-idling signs.
- In the 47 districts with signage, 20 districts had fewer signs than school buildings, which is not in compliance with the state regulation.

% Anti-Idling Signage Posted in District (any) - 2023 report, *n=80 school districts*



 # anti-idling signs less than the # schools

In all districts in 2023 report, n=80 school districts



Overall statewide sample summary

In the current report (21-22 SY), 53.7% of school districts in the statewide sample (n=80) reported that they do not have anti-idling signage, as required by state law. In the 37 districts with signage, 12 had fewer signs than schools, meaning many school buildings did not have the required anti-idling postings.

In the previous report (19-20 SY), 47.7% of school districts in the statewide sample (n=65) reported that they do not have anti-idling signage. In the 34 districts with signage, 9 had fewer signs than schools.

Between the previous and current reports, we saw a greater proportion of schools that do not have anti-idling signage.

SCHOOL SUCCESS STORY:

Otto-Eldred School District posts anti-idling signs where large diesel vehicles (i.e., school buses) load/unload and in parking areas. Additionally, the school has an anti-idling policy included in their Transportation Policy Manual outlining the state law. The School Board is responsible for ensuring that anti-idling signs are in place and maintained on district property and that all bus drivers are notified of the idling restrictions.

Recommended and Required Actions:

The Pennsylvania Diesel Powered Motor Vehicle Idling Act became effective on February 6, 2009 [79]. The act forbids school buses to idle more than 5 minutes in any 60-minute period. Schools are also required to post approved anti-idling signs. School districts must adhere to the state regulation, as a means to protect children from diesel fuel exposure. If you see a violation, you can call your local law enforcement agency or the PA DEP's toll-free Citizen Complaint line at 1-866-255-5158.

Artificial Turf Fields

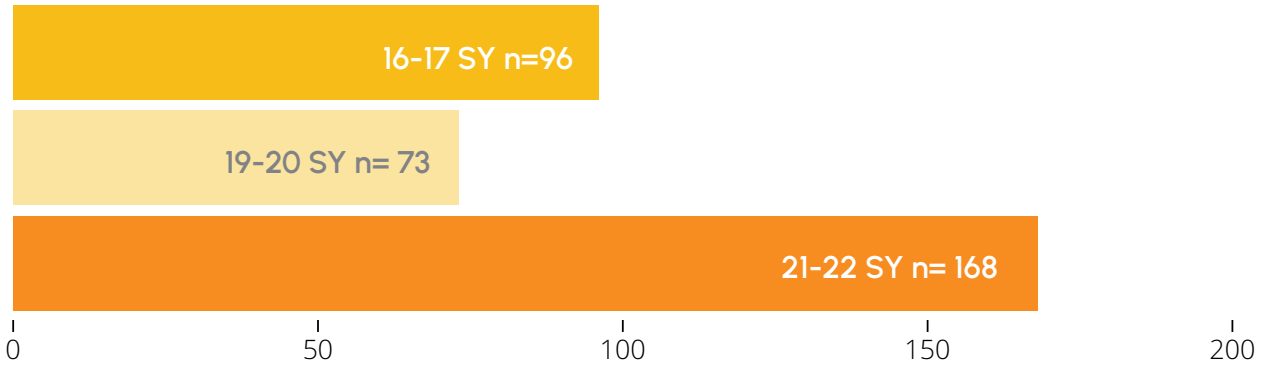
The installation of artificial grass fields or turf has become increasingly popular in the sports industry. Many decide to install turf, thinking it will be easier to maintain, lower in cost, durable, and provide a consistent playing surface. Two of the most popular sports in the United States, football and soccer, have had players speaking out against the increase in turf fields. The National Football League Players Association (NFLPA) has stated its disapproval of the turf fields, advocating for both game and practice fields to become natural grass fields. Collective bargaining agreements are one avenue by which sports teams have been successful at pushing leagues away from artificial turf by upholding health and safety of players. The NFLPA has stated that due to the turf surfaces, a player's risk of a lower extremity injury has increased [80]. The statistics state that there is a 28% higher rate of non-contact lower extremity injuries when playing on turf [80]. Similarly to the National Football League (NFL), the Fédération Internationale de Football Association (FIFA) has listened to players complaints about turf and has mandated that the World Cup Tournaments be played on natural grass, banning turf from the World Cup.

With the widespread installation of artificial turf fields for schools, studies have raised concern about the health and environmental impacts. Researchers have determined numerous toxic chemicals in artificial turf infill, including polycyclic aromatic hydrocarbons (PAHs, a class of harmful chemicals produced during the incomplete burning of organic substances such as coal, oil, and gas, and found in rubber materials), VOCs, and PFAS.

The European Union has taken one step in the right direction by recently issuing a ban in 2024 on microplastics, which includes artificial turf. Numerous studies over the past twenty years have mostly examined the human health risk assessments of crumb rubber for a wide range of contaminants including metals, VOCs, phthalates, PAHs, and BPA. Most studies have been focused on children and young adults and have explored oral, dermal, and inhalation as exposure pathways. A landmark research study conducted at Yale University on crumb rubber found 92 compounds, of which only about half have been tested for human health effects. Of these, nine are known carcinogens, and another 20 are recognized as irritants [81]. With the growing popularity and installation of artificial turf fields in the face of additional concerns such as PFAS, careful consideration must be taken by schools to understand the complete risks and benefits of artificial turf fields.

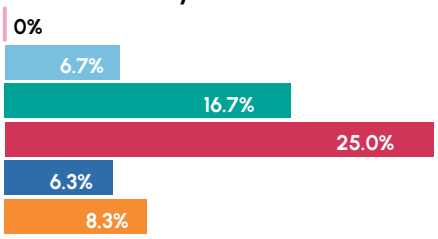
While artificial turf fields are not considered universally as hazardous waste, environmental groups have brought attention to the challenges that exist with waste management and the cumulative impact of microplastics, chemical leaching, and improper disposal. Artificial turf fields in schools typically require replacement every 8-10 years, but schools may choose to delay replacement due to budget constraints, thereby risking playing safety. Pennsylvania has become a dumping ground for discarded artificial turf due to the lack of recycling facilities and the presence of chemicals like PFAS that make disposal challenging [82]. Artificial turf is marketed as recyclable, but few companies in the US are capable of truly recycling it. In 2022, one company received state incentives to build a recycling plant in PA but has not yet done so, leaving thousands of rolls of used artificial turf on land.

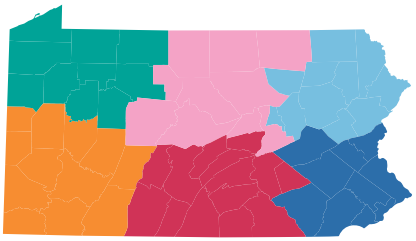
SWPA (# Artificial Turf fields)



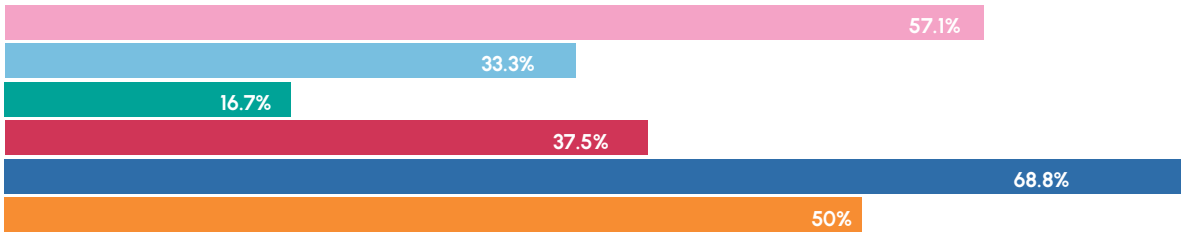
21-22 SY for all districts # of athletic fields *Overall Study Sample (n=80 school districts, n=335,714 students)*

Grass fields only

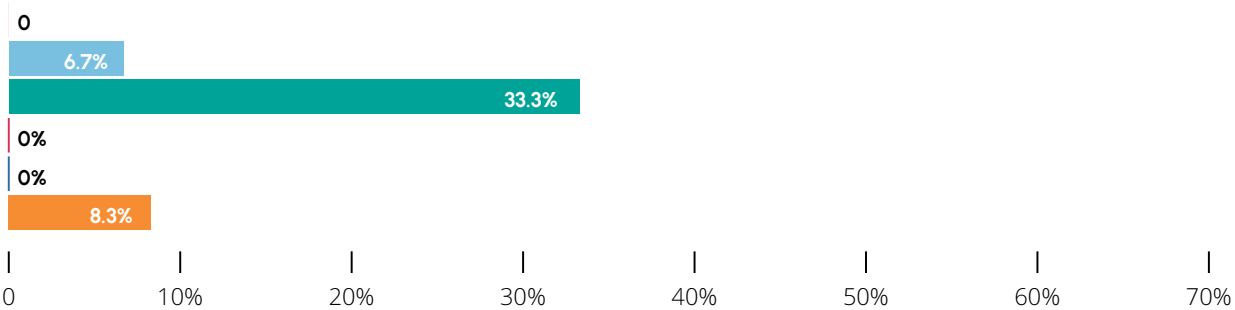


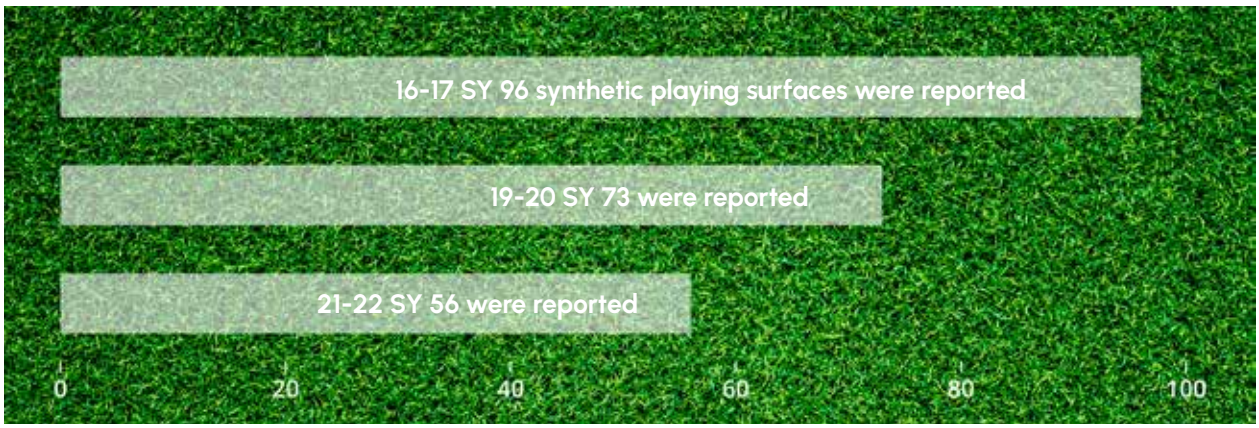


Artificial turf and grass fields



Artificial turf fields only





SWPA Data Comparison

In 16-17 SY *(n=93)*

- 96 synthetic playing surfaces were reported.
- The average number of synthetic fields per district was 1.

In 19-20 SY *(n=99)*

- 73 synthetic playing fields were reported.
- The highest number of synthetic fields per district was 4 (three different districts had this number of synthetic fields.)
- Artificial turf fields were reported by 60% of school districts (35% had both turf and grass fields; 14% had synthetic fields only), 37% had all grass fields, and 13% provided no response.

In 21-22 SY *(n=98)*

- 56 school districts reported having synthetic playing fields.
- A total 168 synthetic playing fields were reported by SW PA schools.
- Artificial turf fields were reported by 57% of school districts (56% had both turf and grass fields; 1% had synthetic fields only); 6% had all grass fields, and 36.7% provided no response.
- Compared to the 2019 report, there was an apparent increase of 99 artificial turf fields. While 26 districts reported the same number of synthetic fields, one reported one fewer, twelve districts reported one more, eleven have added between two and six additional fields, and one large district reported having 52 additional synthetic playing surfaces.

Overall State Sample Data Comparison

In the current report (21-22 SY), artificial turf fields were reported by 56.2% of school districts in the statewide sample (n=80). 51.2% of school districts had both turf and grass fields while 5% had synthetic fields only and 8.8% had all grass fields. 35% of school districts provided no response.

In the previous report (19-20 SY), artificial turf fields were reported by 38.5% of school districts in the statewide sample (n=65). 26.2% of school districts had both turf and grass fields while 12.3% had synthetic fields only and 46.2% had all grass fields. 15.4% of school districts provided no response.

Between the previous report and current report, we saw a significant decrease in schools with all grass fields only and an increase in schools (more than double) with a combination of artificial and natural grass fields.

SCHOOL SUCCESS STORY:

In a 2021, UMass Lowell published a Case Study report featuring Pittsburgh Public Schools (PPS) and Fort Cherry School District as exemplars for sustainable grass management without the use of pesticides [83]. At the time of the report, PPS had nine natural grass fields and all of the athletic fields within Fort Cherry School District were natural grass. Aerating, seeding (as needed), fertilizing (when native soil is less available), and mowing the fields periodically have kept the grass healthy at their schools without any use of harmful chemicals.

Recommended and Required Actions:

A growing body of scientific literature has raised concerns about potential environmental and health risks associated with artificial turf fields, particularly related to chemical exposure and heat retention. Below are examples of government bodies that have acted in the best interest of public health.

Burlington, MA adopted a policy in which students must move to a grass field instead of artificial turf given sufficient heat, recognizing that turf can be hotter than grass [83]. In light of information about the dangers of PFAS, Boston stopped installing new artificial turf fields in city parks in 2022 [84].

In May 2024, Sharon, MA residents voted to extend the Artificial Turf Moratorium for an additional five years.

In May 2025, the Burrillville (RI) Planning Board voted down a proposal for a high school artificial turf field. While not a formal ban, this decision effectively blocked new turf fields in the district.

Schools can utilize educational materials from the Partnership for Healthy Playing Surfaces, a partnership of medical, scientific, and environmental organizations, to help them make informed decisions about their playing fields. The Lowell Center for Sustainable Production also has a collection of reports and other resources that schools can utilize for artificial turf, playground surfacing, and natural grass athletic fields.

School Grounds

Electric Vehicles

The Bipartisan Infrastructure Law of 2021 authorized the EPA to offer grants and rebates to replace existing school buses with cleaner, zero-emission models, as well as charging installation and equipment from the electrical meter to the charging port of the bus (i.e., electric meter, electrical panel, charging stations, battery energy storage systems, renewable onsite power generation systems, and electric buses). As part of this initiative, the EPA's 2022 Clean School Bus program provided $5 billion over a five-year period (2022–2026). Recipients have the flexibility to determine the split between funding for the bus itself and supporting infrastructure. In Pennsylvania, only one school district reported having electric buses in this 2022 sample. That district was awarded seven electric buses through the EPA Clean School Bus Rebate Program. (Only one school district reported data, but more were awarded).

In October 2022, it was announced that 11 school districts in Pennsylvania were awarded $34.6 million in rebates for 89 new "clean" school buses as part of the first round of funding [85]. For the second round of funding, 21 school districts in Pennsylvania were awarded $55.7 million in rebates for 213 clean school buses [86]. The third round of funding for the rebate program closed on January 14, 2025. At that time, the EPA anticipated awarding $965 million to fund new clean school buses throughout the nation. News reports indicate there has been a delay in distributing the funds to school districts awarded the grants. As of October 2024, nearly 9,000 buses across the nation have been replaced through 1,009 awards, with almost $3 billion allocated. The adoption of electric buses in school districts continues to grow, and it is expected that in future reports, more Pennsylvania school districts will utilize electric vehicles.

Benefits of Electric Buses

Environmental Impact

Electric buses significantly reduce greenhouse gas emissions and harmful pollutants, contributing to cleaner air around schools and communities [87]. By transitioning from diesel to electric, school districts can help combat climate change and reduce local air pollution, benefiting both the environment and public health.

Health Benefits for Students with Asthma

Diesel buses release pollutants like nitrogen dioxide and particulate matter, which worsen asthma and other respiratory issues [87]. Electric buses eliminate these harmful emissions, creating healthier air for all students, especially those with asthma.

Helping Low-Income Communities

Low-income and disadvantaged communities often face higher air pollution and asthma rates. Since many are near busy roads and industrial sites, electric buses can reduce diesel emissions and improve air quality, promoting better health for children in these areas [87].

SCHOOL SUCCESS STORY:

Steelton-Highspire School District (SHSD) applied for the EPA 2022 Clean School Bus Program and was selected for funding of up to $2,585,000 rebate to replace 7 school buses and provide charging infrastructure [88, 89]. SHSD is one of the first Pennsylvania school districts to use renewable energy to power its buses and has taken strides to use renewable energy to power its building as well with the installation of solar panels. SHSD found that energy efficiency and solar energy provided significant operational cost savings by offsetting energy savings of up to $4 million to be expected in savings over the next two decades. The district's location in an environmental justice community made it a priority to receive federal funding for the Clean School Bus Program.

Recommended and Required Actions:

If the EPA Clean School Bus Rebate program continues as proposed into FY 2026, we anticipate more school districts across Pennsylvania will continue to apply for the program, and more districts are expected to transition to electric buses in the coming years. The ongoing funding through the Bipartisan Infrastructure Law would provide opportunities for districts to replace older, polluting buses with clean, zero-emission models, ultimately improving the air quality and health outcomes for students and communities across the state. Visit the EPA's Clean School Bus Program webpage for previous and upcoming webinars, technical assistance, and educational materials.

Emergency Preparedness Plans

Importance of Emergency Preparedness Plans (EPP) in Schools:

Emergency preparedness plans are essential for schools to know how to respond in the event of a crisis, whether it's a natural disaster such as a tornado or hurricane, a fire, an explosion, or an active shooter situation. Schools often serve as community emergency shelters, providing a safe haven for residents during disasters and emergencies, especially when other shelter options are unavailable. Thus, schools must be ready to address a wide range of emergencies, ensuring that students and staff are protected. This report includes the question of emergency preparedness to assess how well schools are equipped to handle emergencies in which the school would or could be used as an emergency shelter.

21-22 SY Highlights

Extreme Weather EPP:

- Overall Sample (n=80): 31.3% have a plan, 12.5% do not, 56.3% gave no response.
- SWPA Region (n=98): 29.6% have a plan, 7.1% do not, 63.2% gave no response.
- This is especially troubling as schools face increasing risks from climate change, leading to more frequent events like heatwaves, storms, and flooding.
- Schools can consult with their county emergency management director or the National Weather Service (NWS) to get tailored support with developing an action plan for emergency shelter.

Natural Disasters EPP:

- Overall Sample (n=80): 28.7% have a plan, 15.0% do not, 56.3% gave no response.
- SWPA Region (n=98): 24.5% have a plan, 12.2% do not, 63.2% gave no response.

Medical or Health EPP:

- Overall Sample (n=80): 17.5% have a plan, 26.3% do not, 56.3% gave no response.
- SWPA Region(n=98): 18.4% have a plan, 18.4% do not, 63.2% gave no response.
- This oversight is critical, given the rising rates of chronic health conditions like asthma, which could be exacerbated by environmental factors, especially in buildings with poor air quality or inadequate ventilation.
- Schools should adopt asthma action plans for asthmatic students. These plans provide information and instructions on how to manage a student's asthma. Templates are available from the AAFA, the ALA, and the American Academy of Allergy Asthma and Immunology (AAAAI).

Hazardous Materials EPP:

- Overall Sample (n=80): 30.0% have a plan, 12.5% do not, 57.5% gave no response.
- SWPA Region (n=98): 20.4% have a plan, 16.3% do not, 63.2% gave no response.
- With many school buildings being decades old, potential exposure to harmful chemicals or structural failures during an emergency is a significant concern.
- Visit the Women for a Healthy Environment Environmental Hazards Map to view the potential environmental risks surrounding PA schools. The map is to be updated by summer 2025.

Fire/Explosions EPP:

- Overall Sample (n=80): 26.3% have a plan, 17.5% do not, 56.3% gave no response.
- SWPA Region (n=98): 31.6% have a plan, 5.1% do not, 63.2% gave no response.
- Emergencies such as fires, explosions, or active shooter incidents require not only well-rehearsed plans but also buildings with the infrastructure to support quick evacuation or secure sheltering.

Lockdown/Lock-in EPP:

- Overall Sample (n=80): 15.0% have a plan, 28.7% do not, 56.3% gave no response.
- SWPA Region(n=98): 16.3% have a plan, 20.4% do not, 63.2% gave no response.

Disaster EPP:

- Overall Sample (n=80): 15.0% have a plan, 28.7% do not, 56.3% gave no response.
- SWPA Region(n=98): 10.2% have a plan, 26.5% do not, 63.2% gave no response.

In some cases, schools may choose not to disclose detailed information about their emergency preparedness plans due to safety and security concerns, as publicly sharing specific protocols could potentially compromise the effectiveness of these plans during actual emergencies. While this is understandable, it underscores the need for ensuring that these plans are well-developed, regularly updated, and communicated internally to staff and students, even if they are not shared publicly.

Aging Infrastructure and Preparedness Needs

Many of Pennsylvania's schools are housed in aging buildings, some of which were constructed decades ago under outdated building codes. These buildings may not be structurally equipped to handle modern-day emergencies. For example, inadequate ventilation systems can complicate shelter-in-place procedures during a chemical spill, while deteriorating infrastructure (e.g., windows, roofs, doors, and stairways) could impede evacuation in a fire or natural disaster. It is possible that the physical condition of these buildings could compromise the effectiveness of emergency preparedness plans, putting students and staff at greater risk during a crisis.

In conclusion, while some districts have begun implementing emergency preparedness plans, the widespread lack of planning, combined with the aging infrastructure of many school buildings, poses substantial risks. Developing comprehensive emergency preparedness plans and upgrading school facilities to meet modern safety standards are crucial steps to ensure that Pennsylvania's schools are ready to protect their students and staff during any emergency. As climate change intensifies natural disasters, schools must become more resilient and prepared to ensure the safety and education of students and staff. This includes infrastructure upgrades, disaster preparedness training, and proactive measures to minimize disruptions to learning and equip schools to continue to serve as shelters.

COVID Response Plan

A COVID Response Plan refers to guidance for schools to remain open and help administrators support safe, in-person learning while reducing the spread of COVID-19. The PA DOH encourages schools to follow CDC guidelines when it comes to having plans in place that can help reduce illness and illness-related absenteeism by preventing the spread of common infections like COVID-19 [90]. Plans should be designed to maximize school attendance and its benefits for all students, while also preventing the spread of infectious diseases.

Under the American Rescue Plan Act (ARPA), each local education agency (LEA) that received funding from the ARPA Elementary and Secondary School Emergency Relief (ESSER) Fund was required to develop and make available on the LEA's website a Safe Return to In-Person Instruction and Continuity of Services Plan, also known as Health and Safety Plan [91]. The ARPA and US DOE required Health and Safety Plans to include information on how the LEA would implement prevention and mitigation policies in line with the CDC for the reopening of schools, how the LEA would ensure continuity of services, and how the LEA would maintain the health and safety of students and staff using CDC recommendations. However, each LEA should be tailored to the unique needs of its schools.

21-22 SY Highlights

SW PA *(n=98)*
A COVID policy was reported by 54.1% of districts.

Statewide sample *(n=80)*
A COVID policy was reported by 60% of the districts.

Surveyed School Districts: n=166

Of the 158 Responding Districts, 96 (61%) indicated that they have a COVID response plan. 87 (64%) indicated that they had a response plan and received COVID Funding. Of the 87 with COVID funds that created a response plan, 48 were in SW, 4 on SC, 18 in SE, 9 in NE, 4 in NC and 4 in NW.

Among those reporting no response plan, the asthma prevalence for 21-22 was 8.6% (8.4-8.9). For those that reported creating a response plan, asthma prevalence was 16.9% (16.8-17). Schools that were aware that they had a higher than average prevalence of asthma may have determined that it was more urgent to mitigate the severity of disease during the recent pandemic.

ARPA & CARES Funding

The American Rescue Plan Act (ARPA) of 2021 was signed into action by President Biden and included federal funding to "provide additional relief to address the continued impact of COVID-19 on the economy, public health, state and local governments, individuals, and businesses" [92]. A portion of funds were allocated to the U.S. Department of Education to assist states with addressing the impacts of COVID-19 on elementary and secondary schools, specifically with enrollment and school participation of homeless and low-income children and youth. Local educational agencies (LEAs) were required to reserve funds to address student learning loss, including the purchase of sanitization supplies and educational technology.

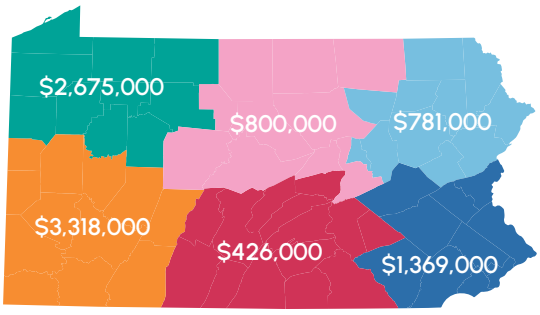
The Coronavirus Aid Relief and Economic Security (CARES) Act of 2020 was signed into law by President Trump and included federal funding to support workers, families, and businesses respond to the economic impacts of the COVID-19 pandemic [93]. The CARES Act is divided into two main parts: Division A, which contains language for programs and mandatory spending provisions, and Division B, which contains emergency, discretionary appropriations. Regarding schools, under Division B, $5 million was allocated to Pediatric Environmental Health Specialty Units and state health departments to provide guidance and outreach on safe practices for disinfection for homes, schools, and childcare facilities. More than $25 billion was made available for food assistance programs, including school breakfast and lunch programs, and $1 billion was available for personal protective equipment [94].

We asked schools to provide any/all accounting of ARPA and/or CARES funding and expenditures in the defined study period.

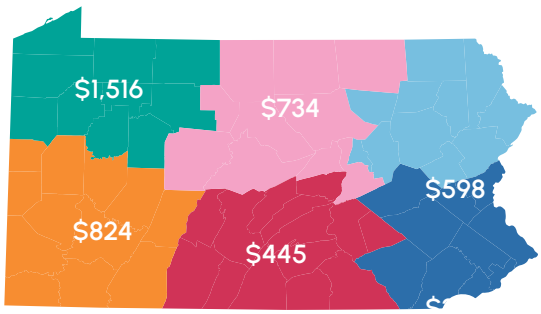
21-22 SY current report highlights *(SWPA, n=98)*: ARPA and/or CARES funding

- 60% of school districts in SW PA reported ARPA and/or CARES funding (compared to 65% of school districts in the overall study sample).
- The median for total funds distributed to SW PA school districts was $1,193,644 (compared to $1,297,801 for school districts in the overall study sample).
- The median for total funds per student in SW PA school districts was $564 (equivalent amount for school districts in the overall study sample).

Total Funds Distributed (Median $) for ARPA and/or CARES by region:
(Overall Sample n=80



Total Funds per Student (Median $) for ARPA and/or CARES by region:



Respondent Highlights *n=166*

- Of the 159 responding schools, 137 (87%) indicated that they received COVID funds, ranging from $14,000 to over $112 million of combined CARES and American Rescue Plan (ARPA) funds.
- The average funds received were $2,228,270.15.

Conclusion and Call to Action

Our children deserve safe and healthy learning environments. Right now, we have the opportunity to make meaningful changes to protect their health and well-being where they spend a majority of their time in school buildings. We must act now to improve indoor air quality, address environmental hazards, and ensure our schools meet the highest safety standards, at the school board level, as well as within the state legislature.

Engage Parents in Healthy Schools

Parents are a key audience of this report. They are positioned to influence school administrators and can play a significant role in generating momentum at the district level. Parents should leverage this report to ask informed questions, raise concerns, and target advocacy efforts for school-level improvements.

Support Stronger Policies

Urge PA lawmakers to mandate annual testing for lead, radon, PCBs, and PFAS in schools. Advocate for state regulations that address needs such as asthma medication access, funding for lead-free drinking water, and mandatory radon testing in schools.

Invest in Safer Schools

Schools should have taken advantage of funding from programs like the EPA Clean School Bus Rebate Program and the Public School Environmental Repairs Program when the grant was open. Schools in SW PA can still apply for WHE's 1000 Hours a Year program to improve air and water quality and address radon. In the 2024-25 PA budget, there was a historic $1.1 billion increase in K-12 public education funding which included a $100 million budget for environmental repairs and other facility upgrades in schools and $25 million specifically for Solar for Schools. The PA budget for upcoming years has the opportunity to continue investments in schools to create healthier and safer learning environments for students and teachers.

Improve Indoor Air Quality

Schools must implement IAQ plans, enhance HVAC systems, and use EPA's IAQ Tools for Schools Action Kit to control mold and moisture.

Promote Safer Practices

Encourage PA to evaluate policies similar to those adopted in Massachusetts, which aim to limit artificial turf in light of potential health and environmental risks identified by public health experts. Support stronger implementation of IPM strategies to minimize pesticide exposure, and advocate for improved compliance with anti-idling regulations to protect air quality around schools.

Promote Green Cleaning

Support the use of third-party certified green cleaning products and professional development on green cleaning in schools.

Pennsylvania can lead the way in creating healthier, safer schools for all students. Contact your legislators today and demand action!

Sample Letter to School Administrators

Subject: Request for Information on School Environmental Health Practices

Dear [Principal/Superintendent Name],

I am a parent of a student at [School Name]...

I would appreciate any available information on the following:

- Has the school tested for lead, radon, or mold?

- Does the district have IAQ or IPM plans?

- Are anti-idling signs posted and enforced?

- What is the process when issues are found?

- How are parents notified?

Thank you for your time.

Sincerely,

[Your Name]

Acknowledgements

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School Districts in Dataset

Abington
Albert Gallatin Area
Aliquippa
Allegheny Clarion Valley
Allegheny Valley
Ambridge Area
Apollo Ridge
Armstrong
Avella Area
Avon Grove
Avonworth
Baldwin-Whitehall
Beaver Area
Bedford Area
Belle Vernon
Bellwood-Antis
Bentworth
Berwick Area
Bethel Park
Big Beaver Falls Area
Blackhawk
Blacklick Valley
Brentwood Borough
Bristol Township
Brownsville Area
Burgettstown Area
Burrell SD
California Area
Canon McMillan
Carbondale Area
Carlynton
Central Bucks
Central Crawford
Central Fulton
Central Greene
Central Valley
Charleroi Area
Chartiers Houston
Chartiers Valley
Clairton
Cocalico
Columbia Borough
Conneaut
Connellsville Area
Conrad Weiser Area
Cornell
Coudersport Area
Crestwood
Danville Area
Deer Lakes
Delaware Valley
Derry Area
Duquesne City
East Penn
Elizabeth Forward
Elizabethtown Area
Fleetwood Area
Forbes Road
Fort Cherry
Fort LeBoeuf
Fox Chapel
Franklin Regional
Frazier
Freedom Area
Freeport Area
Gateway
Greater Latrobe
Greater Nanticoke Area
Greensburg Salem
Harbor Creek
Harmony Area
Hatboro-Horsham
Hempfield Area
Highlands
Hopewell Area
Huntingdon Area
Indiana Area
Jeannette City
Jefferson - Morgan
Jim Thorpe Area
Karns City Area
Kennett Consolidated
Keystone Oaks
Kiski Area
Knoch
Lampeter-Strasburg
Leechburg
Ligonier Valley
Loyalsock Township
Marion Center Area
Marple Newtown
Mars
McGuffey
McKeesport Area
Midvalley
Millville Area
Montour
Mountain View
Mt. Lebanon
New Brighton Area
North Allegheny
North Hills
Northampton Area
Northern Potter
Northern York County
Northgate
Norwin
Octorara Area
Otto-Eldred
Palmerton Area
Penn Delco
Penn Hills
Pennridge
Penns Manor Area
Penn-Trafford
Perkiomen Valley
Philadelphia Public
Phoenixville Area
Pine Richland
Pittsburgh Public
Plum Borough
Pottsville Area
Punxsutawney Area
Purchase Line
Quaker Valley
Ringgold
River Valley
Riverside Beaver County
Riverside
Riverview
Rochester Area
Rose Tree Media
Saint Mary's Area
Saucon Valley
Schuylkill Haven Area
Schuylkill Valley
Shaler
Shippensburg Area
South Allegheny
South Fayette
South Park
South Side Area
South Williamsport Area
Southeastern Greene
Southern Huntingdon County
Southmoreland
Steel Valley
Steelton-Highspire
Sto-Rox
Towanda Area
Tri Valley
Trinity Area
Tunkhannock Area
Twin Valley
United
Upper Dublin
Upper St. Clair
West Allegheny
West Greene
West Jefferson
Western Beaver County
Wilkinsburg
William Penn
Williams Valley
Woodland Hills
Wyoming Area