Impact Analysis for Permanent Adoption of 10A NCAC 41C .1001-.1007

Agency:	North Carolina Commission for Public Health Department of Health and Human Services Division of Public Health Environmental Health Section
Rule Citation(s):	10A NCAC 41C .1001 Definitions 10A NCAC 41C .1002 Funding 10A NCAC 41C .1003 Asbestos Inspections and Abatement in North Carolina Public Schools and Licensed Child Care Facilities 10A NCAC 41C .1004 Lead-Based Paint Inspections and Abatement in North Carolina Public Schools and Licensed Child Care Facilities 10A NCAC 41C .1005 Lead Poisoning Hazards in Drinking Water in North Carolina Public Schools 10A NCAC 41C .1006 Certified Risk Assessors 10A NCAC 41C .1007 Incorporation by Reference
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Rulemaking Authority:	S.L. 2021-180, s. 9G.8.
Impact Summary:	State Government: Yes Local Government: Yes Private Sector: Yes Substantial Impact: Yes

Executive Summary

Despite dramatic improvements over the past 40 years, lead and asbestos exposure remain a serious hazard for thousands of young children across North Carolina. Lead exposure can cause significant biological and neurological damage even at low levels, resulting in cognitive and behavioral impairment that can affect a child's lifelong success. Asbestos exposure can cause asbestos-related diseases such as asbestosis, mesothelioma, and lung cancer. The proposed Rules are expected to reduce children's risk of exposure to lead and asbestos in NC licensed child care facilities and public schools by requiring inspection/testing for these hazards and, if a hazard is detected, requiring action to protect children from the hazard by restricting access to the hazard with funds available for permanent remediation/abatement. In so doing, it will increase the public's trust that public schools and licensed child care facilities are safe environments for kids to learn and grow. Remediating or removing lead hazards is also expected to have immediate and long-term benefits due to the prevention of harm to children, including avoided healthcare costs and loss of IQ and lifetime earnings. In North Carolina, we expect the prevalence of lead and asbestos hazards to vary depending largely on the age of infrastructure, the medium (water, paint, dust, soil, air), and the setting (family child care home, licensed child care center, school). The magnitude of the expected benefits is dependent upon the frequency and severity of lead and asbestos hazards occurring at North Carolina's schools and child care facilities, and

the contribution of these hazards to the child's overall exposure from all environmental sources. Baseline data is not available to estimate the scope of lead-based paint and asbestos hazards in child care facilities or schools. We do have some information about lead in water. Testing for lead in water in child care centers was required separately under rule 15A NCAC 18A .2816, with testing paid for through the EPA WIIN Grant. Under that work, it was found that approximately 3.3% of outlets were producing lead in water at or above the lead hazard level. This package of rules requires similar testing in schools. In schools, we estimate that 7-18% of outlets used for drinking or food preparation may be found to produce lead in water at or above the lead hazard level.

These proposed Rules will not eliminate all hazards at schools and child care facilities. With the proposed testing and inspection protocols and restriction/remediation measures, the Rules aim to strike a balance between risk and cost. We anticipate initial remediation or abatement costs will be borne by the State and paid for using funds appropriated under Session Law 2021-180, Section 9G.8.(a). This Session Law appropriated $150 million in non-recurring funds, allocated from the American Rescue Plan Act, State and Local Fiscal Recovery Funds (SLFRF) for this work. These funds must be obligated by December 31, 2024 and expended by December 31, 2026. It is expected that there will be sufficient SLFRF funds to cover the cost of testing/inspecting for hazards. However, there may not be sufficient SLFRF funds to cover all costs associated with remediation/abatement. Once SLFRF funds are expended, the remaining remediation/abatement costs, as well as any ongoing maintenance costs, will fall to the school or child care facility. In that circumstance, a public school or child care facility may choose to restrict access to an identified hazard rather than pursue full abatement as a cost saving measure or even a zero-cost alternative, in many cases. Under the legislation, public schools are also responsible for a 1/3 match on abatement of lead-based paint and asbestos hazards, which may be additional incentive to restrict access rather than pursue permanent abatement.

Total estimated quantified costs (actual plus opportunity) of the Rule are between $91M and $120M (Table 18). These totals do not include some significant potential costs that were not possible to quantify, such as for lead-based paint and asbestos hazard abatement and the 1/3 local match for abatement at schools. Unquantified costs for abatement are likely to account for a portion of the remainder of the $150M SLFRF appropriation. It is anticipated that public schools and licensed child care facilities would be responsible for costs incurred after the SLFRF funds are exhausted.

There is an expected benefit to laboratories and other professionals who will be hired to complete the testing/inspection and mitigation/abatement work (estimated $61.6M-64.8M, with abatement revenue unquantifiable). This work to detect and abate hazards will have significant long-term benefits for children attending child care and public school that will very likely outweigh the costs, gaining greater information about hazards and removing hazards, where present, to help ensure a healthier start for many of NC's most at-risk children. We expect this benefit of avoiding exposure to lead and asbestos hazards will be a benefit both to current and future cohorts of children who will inhabit the same spaces.

Background: Risks from Lead and Asbestos Exposure in Schools and Child Care Facilities

Lead and asbestos are well known to be hazardous to human health and particularly the health of children, whose bodies are still developing and who are therefore uniquely vulnerable to the risks posed by lead and asbestos. **Lead** is a naturally occurring heavy metal that is toxic to humans.[1] There is no safe amount of lead exposure for children and exposure to lead can have long term impacts on a child's health by causing damage to the brain and central nervous system, slowed growth and development, and challenges related to learning, behavior, hearing, and speech.[2] **Asbestos** is a naturally occurring fibrous mineral that has been determined to

[1] United States National Institute of Environmental Health Sciences, "Lead," available at: https://www.niehs.nih.gov/health/topics/agents/lead/index.cfm.

[2] CDC, "Childhood Lead Poisoning Prevention: Health Effects of Lead Exposure," available at: https://www.cdc.gov/nceh/lead/prevention/health-effects.htm.

be a human carcinogen. Although research on the health effects of asbestos have largely focused on adults who are exposed in the workplace, the United States Centers for Disease Control and Prevention (CDC) has stated that "It is likely that health effects seen in children exposed to high levels of asbestos will be similar to the effects seen in adults."[3]

Although the use of certain materials containing lead and asbestos has been banned in the United States, exposure to both lead and asbestos hazards can still occur in the built environment through things like deteriorating lead-based paint, lead-containing pipes, plumbing, fixtures, and solder that are used to carry drinking water, asbestos ceiling and floor tiles, asbestos insulation, and other products and materials containing lead or asbestos. Exposure to lead and asbestos hazards can be prevented by inspecting facilities and then restricting access to, remediating, or abating any hazards that are identified through the inspection process.

Time-Limited Funding for Testing, Remediation

On November 18, 2021, Session Law 2021-180 was passed. Section 9G.8.(a) of Session Law 2021-180 ("Session Law") appropriated $150 million in non-recurring funds, allocated from the American Rescue Plan Act ("ARPA"), State and Local Fiscal Recovery Funds ("SLFRF"), to establish a program for the inspection, testing, remediation, and abatement of asbestos, lead based paint, and lead in water hazards in public schools and licensed child care facilities. These funds must be obligated by December 31, 2024 and expended by December 31, 2026. The Session Law requires that the North Carolina Department of Health and Human Services ("NCDHHS"), Division of Public Health ("DPH") serve as the lead agency for this program, with program administration to be carried out in collaboration with the Department of Public Instruction ("DPI") and the NC DHHS, Division of Child Development and Early Education (DCDEE). The Session Law also grants the Commission for Public Health ("CPH"), the Child Care Commission ("CCC"), and the State Board of Education ("SBE") rulemaking authority to adopt rules as necessary to implement this program.

Under the Session Law, public schools and licensed child care facilities are required to inspect for lead-based paint and asbestos hazards in their facilities. Public schools are also required to test for lead in drinking water, using a model similar to the model established for child care centers under Rule 15A NCAC 18A .2816. The Session Law does not require public school units or licensed child care facilities to participate in remediation or abatement activities; however, if a hazard is identified, the public school or licensed child care facility is required to restrict access to the hazard until it is remediated or abated. In accordance with separate licensure and sanitation requirements, licensed child care facilities are required to be free from lead poisoning hazards and other hazards that may injure children. Public school units are also required to provide safe and sanitary conditions. The funding appropriated under section 9G.8.(a). of the Session Law may be used to offset the costs of conducting inspections, abatement, and remediation of lead-based paint, asbestos, and lead in drinking water hazards in public schools and licensed child care facilities.

Due to the short timeframe to spend appropriated funds, a decision was made to pursue adoption of rules under temporary to implement the requirements of the programs established by the Session Law. In March of 2022, CPH adopted seven temporary rules at 10A NCAC 41C .1001-.1007. The temporary Rules became effective on April 29, 2022 and are slated to expire from the North Carolina Administrative Code on February 10, 2023. The Rules have been updated and revised for clarity and are now proposed for permanent adoption to ensure that they remain in the North Carolina Administrative Code.

Description of Proposed Rules

This package of seven rules sets out the processes for schools and child care facilities to follow to complete required inspections and tests and to conduct remediation or abatement or otherwise protect children from

[3] CDC, Agency for Toxic Substances and Disease Registry, "Asbestos," available at: https://wwwn.cdc.gov/TSP/substances/ToxSubstance.aspx?toxid=4.

identified hazards. The rules also provide instruction to the certified and accredited professionals who will be carrying out the inspections, remediation, and abatement work by building on existing requirements for this work that are set out in G.S. 130A and 10A NCAC 41C .0600, .0800, and .0900. These rules dovetail with the program that is being established to help fund this work. A brief description of the proposed rules is provided below. The text of the proposed rules has also been included in the appendix.

10A NCAC 41C .1001
This Rule defines key terms that are used throughout the rules.

10A NCAC 41C .1002
This Rule establishes the requirements for public schools and licensed child care facilities to be eligible to receive funding provided by the Session Law. Under the Rule, public schools and licensed child care facilities who complete inspections for asbestos and lead based paint hazards by May 1, 2024 and public schools who complete testing for lead in water outlets used for drinking and food preparation by May 1, 2024 are eligible to participate in the funding mechanisms established by the Session Law to cover the costs of inspecting and abating lead and asbestos hazards and testing and remediating water outlets. These deadlines are intended to ensure funds are expended within the time period they are available. To be eligible to participate, inspections, testing, remediation, and abatement must be conducted in accordance with the proposed rules, which build on existing rules that govern these types of work. Additionally, this Rule requires that when abatement is conducted, materials that are removed- such as lead-based paint or asbestos containing flooring- cannot be replaced by materials that contain more than 1% asbestos or lead in excess of 90 parts per million.

Rule .1002 also creates a mechanism for child care centers that are conducting testing for lead in water under 15A NCAC 18A .2816 to be eligible for funding for testing or remediation. The Rule also establishes a mechanism for public schools and licensed child care facilities to be eligible for funds for inspections and abatement if asbestos or lead based paint hazards are identified during a capital, renovation, or repair project.

Public schools and licensed child care facilities participating must make records regarding testing, inspection, abatement, and remediation available to NC DHHS upon request.

10A NCAC 41C .1003
This Rule requires public schools and child care facilities to conduct an inspection for asbestos hazards by May 1, 2024. The Rule establishes a process for conducting asbestos inspections, identifying asbestos hazards, and, if pursued, carrying out asbestos abatement work under the program in public schools and licensed child care facilities. This Rule builds on an existing regulatory framework established in 10A NCAC 41C .0600. The Rule also requires that reports be submitted to DPH within 45 days following the completion of an inspection, 10 days before any abatement will be conducted, and within 45 days from the date when an abatement is completed. These reporting requirements will give DPH greater visibility into the inspection and abatement processes and allow collection of information that is necessary to satisfy reporting requirements that are set out in the Session Law.

Importantly, Paragraph (h) of this Rule creates a pathway for public schools and licensed child care facilities to meet the inspection requirement established by the Session Law and implemented in this Rule by providing either documentation of a recent inspection that was conducted in accordance with the requirements of this Rule or documentation, in compliance with federal regulations, that demonstrates that asbestos containing material was not used in the construction of the public school or licensed child care buildings. It also allows licensed child care facilities, who are less likely to have the documentation set out by the federal regulations, to produce a property tax record showing the building occupied by the facility was built after October 12, 1988 (which aligns with the date in the federal regulations) in lieu of an inspection.

Lastly, the Rule includes cross-references to existing rules adopted by the CCC, which give DCDEE the authority to take enforcement actions against licensed child care facilities that fail to inspect and ensure that

their facilities are safe and free from asbestos hazards that may injure children. The proposed permanent Rule includes changes to the temporary rule language, which serve to clarify requirements.

10A NCAC 41C .1004

This Rule requires public schools and child care facilities to conduct an inspection for lead-based paint hazards by May 1, 2024. The Rule addresses lead based paint inspections and, if pursued, abatement of lead-based paint hazards under the program in public schools and licensed child care facilities. Under the rule, inspection is defined in alignment with a risk assessment under 40 CFR 745.223, rather than a surface-by-surface inspection. Risk assessments are focused on the identification and assessment of the nature and severity of hazards. There is additional discussion of this in the alternatives section of the fiscal note.

Organizationally, the Rule mirrors Rule .1003 (asbestos) by building on the existing statutory and regulatory framework that governs the management of lead-based paint hazards established 10A NCAC 41C .0800 and .0900. It also has similar reporting requirements as those set out in Rule .1003. This Rule also includes, at Paragraph (h), a pathway for public schools and licensed child care facilities to meet the inspection requirement established by the Session Law and implemented in this Rule by providing either documentation of a recent inspection that was conducted in accordance with the requirements of this Rule or an attestation that lead-based paint, which was banned after February 28, 1978, was not used in the public school or licensed child care building.

The Rule also contains cross-references to a 15A NCAC 18A .2816, which requires that child care centers to be free of lead poisoning hazards, and to existing rules adopted by the CCC that give DCDEE the authority to take enforcement actions against licensed child care facilities that fail to inspect and ensure that their facilities are safe and free from lead poisoning hazards that may injure children. The proposed permanent Rule includes minor changes to the temporary rule language, which serve to clarify requirements.

10A NCAC 41C .1005

This Rule is modeled after 15A NCAC 18A .2816, to the extent feasible and practical, in accordance with the Session Law, which is a framework previously promulgated to test for lead in water in child care centers. This framework requires that water outlets used for drinking and food preparation in public schools be tested for lead in water following the EPA 3Ts methodology, with one modification which allows a water stagnation period of up to 72 hours. These samples are required to be collected and sent to laboratories certified by the State Laboratory of Public Health to analyze lead in water by May 1, 2024. The results of the test are then sent to the school and DPH. If any tested water outlet produced water with a lead concentration level at or above the lead poisoning hazard level, the school is required to take steps to restrict access to the water outlet and provide an alternate water source until the water outlet has been remediated and cleared by the Department. The school also has the duty to notify parents, employees, and the public. The Rule also requires that a report be submitted to DPH within 30 business days of any remediation being completed. This information will be used by DPH to comply with the reporting requirements set out in the Session Law.

10A NCAC 41C .1006

This Rule is intended to ensure there are sufficient certified risk assessors to conduct lead-based paint inspections as part of this program. Certified risk assessors play a key role in lead-based paint inspections and making determinations about the existence of a lead-based paint hazard, which is required in all public schools and licensed child care facilities under the Session Law. Importantly, this is the only category of professionals required to complete the work under these proposed rules where it is anticipated that there may not be sufficient workforce in the state. Under current rules in 10A NCAC 41C, certified risk assessors from other states are permitted to work in North Carolina when there is a reciprocity agreement in place and other requirements of existing rules are met. One requirement in the current rules that is sometimes a barrier for professionals outside the state is the requirement in North Carolina for certified risk assessors to complete a refresher course every 24 months to maintain their certification. Some of North Carolina's neighboring states operate on a 36-month cycle for refresher courses. This Rule will permit this more lenient 36-month cycle for certified risk assessors conducting inspections and making hazard determinations as part of this program.

10A NCAC 41C .1007

This Rule incorporates by reference several areas in federal regulation that govern inspection and abatement of asbestos and lead hazards. These areas of regulation are part of the existing framework that governs remediation and abatement of lead and asbestos hazards in North Carolina.

Impact Analysis

The proposed rules are anticipated to have an economic impact on State Government, Local Government, and the Private Sector that together are expected to amount to a substantial economic impact. The overall impact is expected to consist of program development and administration as well as the costs associated with testing/inspection and abatement/remediation of lead and asbestos hazards. The costs of these programs is balanced by the benefit gained in increased protection of North Carolina's children from lead and asbestos hazards, making public schools and child care facilities safer environments for kids to learn and grow. Avoidance of these exposures is also expected to decrease healthcare costs associated with treating elevated blood lead levels and asbestos-related illnesses as well as avoid associated losses in lifetime earnings.

As stated above, the enabling Session Law appropriated $150 million in non-recurring funds, allocated from the American Rescue Plan Act, Coronavirus State and Local Fiscal Recovery Funds ("SLFRF"). Of that amount, $32,812,500 is dedicated to a program for the testing and remediation of lead in water in schools and child care facilities and $117,187,500 is dedicated to a program for the inspection and abatement of lead-based paint and asbestos hazards in schools and child care facilities. It is anticipated that most of the costs of administering these programs will be paid for directly through a state vendor contract, using SLFRF funding. It is expected that there will be sufficient SLFRF funds to cover the cost of testing/inspecting for hazards. However, there may not be sufficient SLFRF funds to cover all costs associated with remediation/abatement. In that circumstance, the public school or child care facility would be responsible for the cost of remediation/abatement. In addition, if a public school chooses to abate an identified lead-based paint or asbestos hazard, public schools will be required to provide a 1/3 match on abatement, in accordance with the legislation.

A public school or child care facility may choose to restrict access to an identified hazard rather than pursue full abatement as a cost saving measure. This may include removing the handle to a faucet producing water that contains a lead concentration at or above the lead poisoning hazard level (rather than replacing the faucet or installing a filter), maintaining the surface coating or covering deteriorating asbestos or lead-based paint rather than removing it or restricting access to a room. This outcome is more likely if SLFRF funds have been exhausted or if a public school has difficulty identifying funds for the 1/3 match. If a public school chooses not to use the state vendor for required asbestos and lead-based paint inspections, the school will be responsible for a 1/3 match of those costs as well. It is not expected that public schools will choose to pay for these inspections directly. In addition, public schools and child care facilities will be responsible for costs if SLFRF funds are no longer available when the cost is incurred. SLFRF funding must be obligated by December 31, 2024 and expended by December 31, 2026.[4]

We do not expect the process of abating or restricting access to hazards will have a significant impact on the operations of public schools or child care facilities. Under other existing federal and state law, public schools are already required to inspect for and document asbestos hazards, and children should not be present in areas with previously identified, unabated asbestos hazards. In addition, public schools and child care facilities are

[4] Note: This fiscal note covers only the portion of the programs to abate lead and asbestos hazards in schools and child care facilities that are incurred as a result of these administrative rules. Contingent upon availability of funds, additional types of schools (other than public schools) may voluntarily participate in these programs and some child care facilities may choose to take part in the program to test for and remediate lead in water (the rule proposed here only applies to public schools). In addition, there are other state administrative costs that are anticipated to be paid for out of the appropriated SLFRF funds.

subject to periodic inspections for sanitation issues, including the presence of lead and asbestos hazards. If a hazard were visually identified during these inspections, the hazard would be documented and shared with the principal or operator. The more in-depth inspections that will be done as part of these programs are certainly expected to catch exposures that were not previously identified, but it is our expectation, especially in public schools, that these will be more isolated in nature and minimally disruptive to operations. As we do not have information about lead-based paint hazards in family child care homes or asbestos hazards in child care facilities, it is possible that operations could be more greatly impacted at these facilities if significant and widespread issues were discovered. In that case, the DPH vendor that is anticipated to be hired to coordinate this work will ensure efficient coordination and scheduling of remediation/abatement contractors to minimize disruption to these facilities as much as possible.

Quantifying Public Schools and Child Care Facilities

The proposed rules apply to childcare facilities licensed through DCDEE and to public school units as defined at G.S. 115C-5(7a). According to DPI,[5] there are currently **2,701** public schools in North Carolina, including 2,486 local administrative schools, 204 charter schools, 1 regional school, 3 residential schools for students with hearing and visual impairments (G.S. 115C, Article 9C), 1 innovative school (G.S. 115C, Article 7A), and 6 laboratory schools (G.S. 116, Article 29A). We acknowledge that public schools receive funding from federal sources in addition to state and local sources, but for the purpose of this fiscal note, money/time spent by schools are considered to be local or state government spending. With that in mind, local government funds 2,691 of these schools (local, charter, regional), and the state funds the remaining 10 of these schools. Schools operating on military bases, within the Eastern Band of Cherokee Indians (EBCI) boundary, and in other alternative settings are not required to comply with these rules and have been excluded from this number for purposes of this fiscal note, though they may choose to voluntarily participate in the program.[6]

According to DCDEE,[7] there were 4,291 licensed childcare centers and 1,254 licensed Family Child Care Homes (FCCHs) in North Carolina as of August 2022, which brings the estimated total child care facilities to **5,545**. In total, an estimated **8,297** licensed child care facilities and public schools will be required to comply with these rules.

State Government Impact

The impact on state government is expected to consist of (1) the cost of testing of lead in water outlets used for drinking and food preparation in public schools; (2) the cost of remediation of water outlets determined to produce water at or above the lead poisoning hazard level; (3) the cost of inspections for lead-based paint hazards and asbestos hazards in public schools and child care facilities; (4) a portion of the cost of abating lead-based paint and asbestos hazards in public schools and child care facilities; (5) the cost of administering these programs (including some opportunity costs); and (6) the cost for state-funded schools to comply with the Rules.

Under the proposed Rules, public schools are required to complete the testing of water outlets used for drinking and food preparation by May 1, 2024 and public schools and child care facilities are required to complete inspections for lead-based paint and asbestos hazards by May 1, 2024.These tests and inspections are expected to be covered by the State SLFRF funds. Following the testing/inspections, remediation and abatement work will occur on a rolling basis until complete. Some child care facilities and schools may choose to restrict access to a hazard (such as turning off a water fountain or closing off a room) rather than pursing remediation or abatement. Schools and child care facilities that complete testing/inspection and remediation/abatement in accordance with the Rules will be eligible for reimbursement by the State for the

[5] NC Department of Public Instruction, Highlights of the North Carolina Public School Budget, March 2022, available at https://www.dpi.nc.gov/media/14619/download?attachment.

[6] See above footnote 4 regarding the scope of this fiscal note.

[7] Email correspondence from Mandy Holland, Information Specialist Supervisor at DCDEE on 8/16/2022.

cost of remediating water outlets and abating lead-based paint and asbestos hazards until December 31, 2026 or all appropriated SLFRF dollars are expended, with the exception that public schools will be required to match every $2.00 state dollars expended for lead-based paint and asbestos hazard abatement with $1.00 local dollar.

State Costs Related to Water Testing

DPH, as lead agency for the program, intends to use a portion of the $32.8M appropriated to contract with a vendor to manage the process of testing for lead in water outlets used for drinking and food preparation in public schools and remediating those water outlets producing water at or above the lead poisoning hazard level.[8]

Costs related to water lead testing include sample collection materials, shipping, and laboratory analysis for lead. Based on a Google search, costs can range from $59-149 per water sample, depending upon the number of water samples submitted for testing and the state certified laboratory chosen to complete the lead analysis, for an average estimated cost of $99.45. [9] On average, public schools have 40-90 water outlets used for drinking or food preparation that are subject to lead testing, for an average of 65 water outlets per school. The estimate range comes from the Georgia WIIN program, which conducted similar testing in schools in Georgia. With the assumed average testing cost per sample of $99.45 and the estimated average number of taps as 65, the cost for 2,701 schools is estimated to be $17.5M, as set out in Table 1. We anticipate this will be fully paid for by the State using the $32.8M in SLFRF appropriated for this purpose.

Table 1. Estimated Costs to Test for Lead in Water in Public Schools

Estimated number of public schools	2,701
Average number of water outlets per public school used for drinking or food preparation	65
Estimated average per sample cost of lead analysis at a certified laboratory	$99.45
Estimated total cost of testing for lead in water in public schools	**$17,459,939**

Under the proposed rules, the principal or designee would be responsible for collecting the specimens, which is a cost to the public school that will be discussed below in the local impact section. Additionally, a vendor will provide customized training, results reporting, personalized technical support, and coordination with state or local environmental health specialists as part of the per sample testing costs, which is covered in the vendor section below.

State Costs Related to Water Outlet Remediation

Under the proposed rules, if a test reveals that a water outlet used for drinking or food preparation in a public school is producing lead in the water at or above the lead poisoning hazard level, the school will need to take additional steps to restrict access and notify others. The school may choose to permanently restrict access to the impacted outlet, but more likely the school will access the state-funded program to remediate the outlet.

Based on water lead testing in schools in Georgia, we expect that 7% to 18% of drinking water and food preparation outlets in schools will need to be remediated.[10] As there are estimated to be an average of 65 outlets in each school, the estimated number of outlets impacted ranges from 12,290 to 31,602. These are

[8] If there are additional funds, child care centers required to test for and remediate under 15A NCAC 18A .2816 are also eligible for reimbursement, though at this time these costs are largely covered by a separate EPA WIIN grant.
[9] Google search of comparable companies conducting mail-out, kit-based testing for lead in water (average of Safe Home Lead: $89.95, MyTapScore: $149, 120Water: $59.40) conducted on 9/27/2022.
[10] Clean Water for Georgia Kids Program - https://www.cleanwaterforuskids.org/georgia/programsummary (Accessed 9/19/2022).

estimates and depend on the true rates of exceedance and number of drinking and food preparation water outlets sampled per facility.

When appropriate and as funds allow, the strategy the State expects to take to remediate lead in water in public schools is a double-barrier approach that involves:(1) *Replacing faucets and fountains* that have first-draw lead concentrations at or above 10 ppb with certified lead-free fixtures and fountains according to NSF International/American National Standards Institute (ANSI) 372, and (2) *Installing point-of-use (POU) filters certified to remove lead.* The multi-barrier approach represents current best practice for preventing drinking water lead exposures in schools. Even though it is not designed to remove all possible lead from a facility's plumbing, it protects the end users of each tap from both near and distant lead sources by removing faucets with lead-bearing material and filtering out lead that may leach into the water from elsewhere in the plumbing. It also maximizes the use of the SLFRF appropriated funds for remediation by providing a vehicle for addressing all expected identified water lead hazards. Where lead service lines are suspected of causing elevated lead levels in water, a referral will be made to NC Department of Environmental Quality, which received separate infrastructure funding specifically targeting lead service line replacement, and has requested those referrals.

The total cost of remediation includes the cost of the initial faucet/fountain replacement and filter plus the cost of subsequent replacement filter cartridges. The state-funded project will only cover the initial capital and installation costs for faucets, fountains, and filters as funds allow, but will not cover future replacement filter cartridges. The estimated remediation cost for kitchen and classroom sinks used for drinking and food preparation, which includes the faucet fixture replacement with an NSF/ANSI 53 certified, vandal-resistant filter kit installed underneath the sink, is approximately $550, not including labor.[11] The estimated remediation cost for water fountains, which includes a new fountain with chiller, bubbler, filter, and water bottle filler, is approximately $2,050, not including labor.[11] Based on water lead sampling conducted in schools in Georgia, it is estimated that approximately 85% of outlets requiring mitigation will be faucets and 15% will be water fountains, which would be an average cost of $775 per outlet ((2,050*.15) + (550*.85)). Based on the price per filter cartridge from major water fountain suppliers and the standard manufacturer-recommended replacement interval of 12 months, filter maintenance costs approximately $100[12]-$130[13] per filter per year, for an average of $115 per filter per year.

Labor represents the largest overall remediation or abatement cost. Depending on the complexity of each job and the number of water outlets exceeding the hazard level, we estimate that each facility needing remediation will require a minimum of 4 hours and a maximum of 16 hours of labor (including travel costs). We estimate labor costs to be approximately $100 per hour, for a total labor cost per facility between $400 and $1,600.

As set out in Table 2, the total costs of the double-barrier remediation approach would be between $10.6M on the low end and $28.8M on the high end. The most realistic scenario is somewhere between these two estimates as each facility will have a different distribution of fountains, fixtures, filters and different labor costs. In addition, these estimates rely on static assumptions around the overall rate of exceedances by facility type, which may vary considerably.

Table 2. Estimated Costs to Remediate Lead in Water in Public Schools

Number of public schools	2,701	
Average number of water outlets per school used for drinking or food preparation	65	
Estimated % of outlets exceeding 10 ppb and needing remediation or abatement	Low estimate: 7%	High estimate: 18%

[11] Personal correspondence with Jennifer Hoponick-Redmon at RTI International, 9/27/2022.

[12] Replacement filter for sinks and standard fountains, available at https://www.elkay.com/products/details/51299C

[13] Replacement for bottle filling fountains, available at https://www.elkay.com/products/details/51300C

Estimated number of outlets exceeding 10ppb needing remediation or abatement	12,290	31,602
Estimated cost of remediation per outlet	$775	
Estimated cost of labor per facility	Low estimate: $400	High estimate: $1600
Total estimated cost to remediate lead in water outlets used for drinking and food preparation in public schools	$10,604,801	$28,812,918

As discussed above, it is anticipated that initial remediation or abatement costs will be borne by the State and paid for using SLFRF funds appropriated for this purpose. The state-funded program expects to cover all initial remediation or abatement costs as funding allows, providing the school with materials and a plumber (if requested) to install replacement outlets for each outlet that exceeds the lead poisoning hazard level. Beyond the initial remediation costs, it is likely that the cost of maintaining filters will fall to public schools at a cost of approximately $115 per filter per year, which will be noted again below in the local impact section.

The total estimated costs to test for and remediate lead in water in public schools is between $28M – 46M (Table 3), with the range depending on labor costs and the percent of outlets needing remediation. Once SLFRF funds are exhausted, any remaining remediation needs become a local cost. Following remediation, a local or state registered environmental health specialist (REHS) will visit the school and obtain post-remediation samples. This cost has been captured in the local government impact section. Those remediation samples will be analyzed by the State Laboratory of Public Health. This cost has been captured in the state project administration and implementation section.

Table 3. Total Estimated Costs to Test for and Remediate Lead in Water in Public Schools

Estimated total cost of testing water outlets used for drinking or food preparation in public schools	$17,459,939
Estimated Costs to Remediate Lead in Water in Public Schools	$10,604,801- $28,812,918
Total Estimated Testing and Remediation Costs	**$28,064,741 - $46,272,857**

State Costs Related to Lead-Based Paint Hazard and Asbestos Hazard Inspections

DPH, as lead agency for the program, intends to use a portion of the $117.2M appropriated to contract with a vendor to manage the process of inspecting for lead-based paint and asbestos in public schools and child care facilities. The inspection process includes confirming the required certification and accreditation status as needed for all functions (risk assessment, management planning, inspection, sample collection, laboratory analysis). Costs related to inspection and testing for lead-based paint and asbestos are discussed more fully below.

Lead-Based Paint Hazard Inspections

It is anticipated that the estimated cost for lead-based paint hazards inspections in child care facilities and public schools cost will be paid for, as available, using SLFRF funds appropriated to the State for this purpose. It is possible that some public schools and licensed child care facilities may choose to conduct these inspections on their own. In that circumstance, child care facilities who meet the requirements of the proposed rules will be eligible to seek reimbursement of costs. Public schools will also be eligible to seek reimbursement of costs, but will be required to provide a 1/3 match.

The estimated cost of lead-based paint inspections is set out in Table 4. Costs due to lead-based paint inspections consist of risk assessment (i.e., on-site inspection, field-based lead measurement, and sample collection by a certified professional) and laboratory analysis. Persons who perform risk assessments must be state-certified. Laboratories that analyze paint chip, dust, or soil samples must be recognized under EPA's National Lead Laboratory Accreditation Program (NLLAP). Based on experience of the DPH Health Hazard Control Unit (HHCU), risk assessments for lead-based paint conducted by a certified individual range from $92 to $101 per hour, for an average of $96.50 per hour. It is expected that the risk assessment will take up

to 8 hours per 10,000 square feet of school or facility or 1,250 square feet of coverage per hour. For the purposes of this fiscal note, we approximate 2,000 square feet for FCCHS, 5,000 square feet for child care centers, and 10,000 square feet for public schools. Based on experience of HHCU, laboratory testing for lead by a NLLAP accredited laboratory ranges from $35 to $39 per sample, for an average of $37 per sample. For lead-based paint inspections, most measurements of lead concentration are made by x-ray fluorescence (XRF), which are on-site readings with field equipment owned and maintained by certified lead risk assessors. Moreover, the cost of XRF readings is already incorporated in the cost per hour to conduct a lead-based paint inspection. As a result, substantially fewer laboratory samples are collected for lead-based paint inspections compared to water testing and asbestos inspections. It is estimated that 10-30 samples will be taken for suspect lead in paint, dust and soil per school or facility. For the purposes of this fiscal note, we will use 10 samples as the estimate for FCCHs (the smallest buildings), 20 samples for child care centers (medium), and 30 samples for public schools (the largest buildings). Facilities and schools may pay a different testing cost if they decide to hire a consultant or laboratory technician to perform the sampling instead of going through the state's vendor, in which case the facility or school would pay for someone to collect and test each sample.

The Rules grant an exemption from the requirement to obtain a new inspection, if the entity submits documentation that it has previously completed a lead-based paint inspection in accordance with existing rules or the building was built after February 28, 1978 and the individual responsible for the entity attests that no lead-based paint was used in the building. This documentation is acceptable in lieu of an inspection. The percentage of licensed child care centers, FCCHs, and public schools that will seek and obtain an exemption is unknown at this time, so for the purposes of this fiscal note, we estimate costs assuming 100% of facilities will need an inspection. However, *this is an overestimate* as we anticipate that a portion of these schools and child care facilities will not need an inspection because they meet this criteria.

As shown in Table 4, the estimated total cost of lead-based paint inspections for licensed child care centers, FCCH, and public schools will be approximately $10.6M.

Table 4. Estimated Costs for Lead-Based Paint Inspections in Child Care Facilities & Public Schools

Number of licensed child care centers	**4,291**
Estimated cost per hour for inspection	$96.50
Estimated number of hours per center	4 hours (5,000 sq ft / 1,250 sq ft)
Estimated total cost for inspection	$1,656,326 ((4*96.50)*4,291)
Estimated cost per sample	$37
Estimated number of samples per center	20 samples
Estimated total cost for samples	$3,175,340 ((37*20)*4,291)
Estimated total inspection cost for centers	$4,831,666
Number of licensed family child care homes	**1,254**
Estimated cost per hour for inspection	$96.50
Estimated number of hours per FCCH	1.6 hours (2,000 sq ft / 1,250 sq ft)
Estimated total cost for inspection	$193,617.60 ((1.6*96.50)*1,254)
Estimated cost per sample	$37
Estimated number of samples per FCCH	10 samples
Estimated total cost for samples	$463,980 ((37*10)*1,254)
Estimated total inspection cost for FCCH	$657,597.60
Number of public schools	**2,701**
Estimated cost per hour for inspection	$96.50
Estimated number of hours per school	8 hours (10,000 sq ft / 1,250 sq ft)
Estimated total cost for inspection	$ 2,085,172 ((8*96.50)*2,701)

Estimated cost per sample	$37
Estimated number of samples per school	30 samples
Estimated total cost for samples	$ 2,998,110 ((37*30)*2,701)
Estimated total inspection cost for public schools	$5,083,282
Total Estimated Cost for Lead-Based Paint Inspections	**$10,572,545.60**

Asbestos Hazard Inspections

It is anticipated that the estimated cost for asbestos hazards inspections in child care facilities and public schools cost will be paid for, as available, using SLFRF funds appropriated to the State for this purpose. It is possible that some public schools and licensed child care facilities may choose to conduct these inspections on their own. In that circumstance, child care facilities who meet the requirements of the proposed rules will be eligible to seek reimbursement of costs. Public schools will also be eligible to seek reimbursement of costs, but will be required to provide a 1/3 match.

The estimated cost of asbestos inspections is set out in Table 5. Costs due to asbestos inspections include visual inspection and sample collection by an accredited professional and laboratory analysis. Under the existing federal and state regulatory framework for the management of asbestos in school buildings, schools are required to develop and maintain an asbestos management plan that documents the locations of known or suspected asbestos-containing materials and any actions previously taken to remove or repair the materials. Existing management plans will be reviewed by a licensed management planner prior to re-inspection for asbestos. Management plan review costs are included in total costs due to asbestos inspection. Child care facilities that are not part of a school are not required to develop and maintain asbestos management plans. Asbestos inspections in these child care facilities will be planned and implemented without the information available in pre-existing management plans.

Persons who perform asbestos inspections must be state-accredited. Laboratories that analyze samples collected in schools must be accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Based on the experience of HHCU, inspection for asbestos by an accredited professional ranges from $102 to $112 per hour, for an average of $107 per hour. It is expected that the risk assessment will take up to 8 hours per 10,000 sq foot of school or facility or 1,250 sq feet per hour. For the purposes of this fiscal note, we approximate 2,000 square feet for FCCHS, 5,000 square feet for child care centers, and 10,000 square feet for public schools. Based on the experience of HHCU, laboratory testing for asbestos by a NVLAP accredited laboratory ranges from $41 to $45 per routine bulk building material sample, depending on the number of samples submitted for testing and the accredited laboratory chosen to complete the lead analysis, for an average of $43 per sample. It is estimated that 50-100 bulk building material samples will be taken per school or facility. For purposes of this fiscal note, we will use 50 samples as the estimate for FCCHs (the smallest buildings), 75 samples for child care centers (medium), and 100 samples for public schools (the largest buildings). Additional laboratory fees may be applied if expedited sample analysis and data reporting are required.

The Rules grant an exemption from the requirement to obtain a new inspection, if the entity submits documentation of a recent inspection that was conducted in accordance with the requirements of this Rule or documentation, in compliance with federal regulations, that demonstrates that asbestos containing material was not used in the construction of the public school or licensed child care buildings. This documentation is acceptable in lieu of an inspection. It also allows licensed child care facilities, who are less likely to have the documentation set out by the federal regulations, to produce a property tax record showing the building occupied by the facility was built after October 12, 1988 (which aligns with the date in the federal regulations) in lieu of an inspection. The percentage of licensed child care centers, FCCHs, and public schools that will seek and obtain an exemption is unknown at this time, so for the purposes of this fiscal note, we estimate

costs assuming 100% of facilities will need an inspection. However, *this is an overestimate* as we anticipate that a portion of these schools and child care facilities will not need an inspection because they meet this criteria. As shown in Table 5, the estimated total cost of asbestos inspections for licensed child care centers, FCCH and public schools is $32.5M.

Table 5. Estimated Costs for Asbestos Inspections in Child care Facilities & Public Schools

Number of licensed child care centers	**4,291**
Estimated cost per hour for inspection	$107
Estimated number of hours per center	4 hours (5,000 sq ft / 1,250 sq ft)
Estimated total cost for inspection	$1,836,548 ((4*107)*4,291)
Estimated cost per sample	$43
Estimated number of samples per center	75 samples
Estimated total cost for samples	$13,838,475 ((43*75)*4,291)
Estimated total inspection cost for centers	$15,675,023
Number of licensed family child care homes	**1,254**
Estimated cost per hour for inspection	$107
Estimated number of hours per FCCH	1.6 hours (2,000 sq ft / 1,250 sq ft)
Estimated total cost for inspection	$214,684.80 ((1.6*107)*1,254)
Estimated cost per sample	$43
Estimated number of samples per FCCH	50 samples
Estimated total cost for samples	$2,696,100 ((43*50)*1,254)
Estimated total inspection cost for FCCH	$2,910,784.80
Number of public schools	**2,701**
Estimated cost per hour for inspection	$107
Estimated number of hours per school	8 hours (10,000 sq ft / 1,250 sq ft)
Estimated total cost for inspection	$ 2,312,056 ((8*107)*2,701)
Estimated cost per sample	$43
Estimated number of samples per school	100 samples
Estimated total cost for samples	$ 11,614,300 ((43*100)*2,701)
Estimated total inspection cost for public schools	$13,926,356
Total Estimated Cost for Asbestos Inspections	**32,512,163.80**

State Costs Related to Lead-Based Paint and Asbestos Abatement

The costs of abatement of lead and asbestos hazards are difficult to quantify without knowing the frequency in which schools and child care facilities will be identified to have lead-based paint and asbestos hazards and the frequency with which they will choose to abate versus simply restrict access to the identified hazard. Abatement costs will also vary with the scope of each abatement project.

What is known is that lead-based paint, dust, and contaminated soil are the most common sources of lead exposure in and around schools and child care settings. This is a particular concern for young children, because of their frequent and extensive contact with soil outside and with floors, carpets, windows, and other indoor areas where dust gathers, as well as their frequent hand-to-mouth activity.[14] Approximately 65 percent

[14] U.S. Environmental Protection Agency, "America's Children and the Environment, Third Edition," EPA 240-R13-001 (Washington: U.S. Environmental Protection Agency, January 2013): 289, https://www.epa.gov/sites/production/files/2015-06/documents/ace3_2013.pdf; Ronnie Levin et al., "Lead Exposures in U.S. Children, 2008:

of U.S. school facilities were constructed before 1980.[15] A 2014 national survey of schools and classrooms found that only about a third (34 %) had been inspected for lead in cracked or peeling paint in the preceding 12 months, and another 29 % had already been identified as having lead paint hazards and remediated.[16] A 2003 study based on data from a nationally representative sample of licensed U.S. child care facilities showed that 14 percent have one or more lead-based paint hazards, including 26 percent of those located in buildings built before 1960 compared with 4 percent in newer buildings.[17]

The scope of asbestos hazards in schools is also believed to be widespread but difficult to ascertain. Region 4 states (of which NC is a member) reported that up to 75% of schools inspected by the states were issued notices of noncompliance for asbestos. A 2015 investigative report commissioned by Senators Ed Markey (D-Mass.) and Barbara Boxer (D-Calif.) showed that 69.5% of 5,309 local education agencies in 15 responding states had schools that contained asbestos.[18] States have not fully abated the asbestos, suggesting asbestos-containing material is ubiquitous in our public schools. NC was not one of the responding states, however other Southern states Alabama and Tennessee were.

In addition, we don't know how many of those licensed child care facilities and public schools with identified lead/asbestos hazards will opt to restrict access to an affected area rather than pursue abatement under this program. We expect that the availability of abatement funds will act as an incentive for public schools and child care facilities to pursue abatement. The incentive is greater for child care facilities because they would be reimbursed by the state at 100% of their costs, whereas schools would only receive 2/3s reimbursement, as discuss above.

For those facilities that pursue lead-based paint abatement, we do not have any data regarding what it might cost to complete a lead-based paint abatement in schools or child care facilities. Abatement may include removal of the paint or covering it with a new surface, such as drywall, and varies in cost.

For those facilities that pursue asbestos abatement, data from asbestos contract fees in public schools in 52 counties in 2019-2020 provide some information. For these projects, abatement included paint, floor tile replacement, pipe insulation, cementitious roofing, flooring mastic, ceiling tile, and boiler instillation. The average remediation cost was $124,391.90 per county, ranging from $3,498 for a door frame at a single school to $ 663,235.50 to replace floor and ceiling tile, surfacing material, and pipe insulation across seven schools. Schools and child care facilities that have conducted previous asbestos abatement work will decrease the cost of abatement work under these rules.

Costs of Project Administration and Implementation

In addition to the testing/remediation and inspection/abatement work, there will be additional costs incurred in the administration of these programs, including: (1) opportunity costs associated with the time that existing staff will spend setting up and implementing these programs, (2) costs associated with hiring new staff to assist, and (3) costs associated with contracting with a DPH vendor.

Implications for Prevention," Environmental Health Perspectives 116, no. 10 (2008): 1285–93, https://dx.doi.org/10.1289%2Fehp.11241; Howard W. Mielke et al., "The Urban Environment and Children's Health: Soils as an Integrator of Lead, Zinc, and Cadmium in New Orleans Louisiana, USA," Environmental Research 81, no. 2 (1999): 117–29, https://doi.org/10.1006/enrs.1999.3966

[15] From the most recent comprehensive data available: National Center for Education Statistics, "Public-Use Data Files and Documentation (FRSS 105): Condition of Public School Facilities: 2012-13," https://nces.ed.gov/surveys/frss/downloads.asp (Accessed 9/26/2022).

[16] Centers for Disease Control and Prevention, "School Health Policies and Practice Study: Physical School Environment," https://www.cdc.gov/healthyyouth/data/shpps/pdf/2014factsheets/phy_ sch_env_shpps2014.pdf.

[17] David Marker et al., "First National Environmental Health Survey of Child Care Centers: Final Report" (Rockville, MD: Westat Inc., 2003), http://www.nmic.org/nyccelp/documents/HUD_NEHSCCC.pdf.

[18] https://www.markey.senate.gov/imo/media/doc/2015-12-Markey-Asbestos-Report-Final.pdf (Accessed 9/26/2022)

(1) Existing Staff Positions (Opportunity Cost)

We anticipate that one state epidemiologist will work full-time overseeing the administration and implementation of data collection and analysis for the program on testing/remediation of lead in water in public schools, with the assistance of 20% effort from the Environmental Program Manager, 40% of effort from a Chemistry Technician, and 13.5% of effort from a Chemistry Supervisor at the State Laboratory of Public Health. The midpoint annual salary for a public health epidemiologist is $69,398[19] plus fringe[20], for a total cost of $98,891 per year. In addition, an Environmental Program Manager with salary $90,831[21] plus fringe benefits, contributing 20% effort, will total an opportunity cost of $25,430 per year; a Chemistry Technician with midpoint annual salary $44,633[22] plus fringe benefits, contributing 40% effort, will total an opportunity cost of $26,496 per year and a Chemistry Supervisor with midpoint annual salary $84,162[23] plus fringe benefits, contributing 13.75% effort, will total an opportunity cost of $16,273.97 per year.[24]

We anticipate that one Industrial Hygiene Consultant will work full-time overseeing the implementation of the lead-based paint and asbestos program and managing the generated data, with the assistance of 65% effort from the Industrial Hygiene Consultant Advisor and 28% effort from Industrial Hygiene Consultant Team Lead. The midpoint annual salary for an Industrial Hygiene Consultant is $72,703[25] plus fringe, for a total cost of $103,249 per year. In addition, an Industrial Hygiene Consultant Advisor with salary $77,806[26] plus fringe benefits, contributing 65% effort, will total an opportunity cost of $71,485 per year, and an Industrial Hygiene Consultant Team Lead with salary $68,687[27] plus fringe benefits, contributing 28% effort, will total an opportunity cost of $27,427 per year.

As set out in Table 6, the total opportunity cost associated with the time that existing staff will spend overseeing these programs per year is $369,251.89 or $1,846,259.47 over 5 years.

Table 6. Estimated Opportunity Cost of Time Spent by Existing Staff

Existing Positions	Midpoint	FICA	Retirement	Health Insurance	Effort	TOTAL
Public Health Epidemiologist	$69,398	$ 5,308.95	$16,787.38	$7,397	100%	$98,891.32
Environmental Program Manager	$ 90,831	$ 6,948.57	$21,972.02	$7,397	20%	$25,429.72
Environmental Chemistry Technician	$44,633	$ 3,414.42	$10,796.72	$7,397	40%	$26,496.46

[19] Salary Grade for Public Health Epidemiologist is MH15. https://oshr.nc.gov/state-employee-resources/classification-compensation/classification/class-specs/class-specifications-p (Accessed 8/31/22)
[20] Fringe rates for 7/2022-6/2023: FICA = 7.65%, Retirement = 24.19%, Health Insurance = $7,397
[21] NC state employee salary lookup for 'environmental program manager I'. https://www.newsobserver.com/news/databases/state-pay/article11865482.html (Accessed 9/25/22)
[22] Salary Grade for Chemistry Technician I is NC06. https://oshr.nc.gov/state-employee-resources/classification-compensation/classification/class-specs/class-specifications-c (Accessed 9/28/22)
[23] Salary Grade for Chemistry Supervisor I is NC19. https://oshr.nc.gov/state-employee-resources/classification-compensation/classification/class-specs/class-specifications-c (Accessed 9/28/22)
[24] Effort for chemistry positions estimated by personal correspondence with Chris Goforth, Environmental Sciences Manager at the State Laboratory of Public Health, 9/26/22
[25] Salary Grade for Industrial Hygiene Consultant is NC16. https://oshr.nc.gov/state-employee-resources/classification-compensation/classification/class-specs/class-specifications-i (Accessed 8/31/22)
[26] NC state employee salary lookup for 'industrial hygiene consultant supervisor'. https://www.newsobserver.com/news/databases/state-pay/article11865482.html (Accessed 9/25/22)
[27] NC state employee salary lookup for 'industrial hygiene consultant'. https://www.newsobserver.com/news/databases/state-pay/article11865482.html (Accessed 9/25/22)

Environmental Chemistry Supervisor	$84,162	$ 6,438.39	$20,358.79	$7,397	13.75%	$16,273.97
Industrial Hygiene Consultant	$72,703	$ 5,561.78	$17,586.86	$7,397	100%	$103,248.64
Industrial Hygiene Consultant Advisor	$77,806	$5,952.16	$18,821.27	$7,397	65%	$71,484.68
Industrial Hygiene Consultant Team Lead	$68,687	$5,254.56	$16,615.39	$7,397	28%	$27,427.10
Estimated total opportunity cost per year:						**$ 369,251.89**
Estimated total opportunity cost over 5-year life of program:						**$1,846,259.47**

(2) New Staff Positions

Management of these programs will also require several new temporary staff hires as itemized below. The total cost associated with new temporary staff will be $767,653.21 per year ($3,838,080.27 over 5 years) and will be apportioned to the SLFRF funds based on the part the program supported (water v. lead-based paint/asbestos). Fringe rates for non-IT temporary positions are 7.65% FICA, $177.08/month health insurance (above 30 hours/week), and a $2.00 per hour temporary agency fee. Temporary employees can work a maximum of 48 consecutive weeks/year. All temporary positions will be needed for the duration of the program until Dec 31, 2026, approximately 5 years:

- A part-time State Laboratory of Public Health Analytical Chemist to analyze all clearance water samples collected by state or local Environmental Health Specialist staff, and electronically report these data to the public school and the DPH Environmental Health program. The midpoint annual salary for a Chemist I (NC14) is $65,944[28] or $31.70 per hour plus fringe rates noted above. The total cost incurred by the chemist for the duration of the program will be **$285,012.**
- A full-time Operations and Grants Manager to manage the administration of funding deliverables. The mid-point annual salary for a Program Supervisor 1/Program Coordinator IV (NC14) is **$65,944**[28] or $31.70 per hour plus fringe rates noted above. The total cost incurred by the position for the duration of the program will be **$356,540.**
- A full-time Public Health Epidemiologist. The midpoint of a public health epidemiologist (MH15) is $69,398[29]; they would be reimbursed at a rate of $33.36 per hour plus fringe rates noted above. The total cost incurred by the Epidemiologist for the duration of the program will be **$373,695.**
- One full-time temporary IT Developer/Programmer position to provide ongoing IT database support for the lead surveillance system, NCLEAD, to make any improvements necessary to incorporate water lead sampling and remediation data, lead-based paint inspection and abatement data collected as part of this project. The reimbursement rate is estimated at $67.00 per hour. The total cost incurred by the NCLEAD IT Developer for the duration of the program will be **$696,800.**
- One full-time Industrial Hygiene Consultant to review the asbestos and lead-based paint documentation submitted by public schools and child care facilities seeking reimbursement, and those seeking exemption from inspection. This individual will also assist public schools and child care facilities when there is missing information in order to complete the packet of information. The midpoint annual salary for an Industrial Hygiene Consultant (NC16) is $72,703[28] or $34.95 per hour plus fringe rates noted above. The total cost incurred by the Industrial Hygiene Consultant for the duration of the funding will be **$390,127.**

[28] Salary Schedule NC. https://oshr.nc.gov/state-employee-resources/classification-compensation/compensation/salary-schedule-nc (Accessed 9/27/2022)
[29] Salary Schedule MH. https://oshr.nc.gov/state-employee-resources/classification-compensation/compensation/salary-schedule-mh (Accessed 9/27/2022)

- One full-time Program Coordinator II to organize all information within the SmartSheet program and run reports. The mid-point annual salary for a Program Coordinator II (NC10) is $54,252[28] or $26.08 per hour plus fringe rates noted above. The total cost incurred by the Program Coordinator II for the duration of the funding will be **$298,461.**
- A full-time Business Services Coordinator II to review all expenses submitted by public schools and child care facilities to confirm all eligible expenses and submit confirmation to the Budget/Controllers office for payment. The midpoint annual salary for a Business Services Coordinator II (NC09) is $51,668[28] or $24.84 per hour plus fringe rates noted above. The total cost incurred by the Program Coordinator II for the duration of the funding will be **$285,646.**
- A full-time IT Developer/Programmer Analyst position to provide ongoing IT database support for the Health Hazards Control Unit, which includes maintenance and development of five integrated applications. The position is reimbursed at a rate of $67.00 per hour and will be funded. The total cost incurred by the HHCU IT Developer Analyst for the duration of the program will be **$696,800.**
- An IT Developer/Programmer to provide critical IT database support for the Health Hazards Control Unit as a GUPTA programmer to support the transfer of data in the database applications to a version executable in more recent/current Windows environment (GUPTA version 7.3). Thus this position supports the operation of these database applications while a new database/software platform (TBD) is put in place. It is reimbursed at a rate of $70.00 per hour. The total cost incurred by the HHCU GUPTA IT Developer for the duration of the program will be **$455,000.**

As set out in Table 7, the total cost for new staff for the duration of these programs will be $3,838,080.27.

Table 7. Estimated Cost for Time Spent by New Temporary Positions

Category	Hourly Rate	FICA	Temp Fee	Hours	Weeks	Annual Salary[30]	ACA benefits/ month	Total Annual Cost	# Years	Total Program Cost
Chemist I	$ 31.70	0.0765	2	31.75	48	$55,055	$177.08	$57,002	5	$285,012.28
Program Coordinator IV (Operations and Grants Manager)	$ 31.70	0.0765	2	40	48	$69,360	$177.08	$71,308	5	$356,539.88
Public Health Epidemiologist	$ 33.36	0.0765	2	40	48	$72,791	$177.08	$74,739	5	$373,694.98
IT Developer for lead surveillance system	$ 67.00	N/A	N/A	40	52	$139,360	N/A	$139,360	5	$696,800.00
Industrial Hygiene Consultant	$ 34.95	0.0765	2	40	48	$76,077	$177.08	$78,025	5	$390,126.68
Program Coordinator II	$ 26.08	0.0765	2	40	48	$57,744	$177.08	$59,692	5	$298,460.55

[30] Example calculation for Chemist I – Annual salary = $55,055= ($31.70 hourly rate + ($31.70*.0765 FICA)+$2 temp fee)*31.75 hours per week *48 weeks per year; Total annual cost includes ACA benefit for positions more than 30 hours/week. Total annual cost = $57,002 (($31.70 hourly rate + ($31.70*.0765 FICA)+$2 temp fee)*31.75 hours per week *48 weeks per year)+($177.08 ACA benefit/month * 11 months)

Business Services Coordinator II	$ 24.84	0.0765	2	40	48	$55,181	$177.08	$57,129	5	$285,645.90
IT Developer Analyst for HHCU	$ 67.00	N/A	N/A	40	52	$139,360	N/A	$139,360	5	$696,800.00
IT Developer for HHCU GUPTA	$ 70.00	N/A	N/A	25	52	$91,000	N/A	$91,000	5	$455,000.00
Estimated total cost over 5-year life of program:										**$3,838,080.27**

(3) DPH Vendor

It is anticipated that DPH will contract with a vendor to fulfill several critical roles in meeting project objectives for both lead in water and lead-based paint/asbestos, which include: (1) coordinating participation of child care facilities and schools in these programs to test for/remediate lead in water and inspect for/abate lead-based paint and asbestos hazards, including identifying and scheduling contractors for water testing/remediation and lead-based paint and asbestos inspections; (2) developing and delivering education and training regarding how to enroll in the programs, collect water samples, provide inspection documentation for lead-based paint/asbestos, understand sample results for water and lead-based paint/asbestos, and how remediation works for both programs (costs associated with receipt of the training are captured below under public school and child care facility impacts); (3) maintaining an online presence/website; (4) assisting DPH with reporting requirements to auditors and funding; and (5) most importantly developing an integrated system of managing both programs (lead in water and lead-based paint/asbestos) to promote efficiency and avoid duplicative efforts and burden on schools and child care facilities.

Estimating the vendor's costs is not possible at this time as the anticipated contract is not yet awarded. DPH is currently going through the State procurement process. Since the vendor contract is not yet in place, throughout this fiscal note we have estimated costs based on services available in the private sector. We expect these prices may be slightly elevated, since the DPH vendor will be handling the provision of these services and have bulk purchasing power and an economy of scale. However, the cost realized by the state is expected to be similar to what is estimated here, as savings will be offset by the cost of the vendor to manage these portions of the program. For that reason, we expect the vendor cost of tasks 1-3 are rolled into previously costs outlined for testing/inspection and remediation/abatement. Tasks 4-5 are additional implementation and administrative tasks that will be paid for separately. We are currently estimating that no more than approximately 1.3% or $1.95M of the SLFRF funds will be paid to the vendor for these additional services.

Costs for State Public Schools

As discussed in the "*Quantifying Public Schools and Child Care Facilities*" section, 10 of the 2,701 public schools are funded through the state. The one-time opportunity cost associated with testing for and remediating lead in water in for state public schools is estimated to be $7,171.70. There is also an estimated actual cost of maintaining installed water filters of $5,750 - $13,800 per year. These costs are summarized in Table 12 below. The one-time opportunity cost associated with inspecting for and abating lead-based paint and asbestos hazards is estimated to be $5,082.30 (Table 13). A full discussion of the impact on public schools is discussed in the *Local Impact* section, as the majority of these costs, which are mostly opportunity costs, will be borne at the local level.

TOTAL ESTIMATED STATE GOVERNMENT IMPACT

Table 8 summarizes the total estimated state government impact discussed in this section of the fiscal note.

Table 8: Estimated State Government Impact

Estimated Actual Costs	
Total estimated cost of testing for lead in water in public schools	$17,459,939
Total estimated cost of remediating lead in water in public schools.	$10,604,801 - $28,812,918*
Total estimated cost of inspecting for lead-based paint in public schools and licensed child care facilities	$10,572,545.60†
Total estimated cost of inspecting for asbestos in public schools and licensed child care facilities	32,512,163.80‡
Total estimated cost of abating lead-based paint and asbestos hazards in public schools and licensed child care facilities	Unquantifiable§
Total estimated cost of new state staff over the 5-year expected life of the programs	$3,838,080.27
Total estimated cost of DPH vendor	$1,950,000
Total estimated cost to state schools of replacement water filter cartridges over a 5-year period	$28,750 - $69,000 *($5,750*5 - $13,800*5)*
Total Estimated Actual Costs (5-Year Period)	**$76,966,280.17 - $95,214,646.42, with lead-based paint/asbestos abatement unquantifiable**
Estimated Opportunity Costs	
Total estimated cost of existing state staff over the 5-year expected life of the programs	$1,846,259.47
Total estimated one-time opportunity cost to state schools	$12,253.99 *(7,171.69 + 5,082.30)*
Total Estimated Opportunity Costs (5-Year Period)	**$1,858,513.46**
Total Estimated State Costs (Actual + Opportunity)	**$78,824,793.63 – 97,073,159.88*, with lead-based paint/asbestos abatement unquantifiable**

* Low and high estimates are based on estimated percentages of schools for which water and food preparation outlets are found to have unacceptable lead levels. If actual costs are at the high end, SLFRF funds may not be sufficient to cover all costs associated with remediation. In that case, public schools would be responsible for costs that exceed SLFRF funding.
† Likely an overestimate because a portion of facilities are likely to qualify for an exemption from the lead-based paint inspection requirement.
‡ Likely an overestimate because a portion of facilities and schools are likely to qualify for an exemption from the asbestos inspection requirement.
§ Depending on the scope and complexity of abatement required, SLFRF funds may not be sufficient to cover all costs associated with abatement of lead-based paint and asbestos hazards. It is anticipated that public schools and child care facilities would be responsible for costs that exceed SLFRF funding.

Local Government Impact

Local government costs are made up of costs to local health departments and costs to local public schools.

Costs for Local Health Departments

The only anticipated cost to local health departments is the staff time need for a local registered environmental health specialist (REHS) to conduct post-remediation sampling of water outlets in public schools under Rule **41C .1005(g)** on the Department's behalf. The average salary for a local REHS in North Carolina is $48,877.[31] Using this figure, as well as an estimate of the value of fringe benefits, we have calculated the hourly pay rate of a local REHS at $32.45, as shown in Table 9.

Table 9: Average Hourly Pay Rate for Local REHS

Salary and Fringe Benefits		
Salary/Benefit	% of Salary	Total Value
Salary	100	$48,877.00
All Benefits[32]	38.1	$18,622.14
Hourly Rate Calculation		
Total Salary + Fringe	Hours Worked / Year	Hourly REHS Rate
$67,499.14	2080	$32.45

Based on experience, we anticipate that it will take approximately 2 hours for 1 local REHS to conduct this post-remediation sampling at each public school. As there are 2,701 public schools, this is estimated to take 5,402 hours at a one-time cost of $175,294.90 (Table 10). We anticipate that the time spent by local REHS staff will likely be an opportunity cost, as we do not expect that local health departments will hire additional staff to help do this work.

Table 10: Impact on Local Health Departments (Opportunity Cost)

Training for Local REHSs		
Number of Hours to Complete Sampling	REHS Hourly Rate	Cost to Local Health Departments
5,402	$32.45	$175,294.90
TOTAL LHD IMPACT …….…… $175,294.90		

[31] The average REHS salary was estimated using the UNC School of Government's County Salary Survey, for which 2021 data is the most recently available information, and which is available at: https://www.sog.unc.edu/publications/reports/county-salaries-north-carolina-2021 (Accessed 9/26/2022).

[32] The value of benefits was identified using the U.S. Bureau of Labor Statistics' latest available figures from March 2022 on employer costs for employee compensation for state and local government workers, which is available at: https://www.bls.gov/news.release/ecec.t03.htm (Accessed 9/26/2022). Some components of compensation, such as paid sick leave or paid vacation leave, will be variable amongst employees and based upon years of service as a local government employee.

Costs for Local Public Schools

It is anticipated that most of the costs to schools will be staff time to administer aspects of the program as well as one-third of the cost of lead-based paint hazard or asbestos hazard abatement work and any remediation/abatement costs that are not covered by SLFRF funds, due to exhaustion or unavailability of those funds. The Rules designate the responsible person as the principal of the public school or their designee.

According to NC DPI's webpage on compensation for public school employees[33] "[t]eachers, school administrators, and non-teaching positions in NC school districts (LEAs) are employed by local boards of education but are paid on a state salary schedule based on a number of factors. In addition to the state salary, a local supplement may be provided by the school district. Some public school employees may also receive compensation, or longevity pay, for continuing service. Independent Public Schools (IPS - charter schools, lab schools, and regional schools) may follow the state salary schedules or determine their own." The annual salary for a public school principal in North Carolina at the "growth met" level ranges from $79,883 to $99,854,[34] with a midpoint calculated at $89,868.50. Fringe benefits are valued at $27,589.86,[35] bringing the total to $117,458.36 or an hourly rate of $56.47, as set out in Table 11. This hourly rate will be used to calculate the opportunity staff cost to schools.

Table 11: Average Hourly Pay Rate for Principals

Salary and Fringe Benefits		
Salary/Benefit	% of Salary	Total Value
Salary	100	$89,868.50
Benefits	30.7	$27,589.86
Hourly Rate Calculation		
Total Salary + Fringe	Hours Worked / Year	Hourly Rate
$117,458.36	2080	$56.47

Lead in Water

Under the proposed Rule **.1005** regarding lead in water, the principal or designee is responsible for: (1) receiving training on the Rule and on water sample collection; (2) collecting samples from an average estimated 65 water outlets; and (3), if remediation is needed, providing notices, ensuring alternate water sources, overseeing the restriction of and, if pursued, remediation of impacted outlets, and reporting information on the remediation to the state; and (4), if remediation is needed and pursued, an ongoing cost to maintain any installed water filters.

Training will be needed for school principals or their designees to understand the Rule requirements and process for collecting water samples. This training is expected to be delivered by the state vendor. Based on our experience with child care centers (under rule 15A NCAC 18A .2816), it is estimated that this training will take one person approximately **2 hours** to complete.

[33] https://www.dpi.nc.gov/districts-schools/district-operations/financial-and-business-services/compensation-public-school-employees (Accessed 9/26/22)

[34] The average public school principal salary was estimated using NC DPI's Fiscal Year 2022-2023 North Carolina Public School Salary Schedules. https://www.dpi.nc.gov/documents/fbs/finance/salary/schedules/salary-schedule-fn-fy23pdf/download?attachment (Accessed 9/26/22)

[35] The value of benefits was identified as 22.89% for retirement and $7,019 for health benefits using NC Public School Personnel Employee Salary and Benefits Manual 2022-2023, which is available at: https://www.dpi.nc.gov/documents/fbs/finance/salary/salary-manual-2022-23pdf/download?attachment. Some components of compensation, such as paid sick leave or paid vacation leave, will be variable amongst employees and based upon years of service as a local government employee. (Accessed 9/26/22)

The collection of samples is expected to take 8 minutes per water outlet. With an estimated average of 65 water outlets, we estimate that collection will take one person approximately **8.7 hours** to complete.

If a test reveals that a water outlet used for drinking or food preparation in a public school is producing lead in the water at or above the lead poisoning hazard level, the school will need to take additional steps. The immediate steps include restricting access to the water outlet, ensuring students and staff have access to an alternate water source, providing written notice to parents and staff, and making the test results available to the public. The public school may choose to permanently restrict access to the impacted water outlet or to remediate the outlet. There may be a minimal cost to public schools in providing alternate water, though with an average of 65 water outlets, it is expected that the school will have sufficient access to alternative outlets. There will also be a minimal cost to public schools in providing written notice, in the form of staff time spent writing and distributing the written notice and office supplies. The cost to provide public access is expected to be minimal, as public schools may satisfy this requirement by posting a notice on their website. If remediation is pursued, school principals or their designees will need to coordinate with the state to schedule a remediation vendor as well as to provide a report to the state within 30 days of remediation detailing the remediation that took place. It is estimated that these administrative functions will take one person approximately **2 hours**.

Largely, the costs for testing sample and remediating outlets are expected to be covered by the state, to the extent SLFRF funds are available. However, as discussed above, beyond the initial remediation costs, the cost of maintaining filters will fall to public schools at a cost of approximately $115 per filter per year.

Staff time devoted to this work is expected to be an opportunity cost to the public schools, as it is not expected that the public schools will hire additional staff for these purposes.

As discussed above, it is expected that there will be sufficient SLFRF funds to cover the cost of testing water outlets, but there may not be sufficient funds for remediation. In that circumstance, the public school be responsible for the cost of remediation. A public school may choose to restrict access to an identified hazard rather than pursue full abatement as a cost saving measure. In the space of water outlet remediation, this may include taking an outlet out of service, such as by removing the handle of the faucet. This outcome is more likely if SLFRF funds are not available.

The overall fiscal impact to public schools for the lead-in water testing and remediation is reflected in Table 12.

Table 12. Estimated Cost to Public Schools for Testing for and Remediating Lead in Water

Staff Activity	Estimated Hours	Estimated Hourly Rate	Estimated One-Time Cost Per School
Estimated opportunity cost to receive training	2	$56.47	$112.94
Estimated opportunity cost to collect samples	8.7	$56.47	$491.29
Estimated opportunity cost for administrative functions	2	$56.47	$112.94
Estimated Total Opportunity Cost…….$717.17			
Materials	Estimated #of Impacted Outlets	Estimated Cost per Filter	Estimated Cost Per School Per Year

Estimated cost of filters	5 - 12[36]	$115	$575 - $1,380
Estimated Total Cost……$575 - $1,380			
Type of School	Number of Schools	Estimated Total Staff Time (Opportunity Cost)	Estimated Total Cost of Filters Per Year (Actual Cost)
State	10	$7,171.69	$5,750 - $13,800
Local	2,691	$1,929,901.78	$1,547,325 - $3,713,580
Total	**2,701**	**$1,937,073.47**	**$1,553,075 - $3,727,380**
Estimated Cost of Remediation/Restriction (not covered by SLFRF) ……Unquantifiable It is unknown whether costs of remediation/restriction will exceed SLFRF funding. It is anticipated that public schools will be responsible only for those costs that exceed SLFRF funding.			
Estimated Total (Opportunity + Actual) Cost…….$3,490,148.47 - $5,664,453.47, with costs to the public school of remediation/restriction of impacted outlets if SLFRF is unavailable, unquantifiable			

The overall estimated total cost (actual plus opportunity) to local and state public schools for water lead testing and remediation is $3.5M – $5.7M with most of these costs being borne at the local level. It is possible that costs for remediation could exceed SLFRF funding. It is anticipated that public schools would be responsible only for costs that exceed available SLFRF funding.

Lead-based paint and asbestos

Under proposed rules **.1003 and .1004** regarding lead-based paint and asbestos, the principal or designee is responsible for: (1) receiving training on the Rules; (2) coordinating with the state to schedule a vendor to conduct the inspections; (3) hiring and overseeing a vendor to conduct abatement work (if applicable) and paying for 1/3 of that vendor's work; and (4) providing required reports to the state.

Training will be needed for school principals or their designees to understand the Rule requirements. This training is expected to be delivered by the state vendor. Based on our experience, it is estimated that this training will take one person approximately **3 hours** to complete.

Staff time will be needed to coordinate with lead-based paint and asbestos inspectors and abatement professionals to have the inspection and abatement work completed and provide reports and other documents to DPH. Once granted access to a building(s), the designee will not have to be present for the inspection which depends on the square feet being inspected (an inspector can do about 10,000 square feet in an 8-hour day). We estimate that it will take approximately **6 hours** for one person to compile the necessary inspection and abatement documents, coordinate with lead-based paint and asbestos inspectors and abatement professionals, and provide reports to DPH.

If a lead-based paint or asbestos hazard is identified and the public school chooses to go forward with abatement, the school will be responsible for paying the 1/3 match for these activities. As we do not have good information regarding how frequently this is expected to occur, we are not able to quantify this cost.

Staff time devoted to this work is expected to be an opportunity cost to the public schools, as it is not expected that the public schools will hire additional staff for these purposes. One third of the cost of the lead-based paint hazard and asbestos hazard abatement work, if pursued, will be a local cost that public schools will need to absorb. Also, as discussed above, it is expected that there will be sufficient SLFRF funds to cover the cost

[36] Estimating a range of 7% of 65 outlets to 18% of 65 outlets, as described above.

of inspection for lead-based paint and asbestos hazards, but there may not be sufficient funds for abatement. In that circumstance, the public school would be responsible for the cost of abatement. A public school may choose to restrict access to an identified hazard rather than pursue full abatement as a cost saving measure or even a zero-cost alternative in many cases. In the space of lead-based paint and asbestos hazard abatement, this may include maintaining the surface coating or covering deteriorating asbestos or lead-based paint or restricting access to a room. This outcome is more likely if SLFRF funds are not available.

The overall fiscal impact to public schools for lead-based paint and asbestos inspections and abatement is reflected in Table 13.

Table 13. Estimated Cost to Public Schools for Inspecting for and Abating Lead-Based Paint and Asbestos Hazards

Staff Activity	Estimated Hours	Estimated Hourly Rate	Estimated One-Time Cost Per School
Estimated opportunity cost to receive training	3	$56.47	$169.41
Estimated opportunity cost for administrative functions	6	$56.47	$338.82
Estimated Total Cost……...$508.23			
Type of School	Number of Schools	Total Estimated Cost to Public Schools (Opportunity Cost)	
State	10	$5,082.30	
Local	2,691	$1,367,646.93	
Estimated Total Opportunity Cost…….$1,372,729.23			
Estimated Cost of Local Match on Abatement……...….Unquantifiable			
Estimated Cost of Abatement (2/3, not covered SLFRF)……...Unquantifiable			

The overall estimated quantifiable total opportunity cost to public schools (state and local) for lead-based paint and asbestos inspection and abatement is $1.4M, with the majority of these costs being borne at the local level. There are two categories of unquantifiable actual costs: for local match and abatement. Costs for abatement of lead-based paint and asbestos and the potential need for local matching funds could not be quantified. It is possible that costs for abatement could exceed SLFRF funding. It is anticipated that public schools would be responsible only for the 1/3 match and costs that exceed available SLFRF funding.

TOTAL ESTIMATED LOCAL GOVERNMENT IMPACT

Table 14 summarizes the total estimated local government impact discussed in this section of the fiscal note.

Table 14: Estimated Local Government Impact

Estimated Actual Costs	
Total estimated cost to local schools of replacement water filter cartridges over a 5-year period	$7,736,625 - $18,567,900 *($1,547,325*5 - $3,713,580*5)*
Total estimated cost of 1/3 match on lead-based paint and asbestos hazard abatement	Unquantifiable

Total estimated local cost (remaining 2/3) of remediation/abatement (not covered by SLFRF)	Unquantifiable
Total Estimated Actual Costs (5-Year Period)	**$7,736,625 - $18,567,900, with the 1/3 match for lead-based paint/asbestos hazard abatement and the cost of remediation/abatement not covered by SLFRF unquantifiable**
Estimated Opportunity Costs	
Total estimated one-time opportunity cost to LHDs	$175,294.90
Total estimated one-time opportunity cost to local public schools	$3,297,548.71 *($1,929,901.78 + $1,367,646.93)*
Total Estimated Opportunity Costs (5-Year Period)	**$3,472,843.61**
Total Estimated Local Costs	**$11,209,468.61 – 22,040,743.61, with the 1/3 match for lead-based paint/asbestos hazard abatement and the cost of remediation/abatement not covered by SLFRF unquantifiable**

Private Impact

The fiscal impact to the private sector is made up of costs to licensed child care facilities, benefits received by private laboratories and inspection and abatement professionals, and, most importantly, public health benefits, including avoided health care costs and avoided losses in lifetime earnings. There will also be a benefit to the private sector through the DPH vendor; as stated above in the *State Government Impact* section, the anticipated contract is not yet awarded, so that impact cannot be quantified at this time.

Costs to Licensed Child Care Facilities

It is anticipated that most of the costs to licensed child care facilities will be staff time to administer aspects of the program as well as any abatement costs that are not covered by SLFRF funds, due to exhaustion or unavailability of those funds.

Under proposed Rules **.1003** and **.1004** regarding lead-based paint and asbestos, the operator of a licensed child care facility or designee is responsible for: (1) receiving training on the Rules; (2) coordinating with the state to schedule a vendor to conduct the inspections and complete abatement; (3) providing required reports to the state.

The average annual salary for a child care program director/administrator in North Carolina is $44,190.[37] Fringe benefits are valued at $5,258.61,[38] bringing the total to $49,448.61 or an hourly rate of $23.77, as set out in Table 15. This hourly rate will be used to calculate the opportunity staff cost to child care facilities.

[37] The average annual salary of education and child care administrators, preschool and daycare (11-9031) was estimated using the Bureau of Labor Statistics May 2021 State Occupational Employment and Wage Estimates page for North Carolina (May 2021 is the most recently available data), and which is available at: https://www.bls.gov/oes/current/oes_nc.htm. (Accessed 9/26/22)

[38] The value of benefits was identified as 22.89% for retirement and $7,019 for health benefits using NC Public School Personnel Employee Salary and Benefits Manual 2022-2023, which is available at: https://www.dpi.nc.gov/documents/fbs/finance/salary/salary-manual-2022-23pdf/download?attachment. Some

Table 15: Average Hourly Pay Rate for Child Care Operators

Salary and Fringe Benefits		
Salary/Benefit	% of Salary	Total Value
Salary	100	$44,190.00
All Benefits[39]	11.9	$5,258.61
Hourly Rate Calculation		
Total Salary + Fringe	Hours Worked / Year	Hourly Rate
$49,448.61	2080	$23.77

Training will be needed for child care facility operators or their designees to understand the Rule requirements. This training is expected to be delivered by the state vendor. Based on our experience, it is estimated that this training will take one person approximately **3 hours** to complete.

Staff time will be needed to coordinate with lead-based paint and asbestos inspectors and abatement professionals to have the inspection and abatement work completed and provide reports and other documents to DPH. Once granted access to a building(s), the designee will not have to be present for the inspection which depends on the square feet being inspected (an inspector can do about 10,000 square feet in an 8-hour day). We estimate that it will take approximately **6 hours** for one person to compile the necessary inspection and abatement documents, coordinate with lead-based paint and asbestos inspectors and abatement professionals, and provide reports to DPH.

Staff time devoted to this work is expected to be an opportunity cost to child care facilities, as it is not expected that child care facilities will hire additional staff for these purposes. Unlike with schools, child care facilities do not have to provide a match on abatement activities. However, if funding is no longer available, then the abatement costs could fall to the child care facility. As discussed above, it is expected that there will be sufficient SLFRF funds to cover the cost of inspection for lead-based paint and asbestos hazards, but there may not be sufficient funds for abatement. In that circumstance, the child care facility would be responsible for the cost of abatement. A child care facility may choose to restrict access to an identified hazard rather than pursue full abatement as a cost saving measure or even a zero-cost alternative in many cases. In the space of lead-based paint and asbestos hazard abatement, this may include maintaining surface coating or covering deteriorating asbestos or lead-based paint or restricting access to a room. This outcome is more likely if SLFRF funds are not available.

The overall fiscal impact to child care facilities for lead-based paint and asbestos inspections and abatement is reflected in Table 16.

components of compensation, such as paid sick leave or paid vacation leave, will be variable amongst employees and based upon years of service as a local government employee. (Accessed 9/26/22)

[39] The value of benefits was identified using the U.S. Bureau of Labor Statistics' latest available figures from June 2022 on employer costs for employee compensation for private industry health care and social assistance, which is available at: https://www.bls.gov/news.release/ecec.t04.htm. Some components of compensation, such as paid sick leave or paid vacation leave, will be variable amongst employees and based upon years of service as a local government employee.

Table 16. Estimated Cost to Licensed Child Care Facilities for Inspecting for and Abating Lead-Based Paint and Asbestos Hazards

Staff Activity	Estimated Hours	Estimated Hourly Rate	Estimated Cost Per Child Care Facility
Estimated opportunity cost to receive training	3	$23.77	$71.31
Estimated opportunity cost for administrative functions	6	$23.77	$142.62
Estimated Total Cost Per Licensed Child Care Facility ….……...$213.93			
Number of Licensed Child Care Facilities: 5,545			
Estimated Total Opportunity Cost to Licensed Child Care Facilities…….$1,186,241.85			
Estimated Actual Cost of Abatement (not covered SLFRF)…….……Unquantifiable It is likely that at least a portion of costs for abatement of lead-based paint and asbestos will be covered by SLFRF funds. It is anticipated that child care facilities would be responsible only for those costs that exceed available SLFRF funding.			

The overall estimated opportunity cost to licensed child care facilities is $1.2M with an unquantifiable actual cost to cover abatement costs not covered by SLFRF (if exhausted or otherwise unavailable).

Benefits

Revenue to Private Laboratories

There will be an impact to private accredited laboratories that perform analyses for water samples as well as lead-based paint and asbestos inspection samples as described in the "*State Government Impact"* section above. Based on those calculations, we anticipate that state certified private laboratories would receive approximately $17,459,939 in revenue from water testing (Table 1), approximately $6,637,430 in revenue from lead-based paint testing (Table 4: $3,175,340 + $463,980 + $2,998,110), and approximately $28,148,875in revenue from asbestos testing (Table 5: $13,838,475 + $2,696,100 + $11,614,300). This comes to an estimated total revenue benefit of **$52,246,244**.

Revenue to Professionals Conducting Water Outlet Remediation and Lead-Based Paint and Asbestos Hazard Inspection and Abatement Work

There will be an impact on the field of accredited and certified professionals that do lead and asbestos work, including ancillary professions such as plumbers, contractors, building managers and custodians, as well as certified lead risk assessors and accredited asbestos managers. The impact is likely in the form of increase in paid work opportunities for the industry statewide, and possibly neighboring states if the availability of plumbers and other specialists run short. This impact is difficult to quantify. However, extrapolating from Tables 2, 4, and 5 in the *State Government Impact* section, we can estimate approximately $1,080,400 – $4,321,600 in revenue from water outlet mitigation (Table 2), approximately $3,935,115.60 in revenue from lead-based paint inspections (Table 4: $1,656,326 + $193,617.6 + $2,085,172), and approximately $4,363,288.80 in revenue from asbestos inspections (Table 5: $1,836,548 + $214,684.80 + $2,312,056). There will also be revenue from the lead-based paint and asbestos abatement work, but, as above, this is unquantifiable at this time. This comes to an estimated total revenue benefit of **$9,378,804.40 - $12,620,004.40, plus unquantifiable revenue due to abatement work**.

Public Health Benefit

The proposed rules will reduce children's risk of exposure to lead and asbestos in licensed child care facilities and public schools by requiring inspection/testing for these hazards and either restricted access to the hazard or remediation/abatement. Investing in lead and asbestos hazard remediation will also lead to an increase in the public's trust that public schools and licensed child care facilities are safe environments for children and staff.

The public health benefits of this one-time testing and remediation effort, documented in detail in the following sections, are potentially substantial. The adverse effects of lead and asbestos have been well documented, even at low levels. The magnitude of the expected benefits for this effort is dependent upon the frequency and severity of lead and asbestos hazards occurring at North Carolina's schools and child care facilities, and the contribution of these hazards to the child's overall exposure from all environmental sources. Baseline data is not available to estimate the scope of lead-based paint and asbestos hazards in child care facilities or schools. Testing for lead in water in child care centers was required separately under rule 15A NCAC 18A .2816, with testing paid for through the EPA WIIN Grant. Under that work, it was found that approximately 3.3% of outlets were producing lead in water at or above the lead hazard level. This package of rules requires similar testing in schools. In schools, we estimate that 7-18% of outlets used for drinking or food preparation may be found to produce lead in water at or above the lead hazard level.

With the proposed testing and inspection protocols and remediation/abatement measures, the rules aim to strike a balance between risk and cost. While these Rules will not eliminate all lead and asbestos hazards at schools and child care facilities, hazards that are restricted or remediated through abatement (e.g., complete removal of asbestos-containing floor tiles and replacement with new asbestos-free floor tiles, removal and replacement of water fountains or fixtures) are largely expected to have long-term benefits to the children and staff that inhabit those spaces. In particular, once abated, the hazards are either permanently eliminated or treated such that the hazard no longer presents a threat for a long period of time. Lead abatement, which includes removing and replacing building components, or covering large surfaces including walls, ceilings, and exposed soil to ensure property is free of all traces of lead, should last 20 years or longer and will impact many cohorts of children. Installation of a water filter or maintaining the surface coating over lead-based paint without removing the underlying paint, will yield immediate benefits, but these benefits may decline over time in the absence of maintenance. It is also possible for new hazards to arise from continued deterioration as currently intact lead-based paint and asbestos (which do not currently present a hazard) deteriorate. However, existing federal and state laws require periodic sanitation and asbestos specific inspections, which are opportunities to identify new deterioration or maintenance issues. Therefore, most of the health benefits are expected to persist for future cohorts of children beyond this one-time investment.

Benefit of Reducing Exposure to Lead

The primary benefits of reduced lead exposure include avoided healthcare costs for each averted case of elevated blood lead levels and avoided losses in lifetime earnings. Any potential benefits from reduced special education and criminal justice system costs are likely to be small.

Healthcare Cost Savings

Exposure to lead hazards has a cumulative and deleterious effect on health, particularly the health of young children under the age of six who are still developing mentally and physically. There is no safe level of lead exposure. Even low levels of lead have been linked to harmful changes in health, behavior, and intelligence, and children with relatively low blood lead levels require regular monitoring and medical and environmental intervention. Many factors such as a person's age, length of exposure, source of exposure, amount of exposure, and nutritional status can affect how a person's body reacts to lead. As blood lead levels increase, the costs associated with uncovering and treating the health effects also increase. For example, at low blood lead levels, children may require a nurse visit to conduct diagnostic testing, venipuncture, and a lead assay at an estimated cost of $94. At high blood lead levels, chelation therapy is required, at a cost of $1,702 for oral

chelation or $4,390 for intravenous chelation.[40] This cost range, $94 - $4,390, is possible across all blood lead levels, but the higher costs are generally associated with the small number of children with very high blood lead levels (>45 µg/dL).

The total benefit to the private sector in the form of avoided health care costs is a function of the number of children that are expected to avoid a blood lead level at or greater than 3.5 mg/dL, since it is at a blood lead level of 3.5 mg/dL that it is recommended that children receive medical intervention.[41] It is difficult to predict how many of the estimated cases of elevated blood lead levels may be avoided following implementation of the proposed rules.

Lifetime Earnings

Lead exposure can influence children's blood lead levels, leading to decreased IQ and ultimately lower lifetime earnings due to loss of productivity. Lanphear *et al.* compared the blood lead levels of a random sample of 183 children ages 12 – 31 months, taking into account various environmental lead exposures including paint, soil, and water.[42] After controlling for other environmental factors, lead in various environmental media was found to be independently associated with blood lead levels and their relationship can be modelled by a logarithmic relationship - meaning that even small amounts of lead exposure can affect blood lead levels. They found that blood lead levels are affected rapidly from exposure to lead at 0-20 ppb, and then level off at higher water concentrations. Although less research has been done on older children and adults because they do not exhibit the same high-risk behaviors (e.g., crawling, mouthing) as younger children, lead exposure has been associated with IQ and behavioral deficits in school-age children,[43] and increased risk of cardiovascular death and kidney damage in adults.[44]

Grosse *et al.* suggests that a one mg/dL increase in blood lead level is associated with a decrease in IQ of 0.185-0.323 points (average = 0.254 points) and, for every IQ point lost, a loss in lifetime earnings of 1.76-2.38% (average= 2.07%), due to the negative impact of lowered IQ on productivity.[45] Again, it is difficult to predict the exact benefit here due to lack of data on baseline exposure at the facilities, overall environmental exposure, and uncertainty regarding how much the testing and remediation will lower overall lead exposure.

Special Education and Criminal Justice System Cost Savings

Children with elevated blood lead levels have an increased need for special education due to their developmental and cognitive impairments. Schwartz (1994) found that 20% of children with blood lead levels above 25 mg/dL require special education for an average of three years.[46] Korfmacher (2003) suggests that special education costs $19,778 annually per child.[47] In North Carolina in 2017, less than 0.01% of blood

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[40] Elise Gould, Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control, 117 Environmental Health Perspectives, 1162-1167 (2009); Kemper et al., Cost-effectiveness Analysis of Lead Poisoning Screening Strategies following the 1997 Guidelines of the Centers for Disease Control and Prevention, 152 Archives of Pediatrics and Adolescence Medicine, 1202-1208; inflated to 2018 USD.

[41] Blood Lead Reference Value. https://www.cdc.gov/nceh/lead/data/blood-lead-reference-value.htm (Accessed 9/26/22)

[42] Bruce P. Lanphear et al., Environmental Exposures to Lead and Urban Children's Blood Lead Levels, 76 Environmental Research, Section A 120-130 (1998).

[43] Hornung RW, Lanphear BP, Dietrich KN. Age of greatest susceptibility to childhood lead exposure: a new statistical approach. Environ Health Perspect. 2009 Aug;117(8):1309-12. doi: 10.1289/ehp.0800426. PMID: 19672413; PMCID: PMC2721877.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2721877/#ref-list-1title

[44] Lanphear, Bruce P., Stephen Rauch, Peggy Auinger, Ryan W. Allen, and Richard W. Hornung. "Low-Level Lead Exposure and Mortality in US Adults: A Population-Based Cohort Study." (The Lancet Public Health 3, no. 4, 2018): e177-e184. https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(18)30025-2/fulltext

[45] Scott D. Grosse et al., Economic Gains Resulting from the Reduction in Children's Exposure to Lead in the United States, 110 Environmental Health Perspectives 563- 570 (2002).

[46] Joel Schwartz, *Societal Benefits of Reducing Lead Exposure*, 66 Environmental Research, 105-124 (1994).

[47] Katrina Korfmacher, *Long-Term Costs of Lead Poisoning: How Much Can New York Save by Stopping Lead?* Working Paper: Environmental Health Sciences Center, University of Rochester (2003); inflated to 2018 USD.

lead level tests for one- and two-year-old children were above 25 mg/dL. We suggest that regulatory benefits in the form of avoided special education costs are likely small due to the low frequency of blood lead poisoning at this level and the size of the estimated reduction in blood lead levels. However, in the unusual occurrence where a school or facility's baseline lead level is exceptionally high, the Rules could still generate benefits in this category.

Similarly, benefits from reduced crime costs are possible but likely modest due to the estimated number of treated children and the size of the reduction in blood lead levels. Crimes including burglaries, robberies, aggravated assault, rape, and murder are correlated with blood lead levels, based on evidence of the effect of preschool blood lead levels on future criminal activity.[48] A one ug/dL reduction in blood lead levels among all preschool-aged children would result in avoiding 2.9% of burglaries, 0.4% of robberies, 5.1% of aggravated assaults, 3.7% of rapes, and 2.9% of murders. The following costs have been estimated for each type of crime: $5,112 for burglaries, $29,154 for robberies, $25,957 for aggravated assault, $36,221 for rape, $39,656 for murder.[49] Additionally, studies have demonstrated the prevalence and cost of juvenile incarceration associated with lead exposure, which has indicated that frequency and cost associated with juvenile crime could be reduced by reducing childhood blood lead levels. Overall, the contribution of special education savings and crime savings are expected to be minimal.

Data from the Health Impact Project estimate that eliminating all lead hazards from the places where children frequent could have benefits that are valued at $84 billion per birth cohort, and savings would be expected to continue over time to future cohorts of children who would inhabit the same spaces.[50]

Benefit of Reducing Exposure to Asbestos Hazards

The primary benefits of reduced exposure to asbestos hazards include avoided losses in lifetime earnings and the avoided healthcare costs of managing asbestos-related diseases such as asbestosis, mesothelioma, and lung cancer. Asbestos-related diseases generally have a long latency period, meaning that many years may elapse between initial exposure and the presentation of disease. As a result, children and young adults who are exposed to asbestos fibers early in life have a higher chance of developing asbestos-related diseases in their lifetime than adult counterparts who are exposed later in life. A 2013 research report from the U.K. government's Committee on Carcinogenicity concluded a 5-year-old child's lifetime risk of developing mesothelioma was approximately five times greater than that of a 30-year-old adult.[51]

Estimated annual healthcare costs in the U.S. from asbestos-related mesothelioma alone is nearly $2 billion.[52] This excludes loss of productivity or asbestos litigation costs, which are estimated at $2.3 billion annually.

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[48] Rick Nevin, Understanding International Crime Trends: The Legacy of Preschool Lead Exposure, 104 Environmental Research, 315-336 (2007).

[49] Elise Gould, *Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control,* 117 Environmental Health Perspectives, 1162-1167 (2009); inflated to 2018 USD; These cost estimates incorporate the victim costs, legal proceedings, incarceration fees, and lost earnings of both the criminal and the victim. These estimates are conservative as they do not account for lost wages, pain, suffering, other physical and mental health care costs, and lost quality of life.

[50] Health Impact Project. https://www.pewtrusts.org/-/media/assets/2017/08/hip_childhood_lead_poisoning_report.pdf (Accessed 9/26/22)

[51] Public Health England. Guidance: Relative vulnerability of children to asbestos compared to adults. A statement from the Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment. (2013) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/315919/vulnerability_of_children_to_asbestos.pdf (Accessed 9/26/22)

[52] Allen LP, Baez J, Stern MEC, Takahashi K, George F. Trends and the Economic Effect of Asbestos Bans and Decline in Asbestos Consumption and Production Worldwide. Int J Environ Res Public Health. 2018 Mar 16;15(3):531. doi: 10.3390/ijerph15030531. PMID: 29547510; PMCID: PMC5877076. Accessed 9/27/22 at https://www.ncbi.nlm.nih.gov/pubmed/29547510

These estimates may be even higher, as asbestos-related cancers are often not reported[53] and recorded accordingly. The average per episode costs of mesothelioma in an in-patient setting in the US in 2014 was $24,901 (95% confidence interval (CI): $20,819–$28,983) and the total cost of chemotherapy was estimated as at $38,779, excluding facility costs or management of toxicity.[54]

Asbestos exposure also exacerbates conditions such as asthma, reducing productivity and impacting learning. Reduced asbestos exposures provide benefits of more successful learning outcomes for students who have chronic respiratory illnesses such as asthma. As with lead, future cohorts of children exposed to the same spaces would also receive equivalent benefits from abatement activities that include complete removal of hazards because after abatement the hazard is eliminated.

TOTAL ESTIMATED PRIVATE SECTOR IMPACT

Table 17 summarizes the total estimated local government impact discussed in this section of the fiscal note.

Table 17: Estimated Private Sector Impact

Estimated Opportunity Costs	
Total estimated one-time opportunity cost to licensed child care facilities	$1,186,241.85
Estimated Actual Costs	
Total estimated private cost of abatement (not covered SLFRF)	Unquantifiable
Estimated Benefits	
Revenue Benefit to Private Laboratories	$52,246,244
Revenue Benefit to Professionals conducting water outlet remediation and lead-based paint and asbestos inspections	$9,378,804.40 - $12,620,004.40
Revenue Benefit to Professionals conducting lead-based paint and asbestos abatement	Unquantifiable
Benefit to reducing exposure to lead and asbestos, including healthcare cost savings and increase in lifetime earnings	Unquantifiable
Total Estimated Benefits	**$61,625,048.40 - $64,866,248.40, with the private cost of abatement not covered by SLFRF, abatement revenue to professionals, and public health benefits unquantifiable**

Alternatives

Since these rules will create a substantial economic impact, we have also included a description of two alternatives that were considered.

Alternative #1: Define "inspection" as a surface-by-surface investigation, as elsewhere in **10A NCAC 41C**

S.L. 2021-180, Sec. 9G.8, requires public school units and licensed child care facilities to conduct an inspection for lead-based paint, but defers to the Commission for Public Health in the implementation of that inspection. As set out in other 41C rules, a lead-based-paint inspection involves a surface-by-surface inspection of all surfaces in a building. It was considered that this would be an appropriate inspection to

[53] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5982039/ (Accessed 9/26/22)

[54] Borrelli E, Babcock Z, Kogut S. Costs of medical care for mesothelioma. Rare Tumors. 2019 Jul 17;11:2036361319863498. doi: 10.1177/2036361319863498. PMID: 31360386; PMCID: PMC6637828.

require as part of these rules. However, as the legislation is focused on identifying and protecting children from hazards, it was determined instead that it would best meet the goals of identifying and assessing the nature and severity of hazards to align the required inspection with the components of a risk assessment, rather than a surface-by-surface inspection. A risk assessment is less sweeping in scope and also less expensive than surface-by-surface inspection. By definition, "Lead Inspection" means a surface-by-surface investigation to determine the presence of lead-based paint and the provision of a report explaining the results of the investigation. "Risk Assessment" means (1) an on-site investigation to determine the existence, nature, severity, and location of lead-based paint hazards, and (2) the provision of a report by the individual or firm conducting the risk assessment, explaining the results of the investigation and the options for reducing lead-based hazards. The chosen approach (risk assessment) allows for hazards to be appropriately identified while also being good stewards of a limited time and funding.

Alternative #2: Require all public schools and licensed child care facilities to do new inspections (not accepting any recent inspections or other documentation)

S.L. 2021-180, Sec. 9G.8, requires public school units and licensed child care facilities to conduct inspections for lead-based paint and asbestos. In developing the Rules, one option considered was to require that all public schools and child care facilities complete new inspections as part of these programs. Ultimately this alternative was rejected because it was determined that, in some circumstances, alternative documentation exists regarding lead-based paint and asbestos hazards in these facilities. Under the proposed rules, a public school or licensed child care facility can meet the requirements for a lead-based paint inspection by submitting documentation of a recent inspection or a signed statement attesting that the building was built after 1978 and no lead-based paint was used. Similarly, under the proposed rules, a public school or licensed child care facility can meet the requirements for an asbestos inspection by submitting documentation of a recent inspection that meets the requirements or that demonstrates that asbestos containing material was not used in the construction of the building (if built after October 12, 1988). It also allows licensed child care facilities to produce a property tax record showing the building occupied by the facility was built after October 12, 1988 in lieu of an inspection. This approach reduces unnecessary inspection costs (freeing additional funds for abatement) and also allows schools and child care facilities to move more quickly to abate known hazards.

Summary

The proposed rules implement Session Law 2021-180, Section 9G.8.(a), which appropriated $150 million in non-recurring funds, allocated from ARPA, SLFRF to establish a program for the inspection, testing, remediation, and abatement of asbestos, lead based paint, and lead in water hazards in public schools and licensed child care facilities. The proposed rules are anticipated to have an economic impact on State Government, Local Government, and the Private Sector that together are estimated to amount to a substantial economic impact. It is anticipated that most of the costs of these programs will be paid for by the State with SLFRF funding. It is expected that there will be sufficient SLFRF funds to cover the cost of testing/inspecting for hazards. However, there may not be sufficient SLFRF funds to cover all costs associated with remediation/abatement. In that circumstance, the public school or child care facility would be responsible for the cost of remediation/abatement. There are some opportunity costs to local health departments, public schools, and licensed child care facilities. Public schools will also have a continuing cost to replace filters in remediated water outlets and to cover 1/3 of the cost of any lead-based paint and abatement work. In the private sector, it is expected that this work will generate revenue for certain professionals. It is also anticipated to have a significant public health benefit for children at public schools and licensed child care facilities who will have reduced exposure to lead and asbestos hazards which will manifest in decreased healthcare costs and increased lifetime earnings. Table 18 provides an overall summary of the costs and benefits of these proposed rules.

Table 18: Summary of Estimated Fiscal Impact

Estimated Actual Costs (5-Year Period)	
Total Estimated State Costs	$76,966,280.17 - $95,214,646.42, with lead-based paint/asbestos abatement unquantifiable. The total quantified and unquantified State costs are not anticipated to exceed the $150 million allocated SLFRF funding.
Total Estimated Local Costs	$7,736,625 - $18,567,900, with the 1/3 match for lead-based paint/asbestos hazard abatement and the cost of remediation/abatement not covered by SLFRF unquantifiable
Total Estimated Private Costs	Abatement not covered by SLFRF, Unquantifiable
Total Estimated Actual Costs	**$84,702,905.17 - $113,782,546.42, with lead-based paint/asbestos abatement, 1/3 local match for lead-based paint/asbestos hazard abatement, and any local/private cost of remediation/abatement not covered by SLFRF unquantifiable**
Estimated Opportunity Costs (5-Year Period)	
Total Estimated State Costs	$1,858,513.47
Total Estimated Local Costs	$3,472,843.61
Total Estimated Private Costs	$1,186,241.85
Total Estimated Opportunity Costs	**$6,517,598.92**
Total Estimated Costs (5-Year Period)	
Total Estimated Costs (actual plus opportunity)	**$91,220,504.09 - $120,300,145.34, with lead-based paint/asbestos abatement, 1/3 local match for lead-based paint/asbestos hazard abatement, and any local/private cost of remediation/abatement not covered by SLFRF unquantifiable**
Estimated Benefits	
Total Estimated Benefits	**$61,625,048.40 - $64,866,248.40 with abatement revenue and public health benefits (decreased healthcare costs, increased lifetime earnings) unquantifiable**

Appendix: Proposed Rule Text

SECTION .1000 – LEAD AND ASBESTOS INSPECTION, TESTING, ABATEMENT, AND REMEDIATION IN NORTH CAROLINA PUBLIC SCHOOLS AND LICENSED CHILD CARE FACILITIES

10A NCAC 41C .1001 DEFINITIONS

For the purposes of this Section, the following definitions shall apply:

(1) "Department" means the North Carolina Department of Health and Human Services.

(2) "Licensed child care facility" means a child care facility as defined at G.S. 110-86(3).

(3) "Public school" means a public school unit as defined at G.S. 115C-5(7a).

(4) "Program" means the North Carolina Department of Health and Human Services, Division of Public Health, Environmental Health Section.

(5) "Responsible individual" means the superintendent of a public school operated by a local school administrative unit, as defined in G.S. 115C-5(6), or the superintendent's designee(s); the governing body of any charter school or school operated under Article 7A or Article 9C of G.S. 115C or that body's designee(s); or the operator of a licensed child care facility or the operator's designee(s), as applicable.

History Note: *Authority S.L. 2021-180, s. 9G.8;*
Temporary Adoption Eff. April 29, 2022.

10A NCAC 41C .1002 FUNDING

(a) Public schools and licensed child care facilities in North Carolina shall be eligible to participate in the funding mechanisms established in accordance with S.L. 2021-180, s. 9G.8. to fully or partially offset the cost of conducting testing for lead in water and inspections for asbestos and lead-based paint hazards, when a test for lead in water is conducted by May 1, 2024 ~~within 24 months after the effective date of this Rule~~ or an inspection for lead-based paint or asbestos is conducted by May 1, 2024 ~~within 18 months after the effective date of this Rule~~ and the test or inspection is conducted in accordance with the rules of this Section.

(b) Public schools and licensed child care facilities that are eligible to participate under Paragraph (a) of this Rule shall also be eligible to participate in the funding mechanisms established in accordance with S.L. 2021-180, s. 9G.8. to fully or partially offset the cost of conducting remediation of lead in water and abatement of asbestos and lead-based paint hazards identified under this Section when the following requirements are met:

(1) lead or asbestos is detected that meets the requirements under the rules of this Section for abatement or remediation;

(2) the abatement or remediation, as applicable, is performed in accordance with the rules of this Section; and

(3) replacement materials used to abate asbestos hazards do not contain more than 1 percent asbestos and replacement materials used to abate lead-based paint hazards do not contain lead in excess of 90 parts per million.

(c) Notwithstanding Paragraphs (a) and (b) of this Rule, licensed child care centers conducting testing and remediation of water outlets used for drinking or food preparation pursuant to 15A NCAC 18A .2816 shall be eligible to participate in the funding mechanisms established in accordance with S.L. 2021-180, s. 9G.8. for testing conducted in accordance with that Rule by May 1, 2024 ~~within 24 months after the effective date of this Rule~~ and remediation conducted in accordance with that Rule between May 1, 2020 ~~24 months prior to the effective date of this Rule~~ and the date on which funds are no longer available in accordance with S.L. 2021-180, s. 9G.8.(d).

(d) Notwithstanding Paragraphs (a) and (b) of this Rule, if asbestos or lead-based paint is detected during a capital, renovation, or repair project in a public school or licensed child care facility, the public school or licensed child care facility shall be eligible to participate in the funding mechanisms established in accordance with S.L. 2021-180, s. 9G.8. as follows:

(1) to fully or partially offset the cost of conducting an inspection in accordance with Rules .1003(b) or .1004(b) of this Section, as applicable, except that the inspection may be limited to the area in the public school or licensed child care facility where the capital, renovation, or repair project is being conducted; and

(2) to fully or partially offset the cost of conducting abatement when lead-based paint or asbestos is detected that meets the requirements under the Rules of this Section for abatement and abatement is conducted in accordance with Rules .1003(e) and .1004(e) of this Section and with the limitation on materials set out in Subparagraph (b)(3) of this Rule, except that the abatement may be limited to the area in the public school or licensed child care facility where the capital, renovation, or repair project is being conducted.

(e) Inspections and abatements described in Paragraph (d) of this Rule that are limited to the area in the public school or licensed child care facility where the capital, renovation, or repair project is being conducted shall not satisfy the facility-wide inspection requirements for public schools and licensed child care facilities set out in Rules .1003 and .1004 of this Section.

(f) Notwithstanding the foregoing, to be eligible to participate in any funding mechanism under this Rule, responsible individuals shall make all records regarding testing, inspection, abatement, and remediation available to the Department upon request, including, but not limited to, itemized expense reports for activities funded under S.L. 2021-180, s. 9G.8.

(g) Nothing in this Rule shall require the Department to provide funding if the Department determines there are not sufficient funds available in accordance with S.L. 2021-180, s. 9G.8.(d).

History Note: *Authority S.L. 2021-180, s. 9G.8;*
Temporary Adoption Eff. April 29, 2022.

10A NCAC 41C .1003 ASBESTOS INSPECTIONS AND ABATEMENT IN NORTH CAROLINA PUBLIC SCHOOLS AND LICENSED CHILD CARE FACILITIES

(a) For the purposes of this Rule, the following definitions shall apply:

(1) "Abatement" means as defined at G.S. 130A-444(4), and also includes renovation activities that are carried out to repair, maintain, remove, isolate, enclose, replace, or encapsulate asbestos containing material. Abatement shall not be considered complete until a final clearance inspection of the public

school or licensed child care facility is performed by an air monitor in accordance with 40 C.F.R. 763.90(i).

(2) "Air monitor" means as defined at G.S. 130A-447 and 10A NCAC 41C .0601(3).

(3) "Asbestos" means as defined at G.S. 130A-444(2).

(4) "Asbestos containing material" means as defined at G.S. 130A-444(3).

(5) "Asbestos hazard" means a condition that results in exposure to asbestos in excess of the standards set forth in 10A NCAC 41C .0607(a) or to a category of asbestos containing material defined at 40 C.F.R. 763.88(b)(1)-(6).

(6) "Inspection" in a licensed child care facility means an examination of the facility for the presence of asbestos hazards that is conducted by an inspector in accordance with the rules of Section .0600 of this Subchapter. "Inspection" in a public school means a reinspection conducted in alignment with G.S. 130A-445, 10A NCAC 41C .0604, and 40 C.F.R.763.85(b).

(7) "Inspector" means as defined at G.S. 130A-447 and 10A NCAC 41C .0601(a)(7).

(8) "Management Planner" means as defined at G.S. 130A-447 and 10A NCAC 41C .0601(a)(9).

(b) Each responsible individual shall ensure that an inspection is conducted for asbestos hazards in each public school or licensed child care facility for which he or she is responsible by May 1, 2024. ~~within 18 months of the effective date of this Rule.~~ Inspections for asbestos hazards shall be performed by an inspector and documented in an inspection survey report in accordance with the rules of Section .0600 of this Subchapter. A management planner shall review the inspection survey report to determine whether an asbestos hazard has been detected and shall document his or her findings in an asbestos management plan in accordance with Rule 10A NCAC 41C .0604.

(c) If the management planner determines that an asbestos hazard has been detected, then the responsible individual shall restrict access to the identified asbestos hazard until it is abated in accordance with this Rule.

(d) A determination by a management planner that an asbestos hazard is present in a public school or licensed child care facility that is documented in an asbestos management plan in accordance with Paragraph (b) of this Rule shall satisfy the requirement of Rule .1002(b)(1) or (d)(2) of this Section, as applicable, that asbestos is detected that meets the requirements for abatement.

(e) Abatement shall be performed by one or more professionals who are accredited in accordance with 10A NCAC 41C .0602 and shall be performed in accordance with the rules of Section .0600 of this Subchapter.

(f) The information listed in this Paragraph shall be submitted to the Program by email to ARPA-Reimbursement@dhhs.nc.gov: ~~general.hccu@dhhs.nc.gov:~~

(1) Within 45 calendar days following the date on which an inspection is completed pursuant to this Rule, the management planner shall ~~submit:~~ report the following:

(A) the name, address, email address, and phone number of the responsible individual;

(B) the name, address, email address, phone number, and accreditation number of the management planner;

(C) the name and address, including county, of the individual school and the public school unit or the licensed child care facility;

(D) whether the facility for which the responsible individual is submitting the information is a public school or a licensed child care facility;

(E) whether the inspection identified the presence of an asbestos hazard;

(F) a description of any identified asbestos hazard; and

(G) the results of any laboratory testing conducted during the inspection.

(2) If the public school or licensed child care facility plans to use a previous inspection or documentation under Paragraph (h) of this Rule, then the responsible individual shall submit a copy of the inspection survey report, reinspection report, or management plan associated with the previous inspection or the documentation by May 1, 2024 ~~within 18 months after the effective date of this Rule~~ in lieu of meeting the requirements in Subparagraph (f)(1) of this Rule.

(3) At least 10 calendar days before abatement conducted pursuant to this Rule begins, the responsible individual shall ~~submit:~~ report the following:

(A) the name, address, email address, and phone number of the responsible individual;

(B) the name and address, including county, of the individual school and the public school unit or the licensed child care facility, as applicable;

(C) the ~~names, addresses, email addresses, phone numbers,~~ names and accreditation numbers of the professionals who will conduct the abatement ~~abatement;~~ and the email address and phone number of the on-site asbestos supervisor who will oversee the abatement;

(D) whether the facility for which the responsible individual is submitting the report is a public school or a licensed child care facility; and

(E) the dates on which the abatement is scheduled to occur. ~~occur; and~~

~~(F) a description of the planned abatement.~~

(4) Within 45 calendar days following the date on which an abatement completed pursuant to this Rule, the responsible individual shall ~~submit:~~ report the following:

(A) the name, address, email address, and phone number of the responsible individual;

(B) the name and address, including county, of the individual school and the public school unit or the licensed child care facility;

(C) whether the facility for which the responsible individual is submitting the report is a public school or a licensed child care facility;

(D) the date on which the abatement was completed; and

(E) a report of the results of the final clearance inspection.

(g) In accordance with 10A NCAC 09 .0601 and 10A NCAC 09 .1719, as applicable, licensed child care facilities shall inspect for asbestos hazards in accordance with this Rule to ensure these facilities are safe and free from hazards that may injure children. The failure of a responsible individual in a licensed child care facility to inspect for asbestos hazards or to restrict access to or abate identified asbestos hazards in accordance with this Rule shall be considered a violation of 10A NCAC 09 .0601 and 10A NCAC 09 .1719, as applicable.

(h) The requirements of Paragraph (b) of this Rule shall be considered met if:

(1) the public school or licensed child care facility previously completed an inspection of its buildings that meets the requirements of Section .0600 of this Subchapter, provided that building material that was sampled during a previous inspection and reported as trace asbestos or between 0 percent and 10

percent asbestos content shall be reinspected in accordance with the process established in Paragraphs (b) - (f) of this Rule; ~~or~~

(2) the public school or licensed child care facility produces documentation ~~is produced~~ in accordance with 40 C.F.R. .763.99(a)(7); or ~~763.99(a)(7).~~

(3) the licensed child care facility produces a property tax record that shows the building occupied by the licensed child care facility was built after October 12, 1988.

History Note: *Authority S.L. 2021-180, s. 9G.8;*
Temporary Adoption Eff. April 29, 2022.

10A NCAC 41C .1004 LEAD-BASED PAINT INSPECTIONS AND ABATEMENT IN NORTH CAROLINA PUBLIC SCHOOLS AND LICENSED CHILD CARE FACILITIES

(a) For the purposes of this Rule, the following definitions shall apply:

(1) "Abatement" means as defined at 40 C.F.R. 745.223, and also includes interim controls as defined at 40 C.F.R. 745.83. Abatement shall not be considered complete until a final clearance inspection of the public school or licensed child care facility is performed by a certified risk assessor in accordance with the standards set forth at 40 C.F.R. 745.227. ~~745.85(b).~~

(2) "Certified Project Designer" means an individual who meets the requirements for a project designer as set forth in G.S. 130A-453.03 and Rule .0802 of this Subchapter.

(3) "Certified Supervisor" means an individual who meets the requirements for a supervisor as set forth in G.S. 130A-453.03 and Rule .0802 of this Subchapter.

(4) "Certified Risk Assessor" means an individual who meets the requirements for a risk assessor as set forth in G.S. 130A-453.03 and Rule .1006 of this Section.

(5) "Inspection" means a risk assessment conducted in accordance with 40 C.F.R. 745.223.

(6) "Inspection report" means a summary prepared in accordance with Rule .0807(b) of this Subchapter.

(7) "Lead-based paint hazard" means as defined at G.S. 130A-131.7(6).

(8) "Lead poisoning hazard" means as defined at G.S. 130A-131.7(7).

(9) "Occupant protection plan" means as defined at Rule .0801(a)(6) of this Subchapter.

(b) Each responsible individual shall ensure that an inspection is conducted for lead-based paint hazards in each public school or licensed child care facility for which he or she is responsible by May 1, 2024. ~~within 18 months of the effective date of this Rule.~~ Inspections for lead-based paint hazards shall be performed by a certified risk assessor and documented in an inspection report. The certified risk assessor shall determine whether a lead-based paint hazard is present in the public school or licensed child care facility based on the inspection, in accordance with the rules of Sections .0800 and .0900 of this Subchapter, and document the determination in the inspection report. If the certified risk assessor determines that a lead-based paint hazard exists, then an occupant protection plan shall be written by a certified supervisor or certified project designer in accordance with 40 C.F.R. 745.227(e)(5) and the rules of Section .0800 of this Subchapter.

(c) If the certified risk assessor determines that a lead-based paint hazard has been detected, then the responsible individual shall restrict access to the identified lead-based paint hazard until abated in accordance with this Rule.

(d) A determination by a certified risk assessor that a lead-based paint hazard is present in the public school or licensed child care facility that is documented in the inspection report in accordance with Paragraph (b) of this Rule shall satisfy the requirement of Rule .1002(b)(1) or (d)(2) of this Section, as applicable, that lead is detected that meets the requirements for abatement.

(e) Abatement shall be performed by one or more professionals who are certified in accordance with G.S. 130A-453.03 and Rules .0802 or .0902 of this Subchapter and shall be performed in accordance with the rules of Sections .0800 and .0900 of this Subchapter, as applicable.

(f) The information listed in this Paragraph shall be submitted to the Program by email to ARPA-Reimbursement@dhhs.nc.gov: ~~general.hccu@dhhs.nc.gov:~~

(1) Within 45 calendar days following the date on which an inspection is completed pursuant to the Rule, the certified risk assessor shall ~~submit:~~ report the following:

(A) the name, address, email address, and phone number of the responsible individual;

(B) the name, address, email address, phone number, and certification number of the certified risk assessor;

(C) the name and address, including county, of the individual school and the public school unit or the licensed child care facility;

(D) whether the facility for which the responsible individual is submitting the report is a public school or a licensed child care facility;

(E) whether the inspection identified the presence of a lead-based paint hazard;

(F) a description of any identified lead-based paint hazard; and

(G) the results of any laboratory testing conducted during the inspection.

(2) If the public school or licensed child care facility plans to use a previous inspection or a signed attestation under Paragraph (h) of this Rule, then the responsible individual shall submit a copy of the inspection report ~~or occupant protection plan~~ associated with the previous inspection or the signed attestation by May 1, 2024 ~~within 18 months from the effective date of this Rule~~ in lieu of meeting the requirements in Subparagraph (f)(1) of this Rule.

(3) At least 10 calendar days before abatement conducted pursuant to this Rule begins, the responsible individual shall ~~submit:~~ report the following:

(A) the name, address, email address, and phone number of the responsible individual;

(B) the name and address, including county, of the individual school and the public school unit or the licensed child care facility, as applicable;

(C) the ~~names, addresses, email addresses, phone numbers,~~ names and certification numbers of the professionals who will conduct the abatement ~~abatement; the names, addresses, email addresses, phone numbers,~~ and the email address and phone number of the on-site lead supervisor who will oversee the abatement;

(D) whether the facility for which the responsible individual is submitting the report is a public school or a licensed child care facility; and

(E) the dates on which the abatement is scheduled to occur. ~~occur; and~~

~~(F) a description of the planned abatement.~~

(4) Within 45 calendar days following the date on which abatement is completed pursuant to this Rule, the responsible individual shall ~~submit:~~ report the following:

(A) the name, address, email address, and phone number of the responsible individual;

(B) the name and address, including county, of the individual school and the public school unit or the licensed child care facility;

(C) whether the facility for which the responsible individual is submitting the report is a public school or a licensed child care facility;

(D) the date on which the abatement was completed; and

(E) a report of the results of the final clearance inspection.

(g) In accordance with 15A NCAC 18A .2816(a), 10A NCAC 09 .0601(f), and 10A NCAC 09 .1707(2), as applicable, licensed child care facilities shall inspect for lead-based paint hazards in accordance with this Rule to ensure these facilities are free from lead poisoning hazards. The failure of a responsible individual in licensed child care facility to inspect for lead-based paint hazards or to restrict access to or abate identified lead-based paint hazards in accordance with this Rule shall be considered a violation of 15A NCAC 18A .2816(a), 10A NCAC 09 .0601(f), or 10A NCAC 09 .1707(2), as applicable.

(h) The requirements of Paragraph (b) of this Rule shall be considered met if:

(1) the public school or licensed child care facility has previously completed an inspection of its buildings that meets the requirements of Sections .0800 and .0900 of this Subchapter; or

(2) the responsible individual of a public school or licensed child care facility located in a building that was built after February 28, 1978 signs a statement attesting that no lead-based paint was used in the building.

History Note: *Authority S.L. 2021-180, s. 9G.8;*
Temporary Adoption Eff. April 29, 2022.

10A NCAC 41C .1005 LEAD POISONING HAZARDS IN DRINKING WATER IN NORTH CAROLINA PUBLIC SCHOOLS

(a) For the purposes of this Rule, the following definitions shall apply:

(1) "Lead poisoning hazard" means as defined at G.S. 130A-131.7(7)(g).

(2) "Testing" means the process described in Subparagraphs (b)(1)-(4) of this Rule.

(3) "Remediation" means as defined at G.S. 130A-131.7(15).

(b) The following actions shall be taken to ensure that drinking water in public schools are free of identified lead poisoning hazards:

(1) Responsible individuals at public schools shall complete a one-time test of all water outlets used for drinking or food preparation. The responsible individual shall provide documentation of testing results for review by the Department during routine sanitation inspections under Rule 15A NCAC 18A .2402(a).

(2) Initial water samples shall be collected by the responsible individual and tested in accordance with Subparagraph (b)(3) of this Rule by May 1, 2024. ~~within 24 months after the effective date of this Rule.~~

(3) The responsible individual shall collect samples and submit them for testing in accordance with guidance specified by the United States Environmental Protection Agency in its publication, 3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities, which is hereby incorporated by reference, including any subsequent editions or amendments, and available free of charge at: https://www.epa.gov/ground-water-and-drinking-water/3ts-reducing-lead-drinking-water.

Notwithstanding the foregoing guidance, samples may be collected with a stagnation period of up to 72 hours. Samples shall be analyzed by a laboratory certified by the North Carolina State Laboratory of Public Health to analyze for lead in drinking water.

(4) When a water sample is analyzed for lead content by a laboratory under this Rule, the laboratory shall notify the Department of the test results by electronic submission in alignment with the requirements of G.S. 130A-131.8.

(5) When a public school receives test results from a laboratory indicating that a water sample collected by the responsible individual contains a lead concentration at or above the lead poisoning hazard level, the responsible individual shall:

(A) restrict access to any water outlet(s) used for drinking or food preparation that have lead concentrations at or above the lead poisoning hazard level;

(B) ensure that all students and staff have access to water free of cost that does not contain lead concentrations at or above the lead poisoning hazard level for drinking and food preparation; and

(C) continue to follow Parts (b)(5)(A) - (B) of this Rule until the Department determines in accordance with Subparagraph (b)(10) of this Rule that the water outlet(s) are not producing water lead levels at or above the lead poisoning hazard level and notifies the responsible individual and the Department of Public Instruction in writing of this determination.

(6) If a water sample collected by the responsible individual reveals a water lead level at or above the lead poisoning hazard level then the requirement of Rule .1002(b)(1) of this Section shall be considered met.

(7) Within five business days of receiving the test results of a water analysis that shows a water lead level at or above the lead poisoning hazard level, the responsible individual shall provide written notification of the test results to the parents or legal guardians of the children attending the public school and the staff of the public school in accordance with the United States Environmental Protection Agency guidance specified in Subparagraph (b)(3) of this Rule.

(8) Within five business days of receiving the test results of a water analysis that shows a water lead level at or above the lead poisoning hazard level, the public school shall make the test results available to the public, free of charge. The responsible individual may post test results to the public school's website to satisfy the requirement to make the test results available to the public.

(9) Remediation of water outlet(s) producing water lead levels at or above the lead poisoning hazard level shall ensure that water produced is below the lead poisoning hazard level and may include replacement of service lines, pipes, and fixtures and the installation of filters at affected faucets. Within 30 business days from the date on which remediation is conducted under this Rule, the responsible individual shall submit the following information to the Program:

(A) the name and contact information of the responsible individual;

(B) the name and address, including county, of the public school;

(C) the steps taken to remediate the lead poisoning hazard; and

(D) the date on which the remediation was completed.

(10) Remediation shall not be considered complete until the Department conducts sampling at the water outlet identified to have a water lead level at or above the lead poisoning hazard level to confirm that the remediated water outlet is no longer producing water lead levels at or above the lead poisoning hazard level.

History Note: *Authority S.L. 2021-180, s. 9G.8;*
Temporary Adoption Eff. April 29, 2022.

10A NCAC 41C .1006 CERTIFIED RISK ASSESSORS

(a) For the purposes of this Section, a certified risk assessor is defined as an individual who meets the requirements of Rule .0802 of this Subchapter, except that the individual shall be required to complete an accredited refresher course for risk assessors every 36 months from the date of completion of initial training or last training instead of every 24 months as set forth in 10A NCAC 41C .0802(b).

(b) A certified risk assessor who is certified under Paragraph (a) of this Rule shall be considered a certified risk assessor solely for the purposes of conducting inspections ~~and determinations about the existence of lead-based paint hazards~~ in public schools and licensed child care facilities under Rule .1004 of this Section.

History Note: *G.S. 130A-453.03; 130A-453.05; S.L. 2021-180, s. 9G.8;*
Temporary Adoption Eff. April 29, 2022.

10A NCAC 41C. 1007 INCORPORATION BY RFERENCE

For the purposes of this Section, 40 C.F.R. 763, Subpart E and 40 C.F.R. 745, Subparts L and E are hereby incorporated by reference, including any subsequent amendments or editions, and available free of charge at www.ecfr.gov/.

History Note: *Authority S.L. 2021-180, s. 9G.8;*
Temporary Adoption Eff. April 29, 2022.