OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

Lead Plumbing Fixture Replacement Assistance Grants Program

SUMMARY AND RESULTS

June 30, 2019

Ohio Facilities Construction Commission

in cooperation with
Ohio Environmental Protection Agency
Ohio Water Development Authority

OHIO FACILITIES CONSTRUCTION COMMISSION

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Executive Summary

This report contains the background, timeline, program highlights and goals, statistics, and lessons learned for Ohio's Lead Plumbing Fixture Replacement Assistance Grants Program. This report concludes that the program met its goals for outreach, ease of use, transparency, and efficiency. Within the scope of legislation for this program, water quality testing and the detection of faulty drinking fixtures assured Ohio's parents, school staff and communities that Ohio was taking active measures to keep students safe from lead in school drinking water.

Background

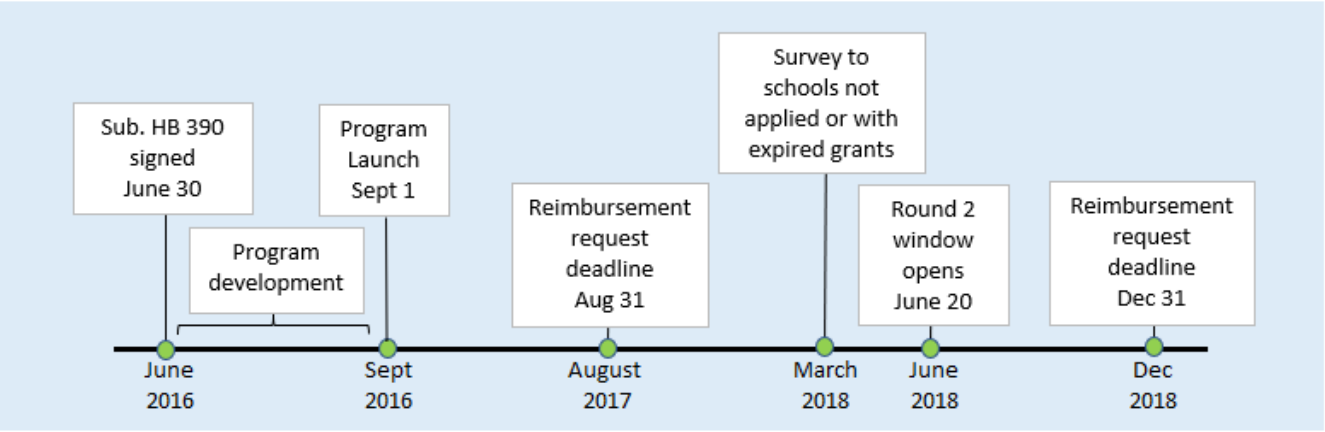
In June 2016, a new Ohio law authorized the creation of the Lead Plumbing Fixture Replacement Assistance Grants Program and created an appropriation of $12 million in state funds for the program. The grants were used to reimburse public and chartered nonpublic schools to sample and assess their drinking water and replace drinking fountains, water coolers, plumbing fixtures, and limited connected piping found to be a cause of lead above the federal action level of 15 parts per billion (ppb) in drinking water.

The program was created in collaboration with the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Water Development Authority (OWDA), and the Ohio Facilities Construction Commission (OFCC).

Public school buildings which were constructed prior to 1990 were the target facilities for this grant program. These buildings are the ones most likely to have solder, pipes, drinking faucets and water coolers containing lead. The grant program reserved $15,000 per approved school for the assessment of eligible fixtures and the material costs to replace those fixtures if they were identified as being the cause of lead above the federal action level.

Based on Ohio EPA's experience, the highest risk of lead exposure in schools is directly related to the water fountains or coolers and their associated plumbing connection. U.S. EPA further identifies these fixtures as "high priority" for sampling locations. This grant program was created to quickly address these highest risk and most likely sources of contamination in the most cost-effective manner.

Two rounds of grants were offered to Ohio's eligible schools. Schools that did not apply for grant funds in Round 1 and schools that let their Round 1 grants expire were surveyed in early 2018 to gauge their level of interest in participating in the program if it were to be extended. Results from the survey indicated that there was interest in a second round of grants. As a result, the grant program was re-opened and interested schools could apply until July 31, 2018. Applicants then had five months to submit for reimbursement before the program's expiration on Dec. 31, 2018.



Program Highlights *as of June 30, 2019*

More than **354,000** students served

Tests performed **17,562**

683
school buildings with invoiced grants

Samples over action level **9.1%**

Fixtures replaced **809**

$599,147
reimbursed to date

Goals

The program was designed with four goals in mind:

1. **Outreach:** ensure all eligible schools are aware of the program
2. **Ease of use:** make it easy to apply and be reimbursed
3. **Trust:** generate public trust and confidence in program results
4. **Efficiency:** use public funds efficiently and effectively

Efforts to achieve these goals follow.

Goal 1: Outreach

The goal was to ensure that all eligible schools were aware of the program. Various communication methods were used to promote the grant program including:

- A dedicated webpage with program resources including program guidelines, FAQs, an informative brochure, sampling protocol instructions, a list of certified Ohio EPA laboratories and a link to a testing contract created in collaboration with the Ohio Department of Administrative Services to assist schools in contracting for their lead testing services;
- Multiple email communications to school district contacts, superintendents, treasurers and principals including a "coming soon" announcement, an invitation to apply, funding still available, and deadline reminders during the application period;
- An informative webinar that was recorded and posted to the program webpage;
- Discovery conference calls with Ohio EPA, the Ohio Department of Health and local health departments prior to program launch to advise them of the program, gauge interest and request feedback;
- Promotional articles sent to the Ohio Department of Education, and to Ohio's school associations for publication in their news publications;
- Public speaking engagements;
- Media release;
- Social media outlet promotion;
- Regional coverage of the program from Cleveland, Cincinnati and Dayton media outlets;
- Infographic created to summarize the impact of the program;
- Survey to gauge interest from schools that had not yet applied or let their grants expire.

More than 6,000 application invitation emails were sent to more than 3,000 unique users. Program staff followed up on undeliverable emails to ensure that program information reached appropriate contacts at the school.

Goal 2: Ease of Use

The program was designed for ease of use from the school's perspective. Since much of the school's information was already available in state databases, OFCC worked with the Ohio Department of Education to pre-populate the grant application with known data, such as number of buildings and students, addresses, internal reference numbers (IRNs), and contact information of key personnel.

Application

An electronic web-based application (web app) was developed by OFCC staff to support the mechanics of the grant program. Using the known contact information, OFCC emailed to each district/school a customized invitation including a unique link to the web app. This link provided access to the district/school's application page where they could view their list of buildings, add or edit buildings and add or update contact information. The applicant was required to answer just two yes-no questions in the affirmative:

1. Was this building constructed before 1990?
2. Have you read, and do you agree to comply with the Lead Plumbing Fixture Replacement Assistance Grants Guidelines?

The guidelines were accessible as a link on the same page. The applicant then certified that he or she was an authorized representative of the district, and that all the information contained in the application was true and correct to the best of his or her knowledge. The applicant clicked the "submit" button to electronically submit the application for approval.

Applications were automatically approved if both questions were answered "Yes." Approved applicants received an email notice that their grant application was approved, and that they had nine months in the first grant round to submit for reimbursement. At the time of approval, the grant system reserved $15,000 in funding for the approved school and started the reimbursement clock.

Testing and Fixture Replacement

By an electronic notification of grant approval in the amount of $15,000 through the web tool, the applicant could now proceed with testing fixtures, replacing eligible fixtures, and submitting paid invoices and required supporting documentation through the web app for reimbursement.

Because most schools were not experts in drinking water testing, the grants team wanted to make it easy for the schools to sample and assess their drinking water. The Ohio EPA published a sampling protocol to guide schools through the proper procedure for gathering water samples. The protocol included development of a sampling plan, determination of sampling locations, proper procedures for drawing samples, and other key information. Sample bottles could be obtained from Ohio EPA-certified labs that were responsible for testing and reporting of results.

OFCC worked with the Ohio Department of Administrative Services (DAS) to create a statewide contract for drinking water testing by Ohio EPA-certified laboratories. Through the DAS Cooperative Purchasing Program, schools could order the correct tests directly from the certified laboratories at pre-determined, competitive prices of $10 to $22 per test.

Reimbursement

Once testing and fixture replacement were complete, applicants would return to the web app to attach and upload electronic copies, photos or .pdfs of invoices for reimbursement. Applicants were required to indicate the following information:

- ***Assessment Cost*** –total dollar amount of assessment costs for which they were seeking reimbursement;
- ***Fixtures Assessed*** – total number of fixtures that were assessed;
- ***Fixtures over the action level*** – total number of fixtures that have been determined to be the cause of lead above the federal action level of 15 parts per billion in drinking water (must be less than or equal to the figure entered directly above);
- ***Fixtures Replaced*** – total number of fixtures over the action level that have been replaced (must be less than or equal to the figure entered directly above);
- ***Fixture Replacement Cost*** – total dollar amount of fixture replacement cost (materials only, no labor or sales tax) for which you are seeking reimbursement;
- ***Reimbursement Requested*** – capped at $15,000.

The web application captured the data fields above and could be automatically downloaded to Excel by administrative staff to generate various queries and reports. All necessary reports could be generated from adding just these six data elements to information already contained in the system.

Reimbursement Approval

As applicants submitted reimbursement requests, OFCC staff would review the requests and the supporting documentation. Invoices from Ohio EPA-certified labs were required to approve the reimbursement of the assessment costs. Invoices and proof of payment were required to approve the reimbursement of the material costs to replace eligible fixtures. If the supporting documentation was incomplete or incorrect, the school was notified to resubmit the proper documentation. Once OFCC staff determined that everything was in order, the reimbursement request was approved in the web app.

Approximately every two weeks, the OFCC would submit a request to the state Controlling Board to release funds equal to the reimbursements approved since the last Controlling Board request. OFCC has made 30 such requests to date. Once the funds were released, OFCC paid the schools by electronic deposit into the schools' accounts using school-specific invoices generated by the web app. The grants were considered completed once OFCC paid the invoices.

On Aug. 19, 2016, the OFCC and OWDA entered into a memorandum of understanding (MOU) whereby OWDA agreed to provide the OFCC with up to $2 million to fund the drinking water assessments under the grant program. The MOU was later amended to extend the original two-year term by a year to accommodate Round 2. OFCC has requested disbursement from OWDA at the end of each fiscal year. OWDA has provided over $323,000 to fund the assessments.

Goal 3: Trust

Given that the program is a school health and safety initiative, the grants team placed a high priority on generating trust and confidence with the public. Among the program's design considerations were testing, reimbursement auditing, and transparency.

Testing:

- Approved methods for lead testing were specified.
- The program accepted only those tests performed by laboratories certified by the Ohio EPA.
- Testing required maintaining chain-of-custody procedures and documentation to ensure traceability of all personnel handling or transferring samples.
- The state testing contract required a signed statement by either the laboratory manager, quality assurance manager, or project manager attesting to the validity of the analytical results.

Reimbursement auditing:

- While schools could choose to hire environmental consulting firms to assist with drinking water assessments, only direct test results reported from Ohio EPA-certified labs were used for determining compliance, and only those direct costs were reimbursable under the program.
- Expenses inconsistent with the program guidelines, such as consulting fees, installation labor, and testing on fixtures not used for drinking water were ineligible and not reimbursed. The focus on eligible expenses was to maintain trust that the authorized funds were used for their intended purpose.
- There were two main reasons why some schools received less than their requested reimbursement: requesting reimbursement of environmental-consultant charges or requesting reimbursement related to ineligible fixtures. Of the 683 schools with completed grants, 141 had an approved reimbursement that was less than the requested reimbursement, for a difference of $154,902.

Transparency:

- No public records exemptions were created for the program. All information collected by the state and local school districts is publicly available.

- All drinking water test results were publicly available and kept locally by participating school districts. Some districts chose to distribute publicly their test results, while others made test results available by request.
- Schools were required to report to OFCC as to whether individual fixtures were above the 15-ppb limit. Those samples were reported as "Samples over action level."
- OFCC collected data through the web app to generate weekly reports and infographics, and to respond to inquiries from the media and the public.

Goal 4: Efficiency

This program was intended to make a positive impact on health and safety, reaching a large number of schools with relatively small grant amounts over a short period of time. This meant narrowing the focus of eligible expenditures to address the highest risk and most likely sources of lead exposure. By design, the program did not include reimbursement of:

- assessments of plumbing fixtures not primarily used for the delivery of water for human consumption;
- whole-school plumbing assessments;
- post-testing or any other services outside the program guidelines;
- assessments or fixture replacements completed before Jan. 1, 2016; or
- assessments or fixture replacements completed in buildings built after 1990.

The grant program's enabling legislation did not include new funding for grant staff or administration. By necessity the program had to be administratively lean and efficient to achieve its intended purpose.

A high volume, small grant amount program requires automation, simplicity, and collaboration. Among the factors that contributed to the program's efficiency were:

- Ability to repurpose a previously developed electronic grant application system designed for the OFCC School Security Grant Program, which reached a nearly identical audience as this program;
- Electronic communication of grant status, which reduced questions and manual intervention;
- The simple two-question design of the grant application;
- Excellent cooperation and resources from the Ohio EPA, OWDA, Ohio Department of Education, and Ohio DAS.

Once the grant application was launched, the program was administered by the equivalent of one full-time employee. As shown in the previous Program Highlights section, the program has reached 354,507 students at a direct reimbursed cost of $1.69 per student. Adding indirect and administrative costs would increase the average to about $2.00 per student.

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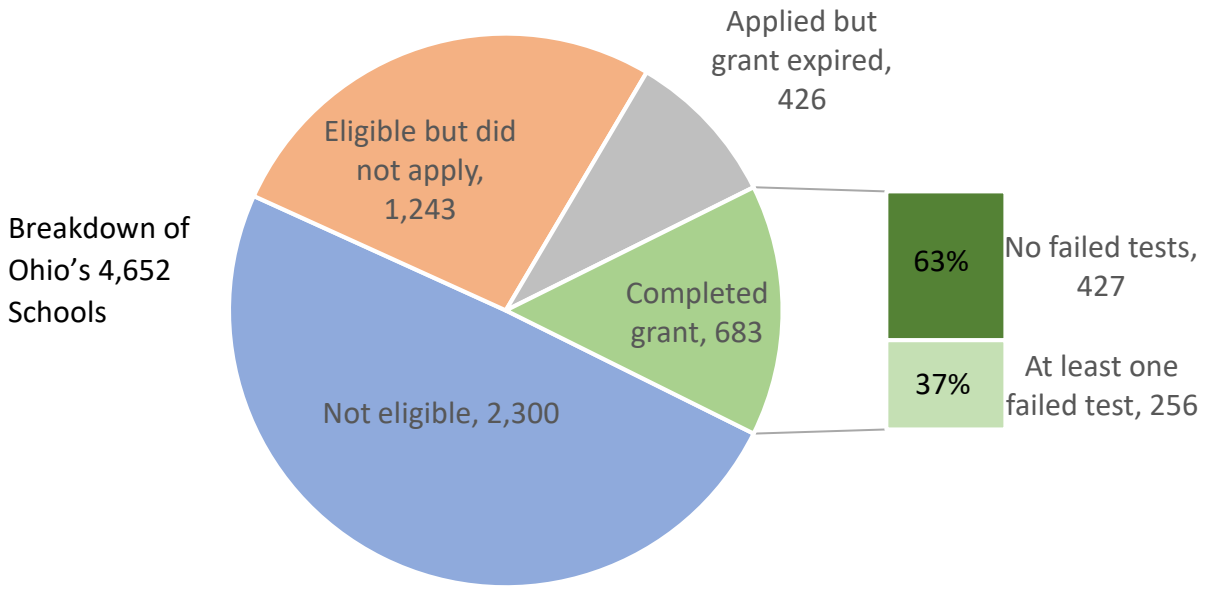
Program Data and Statistics

Fixtures assessed	17,562
Assessment costs	$ 323,632.79
Average assessment cost	$ 18.43
Fixtures over action level	1,595
Fixtures replaced	809
Fixture replacement costs	$ 275,514.11
Average fixture cost	$ 340.56
Failed fixtures / fixtures assessed	9.1%
Fixtures replaced / bad fixtures	50.7%
Students affected	354,507
Total reimbursed	$ 599,146.90
Average cost per student	$ 1.69

Lead Testing Results in Ohio Schools

The program revealed that **9 percent of fixtures sampled** were over the federal action level, while **37 percent of participating schools** had at least one sample over the federal action level. This program has provided useful data on lead levels in school drinking water; however, these percentages are not representative of Ohio schools overall, for the following reasons:

- Eligibility was limited to schools built before 1990, under the assumption that schools built after that were very unlikely to have elevated lead levels. Using the national average for age of school buildings,[1] and the known number of new schools constructed by OFCC since 1990, it is estimated that 48 percent of all Ohio schools were built after 1990 and therefore are not at risk.
- Some schools built before 1990 have undergone major renovation since their original construction. For the average school, it has been 12 years since major renovation,[2] which may have included plumbing renovations.
- Drinking fountains have an average useful life of 15 to 20 years.[3] Because it has been 29 years since 1990, many original fixtures in pre-1990 buildings would have been replaced by now. The occasional unreplaced fixture may explain the higher count of schools with at least one sample above the action level.
- Some eligible schools had completed their own testing and replacement program prior to the state's program and therefore did not to participate.



In a recent study published by the Harvard T.H. Chan School of Public Health, lead testing results for Ohio's schools were lower than the national average. Among the twelve states studied with drinking water testing programs, 44 percent of schools had one or more water samples with a lead concentration at or above the state's action level, compared to 36 percent for Ohio. Among those same states, 12 percent of all tests were above the state's specified action level, compared to 9 percent in Ohio.[4]

The Harvard study used Ohio's data as of March 15, 2018. Data as of June 30, 2019 reveal the following:

Type	Schools with completed grants	Schools with at least one failed test	Percent
Public school districts	546	235	43%
Community schools	25	1	4%
Nonpublic schools	112	20	18%
All schools	683	256	37%

Observations and Lessons Learned

1. **Application and Participation Rates.** OFCC estimated that about 2,352 schools were eligible. Since 683 schools applied and were reimbursed, the **participation rate was 29 percent**. However, an additional 426 schools were approved for grants but allowed the grants to expire by not submitting for reimbursement. Among the possible reasons were that the schools:

    - Chose not to test
    - Tested late and did not submit reimbursement in time
    - Tested, but due to the low cost, chose not to go through the reimbursement process

    Regardless of reimbursement status, a total of 1,109 schools applied for the grant program, representing an **application rate of 47 percent**. Of the 319 schools that had expired grants in Round 1, 41 reapplied in Round 2. Of the 41, 20 schools had a completed grant as of June 30, 2019. At the end of Round 2, 128 grants expired, 21 of them for the second time.

2. **Awareness rate was high.** Due to the extensive outreach outlined earlier in the report, the number of schools aware of the program should have been close to 100 percent. In the survey findings for a possible second round, some schools cited turnover as a reason for not applying in the first round (previous personnel were contacted, left employment prior to applying, and did not forward the information). Others stated that they were not contacted, only to find through email records produced by OFCC that they were contacted, or that other staff contacted at the school did not share the information internally.

3. **Testing costs were reasonable.** The average cost of drinking water assessments was very affordable at $18.43, although a number of schools contracted with certified labs to draw the samples from the fixtures rather than using in-house staff. In hindsight there could have been a cap on this reimbursable expense, or it could have been ineligible altogether, encouraging the schools to follow the sampling protocol themselves.

4. **Grant amounts were lower than expected**. No reimbursement requests reached the $15,000 maximum. In fact, only 10 grants were over $6,000. The program's average grant amount was $877 while the median grant amount was $375.

5. **Online grant application worked well.** The program confirmed the ease of an electronic grant application to manage the transactional nature of the process and to generate program data on demand.

6. **Environmental consulting fees were an issue.** Although easy to follow sampling protocol steps were outlined for collecting and testing the water samples, environmental consulting firms contacted schools early and marketed their services to them. Despite information to the contrary in the guidelines to which the schools agreed, many schools assumed that these consulting fees were

eligible for reimbursement. In fact, they were not, leading to some disappointment, particularly since the consulting fees were often many times higher than the program's permissible grant expenditures. This message could have been stronger, or should have been included in the legislation, and would have alleviated some challenges with the reimbursement process.

7. **Half of the identified fixtures were not replaced under the program.** A surprising finding was that schools did not seek reimbursement to replace 49.3 percent of the fixtures that tested over the action level. Although the grant program did not reimburse for the replacement of these fixtures, it is unlikely that they are still in service. For every case in which grant staff communicated with the schools on this issue, these fixtures were either taken out of service or labeled as non-potable.

Endnotes

[1] *Education Week*, "Data: U.S. School Buildings: Age, Condition, and Spending," Nov. 28, 2017, <https://www.edweek.org/ew/collections/school-facilities/>, accessed on Jan. 8, 2019.

[2] Ibid.

[3] Schoen, Lawrence J., P.E., *Preventive Maintenance Guidebook: Best Practices to Maintain Efficient and Sustainable Buildings*, Building Owners and Managers Association (BOMA) International, Washington, D.C., 2010, p. 78.

[4] Cradock A.L., Hecht C.A., Poole M.K., Vollmer L.Y., Flax C.N., Barrett J.L., *State approaches to testing school drinking water for lead in the United States*, Boston, MA, Prevention Research Center on Nutrition and Physical Activity at the Harvard T.H. Chan School of Public Health, January 2019.

Appendix: Lead Grants by School District

ofcc.ohio.gov/Portals/0/Final Report - Grant Table.pdf