



Scranton School District Environmental Update

Environmental Task Force

September 15, 2021

Updates

- COVID-19 Reopening HVAC
- Bipolar Ionization Installation
- Northeast Intermediate
- 2021 Summer Abatement Project
- 3 Year Reinspection Plan
- Lead in Drinking Water
- West Nile Virus
- Mold Investigations

Executive Summary of Draft GPI Ventilation Study

The Scranton School District (SSD) is currently in the early planning stages of a Facilities Improvement Plan that is focused on prioritizing, budgeting, and implementing Capital Improvements to improve the District's aging facilities and replace infrastructure that is at the end of its life cycle.

The District recognizes that current COVID-19 guidelines provide additional facilities challenges including cleaning, sanitizing, social distancing, and other parameters that are required to be implemented in accordance with safe health practices. One area that is especially important for buildings is air quality, and in particular, fresh air to reduce the potential for COVID-19 transmission.

Greenman-Pedersen, Inc. (GPI) recommendations for improving building HVAC system ventilation performance:

1. Identify any areas where mechanical ventilation is not functioning as designed or is not available.
2. Perform repairs where feasible and/or identify temporary measures until repairs are implemented.
3. Determine where MERV 13 filtration is feasible.
4. Assess a long-term solution to incorporate bipolar ionization where MERV 13 filtration is not feasible.
5. After the above is complete, consider Measurement and Verification of the systems in order to verify that the mechanical ventilation is operating as originally intended.

Ventilation Improvements Summary

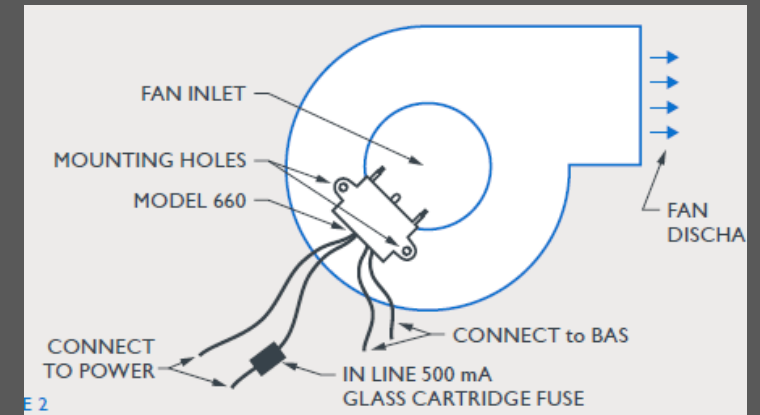
SCRANTON SCHOOL DISTRICT	DRAFT GPI Ventilation Study								
	Built	Reno	Maintain HVAC System Functionality and Cleanliness	Perform Systems Flush Out	Open Operable Windows Whenever Practical	Upgrade Filters	Add Portable Air Purifiers	Schools With No Mechanical Ventilation	Verify Ventilation Airflow Rates
HIGH SCHOOLS									
Scranton HS	2001	none	X	X	X	18 AHUs	59	N/A	X
W. Scranton HS	1927	none	X	X	X	N/A	N/A	Locker Rooms & Vice Principal's Office near Room 117	X
INTERMEDIATE SCHOOLS									
W. Scranton IS	1975	none	X	X		15 AHUs	N/A	N/A	X
S. Scranton IS	1937	none	X	X	X	N/A	N/A	N/A	X
NE Scranton IS*	1904	1930, 1999	X	X	X			IN PROGRESS*	X
ELEMENTARY SCHOOLS									
John Adams ES	1931	1965+/-	X	X	X	N/A	N/A	Cafeteria & Library, Computer CR, Art CR, and Teacher's Lounge in Basement	X
Neil Armstrong ES	1969		X	X		Multipurpose	33	N/A	
George Bancroft ES	1928	1960's	X	X	X	N/A	20	Lunchroom and rooms on 1st & 2nd Floors	X
John F Kennedy ES	1964	1983	X	X	X	AHUs	21	N/A	X
McNichols Plaza Building	1977		X	X		AHUs	N/A	N/A	X
Monticello	Leased		X	X		AHUs	N/A	N/A	X
Robert Morris ES	1895	1966	X	X	X	Multipurpose	20	Secretary & Principal's office (1st Flr) Art CR, Counseling room, Teacher workroom in Basement	X
William Prescott ES	1966	none	X	X	X	Multipurpose	16	Basement, Principal & Secretary's office (1st Flr), Teacher's lounge (2nd Flr)	X
Charles Sumner ES	1968		X	X	X	Multipurpose	15	Speech Therapy Rooms (3) and Reading specialist in main corridor. Nurse, Secretary, Principal, & Teacher's Lounge near main office.	X
Isaac Tripp ES	2011	none	X	X	X	AHUs	N/A	N/A	X
Whittier Annex	Leased				X	N/A	15	Building	
John Greenleaf Whittier ES	1896	1966	X	X	X	AHUs	N/A	N/A	X
Frances Willard ES	1928	1960	X	X	X	N/A	N/A	Nurse's Office	X
MISC.									
Memorial Stadium	1949	2010 +/-	IN PROGRESS						
Administration Building	1910	1966			X	N/A	N/A	Building	
	Built	Reno	Maintain HVAC System Functionality and Cleanliness	Perform Systems Flush Out	Open Operable Windows Whenever Practical	Upgrade Filters	Add Portable Air Purifiers	Schools With No Mechanical Ventilation	Verify Ventilation Airflow Rates
SCRANTON SCHOOL DISTRICT	DRAFT GPI Ventilation Study								

*Northeast Scranton IS Ventilation System is included in Summer 2021 Priority Projects.

Bipolar Ionization

The recommendation from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is to increase outdoor air exchange and filter efficiency where sufficient exterior air exchanges could not occur, to a MERV 13 filters or the most efficient the system can handle. In systems that were not designed to accept such filters, the recommendation from the District's engineers (Greenman-Pederson Inc. [GPI]) and consultants (D'Huy Engineering [DEI]) is to retrofit ventilation units with bipolar ionization units. The units will be installed by the district in approximately 181 classrooms/areas across six buildings.

The use of bipolar ionization technologies in “air cleaning” systems is novel, and little research is available to validate it outside of laboratories. The U.S. Environmental Protection Agency (EPA) has identified that harmful by-products may be generated by the technology, and users should ensure zero ozone generation occurs and that appropriate maintenance occurs to the system¹. Limited peer-reviewed literature identify an increase in particulate matter when these systems are operational, which must also be addressed.



Bipolar Ionization Baseline Testing Status

SCHOOL	PARAMETER											
	PM2.5		Ozone		VOCs		ATP		CO2		Ions	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Scranton High	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓
Armstrong	✓		✓		✓		✓		✓	✓	✓	
Kennedy	✓	✓	✓	✓	✓		✓	✓			✓	✓
Morris	✓	✓	✓	✓	✓		✓	✓			✓	✓
Prescott	✓	✓	✓	✓	✓		✓	✓			✓	✓
Sumner	✓	✓	✓	✓	✓		✓	✓			✓	✓

Carbon Dioxide



Onset Technologies Datalogger

- Temperatures
- Relative Humidity
- Carbon Dioxide

Currently 10 units were purchased for use throughout the district.

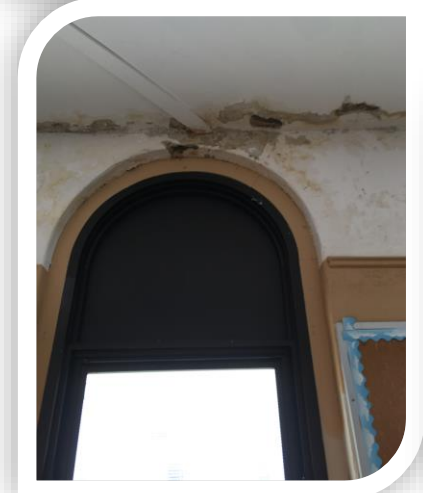
Northeast Intermediate

- Scope of Work included removal of TSI from 1906 HVAC (tunnels), plus TSI on 1931 wing and VAT in both.
 - 3,500 LF of TSI
 - 8,000 SF of VAT
 - Duct Cleaning
- Abatement completed September 1, 2021
- Approximately 15 tons of material removed
- All regulated work areas were cleared by TEM/PCM, plus each room had air characterization completed to meet “EPA Clean Air” criteria

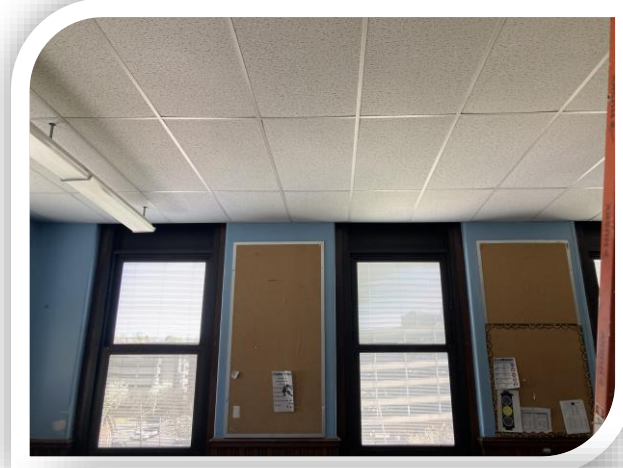
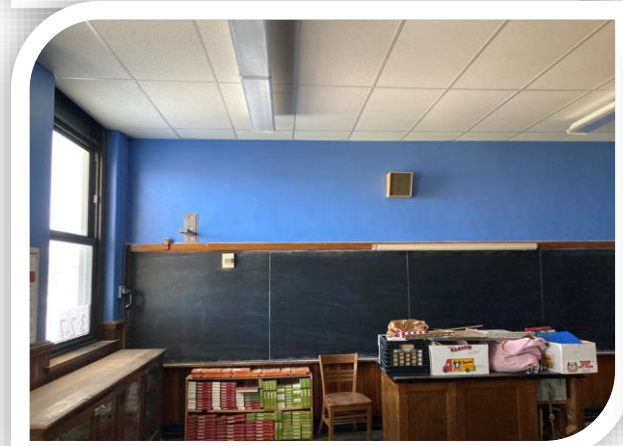


Northeast Intermediate

Before

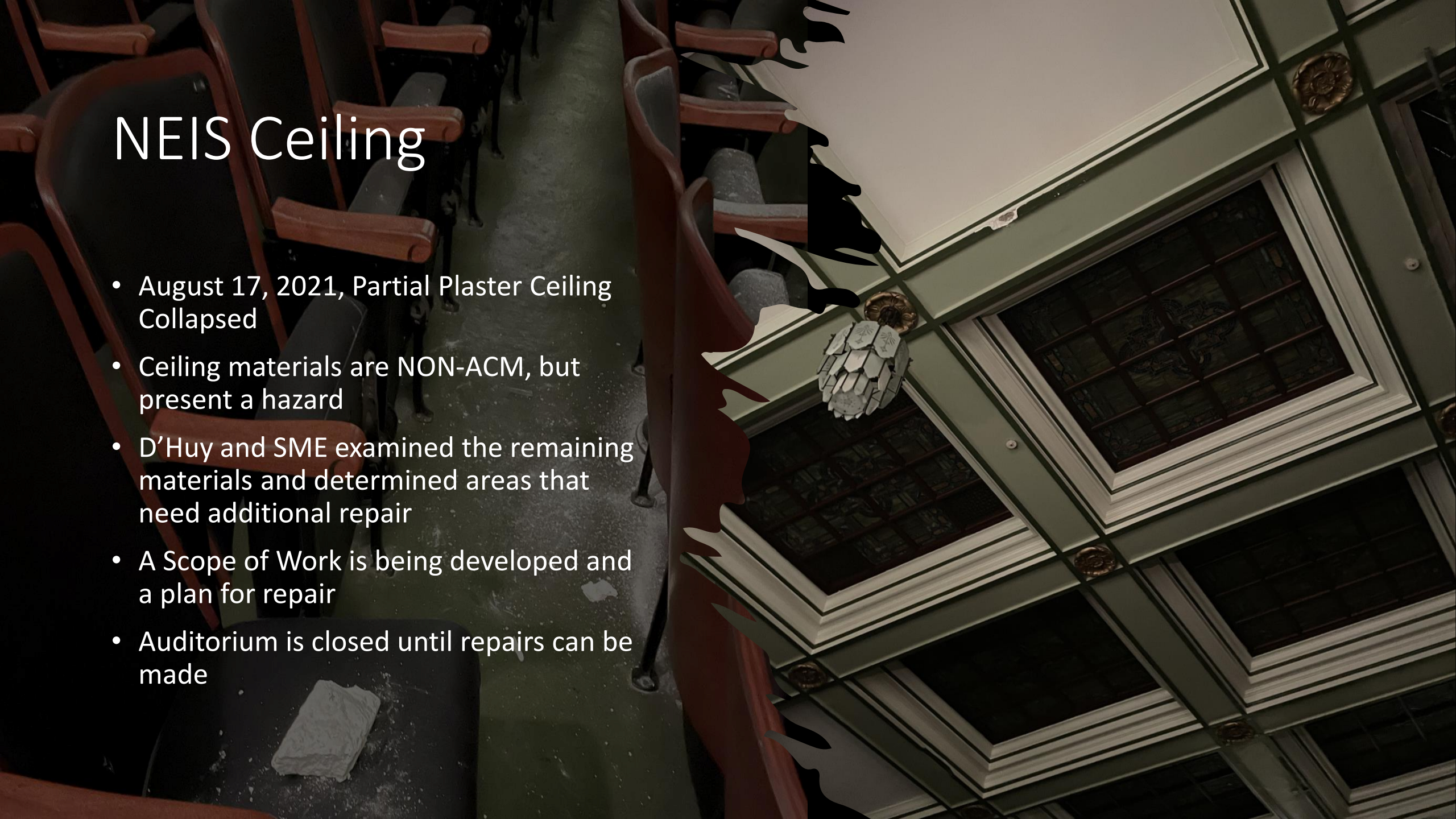


After



NEIS Ceiling

- August 17, 2021, Partial Plaster Ceiling Collapsed
- Ceiling materials are NON-ACM, but present a hazard
- D'Huy and SME examined the remaining materials and determined areas that need additional repair
- A Scope of Work is being developed and a plan for repair
- Auditorium is closed until repairs can be made





2021 Summer Abatement

Summer Abatement Project

- 8+ Schools
 - 2,000 SF Flooring
 - 2,500 LF Insulation
 - 1,200 SF Ceilings
 - 2,600 SF Encapsulation
- Awarded to Datom Products
- Abatement completed August 2, 2021
- Total removed 17.5 tons
- Expanded to include additional encapsulation at Sumner, ductwork at Willard and VAT at Prescott



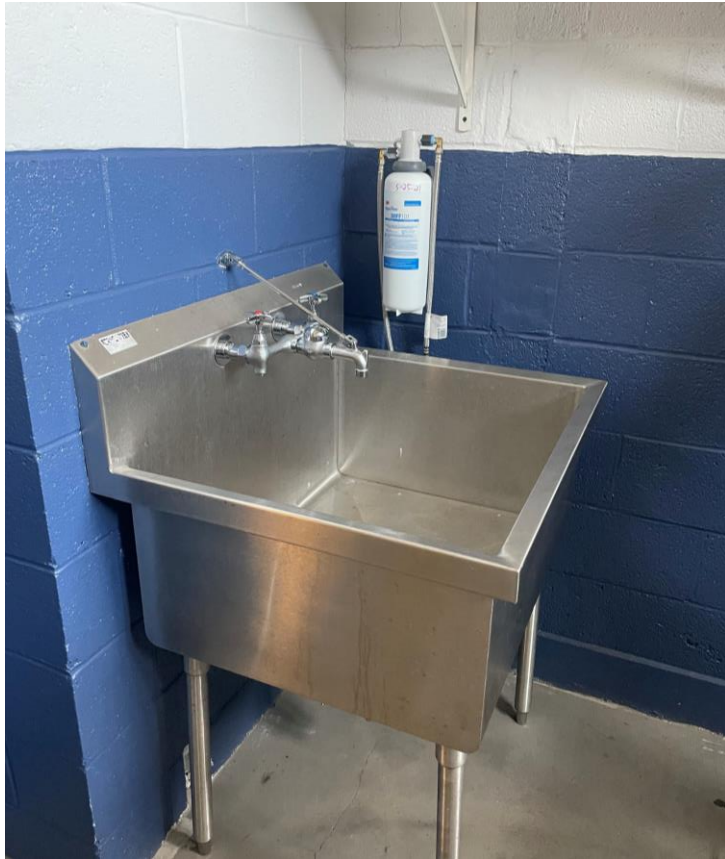


3 Year Reinspections and Management Plans



- A single Management Plan for the District
- The Management Plans are being updated based on the Summer 2021 Abatements and should be revised by October 1st
- Six Month Surveillance Inspection will commence immediately following the revision of the plans and will be conducted jointly with PA Licensed Building Inspectors
- Future work includes
 - Administration Building Project Design
 - Summer 2022 Asbestos Abatement Plan
 - Integrated Pest Management Plan

Lead in Drinking Water



- Testing for the 2020-2021 SY occurred in fall/winter
- Report issued in February
 - 76 Distribution Points
 - 17 Schools >EPA AL
- All Distribution Points have passed (<15ppb)

West Nile Virus

- A West Nile Virus(+) mosquito was identified at/near McNichols Plaza in South Scranton on August 18, 2021.
- Testing was conducted due to a large quantity of mosquitos in the entire area, not just the school property
- Treatment for WNV was initiated the next day (8/19) with products approved for use in this application
- The presumed source of mosquitos in the area of the school are a semi-arid creek bed and possible small water sources around the school; however, this area is not necessarily unique as much of the county is seeing positives



Fight West Nile Virus

Tips to

DUMP IT

TREAT IT

DRAIN IT

West Nile Virus (WNV) is a disease spread by mosquitoes, which bite birds infected with WNV, then bite people and transmit the disease.

One in five people bitten by an infected mosquito will get flu like symptoms. A very small percentage of people will get West Nile Encephalitis, which can cause serious illness and very rarely even death.

Reduce the chance of being bitten by a mosquito infected with WNV by eliminating standing water around the home. Here's how to help fight WNV at your house:

DUMP IT—Dump water from buckets, flower pots, kiddie pools, old tires and other containers. Even a cupful of water in one of these containers can breed thousands of mosquitoes.

DRAIN IT—Trash cans and other containers that are left outside may hold water. Drill small holes in the bottom of these containers to let water drain out.

TREAT IT—Birdbaths, ponds, ditches, and

Mold Investigations

- We responded to numerous reports of mold growth this summer
- There are virtually no federal or state regulations for mold contamination
- The national consensus standards and guidelines prescribe a three-fold approach
 - Visual and sensory Investigation – looking for visible mold, water staining, malodors
 - Environmental Monitoring – measuring the atmosphere to determine if the environment will support mold growth or amplification (temp, rH, CO₂, MC)
 - Air Sampling – collecting spore trap samples to compare indoor air to outdoor looking for similar speciation and quantity

