Lessons from the Field

Indoor Air Quality and Ventilation in America’s K-12 Schools: Guidance and Strategies for Improved Results

JUNE 30, 2021
To access information and archived materials from previous Lessons from the Field webinars, go to: https://safesupportivelearning.ed.gov/lessons-field-webinar-series
Logistics

Zoom Control Panel

Technical Issues

For assistance during the webinar, please contact Shoshana Rabinovsky at srabinovsky@air.org.

This webinar is being recorded and will be archived at the following location: https://safesupportivelearning.ed.gov/events/webinar/lessons-field-indoor-air-quality-and-ventilation-americas-k-12-schools-guidance-and

The content of this presentation does not necessarily represent the policy or views of the U.S. Department of Education, nor does it imply endorsement by the U.S. Department of Education.
Initial Polling Questions

1. Do you work in:
   - Administration
   - Building & Grounds
   - Capital Projects
   - Facilities & Maintenance
   - Safety/Security
   - Other (Please specify in the chat.)

2. Do you represent:
   - School
   - Local education agency
   - State education agency
   - Community
   - Contractor
   - Other (Please specify in the chat.)

3. How well do you feel your indoor air quality program is functioning?
   - Excellent
   - Good
   - Average
   - Fair
   - Poor
   - Not applicable
Agenda

1. Introduction and Logistics
2. Elementary and Secondary School Emergency Relief (ESSER) Program: Use of Funds FAQs Improving Ventilation (ED)
3. Ventilation in Buildings During the COVID-19 Pandemic (CDC)
4. Indoor Air Quality and Ventilation in America’s K-12 Schools: Guidance and Strategies for Improved Results (EPA)
5. Panel Discussion
6. Wrap Up & Closing
Speakers

Ruth Ryder
Deputy Assistant Secretary, Office of Elementary and Secondary Education, U.S. Department of Education

Diane Rentner
Education Program Specialist, Office of State and Grantee Relations, U.S. Department of Education

Jane Hess
Attorney, Office of the General Counsel, U.S. Department of Education

Kenneth Mead
Senior Research Engineer, Centers for Disease Control and Prevention

Tracy Enger
Indoor Air Quality for Schools Program Leader, Environmental Protection Agency

Fred Remelius
Director of Operations, Upper Merion Area School District, King of Prussia, PA

Mark Cocco
Safety Manager, Martin County School District, Stuart, FL

Ricky Martinez
Assistant Director of Facility Services, Salt Lake City School District, UT

Bios for the speakers are archived at the following location:
https://safesupportivelearning.ed.gov/events/webinar/lessons-field-indoor-air-quality-and-ventilation-americas-k-12-schools-guidance-and
Elementary and Secondary School Emergency Relief (ESSER) Program

Use of Funds FAQs
Improving Ventilation

June 30, 2021
References to “ESSER” in this presentation includes ESSER I under the CARES Act, ESSER II under the CRRSA Act, and ARP ESSER.

As noted in the ESSER and GEER Use of Funds FAQs issued on May 26, 2021, GEER funds can be used for the same activities as ESSER.

The Use of Funds FAQs can be accessed here:

https://oese.ed.gov/files/2021/05/ESSER.GEER_.FAQs_5.26.21_745AM_FINALb0cd6833f6f46e03ba2d97d30aff953260028045f9ef3b18ea602db4b32b1d99.pdf
With regard to ventilation systems, the authorizing statutes allow ESSER funds to be used for:

- School facility repairs and improvements to enable schools to reduce the risk of virus transmission and exposure to environmental health hazards, and to support student health needs

- Inspection, testing, maintenance, repair, replacement, and upgrade projects to improve the indoor air quality in school facilities, including mechanical and non-mechanical heating, ventilation, and air conditioning systems, filtering, purification and other air cleaning, fans, control systems, and window and door repair and replacement
Considerations

• Before using ESSER or GEER funds for construction activities, including new construction, remodeling, alterations, or renovations, LEAs should consult questions B-6 and B-7 in the ESSER and GEER Use of Funds FAQs.

• FAQs B-6 and B-7 highlight the Federal requirements that apply when undertaking such projects with Federal education funds, including:
  ➢ Cost principles in 2 CFR Part 200, subpart E
  ➢ Prior approval requirements
  ➢ Davis Bacon prevailing wage requirements and
  ➢ Department’s applicable regulations regarding construction at 34 CFR §§ 76.600 and 75.600-75.618.
Process for Prior Approval

Does the Department determine the process that States must use for granting prior approval to their LEAs for capital expenditures?

• No. The process an SEA uses for granting prior approval to an LEA to use ESSER funds for capital expenditures (including HVAC projects) such as minor remodeling, renovation, or construction is left to the discretion of the SEA. Neither the Department nor the Uniform Guidance specifies the process that must be used.

• An SEA has the flexibility to establish its own reasonable process that ensures that the expenditures meet the applicable statutory and regulatory requirements, including those in Subpart E of the Uniform Guidance (2 CFR Part 200).
Does the Department determine the process that States must use for granting prior approval to their LEAs for capital expenditures? (continued)

• For example, an SEA could:
  • Use or modify the current procedures that it already uses for prior approval categories for other Federal programs under the Uniform Guidance.
  • Consider getting a building expert (engineer, inspector, architect) who knows applicable State, local, and Federal requirements to assist with its review of prior approval requests. The expert could be acquired on a limited basis through procurement or perhaps an interagency agreement with another State agency, such as a Public Works office or another agency with authority over facilities.
  • Consult with other States that have facilities programs for suggestions on how to implement an efficient process for prior approvals for facilities expenditures.

(continued on next page)
Does the Department determine the process that States must use for granting prior approval to their LEAs for capital expenditures? *(continued)*

For example, an SEA could:

- Develop a checklist of items that an LEA seeking prior approval should provide. This could include:
  - The name of the school facility the LEA is proposing to repair, construct, or modernize.
  - The identification of the LEA's interest in, or authority over, the school facility involved, such as an ownership interest or a lease arrangement.
  - Sources and amounts of funds available for the proposed project.
  - A statement signed by an appropriate independent local official that: (1) the renovation or construction project meets the applicable Federal, State, or local requirements with respect to health and safety, environmental standards, Historic Preservation, and other requirements (see FAQ B-6 and 34 CFR Part 75) and (2) any deficiency that requires renovation or construction is necessary (e.g., because it threatens the health and safety of occupants of the facility or prevents the use of the facility). An appropriate local official may include a local building inspector, a licensed architect, or a licensed structural engineer.
  - A description of the need for funds as related to COVID-19 including a cost estimate and other details needed to support the reasonableness and allowability of the expenditure under the applicable statute ARP Act and cost principles in the Uniform Guidance (e.g., the original construction date and the dates and descriptions of any other major renovations of the school facility).
  - Applicable assurances and certifications (see FAQ B-6 for applicable requirements that must be met for any renovation or construction project).
Does the Department determine the process that States must use for granting prior approval to their LEAs for capital expenditures? (continued)

- Please note that some HVAC upgrades may constitute “minor remodeling” and the Department’s applicable regulations regarding construction at 34 CFR §§ 76.600 and 75.600-75.618 would not apply.

- Minor remodeling means minor alterations in a previously completed building, for purposes associated with the coronavirus. The term also includes the extension of utility lines, such as water and electricity, from points beyond the confines of the space in which the minor remodeling is undertaken but within the confines of the previously completed building.

- The term does not include permanent building construction, structural alterations to buildings, building maintenance, or repairs. However, minor remodeling projects that constitute capital assets under the Uniform Guidance still require prior approval consistent with 2 CFR 200.439.
Is SEA prior approval required **before** LEA bidding is advertised?

- No. SEA prior approval is **not** required before LEA bidding is advertised under applicable Department requirements.

- The provisions in 34 CFR §§ 75.600-617 are “as applicable” and every provision does not apply to every project. Some have cited 34 CFR § 75.605, which states in relevant part that: “Before construction is advertised or placed on the market for bidding, the grantee shall get approval by the Secretary of the final working drawings and specifications.”

- This provision applies to direct construction projects that require approval from the Department, not those that require approval under the Uniform Guidance from an SEA. Therefore, an LEA ESSER project that an SEA is approving and has been initiated or is already underway should not have to be rebid.
Prior Approval Timeline

When must SEA prior approval occur?

- SEA approval can come at any point in the project timeline until the point that reimbursement using ESSER funds occurs.

- As described in the response to the first question, States have the flexibility to develop or refine their own prior approval processes to ensure that an allowable expenditure is reasonable and necessary and is otherwise in line with program, Uniform Guidance, and other applicable requirements. Ideally the SEA review process is complete as soon as possible on a project’s timeline, but a State may utilize this flexibility at any point in the project process.

- This continuum includes up until the point when the Federal funds are actually approved for reimbursement.
Applicability of NEPA

Is NEPA applicable to LEA construction projects funded with ESSER funds?

• No. NEPA is **not** applicable to LEA construction projects that are funded with ESSER funds.

• 34 CFR § 75.601 requires an applicant to submit an environmental assessment of the impact on the proposed construction that is consistent with relevant provisions of the National Environmental Policy Act (NEPA). This provision only applies to construction projects that are operated and managed by the Department and require direct approval from the Department. Due to the nature of the ESSER funds, the Department does not: have a decision-making role in planning the specific projects, or directly manage the implementation or procurement for LEA projects such as the HVAC projects or have the power to act on any environmental effects revealed by an environmental assessment.
Is NEPA applicable to LEA construction projects funded with ESSER funds? (continued)

• In addition, the Department does not exercise control over the use of the funds for any individual project, as long as the project continues to meet all statutory and other applicable requirements (such as the Uniform Guidance and the Department’s administrative regulations). As a result, these types of LEA ESSER projects are not considered as a “major Federal action” under the NEPA provisions and are not subject to 34 CFR§ 75.601.

• While NEPA is not applicable, the Department highly encourages States to require some type of environmental assessment for LEA projects that involve breaking new ground such as for expanding the size of an existing facility or replacing an outdated facility. This may already be required by some State laws and is a prudent step that would help to assess any potential environmental ramifications of expanding or replacing school facilities and ensure compliance with any applicable State, local or Federal environmental requirements.
If you have questions that are not addressed in this FAQ document, please send them to your State email box, [STATE].oese@ed.gov
Ventilation in Buildings
During the COVID-19 Pandemic

Kenneth R. Mead, PhD, PE
kmead@cdc.gov

cdc.gov/coronavirus
• The principal mode by which people are infected with SARS-CoV-2 (the virus that causes COVID-19) is through exposure to respiratory fluids carrying infectious virus. Exposure occurs in three principal ways:
  1. Inhalation of very fine respiratory droplets and aerosol particles.
  2. Deposition of respiratory droplets and particles on exposed mucous membranes in the mouth, nose, or eye by direct splashes and sprays.
  3. Touching mucous membranes with hands that have been soiled either directly by virus-containing respiratory fluids or indirectly by touching surfaces with virus on them.

• The risk of SARS-CoV-2 infection varies according to the amount of virus to which a person is exposed.

• Transmission of SARS-CoV-2 from inhalation of virus in the air farther than six feet from an infectious source can occur.

Do not get distracted by terminology

- Different professions (clinicians, aerosol scientists, engineers, industrial hygienists, microbiologists) do not always use consistent terminology.
- Regardless of the name, if it is small enough to float in air, then ventilation interventions can help prevent its distribution and reduce individual exposure.

Graphic: https://www.cdc.gov/niosh/topics/aerosols/pdfs/Aerosol_101.pdf
Ventilation in Buildings

Ventilation in Schools and Childcare Programs
CDC recommends a layered approach to reduce exposures to SARS-CoV-2

The Swiss Cheese Respiratory Virus Pandemic Defence

Recognising that no single intervention is perfect at preventing spread

Personal Responsibilities

Shared Responsibilities

Each intervention (layer) has imperfections (holes).
Multiple layers improve success.

Graphic Credit: Ian W. McKay, virologydownunder.com

Note: The interventions shown are not all-inclusive and are not depicted in any meaningful order.
SARS-CoV-2 viral particles are more readily spread between people indoors than outdoors

- Outdoors: Even a light 1 mph [88 feet per minute (fpm)] wind can rapidly reduce airborne contaminant concentration.

- Indoors: Protective ventilation practices and interventions can reduce the airborne concentration of the virus and reduce the overall viral dose to occupants.
In most cases, re-occupancy should not require new building ventilation systems.

Buildings that provided healthy, code-compliant indoor air quality prior to the pandemic can be improved for pandemic occupancy using less costly interventions.
Steps beyond code-compliant minimums

- Ventilation system upgrades or improvements can increase the delivery of clean air and dilute potential contaminants.
  - Consult experienced heating, ventilation, and air conditioning (HVAC) professionals.
  - CDC guidance presents a list of ventilation interventions, “tools in the mitigation toolbox,” that can help reduce the concentration of viral particles in the air.
    - Each tool can contribute towards a reduction in risk.
    - Implementing multiple tools at the same time is consistent with CDC’s layered approach and will increase overall effectiveness.
Steps beyond code-compliant minimums (continued)

- Using these tools can reduce the risk of exposure to the virus and the spread of disease but will not eliminate risk completely.
- Tools can be universally applied across indoor environments but choosing which tools to apply can be challenging.
- The specific combination of tools used at any point in time can change.
- The building owner or operator (with expert consultation as needed) should identify which exposure reduction tools are appropriate for each building throughout the year.

- In addition to buildings, ventilation improvements can be applied to vehicles, including public transportation.
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Many new air disinfection devices are marketed for their ability to inactivate SARS-CoV-2. How can I tell if they work as advertised?

As with all emerging technologies, consumers are encouraged to exercise caution and to do their homework. Registration alone, with national or local authorities, does not always imply product efficacy or safety. Consumers should research the technology, attempting to match any specific claims against the intended use of the product. Consumers should request testing data that quantitatively demonstrates a clear protective benefit and occupant safety under conditions consistent with the intended use. When considering air cleaning technologies that potentially or intentionally expose building occupants, the safety data should be applicable to all occupants, including those with health conditions that could be aggravated by the air treatment. In transient spaces, where average exposures to the public may be temporary, it is important to also consider occupational exposures for workers that must spend prolonged periods in the space.

Preferably, the documented performance data under as-used conditions should be available from multiple sources, some of which should be independent, third-party sources. Unsubstantiated claims of performance or limited case studies with only one device in one room and no reference controls should be questioned. At a minimum, when considering the acquisition and use of products with technology that may generate ozone, verify that the equipment meets UL 867 standard certification (Standard for Electrostatic Air Cleaners) for production of acceptable levels of ozone, or preferably UL 2998 standard certification (Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners) which is intended to validate that no ozone is produced.
For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Indoor Air Quality and Ventilation in America’s K-12 Schools: Guidance and Strategies for Improved Results

Wednesday, June 30, 2021
Eligible IAQ Activities under the American Rescue Plan


(H) Training and professional development for staff of the local educational agency on sanitation and minimizing the spread of infectious diseases.

(I) Purchasing supplies to sanitize and clean the facilities of a local educational agency…

(O) School facility repairs and improvements to enable operation of schools to reduce risk of virus transmission and exposure to environmental health hazards…

(P) Inspection, testing, maintenance, repair, replacement, and upgrade projects to improve the indoor air quality in school facilities, including mechanical and non-mechanical heating, ventilation, and air conditioning systems, filtering, purification and other air cleaning, fans, control systems, and window and door repair and replacement.

(Q) Developing strategies and implementing public health protocols including . . . policies in line with guidance from the Centers for Disease Control and Prevention for the reopening and operation of school facilities to effectively maintain the health and safety of students, educators, and other staff.
Please note that the Environmental Protection Agency (EPA) has a variety of publications that can assist education leaders in improving the indoor air quality in schools. EPA resources on indoor air quality in schools can be accessed at: https://www.epa.gov/iaq-schools. The EPA has information available at: https://www.epa.gov/coronavirus/air-cleaners-hvac-filters-and-coronavirus-covid-19 on some indoor air filtration devices that use bipolar ionization technology, which has the potential to create ozone. EPA states that ozone generators should not be used in occupied spaces. If choosing to use a device that incorporates bipolar ionization technology, EPA recommends using a device that meets UL 2998 standard certification (Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners) and notes that there are many air cleaning devices that do not use bipolar ionization. In addition, the CDC provides information on improving ventilation in schools at: https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/ventilation.html and in buildings at: https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.
Newly Released CDC Guidance

Cleaning, Disinfecting, and Ventilation
Plan, Prepare, and Respond

Updated Dec. 21, 2020

Community, Work & School
Vaccination
Health Equity
Community Mitigation Framework
Cleaning, Disinfecting, & Ventilation

Guidance for Cleaning and D
Ventilation in Schools and Childcare Programs

How to use CDC building recommendations in your setting

Opening windows, using portable air cleaners, and improving building-wide filtration are ways you can increase ventilation in your school or childcare program.

Figure 2. Source: Jones et al., 2020. Schools for Health: Risk Reduction Strategies for Reopening Schools. Harvard Healthy Buildings Program.
COVID-19 can sometimes be spread by airborne transmission.

- Some infections can be spread by exposure to virus in small droplets and particles that can linger in the air for minutes to hours. These viruses may be able to infect people who are further than 6 feet away from the person who is infected or after that person has left the space. This kind of spread is referred to as airborne transmission.

- There is evidence that under certain conditions, people with COVID-19 seem to have infected others who were more than 6 feet away. These transmissions occurred within enclosed spaces that had inadequate ventilation.
IAQ Tools for Schools

Indoor Air Quality Backgrounder: The Basics

Air Supply in a Central Air Handling System

Air Supply in an Exhaustible System

Indoor Air Quality Tools for Schools

Ventilation Checklist

Teacher’s Classroom Checklist

Health Officer/School Nurse Checklist

Renovation & Repair Checklist

Building & Grounds Maintenance Checklist

Integrated Pest Management Checklist

Waste Management Checklist

Food Service Checklist

School Official’s Checklist

Administrative Staff Checklist

IAQ Tools for Schools

2. Animals in the Classroom

3. Drain Traps in the Classroom

4. Excess Moisture in Classrooms

5. Thermal Comfort

6. Ventilation

7. Educational Supplies (Art, Sci,...

Indoor Air Quality (IAQ)
The Framework for Effective School IAQ Management: Six Key Drivers

**ORGANIZE**
- Develop Systematic Approach
- Identify Existing Assets
- Design Standard Operating Procedures
- Empower an IAQ Leader
- Build an Effective Team
- Create Champions
- Secure Senior Buy-In

**EVALUATE**
- Solicit Feedback
- Capture Return on Investment
- Measure, Assess and Track Program Implementation
- Document Accomplishments
- Determine the Most Effective Strategies for Continuous Improvement

**COMMUNICATE**
- Share Your Goals
- Make IAQ Meaningful
- Be Transparent and Inclusive
- Communicate Results (Return on Investment)

**ASSESS**
- Walk the Grounds
- Listen to Occupants
- Use Technology
- Determine a Baseline
- Keep Customers Satisfied
- Identify and Prevent Risks

**PLAN**
- Prioritize Actions
- Put Goals in Writing
- Start Small
- Work in Stages
- Plan for the Future

**ACT**
- Educate Staff About IAQ to Change Behavior
- Train Occupants to Address IAQ Risks
- Address the Source of Problems

**Evaluate**

**Actions Kit**
- HVAC
- Moisture/Mold
- IPM
- Cleaning & Maintenance
- Materials Selection
- Source Control
- Energy Efficiency

**Organize**

**Communicate**

**Assess**

**Plan**

**Act**
The Framework for Effective School IAQ Management: Seven Technical Solutions

**Quality HVAC**
- Inspect HVAC systems regularly
- Establish a maintenance plan
- Change filters regularly and ensure condensate pans are draining
- Provide outdoor air ventilation according to ASHRAE Standards or local code
- Clean air supply diffusers, return registers and outside air intakes
- Keep unit ventilators clear of books, papers and other items

**Control of Moisture/Mold**
- Conduct routine moisture inspections
- Establish a mold prevention and remediation plan
- Maintain indoor humidity levels between 30% and 60%
- Address moisture problems promptly
- Dry wet areas within 24–48 hours

**Strong Integrated Pest Management (IPM)**
- Inspect and monitor for pests
- Establish an IPM plan
- Use spot treatments and baits
- Communicate with occupants prior to pesticide use
- Mark indoor and outdoor areas treated with pesticides

**Effective Cleaning and Maintenance**
- Conduct routine inspections of school environment
- Develop a preventive maintenance plan
- Train cleaning/maintenance staff on protocols
- Ensure material safety data sheets (MSDS) are available to staff
- Clean and remove dust with damp cloth
- Vacuum using high-efficiency filters

**Smart Materials Selection**
- Maintain products inventory
- Develop low-emitting products purchasing and use policies
- Use only formaldehyde-free materials
- Use only low-toxicity and low-emitting paint
- Select products based on product rating systems
- Use least toxic cleaners possible (only those approved by the district)

**Aggressive Source Control**
- Conduct regular building walkthrough inspections
- Test for radon; mitigate if necessary
- Implement a hazardous materials plan (use, label, storage and disposal)
- Establish a school chemical management and inventory plan
- Implement smoke-free policies
- Establish an anti-idling school bus policy
- Use walk-off mats at building entrances
- Conduct pollutant-releasing activities when school is unoccupied

**Integrated Energy Management Solutions**
- Protect IAQ during energy efficiency upgrades and building renovations
- Conduct regular HVAC maintenance and tune-ups
- Install programmable thermostats
- Consider performing post-construction commissioning for HVAC systems
- Control moisture in building assemblies, mechanical systems and occupied spaces
EPA Resources for Responding to COVID-19

Frequent Questions Related to Coronavirus (COVID-19)

Disinfectants
Indoor Air
Drinking Water
Grants
Wastewater and Septic Systems
Waste

COVID-19 is thought to spread mainly through close contact between persons to person. Exposure also may occur via fomites or contaminated surfaces. Indoor environments offer unique challenges and opportunities for intervention. The guidance below is intended to help facilities and communities to better understand and address the risks posed by COVID-19. EPA is working closely with public health officials and partners to provide information and resources on prevention, preparedness and response to COVID-19. Additional information is available on the EPA’s website: epa.gov/coronavirus

Indoor Air and Coronavirus (COVID-19)

COVID-19 is thought to spread mainly through close contact between persons to person. Exposure also may occur via fomites or contaminated surfaces. Indoor environments offer unique challenges and opportunities for intervention. The guidance below is intended to help facilities and communities to better understand and address the risks posed by COVID-19. EPA is working closely with public health officials and partners to provide information and resources on prevention, preparedness and response to COVID-19. Additional information is available on the EPA’s website: epa.gov/coronavirus

List N: Disinfectants for Use Against SARS-CoV-2

All products on this list meet EPA’s criteria for use against SARS-CoV-2, the virus that causes COVID-19.

Finding a Product

To find a product, enter the first two sets of its EPA registration number into the search bar below. You can find this number by looking for the EPA Reg. No. on the product label. For example, if it EPA Reg. 32199, enter 32199 into the search bar, you can find EPA Reg. No. 32199 in the database and know you’re getting an equivalent product. Search for EPA registration number

Other COVID-19 Resources

- EPA’s national database of COVID-19 resources
- COVID-19 prevention
- Data analysis and modeling
- Recommendations for COVID-19 and other viruses
IAQ Master Class Series
10 technical trainings to build your knowledge base to start, improve or sustain an IAQ management program. Complete all 10 to join the IAQ Master Class.

IAQ Knowledge-to-Action Series
Technical trainings to deepen your IAQ knowledge and build capacity to take immediate action.

Technical Knowledge
- Asthma Triggers
- HVAC Systems
- Moisture and Mold
- Energy Efficiency
- Integrated Pest Management
- Cleaning and Maintenance
- Materials Selection and Source Control

Capacity Building
- Funding and Gaining Buy-In
- Assessment and the IAQ Mobile App
- Staff Training
- Evaluation and Data

Virus Mitigation

Free Online Training, Earn CEUs!

www.epa.gov/iaq-schools/ondemand-training-webinars
EPA Resources to Get You Started!

- **IAQ Tools for Schools Action Kit**
- **IAQ Tools for Schools Mobile App**
- **Framework for Effective IAQ Management**
- **IAQ Master Class Professional Training Webinar Series**
- **Energy Savings Plus Health Guide and Interactive Air Quality Planner**
- **IAQ Tools for Schools: Preventive Maintenance Guidance**

[www.epa.gov/iaq-schools](http://www.epa.gov/iaq-schools)
Thank You!

Tracy Washington Enger
Indoor Environments Division
US Environmental Protection Agency
enger.tracy@epa.gov
Panel Discussion

LESSONS FROM THE FIELD
Frederick P. Remelius, Director of Operations
Upper Merion Area School District
4,000 K-12 students in King of Prussia, PA

WE SURVIVED THE GREAT COVID PANDEMIC THANKS TO

CDC & US EPA

AND WE ARE READY TO MOVE FORWARD!
COVID isn’t gone yet, the flu will be back and ASTHMA will be here forever.

Asthma affects more than 1 in 10 students & staff

Return On Investment from PREVENTIVE MAINTENANCE can be a much as 545 percent.

Preventive Maintenance yields an estimated 12% to 18% cost / energy savings!
MARK A. COCCO, FIRE INSPECTOR I, CIAQP, CPSI, CSCSI
SAFETY MANAGER

Martin County School District, Florida
K-12 | 17,500 Students | 34 Facilities | 3,689,914 sq ft
IAQ SUPPORT

Indoor air quality is not a job for one person. Support from School Boards, Principals, Staff and all Departments is necessary.

- Funding
- Policies, Procedures & Rules
- Technical
COMMUNICATION

Keep all stakeholders informed of the preventative measures and corrective actions through each step or phase of the IAQ program.

Remember, it is about the children.
Ricky Martinez Assistant Director Of Facility Services
Salt Lake City School District
K-12 24,020 Students, 38 Facilities, 4,600,000 sq ft

Front Line Workers are Heroes!
We Did It Together!
Pandemic & Indoor Air Quality

- Cleaning & Disinfecting – Safer Chemicals, Equipment, Processes, IPM
- Ventilation – Filters, Airflow, Set Points, Runtime & Damper Adjustments
- Training – Communication and Educating Staff & Stakeholders
Panel Discussion

LESSONS FROM THE FIELD
4. Select the topic(s) for which you feel additional information is needed. (Select all that apply.)

- Allowable Uses of ARP Funds
- COVID-19 Prevention and Safe Operations Strategies
- Mental Health for Students, Faculty and Staff
- Vaccinating Students, Faculty and Staff
- Re-engaging students
- Early childhood
- Higher education
- Nutrition and wellness
- Other (Please specify in the chat box.)
Lessons from the Field Webinar Series

SCHEDULE AND TOPICS FOR BACK-TO-SCHOOL SUMMER SESSIONS

July

July 14: Preparing to return to school

July 28: Supporting staff and educators

August

August 11: Re-engaging students as return to school (1)

August 25: Re-engaging students as they return to school (2)

September

September 8: Early childhood

September 22: Nutrition and wellness
Feedback Form

HTTPS://WWW.SURVEYMONKEY.COM/R/LFTFSESSION7
Thank You!

Should you have any questions, please contact us at NCSSLE@air.org or 800-258-8413. We are happy to help!

NCSSLE Website
https://safesupportivelearning.ed.gov

Best Practices Clearinghouse
https://bestpracticesclearinghouse.ed.gov/