

# ***CT School Indoor Environment Resource Team***

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## **“Buy-In” Presentation**



***EPA's Indoor Air Quality  
Tools for Schools***



# ***CT School Indoor Environment Resource Team***

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- AFT – Connecticut
- American Institute of Architecture
- American Lung Assn of CT
- CT Assn of Boards of Education
- CT Assn of Local Health Drs.
- CT Assn of Public Sch Superintendents
- CT Assn of School Business Officials
- CT Assn of School Administrators
- CT Council for Occup. Hlth & Safety
- CT Dept of Envir. Protection
- CT Dept of Education
- CT Dept of Public Health
- CT Department of Construction Services
- CT Education Association
- CT Foundation for Env. Safe Schools
- CT Interlocal Risk Management Assn
- CT OSHA
- CT PTA
- CT School Nurses Association
- CT School Building & Grounds Assn
- Southeast CT Indoor Air Coalition
- UCONN Health Center
- U.S. EPA Region I
- Yale Occup/Envir. Medicine Program



# ***Why is This Important?***

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- **Asthma Epidemic, Absenteeism, & Student Performance**
  - **Staff Health Issues**
  - **EPA'S TfS Program Works!**
  - **Communication is Key**
  - **State Law: All CT Schools Have IAQ Program**
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# **Why School IAQ?**



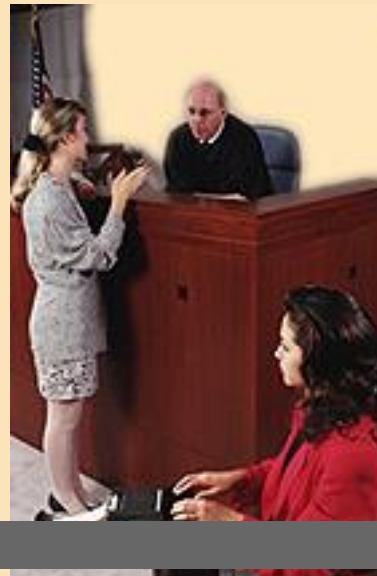
- **Large number of IAQ Phone Inquiries**
- **Serious School IAQ Incidences**
- **CT CASE Report**
- **EPA's Tools For Schools - Useful, Practical Intervention**





# ***Consequences of Poor IAQ***

- ◆ **Health Problems**
- ◆ **Reduced Learning and Productivity**
- ◆ **Higher Costs to Fix Problems than to Prevent**
- ◆ **Poor Public Relations**
- ◆ **Liability Issues**



# Public Health Implications

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## ■ Asthma:

- 14 Million Missed School Days Per Year
- Average Classroom: 2 asthmatic Kids
- In Urban schools – up to 25% asthma
- **Leading Health-Related Cause of School Absences**
- NIOSH: Leading Health Hazard for Teachers

## ■ Allergies:

- Cause Additional 2 Million Lost School Days



# ***IAQ & Academic Performance***

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## **Adequate Outdoor Air Ventilation:**

### **Benefits:**

- Improved student and teacher performance;
- Increased test scores; and
- Reduced airborne transmission of infection.

**In 1 study, students in classrooms with higher outdoor air ventilation rates scored 14 to 15 percent higher on standardized test scores than children in classrooms with lower outdoor air ventilation rates.<sup>1</sup>**

<sup>1</sup>Shaughnessy, R.J., et al. 2006. A preliminary study on the association between ventilation rates in classrooms and student performance. *Indoor Air* 16(6): 465-468.

# ***Addressing the problem***

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- **Problems Multifactorial - No Silver Bullet**
- **Avoid Relying on Air Testing**
- **Best Strategy: Ongoing Assessment, Improvements, Communication**





# ***What About “Testing the Air”?***

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## **Usually Not the First Move:**

- You Have to Know What You Are Looking for
- There Are No Appropriate Standards for IAQ
- There Are No Standards for Indoor Molds Levels
- Results May Be Hard to Interpret
- Can Lead to Confusion, Mistrust

## **A Comprehensive Building Evaluation Is 1st Step**

### **Note: Useful Tests:**

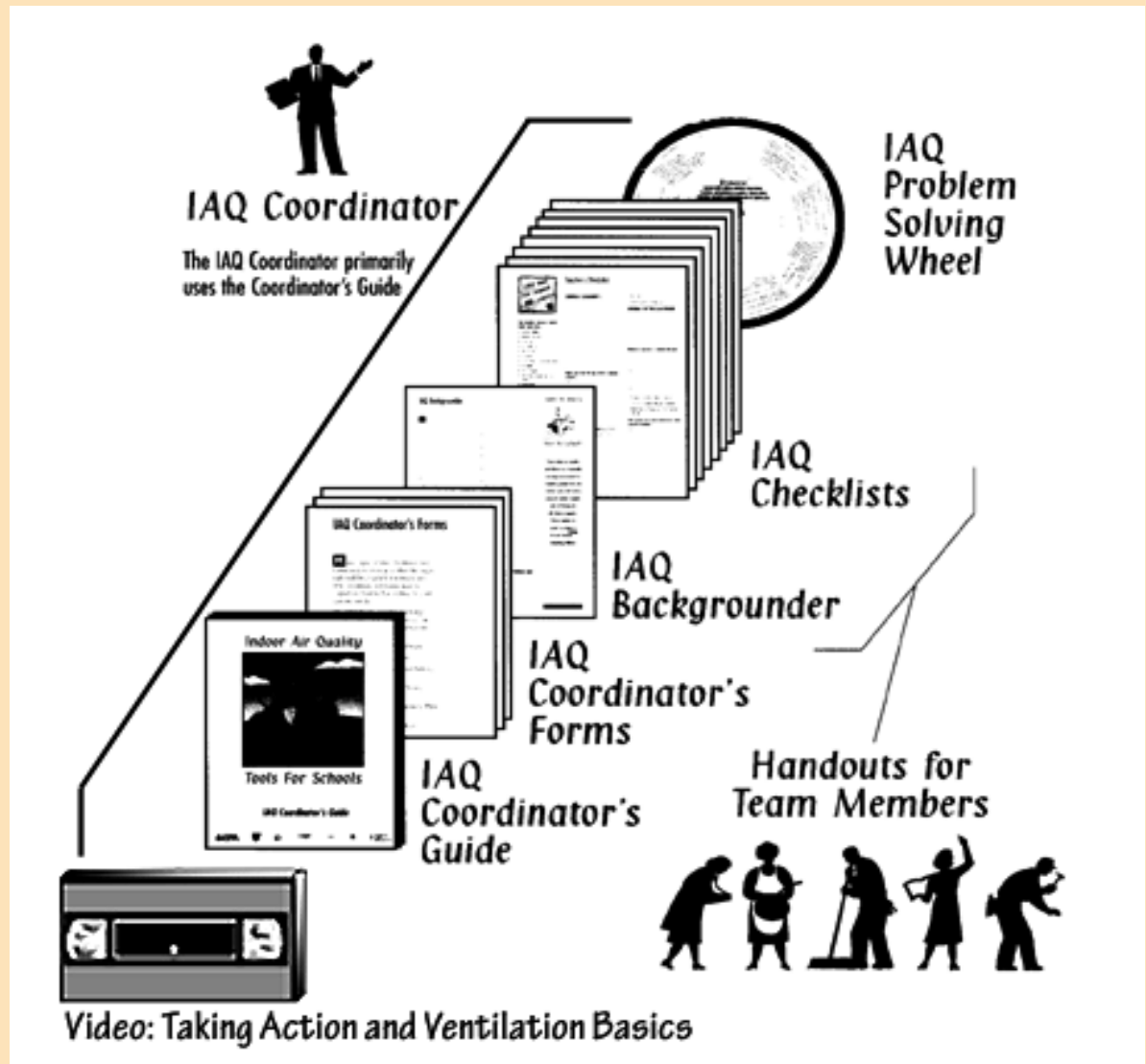
- Temperature
- Water Vapor
- CO<sub>2</sub>





# Tools for Schools Program

- ◆ Helps People Easily Diagnose IAQ Problems in Schools
- ◆ Simplifies the Process for Maintaining Good IAQ
- ◆ Prevents Loss of Dollars and Trust





# TfS Building Team Members

Teacher



Parent



Administrative Staff



School Nurse

Custodian





# **TfS Building Team Members**

## **Middle & High Schools:**

**– Utilize Students**



**Seize “The Educable Moment”**





# Tools for Schools Process

**Teams Trained**



**Buildings Assessed**



**Findings Prioritized**



**Report Developed**



**Improvements, Education**





## How Students Can Play a Role in the *Tools for Schools* Program to Create a Healthy School Environment



A healthy school indoor environment should be everyone's responsibility, including students. *Tools for Schools* (TfS) can offer students a chance to be involved as team members and as STEM learning opportunities. Students can also bring home ideas on how to make their homes healthy. Here are some suggestions.

### High School

- As a TfS team member
- Liaison to student government
- Write articles for the school newspaper/newsletter
- Present program to school community – assembly, PTA
- Involvement in environmental club, environmental science classes
- Develop and maintain TfS webpage for school/district
- Develop a database to compile TfS data and track corrective actions through clubs such as math or computer
- Participate in presentation to the Board of Education
- Collect data at home using the Healthy Homes checklist; compile results, make list of top problems
- Develop science experiments related to IEQ; science fair exhibit
- Go on school walkthrough; make suggestions for improvements students can make.
- Calculate energy savings from replacing incandescent bulbs with CFLs



### Students will learn:

- Science
  - Ecology
    - ✓ indoor environment,
    - ✓ pollution
  - Microbiology
    - ✓ mold
- Technology
  - ✓ Building science
- Engineering
  - ✓ ventilation systems,
  - ✓ building structure
- Math and Computer
  - ✓ developing

### Middle School





# ***Tools for Schools***

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- **Non-regulatory approach**
- **Public health preventive model**
- **Collaborative team approach**
- **Not tied to availability of funds**





# **TfS Building Team Members**

## **Statewide School Budget Crisis >**

### **Cuts in Maintenance Budget:**

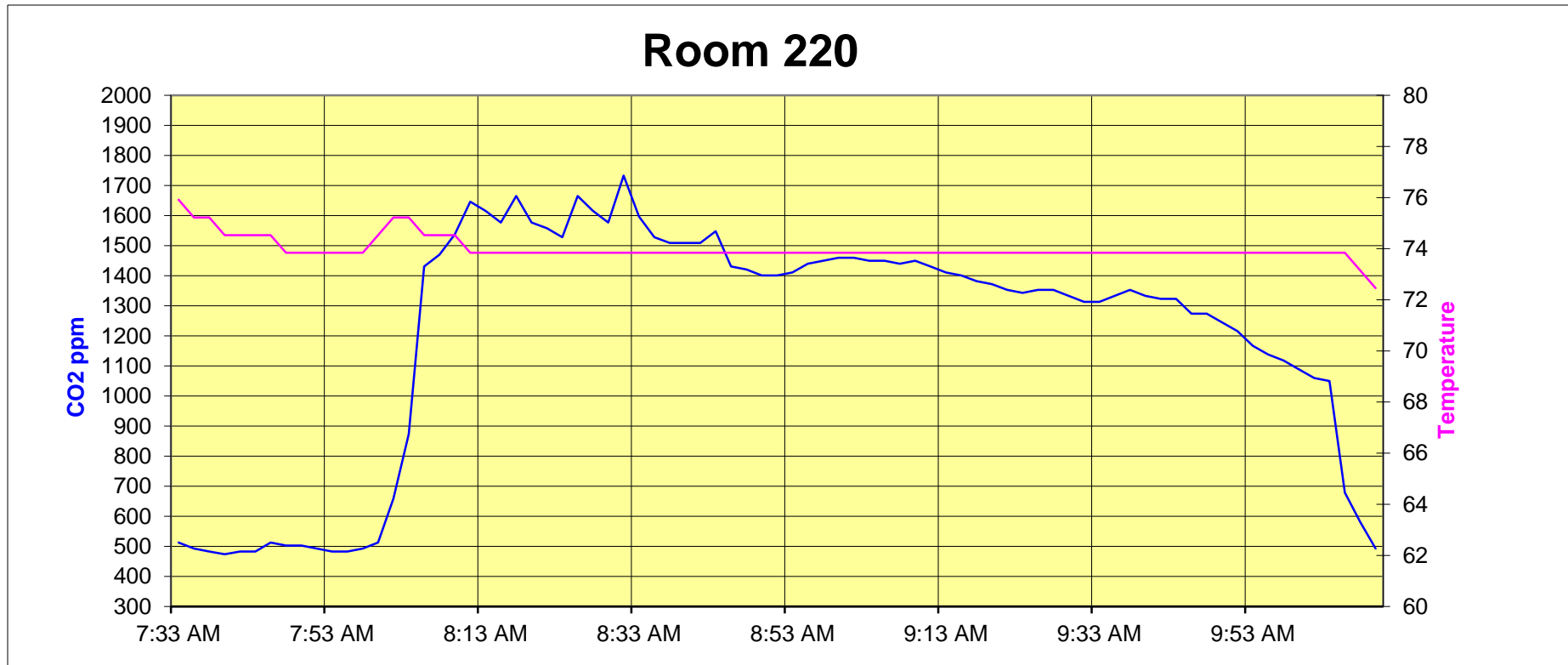
- Need Team Effort
- Focus on No, Low-cost Fixes





# Results of CO<sub>2</sub> Test

This is what happens when books are stacked on the unit ventilator

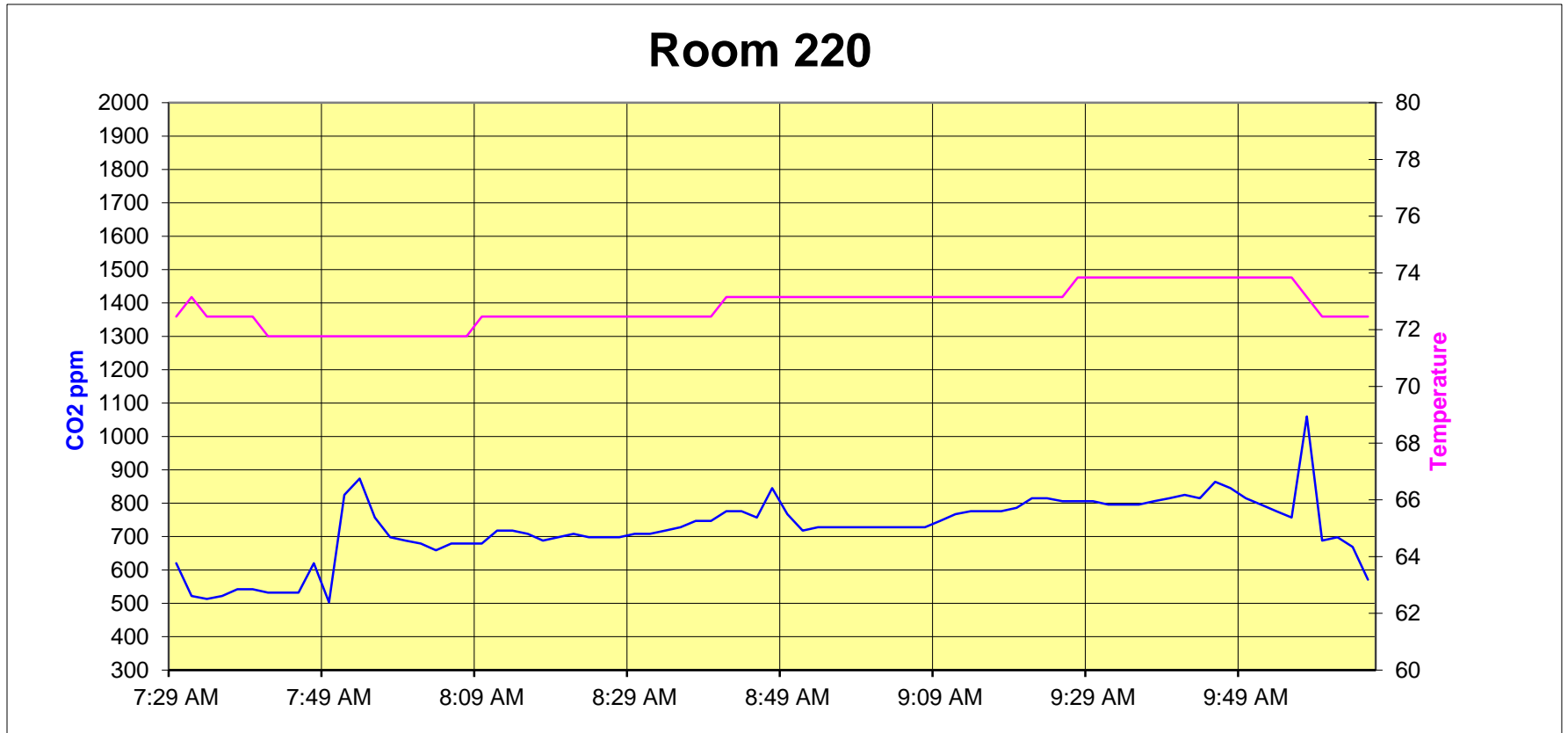


Credit:

Bill Thompson, Director of Facilities Management  
Lockport Township High School District 205, IL

# Results of CO<sub>2</sub> Test

## Removed Books Off Unit Ventilator



Credit:  
Bill Thompson, Director of Facilities Management  
Lockport Township High School District 205, IL

# ***Tools for Schools***

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- **Relatively Easy to Implement**
- **Addresses CT Law (Implement an IAQ Program)**
- **Planning Mechanism**
  - **Communication Component**





# ***Healthy IAQ & Energy Conservation***

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- **Energy Cost-saving Measures Should Not Include Reducing Fresh Air!**
- **Less Energy Costs → More Funding for IEQ Improvements, Maintenance**
- **TfS Teams Should Encourage Energy Conservation**



# ***Training Program***



## **2 Part Training:**

### **1st Module:**

- **IAQ Health issues**
- **Basics of School IAQ issues**
- **Review of TFS Action Packets/Program**
- **Importance of Effective Communication**

### **2nd Module :**

- **Walkthrough Training**
- **2 Hr. Workshop With Exercise in A School**



# ***Implementation Guide Summary***

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- 1. Initial School Team training**
- 2. Present TfS to Faculty/Staff**
- 3. Assemble/Distribute Action Packets**
- 4. Summarize checklists/  
[View Ventilation Basics Video](#)**
- 5. Training on conducting a walkthrough investigation**
- 6. Walkthrough Investigation**
- 7. Prioritize Results of Investigation**
- 8. Taking Action**

# CT Districts With Tfs

[www.ct.gov/dph/schools](http://www.ct.gov/dph/schools)



## Connecticut School Districts That Have Implemented \* EPA's Tools For Schools Indoor Air Quality Program as of September 17, 2014

### Connecticut School Indoor Environment Resource Team Member Organizations

American Federation of Teachers  
 CT American Institute of Architecture  
 American Lung Association of Connecticut  
 CT Association of Boards of Education  
 CT Association of Local Health Directors  
 CT Association of Public School Superintendents  
 CT Association of School Business Officials  
 CT School Building & Grounds Association  
 CT Council for Occupational Safety & Health  
 CT Department of Energy & Environmental Protection  
 CT Department of Education  
 CT Department of Labor, Division of Occupational Safety and Health  
 CT Department of Public Health  
 CT Education Association  
 CT Federation of School Administrators  
 CT Foundation for Environmentally Safe Schools  
 CT School Nurses Association  
 CT Internal Risk Management Agency  
 CT Parent & Teacher Association  
 UCONN Health Center - Division of Occupational & Environmental Medicine Program  
 U.S. Environmental Protection Agency, Region 1  
 Yale Occupational & Environmental Medicine Program

### Technical High Schools With "Tools for Techs" Teams:

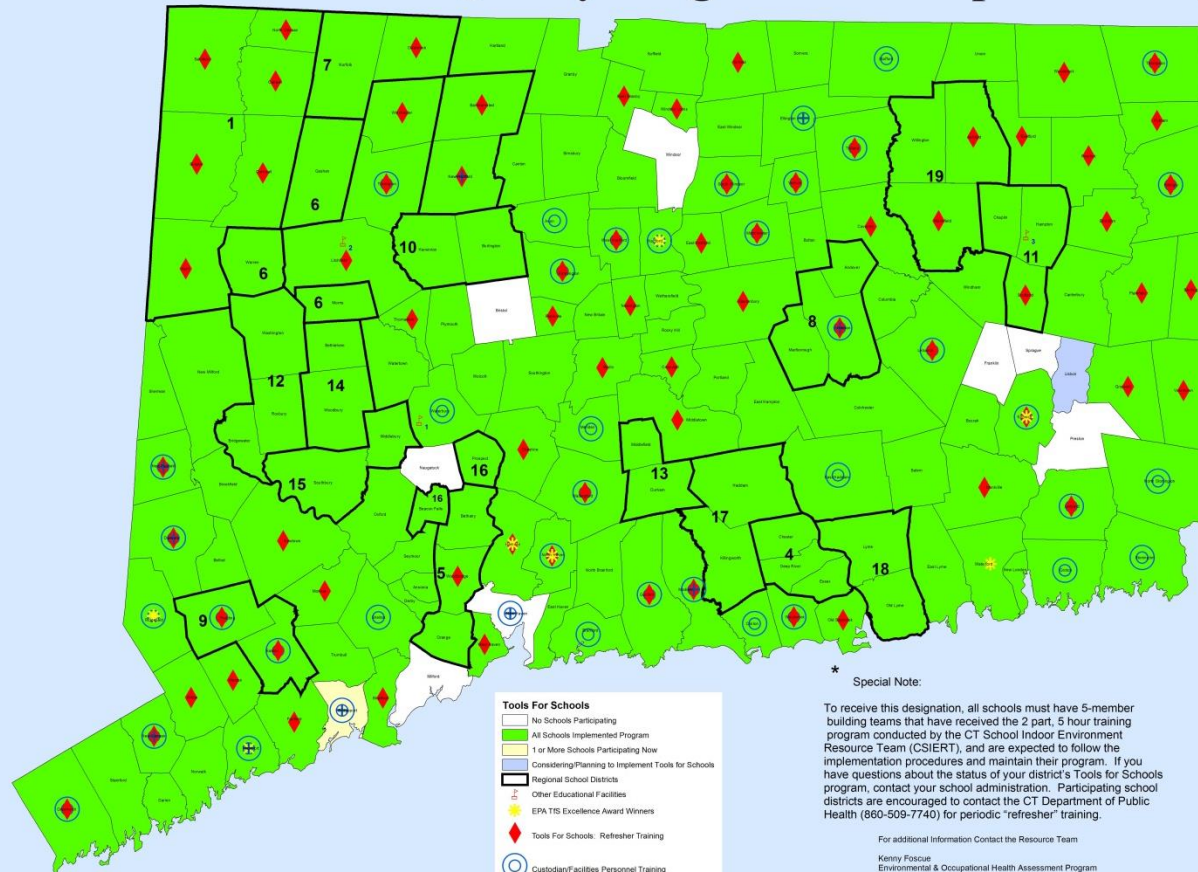
School	City
Cheney	Manchester
Prince	Hartford
Vinal	Middletown
Grasso	Groton
O'Brien	Ansonia
Platt	Milford
Bullard-Haven	Bridgeport
Winham	Williamantic
Norwich	Norwich
Kaynor	Waterbury

### REGIONAL SCHOOL DISTRICTS

- | DISTRICT | TOWNS  |
|----------|--|
| 01       | CANAAN, CORNWALL, KENT NORTH, CANAAN, SALSBURY, SHARON |
| 04       | CHESTER, DEEP RIVER, ESSEX                             |
| 05       | BETHANY, ORANGE, WOODBRIDGE                            |
| 06       | GOSHEN, MORRIS, WARREN                                 |
| 07       | BARKHAMSTED, COLEBROOK, NEW HARTFORD, NORFOLK          |
| 08       | ANDOVER, HEBRON, HARTFORD, EASTON, REDDING             |
| 10       | BURLINGTON, HARTWINTON                                 |
| 11       | CHAPLIN, HAMPTON, SCOTLAND                             |
| 12       | BRIDGEWATER, ROXBURY, WASHINGTON                       |
| 13       | DURHAM, MIDDLEFIELD                                    |
| 14       | BETHLEHEM, WOODBURY                                    |
| 15       | MIDDLEBURY, SOUTHBRURY                                 |
| 16       | BEACON FALLS, PROSPECT                                 |
| 17       | HADDAM, KILLINGWORTH                                   |
| 18       | LYME, OLD LYME   |
| 19       | ASHFORD, MANSFIELD, WILLINGTON                         |

### Regional Education Service Centers (RESCS):

- ACES
- CREC
- Education Connection, Litchfield, CT
- EASTCONN, Hampton, CT



**Tools For Schools**

- No Schools Participating
- All Schools Implemented Program
- 1 or More Schools Participating Now
- Considering/Planning to Implement Tools for Schools
- Regional School Districts
- Other Educational Facilities
- EPA TFS Excellence Award Winners
- Tools For Schools: Refresher Training
- Custodian/Facilities Personnel Training
- Green Cleaning Consultation

**\* Special Note:**  
 To receive this designation, all schools must have 5-member building teams that have received the 2 part, 5 hour training program conducted by the CT School Indoor Environment Resource Team (CSIERT), and are expected to follow the implementation procedures and maintain their program. If you have questions about the status of your district's Tools for Schools program, contact your school administration. Participating school districts are encouraged to contact the CT Department of Public Health (860-509-7740) for periodic "refresher" training.

For additional information contact the Resource Team  
 Kenny Foscoe  
 Environmental & Occupational Health Assessment Program  
 CT Department of Public Health, Environmental Health  
 410 Capitol Ave, MS # 11CHA, Hartford, CT 06134-0308  
 Phone: 860-509-7740 Fax: 860-509-7785



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# ***CT Success Stories***

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- **Waterford**  
IAQ Health Complaints Decrease of 66% or Greater in 9 Out of 13 Elementary Classrooms After TfS Implemented
- **North Haven**  
Decrease of 48% (256) of Reported Cases of Respiratory-related Illnesses After TfS
- **Chester**  
# Yearly Asthma-related Office Visits Decreased 463 Before TfS to 82 (Over 4 Yrs) After TfS
- **Hartford**  
# Of Asthma Incidents Declined 21% After TfS, Companion Nurse Training
- **EPA National Excellence Award Winners:**
  - Hamden
  - Norwich
  - Hartford
  - Waterford
  - North Haven
  - Amity Region 5
  - Ridgefield
  - Technical High School System
  - Westport





# ***Chester Elementary TfS Experience***



- **School Nurse Reporting**
- **Approx. 335 Students**
- **Large # Asthma Visits, Other Complaints**
- **TfS Interventions:**
  - **Carpet Removal**
  - **Repair Roof Leaks**
  - **Ventilation Improvements**
  - **Pest Management Program**

<b>School Year</b>	<b># Asthma Related Office Visits</b>
2001-2002 (before TfS)	463
2002 – 2003 (After TfS)	256
2003-2004	114

**Absenteeism < by 860 - 1yr**



# *Getting TfS Going*

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- **Presentation to School Executive Staff**
- **School System Recruits Teams**
- **1st Training Scheduled, Conducted**
- **2nd Training Conducted After Initial Assessment Period**
- **Follow-up by LHDs**
- **Yearly Kick-off Meetings**



# ***Other CSIERT Resources***

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- ✓ **Refresher Workshop**
  
- ✓ **Custodian/Facilities “Advanced TfS” Workshop**
  - ✓ **IAQ**
  - ✓ **Green Cleaning**
  - ✓ **Flu Outbreaks/Infection Control**
  
- ✓ **CSIERT Web Site**
  
- ✓ **IAQ Curriculum for Teachers**



**CONNECTICUT  
GREEN LEAF  
SCHOOLS**

*Leading, Educating, Achieving and Fostering  
healthy, green schools for all.*

**Provide Effective  
Environmental and  
Sustainability  
Education**

**Improve the  
Health and  
Wellness of  
Students and  
Staff**

**(Including Healthy  
Building Environments)**

**Reduce  
Environmental  
Impact and Cost**