

# Indoor Air Quality in Northwest Schools

***An electronic newsletter for school Indoor Air Quality (IAQ) exclusively for Northwest schools***

Spring Quarter 2002

*“20% of the US population spend their days in elementary and secondary schools . . . yet, half of US schools have problems linked to Indoor Air Quality.”*  
source: EPA

## Why this newsletter?

Good things are happening regarding indoor air quality in many schools across our four-state region (Oregon, Washington, Idaho, Alaska). This newsletter was developed to provide a forum to share information so all schools in the region can benefit from the “collective wisdom” of hundreds of practical and creative school facility employees who have dedicated themselves to operating healthy schools, often with inadequate budgets. Hypertext links will be provided throughout the newsletter to give instant access to additional resources.

To keep building on the collective wisdom, this newsletter will help alert you to IAQ training opportunities in our region, as well as grants and other funding opportunities.



*Indoor Air Quality in Northwest Schools* will gradually feed you tips and notes about IAQ to increase your awareness of the many things that add up to good IAQ. These tips will help you recognize those often small - but important - things you can do or observe and report during your normal work activities that will enhance the indoor health of your school at low or no cost, or even save large sums of scarce maintenance dollars. A teacher might report a water leak before it becomes water damage and ultimately a mold problem. A facilities employee might learn to significantly improve classroom ventilation with a simple adjustment to existing systems. Hopefully, information provided in the newsletter will help your school perform as well as it possibly can with regard to IAQ, given the financial constraints felt by all school districts in the region.



## Why is this Newsletter provided only in electronic format?

An electronic newsletter makes sense. It can be broadcast to hundreds of people immediately and allows easy feedback and real input from users. An electronic newsletter also makes sense for the environment -as always we need to be aware of opportunities to be resource efficient and reduce costs while improving services. Printing and mailing fewer newsletters saves money, and electronic access will help reach a larger audience. The newsletter will be published and distributed as a .pdf file, which should be easy for most users to print and distribute as needed. If a mailed version is needed, please let us know and we'll do our best to accommodate this need.

Your comments and suggestions for improvements to this newsletter are welcome. Those interested in submitting an article, newsworthy item, or comment, can email Rich Prill at [prillr@energy.wsu.edu](mailto:prillr@energy.wsu.edu).

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Facility Manager Carl Haan measures the concentration of carbon dioxide entering an occupied classroom during an IAQ walkthrough evaluation in the Lynden Christian Schools in Washington State.

Answers to and discussion of frequently asked questions (FAQs) about IAQ from

teachers, administrators, parents, and facilities staff can be presented to a wide audience, followed by recommendations from IAQ specialists, building scientists, and most importantly those school facilities folks that have "been there and done that."

Many of you have good ideas that work for your classroom or school that can be broadcast to others using this electronic newsletter and we welcome your input.

Let us know: [prillr@energy.wsu.edu](mailto:prillr@energy.wsu.edu) or <mailto:wawrukiewicz.ann@epa.gov>

## News from EPA Region 10

### Ann Wawrukiewicz is your Regional Indoor Air Quality Program Manager

School indoor air quality is one of U.S. Environmental Protection Agency's (EPA) top priorities, and schools in Region 10 have access to great IAQ resources. In Washington, Oregon and Idaho we have grants that can help you with free technical assistance in getting Tools for Schools implemented in your school or school district. If you have any questions or comments about Tools for Schools or indoor air in Region 10, call Ann Wawrukiewicz at 1-800-424-4372 x 2589. If you'd like to learn more about the Tools for Schools program by having a presentation in your school district, be it for administrators, facilities managers, school nurses, teachers, or parents, give Ann a call.

This year, for the first time, we expect to have a regional award program affiliated with the national IAQ Tools for Schools Excellence Awards. Through this program we will honor schools in the region that have made outstanding progress toward improving air quality in their schools. Watch this space for more information about how to nominate your school or district for an award!

## EPA Hosts National School Symposium – Opportunities for NW school folks to attend

The U.S. Environmental Protection Agency (EPA) will host its 3rd Annual *Indoor Air Quality Tools for Schools* National Symposium on August 8-10, 2002, in Washington, D.C. The Symposium will bring together school board officials, administrators, school nurses, teachers, facility managers, school and health association members, parents, and others to discuss good indoor air quality in our nation's schools. Attendees will learn about resources and materials, including EPA's *Indoor Air Quality Tools for Schools* Kit and Program, which will enable them to support and implement good IAQ practices in schools. Expenses will be paid for some qualifying members, including travel, lodging, and the Symposium registration fee.

Innovative sessions will address various topics associated with implementing an IAQ program in a school settings, including communication strategies, mold remediation, facilities management, integrated pest management, new school construction, student performance, advocacy, financing, asthma management and more. An awards ceremony will be held to honor schools with exemplary IAQ programs.

## Grants available from EPA Region 10

Over the next few years Region 10 will most likely have several grant opportunities for school districts to implement the Tools for Schools kit in their schools. These opportunities will be advertised in this newsletter as timing allows, but if you would like to be notified about funding availability directly by email, please send your contact information and email address to Ann Wawrukiewicz at <mailto:wawrukiewicz.ann@epa.gov>

Symposium sponsoring associations will cover expenses for some qualifying individuals, including travel, lodging and the Symposium registration fee.

Sponsoring associations include the American Association of School Administrators, American Lung Association, Council of Educational Facility Planners International, National Association of School Nurses, National Education Association Health Information Network, and others. Application packets will be available March 1st. Additional information regarding the symposium can be found on EPA's website at [www.epa.gov/iaq/schools](http://www.epa.gov/iaq/schools).

### EPA sponsors new IAQ technical hotline

Do you need information about an indoor air quality issue in your school, or technical assistance using the IAQ Tools for Schools Kit? EPA is supporting the University of Wisconsin's efforts to assist public schools with technical questions about IAQ Tools for Schools Kit. They'll field and respond to inquiries that range from technical questions on HVAC systems or diagnosing IAQ problems to nontechnical questions involving the kit and its implementation.

The toll-free number is 1-866-837-3721. The hotline is staffed from 8:30 a.m. to 4:30 p.m. Central Time or you can send questions to [mailto:tfs\\_help@epa.gov](mailto:tfs_help@epa.gov).

## IAQ Programs Across the Region

### Unique Indoor Air Program helps schools in NW Washington

The Northwest Air Pollution Authority (NWAPA), located in Mount Vernon, WA, is the only local air pollution control agency in North America that aggressively addresses indoor air issues, especially in schools. Within a jurisdiction that covers Island, Skagit and Whatcom counties, NWAPA Indoor Air Quality Specialist Dave Blake has provided free IAQ evaluations of 85 schools since November, 2000. Most of these schools have also "implemented" EPA's *IAQ Tools for Schools* program and have created in-house policy documents to guide administrative response to indoor air issues if they arise. Aided by EPA grants and the on-site consultation of indoor air expert Rich Prill of Washington State University Cooperative Extension Energy Program (Spokane), NWAPA has also provided dozens of free workshops targeting key people (facility managers and staff, health professionals, architects, loss control specialists). NWAPA has also purchased a variety of indoor air monitoring equipment and moisture meters that are available for loan to responsible parties. The equipment can be used to investigate potential problem situations or to collect "baseline" data that documents how a school building is performing now - without reports of indoor air issues - information that often proves to be invaluable when concerns or problems arise.

## Awards and Special Recognition

Outstanding efforts by key personnel earn EPA's National 2000-2001 **IAQ Tools for Schools** awards for Eastern Washington's ESD 101, Western Washington's Everett and Sedro Woolley School Districts

U.S. Environmental Protection Agencies headquarters in Washington, DC hands out only 10 national awards per year to school district personnel that demonstrate an outstanding commitment to improving indoor air quality in schools by implementing EPA's *IAQ Tools for Schools* program. In 2000, Mike Riddle, maintenance supervisor for the Sedro-Woolley School District received one of the ten national awards recognizing his work creating and managing their IAQ program. Among many other accomplishments, all schools in his district have been evaluated and fresh outside air ventilation increased in areas found lacking.

In 2001, Jim Kerns of Spokane-based ESD 101 earned one of only three special national awards, while Gary Jefferis of the Everett School District was awarded one of the ten national awards. Both Jim and Gary have demonstrated that significant IAQ improvements can be made by creative redirection of existing maintenance dollars.

All three men are quick to say they had plenty of help from coworkers but clearly they provide a few examples of how one committed person can make a significantly positive impact on IAQ for a school district. These individuals are happy to talk to anyone who cares to "pick their brains" for ideas on how to achieve similar success in other districts. Contact Mike Riddle at 360-855-3505; Jim Kerns at 509-789-3517; and Gary Jefferis at 425-388-4770. View the article on Jim Kerns at ESD 101: look at the Fall 2001 back issue at <http://www.esd101.net/focus.html>

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## IAQ News from Idaho Schools

The Idaho Indoor Environment Program/Division of Health and the WSU Energy Extension Program have provided IAQ evaluations for 45 Idaho schools in the past 3 years. These “walk-through evaluations” include checking schools for adequate fresh air ventilation, air flow patterns (e.g. classroom to darkroom to exhaust fan), and possible asthma and allergy triggers. Schools statewide are encouraged to take a proactive stance and establish an IAQ program and policy for all their buildings. The participating schools have been very cooperative and feedback has been overwhelmingly favorable. This year, we plan to conduct IAQ walk-through evaluations in 3 more major school districts. If you would like to have a walk-through conducted in your school, please contact Kara Stevens, manager, Idaho Indoor Environment Program at 1-800-445-8647 or [stevensk@idhw.state.id.us](mailto:stevensk@idhw.state.id.us).

## Easier Three Step process to “implement” EPA’s *IAQ Tools for Schools* program

“There had to be a simpler way,” explained Rich Prill of Washington State University Cooperative Extension Energy Program. Rich, a “building scientist” and indoor air expert with 20 years of experience, helped design the Three Step approach to jumpstarting schools with EPA’s *IAQ Tools for Schools* program. Last year, Rich and other partners around the region helped over 200 northwest schools implement an indoor air quality program tailored to the needs of each school.

Step One: Select an Indoor Air Coordinator for the school. The Indoor Air Coordinator provides a focal point to receive staff input on IAQ and organize response action.

The cozy corners so often encountered in K-6 classrooms may also be sources of allergy and asthma triggers unless extraordinary care is taken to keep items clean and dust-free.



Step Two: Do an IAQ walk-through evaluation of the school using a provided form. The assessment is aimed at helping the district understand how the building works, what is being done well and what improvements might be considered. The walk-through is a wonderful opportunity for school personnel to get the benefit of one-on-one IAQ and building science training in their own facilities.

Step Three: Create a written indoor air program for the school by selecting from a comprehensive list of bulleted IAQ Program building blocks. Based on the findings from the walk-through evaluation, WSU staff assists with the prioritization of actions, and helps each school craft a custom IAQ program.

## What we learned from the first 156 school evaluations

The Step 2, walk-through evaluation results clearly show the following:

- ◆ A significant number of schools have ventilation deficiencies and exhaust fan failures. 42% of the classrooms visited had CO<sub>2</sub> levels above 1,000 ppm and 67 % of the schools had exhaust fans that were not functioning properly. For more information, go to [www.es.wapa.gov/pubs/briefs/co2/co2.cfm](http://www.es.wapa.gov/pubs/briefs/co2/co2.cfm)
- ◆ The schools also had 180 portable classrooms, with 66% of these portable classrooms having CO<sub>2</sub> levels above 1,000 ppm. Ventilation systems in 46 portables were turned off, and 18 portables had no mechanical ventilation system.
- ◆ Carpets are widely used in the schools
- ◆ Office equipment (copiers, laminators) is rarely vented to the exterior.
- ◆ Animals were present in classrooms in a majority of the schools.
- ◆ Only 4% of schools with combustion equipment had carbon monoxide (CO) alarms installed.

A follow-up telephone survey allowed school IAQ coordinators to evaluate the relative success of the 3 Step program in their schools. IAQ coordinators (representing 94 % of the schools) were successfully contacted by telephone and asked to respond to 10 questions regarding the 3 Step program. Here are some highlights:

- ◆ The majority of IAQ coordinators “agreed” or “strongly agreed” that their schools had already responded to the highest priority recommendations developed from the walk-through assessment; and “strongly agreed” that they would recommend the 3 Step IAQ Program to other school districts.
- ◆ All IAQ coordinators “agreed” or “strongly agreed” that the 3 Step Program was useful in identifying important indoor air quality issues in their buildings, helped staff more fully understand IAQ in their buildings, and will help prevent IAQ problems from occurring in their buildings.
- ◆ 90% of IAQ coordinators also “agreed” or “strongly agreed” that it was useful to have an “outside expert” conduct the IAQ assessment and assist with launching their IAQ program.
- ◆ 90% strongly agreed that the school district would neither have completed a thorough IAQ assessment nor established an IAQ program without competent, and relatively unbiased assistance.
- ◆ 70 % “agreed” or “strongly agreed” that IAQ is one of the major challenges facing their school district and their IAQ problems are preventable with a reasonable amount of effort and financial investment. For more information, go to [www.energy.wsu.edu/index/buildings.cfm](http://www.energy.wsu.edu/index/buildings.cfm)



Planned exhaust to remove potential pollutants directly outdoors is recommended for equipment like kilns, laminators, darkrooms, and busy photocopiers.

More information about Indoor Air Quality is available on the Internet:

**U.S. Environmental Protection Agency**

<http://www.epa.gov/>

**Washington State Department of Health**

<http://www.doh.wa.gov/>

**Office of Superintendent of Public Instruction**

<http://www.k12.wa.us/>

**Northwest Air Pollution Authority**

<http://www.nwair.org/>

**Washington State Cooperative Extension Energy Program**

<http://www.energy.wsu.edu>

Support for this newsletter is provided by the U.S. Environmental Protection Agency, Region 10

### Healthy and Comfortable Schools

Several carefully controlled studies designed to measure student performance and establish a correlation with indoor air quality parameters are being conducted now and should yield some quality information in the near future. Meanwhile, most educators agree that when students are uncomfortable, distracted by illness and health symptoms from allergies and asthma, or absent, their performance and achievement can be seriously impacted. For more information, check out EPA's "Indoor Air Quality and Student Performance" publication # EPA 402-F-00-009, or view/download at <http://www.epa.gov/iaq/schools/perform.html>.