



PUBLIC HEALTH

**ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON**

Washington State Department of Health
School Environmental Health & Safety
Fall 2009 Workshops

IAQ/School EH&S Program Mission

*To protect and improve the
Environmental Health & Safety
conditions of schools
and Indoor Air Quality in Washington
State.*

Program Vision

- *The indoor air quality (IAQ) and school environmental health and safety (EH&S) program will be the premier technical source for information and training on IAQ and school EH&S in Washington State.*
- *The public will be aware of the importance of school EH&S to student and staff health, safety, and productivity.*
- *The citizens of Washington State will have the knowledge necessary to achieve and maintain healthy indoor air quality.*

Environmental Health and Safety Issues in Schools

- **Indoor Air Quality (IAQ)**
- **Safe food and water**
- **Building design**
- **Acoustical Control**
- **Daylighting**
- **Safety in labs, art rooms, and shops**
- **Safe use, clean-up, and disposal of chemicals**
- **Injury prevention through design and modification**
- **Integrated Pest Management (IPM)**
- **Clean and dry**

School Environmental Health & Safety

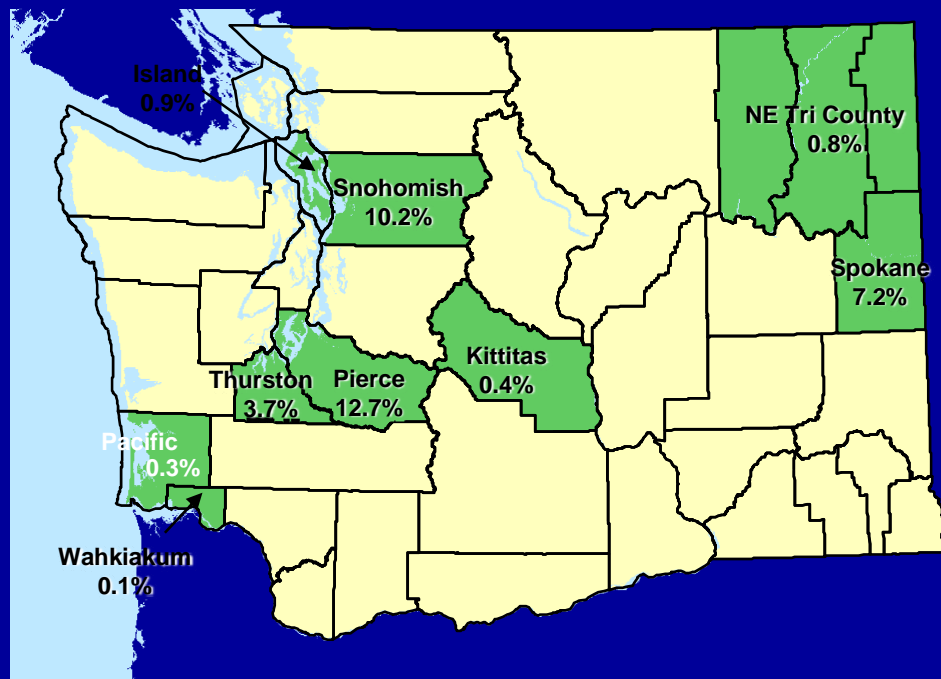
- **Staff**
 - Program Manager - 1.0 FTE
 - Public Health Advisor - .75 FTE
- **WAC 246-366**
 - DOH/OSPI K12 Health & Safety Guide (K12 H&SG)
- **Provide technical support & training, develop resources**
 - Local Health Jurisdictions (LHJs)
 - Schools: K – 12th grade
 - School IAQ Best Practices Manual
 - “Green Cleaning” tools and resources
- **Available for school IAQ technical assistance/ Investigations**
- **School IAQ Monitoring Station Loan Program**

Partners & Associates

- 35 Local Health Jurisdictions
- State Agencies:
 - Office of The Superintendent of Public Instruction (OSPI)
 - School Facilities, Safety Center, School Nurse Corps
 - 9 Educational Service Districts (ESDs)
 - **DOH Office of Environmental Health, Safety, & Toxicology**
 - Zoonotic Diseases, Food Safety, Assessments, Pesticides
 - DOH Asthma Program, Injury Prevention Group
 - DOH/OSPI/CDC Coordinated School Health
- Ecology
- Labor & Industries
- Agriculture
- State Building Code Council
- Department of Early Learning
- Clean Air Agencies – NWCAA

- **Federal Agencies: EPA, CPSC, CDC, NIOSH**
- **Associations: WSPHA, WSEHA, WASBO, WAMOA, WASA, SNOW, WSPTA, ALA-WA**
- **Standard Setting**
 - **American Society for Testing and Materials (ASTM)**
 - **American National Standards Institute (ANSI)**
- **WA Education Association (WEA)**
- **Risk Insurers:**
 - **WA Schools Risk Management Pool (WSRMP)**
 - **ESD 112 Insurance Cooperative**
 - **Canfield & Associates – insurance**
- **Washington Asthma Initiative**
- **NW Pediatric Environmental Health Specialty Unit (ATSDR)**
- **Higher Ed:**
 - **UW School of Public Health & Community Medicine**
 - **WSU Energy Extension Program**
 - **WSU Extension Program**

LHJ School Environmental Health and Safety



- LHJ School Environmental Health Programs (% of students)
- LHJs without School Environmental Health Programs

- 1.2 million school-aged children
 - 2,300 public schools in 295 districts
 - 494 private schools
- Students spend 1,300 hours in school each year
- Health risks are greater for children—they are not small adults”
- Nine Local Health Jurisdictions conduct routine environmental health and safety inspections every 1-3 years, serving a total of 36.3% of the state’s K-12 school students

Program Technical Materials/Partnerships

- **DOH/OSPI K12 Health & Safety Guide**
 - **Updating the K12 this year to correct code references.**
 - Section at a time, sent out for a short review period.
 - Upload to a new website section-by-section.
 - Intend it to be more user friendly.
- **School IAQ Best Practices Manual, 2003**
- **EPA / CDC / NIOSH / ASHRAE Technical Guidance**
- **NW Clean Air Agency/WSU EE (Dave Blake/Rich Prill)**
 - **School IAQ Walk-Through DVD**
 - **EPA Region X Tools for Schools 3 Step Guide**
- **King County Local Hazardous Waste Management Program**
 - **Hazardous Chemicals in Schools Data Base, Art Hazards**
 - **Rewriting and expanding much of the Rehab the Lab, School Chemicals Database and Art Chemical Hazards websites**
 - **Major updates due Winter 09-10**

EPA – Schools Chemical Cleanout Campaign (SC3)

- **SC3 aims to ensure that all schools are free from hazards associated with mismanaged chemicals.**
- **SC3 gives K-12 schools information and tools to responsibly manage chemicals.**

<http://www.epa.gov/epawaste/partnerships/sc3/index.htm>

School EH&S Fall Workshops

- 2001, 2002, 2003 Statewide School EH&S committee
 - EPA Sponsorship – IAQ and Rehab the Lab committees
- 2004 – First Fall Workshop – 6 locations
 - Build on the work of the 3 annual meetings
 - Local Health Jurisdictions (LHJs) and schools together
 - DOH Office of Drinking Water sponsored
 - Seattle Public Schools lead in DW issue
 - Lunches and snacks
- 2005 – 7 locations +1, Lunch on their own
- 2006 – 9 locations, first DVD produced – IAQ / TfS Walkthrough
- 2007 – First use of Workshop website
 - Healthy Cleaning PPT w/ voice posted
 - High Hazards Chemicals DVD
- 2008 – First use of K20 for Dave Waddell to do all 9 locations
- 2009 – First partnership with OSPI School Nurse Corps
 - Budget reductions continue

Students Saved with AEDs

Teacher at Hazen High saves student with defibrillator

- Freshman collapsed during the 1 mile run
- PE teacher – CPR, 1 student to call 911, 1 student to get the AED
- School nurse took over CPR until medics arrived
- Renton SD has 38 AEDs at all schools, at least 2 at each middle and high school

Redmond Jr. High School

- 13 year old in gym class
- Trained teacher, principal, coach
- AED in the school

Concussion

Zackery Lystedt law, May 4, 2009

- Requires all school districts to work with the WIAA to develop guidelines and informational forms to educate coaches, youth athletes, and their parents of the nature and risk of concussion and head injury
- Requires signed informed consent , parents and youth athletes
 - acknowledging the risk of head injury prior to practice or competition
- Requires that a youth athlete who is suspected of sustaining a concussion or head injury be removed from play.
- Written clearance prior to returning to play, from a licensed health care provider.
- Requires private, nonprofit youth sports associations to be in compliance with the policies adopted by the WIAA.

Harborview Medical Center, UWMC, & Children's Hospital– New
Seattle Sports Concussion Program

Sports Injuries

- **Install breakaway or flush bases on all softball & baseball fields**
 - 96% reduction in injuries
- **Automatic External Defibrillators**
- **Light weight “soccer” balls for heading drills**
- **Anchor soccer goals**
 - CPSC: At least 28 deaths since 1979
- **Padded soccer & football goal posts**
 - Hooks covered
- **Hydration policy / heat stroke prevention**
 - The Institute for Preventative Sports Medicine
 - The U.S. Consumer Product Safety Commission

Score a goal for safety

- Movable soccer goals can kill or injure children who climb on them.
- Properly anchor or counterweighted to prevent tip over.
- Prohibit homemade soccer goals on school grounds.
- Secure the goal to the ground, at the rear of the goal.
- Anchors flush with the ground and clearly visible.
- Net pegs NOT used to anchor the soccer goal.
- Store goals properly when not being used.

“Guidelines for Movable Soccer Goal Safety,” (U.S Consumer Product Safety Commission, January 1995)

<http://www.cpsc.gov/CPSCPUB/PUBS/Soccer.pdf>

Thanks to the ESD 112 *Risk Management Matters*, Fall 2008

Green Cleaning Resources - Free

- *The Quick & Easy Guide to Green Cleaning in Schools*, Healthy Schools Campaign, Second Edition

http://www.healthyschoolscampaign.org/campaign/green_clean_schools/

- *Cleaning for Healthy Schools Toolkit*
 - Training tool to use to build awareness, knowledge, and commitment to adopting best practices for green cleaning in schools and child care centers.

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

WA School IPM Update

- **IPM STAR Certification, IPM Institute of North America**
 - North Thurston SD – Fall 2009
 - Pasco SD – Pending
 - Sedro Woolley SD & Olympia SD – IPM STAR Audit
 - Vancouver SD – IPM STAR Recertification Audit
- **WSU/UPEST developing an IPM online record system**
- **Western Region School IPM Assessment & Implementation Work Group – funding for a project**
- **WSU new quarterly “Pest Press” for schools**
- **UPEST website – updates, improvements**
- **National School IPM Strategic Plan – all schools by 2015: http://www.ipminstitute.org/school_ipm_2015/about.htm**
- **Contact: Carrie Foss, Urban IPM Coordinator, WSU Puyallup, cfoss@wsu.ed, 253-445-4577**

National / International Work – IAQ/Mold

- **Federal Interagency Committee on Indoor Air Quality**
 - <http://www.epa.gov/iaq/ciaq/index.html>
 - **Coordinates Federal IAQ research**
 - **Facilitates the exchange of information among Federal agencies, state & local governments, the research community, the private sector and general public.**
- **September 2008 Report on Indoor Mold – GAO**
 - <http://www.gao.gov/cgi-bin/getrpt?GAO-08-980>
- **Indoor Environmental Standards Organization -School Standards Committee developing -**
 - **Standard Guide for the Inspection of an Educational Facility for Moisture Intrusion and Mold Growth IESO 3210**

WHO Guidelines for IAQ Dampness and Mould, 2009

- Rigorous two-year review of the currently available science.
- “When sufficient moisture is available, hundreds of species of bacteria and fungi – particularly mould – pollute indoor air. The most important effects of exposure to these pollutants are the increased prevalence of respiratory symptoms, allergies and asthma, as well as disturbance of the immune system. Preventing (or minimizing) persistent dampness and microbial growth on interior surfaces and building structures is the most important means of avoiding harmful effects on health.”

http://euro.who.int/InformationSources/Publications/Catalogue/20090629_4

<http://www.euro.who.int/document/E92645.pdf>

Indoor Air Quality Guide: Best Practices for Design, Construction, and Commissioning

- ASHRAE, EPA, AIA, USGBC, etc.
- “Practical guidance on best practices for IAQ in all phases of building design and construction including those that affect operation and maintenance.”
- November 2009
- *The Summary Guidance Document* –Free Download .
- The IAQ Guide’s Detailed Guidance – CD \$29.00 (+S&H).

<http://www.ashrae.org/publications/page/1936>

Recognition, Evaluation, and Control of Indoor Mold

- De-emphasizes mold sampling.
- Inspections, histories, other assessments – key.
- 2000 consensus – Public Health requires a building to be “clean” of dust, regardless of the components of that dust.
- Implications of research to date: “prevention of unwanted moisture, and removal of filth caused by moisture, is necessary to prevent disease.”

American Industrial Hygiene Association
Edited by Prezant, Weekes, and Miller, 2008

Lead

- On March 31 2008, EPA final ruling.
 - Hazards created by renovation, repair and painting activities that disturb lead based paint in target housing and child occupied facilities, built before 1978, frequented by children under the age of six.
 - These buildings include kindergarten and child care centers.
 - April 2010, Renovation Firms –
 - Must be certified in renovations
 - Sampling must be done by certified technicians
 - Workers trained in proper techniques
- Lead in Paint, Dust, and Soil
<http://www.epa.gov/lead/pubs/renovation.htm#tenant>

PCBs

- **Non-dioxin-like polychlorinated biphenyls (PCBs)**
- **Stopped US manufacture in 1977**
- **Persistent Bioaccumulative Toxin**
- **Solids or oily liquids that are colorless to light yellow**
- **Can exist as vapor in air**
- **PCBs were used as coolants and lubricants in transformers, capacitors, and other electrical equipment**
- **Do not burn easily**
- **Good insulators**

PCBs in Schools

- Light ballasts
- Caulk – before 1978 (generally)

Public Health Levels for PCBs in Indoor School Air

- Calculated prudent public health levels that maintain PCB exposures below the "reference dose"
 - 20 ng PCB/kg body weight per day.
- Indoor air levels based on EPA's understanding of average exposure to PCBs from all major sources, and were calculated for all ages of children from toddlers in day care to adolescents in high school as well as for adult school employees.

EPA Guidance on PCBs in Caulk

School built or renovated between 1950 and 1978:

- Improve ventilation by opening windows and using or installing fans where possible
- Clean frequently to reduce dust and residue inside buildings
- Use a wet or damp cloth or mop to clean surfaces
- Using vacuums with high efficiency particulate air filters
- Do not sweep with dry brooms; minimize the use of dusters
- Wash children's hands with soap and water often, particularly before eating
- Wash children's toys frequently
- Wash hands with soap and water after cleaning, and before eating or drinking.

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

EPA – School Site Selection & Evaluation

- **Prior to site acquisition, Phase I Environmental Site Assessment , ASTM Standard Practice E1527.**
- **If preliminary assessment suggests significant potential sources of contamination, Phase II Environmental Site Assessment , ASTM Standard Practice E1903-97.**
- **Ensure that soil contamination is cleaned up or avoid site.**
 - **EPA's Office of Solid Waste and Emergency Response, Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils**
- **Provide opportunities for participation in the school site acquisition process by school administrators and staff, parents, age-appropriate students, and community members.**

<http://www.epa.gov/iaq/schooldesign/predesign.html#School Site Selection and Evaluation>

2009 International Building Codes

- **State Building Code Council - deliberating adoption for 2010**
- **2009 IMC incorporates ANSI/ASHRAE 62.1-2004, Ventilation for Acceptable IAQ**
- **Proposal to revoke WAV 51-13, state ventilation code**
- **Plan review impact**
 - **Table 6-1: Minimum Ventilation Rates in Breathing Zone**
 - **Default Values**
 - **8 cfm/person, lecture halls, multi-use assembly**
 - **12 cfm/person, music/theater/dance**
 - **13 cfm/person, classrooms, ages 9+**
 - **15 cfm/person, classrooms, ages 5-8, computer labs, media centers**
 - **19 cfm/person, art classroom, wood/metal shops**

Hazardous Materials in the IFC, 2006

- **2701.5.1 Hazardous Materials Management Plan**
 - Facility site plan
 - Storage and use areas
 - Maximum amount of each material stored or used, each area
 - Emergency equipment
- **2705.2 Hazardous Materials Inventory Statement (HMIS)**
 - Manufacturer's name, Chemical name
 - Chemical Abstract Service (CAS) identification number
 - Hazard classification
 - MSDS
 - Maximum quantity stored or used on site
 - Storage Conditions – type, temperature
- **Do you tie this in with the required HazMat Inventory in the Safe Schools Plan?**

School LHJ Plan Review Issues

- Number of restrooms facilities based on the planned enrollment and the International Building Code,
- But, are the locations of existing hand wash sinks effective/efficient?
- A proposal: policy that all students in portables must be able to go through hand washing within 10 minutes before lunch. ???
- How do we facilitate hand washing?

Safety Issues – LHJ Plan Review

- **IBC 3202.2: “encroachments into the public right of way above grade and below 8 feet in height are prohibited... Doors and windows shall not open or project into the public right of way.**
- **3202.2.2 Architectural features. “Belt courses, lintels, sills, architraves, pediments and similar architectural features shall not project more than 4 inches.”**
- **The IBC does not currently have restrictions on window openings.**
- **LHJ’s restrict opening where they access a fall hazard for small children.**

Other Plan Review Safety Issues

- Old-fashioned hot radiators.
- Science Rooms – Fume Hood Guidance from Doug Mandt
- Recirculation of air from science rooms – bad idea.
- Others?

SBOH School Rules History

- **First adopted in the 1950's, Earliest available – 1960**
- **Last major revision – 1971**
 - **Annual inspection by the LHJ changed to “periodic”**
- **Last revision – 1991, clarification in the noise section**
- **1990's**
 - **many complaints to the SBOH on school IAQ and EH&S**
 - **Conflict between school risk managers and LHJs**
 - **2000, 2003 – DOH/OSPI K12 Health & Safety Guide**
- **2003 – SBOH ordered rule revision in 2004**

School Rule Revision

- **November 2004 – School Rule Development Committee**
 - 3 Technical Workgroups – IAQ, Drinking Water, Safety
- **March 2006 - 1st Informal draft**
 - Fall 2006 SBOH study session
- **August 2007 - 2nd informal draft**
 - Spring 2008 Legislative request – 5 workshops
- **July 2008 - Official Proposed Rule**
 - August & September - Public hearings
 - October 2008 – amendments adopted, vote suspended
- **August 12, 2009 – adopted pending Legislature action**
 - Tentative effective date: July 1, 2010

School Drinking Water

- Schools that are their own water system must still fulfill their requirements as Group A public water systems (246-290 WAC).
- Schools on public water systems can determine the quality of the water in their facilities using the monitoring provisions in the new School Rule on a voluntary basis.
- Congress plans to hold hearings on the topic of drinking water in schools. This could result in new federal requirements.

How to Communicate

- What are the best ways to get updates out to you?
- DOH is beginning to use social media. It currently uses 'Twitter' for delivery of West Nile Virus, H1N1, and seasonal flu information.
- http://twitter.com/WA_DeptofHealth
- CDC has similar social media with H1N1, Seasonal Flu, and Peanut Product recalls.
 - Twitter, Facebook, MySpace, DailyStrength, YouTube, Flickr, iTunes, and Second Life Island.
- Blogs, Bloginars, Email Updates, Image Sharing, Micro-blogs, Mobile, Online Video, Podcasts, RSS, Virtual Worlds, and Widgets.
- <http://www.cdc.gov/socialmedia/>

Fall 2010 School EH&S Workshops

- Program ideas?
- Format ideas?
- Locations?
- Other?

Questions?

Comments?

Thank you for participating!

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