



# UNIVERSITY OF WASHINGTON REPORT



Environmental Health and Safety Study: K-12 Schools

Presenter:

State Board of Health Meeting

03.08.2023



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## Statement of Work:

- The Washington State Department of Health (WSDOH) contracted the University of Washington Department of Environmental & Occupational Health Sciences (UW DEOHS) to develop a report to the legislature regarding school environmental health and safety policies, recommendations, and standards, due December 31<sup>st</sup>, 2022.

## Statement of Work:

- **Recommendations & best practices** for Polychlorinated biphenyls (PCBs) exposure standards and remediation levels.
- Summary of the **WA K-12 Environmental Health and Safety Guide** and Local Health Jurisdiction oversight activities.
- Comparing the **WA K-12 Environmental Health and Safety** standards, activities, and best practices with other states.
- Content analysis of **K-12 Environmental Health and Safety** policies and regulations in other states.
- Summary of **K-12 Environmental Health and Safety** recommendations for policy and next steps.

# Background

- What are Polychlorinated biphenyls (PCBs)?
- Regulations applying to PCBs in Washington schools:
  - Schools vs. other buildings
  - Federal vs. State
- Best practices for addressing and assessing PCBs in schools.
- What were other states doing to address PCBs in their schools?
- What do we know is the scope of the problem of PCBs in WA schools ?

## Polychlorinated biphenyls (PCBs)

- Polychlorinated biphenyls were chemicals produced and used in construction, planning, and building structures between 1950 and 1980.
  - Found as a plasticizer in building materials such as paints, caulks, etc.
  - Found in electric equipment such as transformers, capacitors in light ballasts.
- Health Effects:
  - Classified as a probable human carcinogen—specifically liver and skin (melanoma).
  - Non-cancer effects such as immune, reproductive, endocrine, neurological.



## COMMON BUILDING MATERIALS CONTAINING PCBs



LIGHT  
BALLASTS



DUCT  
SEALANTS



GALBESTOS  
ROOFING/SIDING



PAINT



DOOR/WINDOW  
CAULK

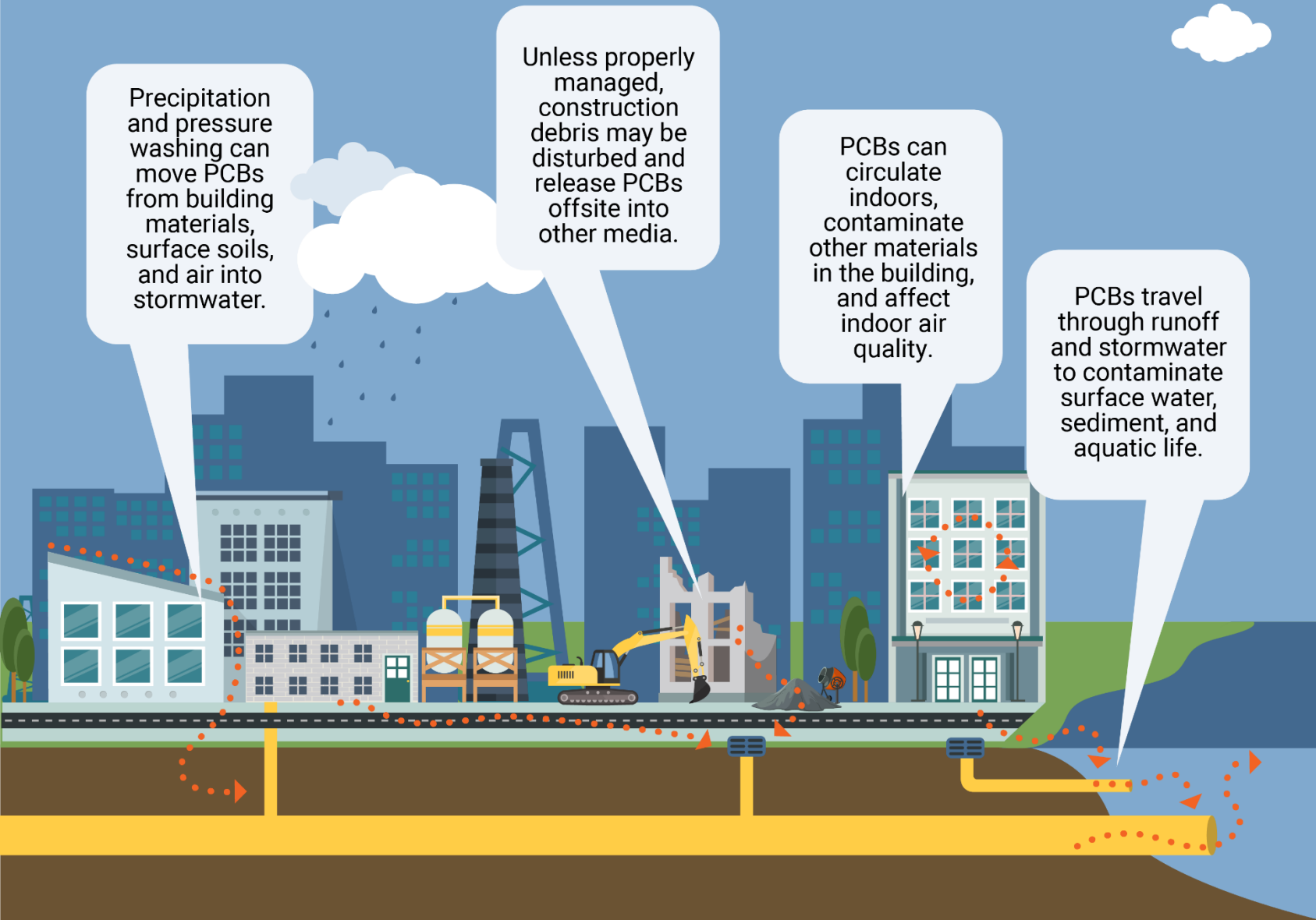


JOINT  
MATERIAL

## Common Building Materials Containing PCBs

- PCBs can be volatile and found in the ambient air around us
- PCBs can be found on various surfaces
- PCBs can leach from one material to another

## PCB CONTAMINATION PATHWAYS



How do PCBs in building materials affect people and the environment?

- Construction debris
- PCBs in the air
- PCBs in the stormwater
- Precipitation and pressure washing



# Toxic Substance Control Act (TSCA) Findings:

- Banned by the EPA in 1979, with exceptions.
- PCBs above a certain concentration in materials are not allowed and must be removed and disposed of properly.
- There are no current requirements to test for PCBs (air or building materials).
- Enclosed use is authorized. However, non-leaking lights are still allowed.
- Best practices for PCBs in schools are from EPA guidelines.
- EPA developed exposure level limits for indoor air in schools.

EPA developed  
exposure  
levels for  
indoor air in  
schools

- PCB concentrations in dusts and soils in and around schools.
- Adults and children are in schools for 8 hours per day with potential exposure.
- Adults and children are in schools for 185 days per year.

# EPA PCB exposure level limits:

| Exposure Levels for Evaluating PCBs in School Indoor Air (ng/m3)* |                  |                  |                                       |  |                                      |                         |
|---|------------------|------------------|---------------------------------------|--|--------------------------------------|-------------------------|
| Age: 1-<br><2 yr  | Age: 2-<br><3 yr | Age: 3-<br><6 yr | Age: 6-<12 yr<br>elementary<br>school | Age: 12-<br>15< yr<br>middle<br>school | Age: 15-<br><19 yr<br>high<br>school | Age:<br>19+ yr<br>adult |
| 100   | 100              | 200              | 300                                   | 500                                    | 600                                  | 500                     |

## Findings:

- The scope of the PCB problem in Washington schools is unknown.
- There is limited sampling data of PCBs in air/on surfaces or PCBs in building materials in schools.
- PCBs are likely present in Washington schools' structures built and/or renovated before 1980, though implications for potential PCB exposures are unknown.
  - 1681 Washington public-schools buildings built or renovated before 1980 ( which is roughly around 30% of all public-school buildings in WA).
  - PCBs have been found in older schools in WA and other states in air, on surfaces (some levels higher than EPA guidelines), and high concentration in some caulking.

## Findings:

- PCBs Best practices and other regulations
- The state of Vermont has a new 2021 rule:
  - ✓ Requiring sampling of airborne PCBs in schools built or renovated before 1980
  - ✓ 2 schools with results above action level
  - ✓ 4 schools with results below action level

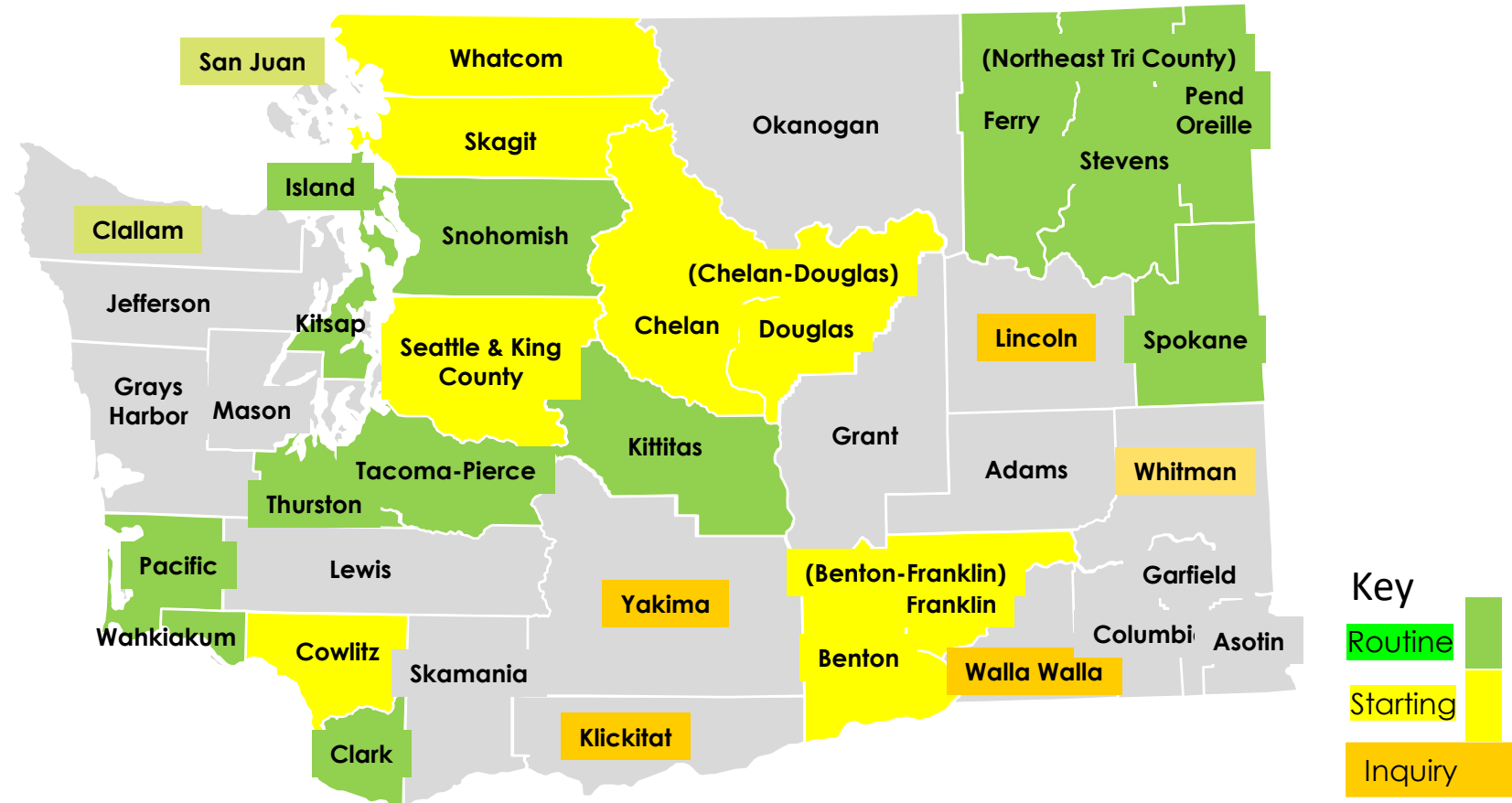


# Findings:

- Local Health Jurisdiction (LHJs) Survey:
  - Survey was sent to 39 LHJs.
  - 22 of 39 LHJs responded.
  - Questions sourced from: EPA Model K-12 schools EH Program, DOH Health and Safety Guide for K-12 schools, WAC 246-366 & 246-366A, DOH school EH Survey (2004), and EPA Tools for schools.
  - Question topics: school inspections, guidance utilized, barriers & needs, complaints, enforcement & corrective action, support capacity, training.

# Local Health Jurisdiction

## School Environmental Health & Safety Inspection Programs



- Schools in all 39 counties in the state receive food service inspections, construction plan review and complaint response from their local health jurisdiction.
- Seventeen Local Health Jurisdictions have or are starting school programs with periodic routine inspections. Seven more are starting the process of implementing a program.

# LHJ: School EHS Inspection Program:

- Survey findings:
  - Barriers to implementation were found.
  - Perceived school barriers.
  - Facilitating factors for implementation.
  - Support needed from state agencies.
  - Support needed from legislators to remove the proviso from the budget.

# LHJs: School EHS Inspection Programs:

- Guidance and regulations are out of date.
- DOH's school EHS Program is critical.
- Limited capacity and data available.
- Top needs from legislators:
  - Funding; and
  - Updates to rules Chapter 246-366 WAC.

## Content Analysis findings:

- Chapter 246-366 WAC (1991) is out of date relative to other regulations reviewed by UW DEOHS.
  - Of 13 regulations from other states reviewed, all were updated since 2002.
- Currently, Chapter 246-366 WAC does not sufficiently address existing and emerging hazards.
  - Other state regulations can provide guidance in development of a more comprehensive code.
- Other states have built collaborative mechanisms into regulations.
  - Balance of agency at school/district level and enforcement ability.



## Recommendations:

- Quantify the scope of PCBs.
- Establish inspection, testing, and remediation requirements, as in the state of Vermont.
- Funding to address PCBs.
- Focus on improving ventilation, filtration, and cleaning procedures.
- Update the school rule once the budget proviso is removed.

## Next steps for DOH:

- Update the Health and Safety Guide for K-12 schools.
- Continue LHJ schools' Partners meetings.
- Establishing new positions at DOH's schools Program thanks to FPHS funding:
  - Indoor Air Quality Specialist
  - Plan Review Specialist
- Provide training and technical assistance to improve ventilation, chemical storage, identify school hazards and best practices, and other informational opportunities for schools in WA.

Questions?





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