

**Environmental Health & Safety
Primary and Secondary Schools—Chapter 246-366A WAC**

Preliminary Cost-Benefit Analysis Summary

Proposed Rule Changes, Likely Implementation Costs, Sources and Estimates of Potential Cost

Introduction—

The purpose of this Preliminary Cost-Benefit Summary is to share the work that is currently underway at the Department of Health to develop the cost-benefit analysis required by the Administrative Procedures Act, chapter 34.05 RCW. For this document, we have identified those proposed changes that meet the definition of a “significant legislative rule.” For those identified changes, we have made assumptions about the costs increases or decreases that may result from the incremental change from the current rule to the proposed rule.

A “significant legislative change” is one that:

- Creates a requirement for a license or permit
- May subject a person or entity to a sanction
- Makes significant amendments to a policy or regulatory program.

This document focuses on the cost assumptions identified for individual sections of the rule. The complete cost benefit analysis will also include a discussion of the benefits anticipated as a result of the proposal. However, the benefits fall into more general categories with the changes for several sections trying to achieve a common public health benefit. For example, changes proposed for mold prevention in section -070 are intended to improve air quality and reduce asthma triggers and allergic reactions. This is also true for the changes proposed in section -065 for walk-off mats as well as the changes in -090 and -095 for heating and ventilation. For now, the benefits are contained in the Public Health Benefit portion of each section.

This proposal presents several challenges for determining implementation costs.

- On one hand, for most rule proposals the department assumes there is general compliance with the current rule. The costs associated with current rule implementation costs are the base against which proposed changes are measured. However, the department recognizes that only nine of thirty-five local health jurisdictions have a school environmental health and safety program providing active implementation of chapter 246-366 WAC. Therefore, many requirements are perceived to be entirely new by some schools and local health jurisdictions and so, the incremental costs identified here may appear to be under reported.
- On the other hand, many of the changes proposed for this rule simply add language to the rule to reflect current practices. Other proposed changes will apply in limited situations, such as notifying parents and staff if there is a serious mold problem. Thus, the impact of the proposed changes will vary from school to school based on what they are already doing, and issues that may or may not happen. Therefore, a simple total of all new costs identified would over report the costs to any individual school.

Throughout this document we have tried to add these issues into the discussion of the cost assumptions.

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

For each section of the proposed draft rule (WAC 246-366A) presented below, please find statements relating to:

- Intent
- Background
- Public Health Benefit
- Significant Changes
- Cost Assumptions, and
- Preliminary Cost Estimates

While many of the proposed draft rule sections contain significant changes, there are several sections that do not. Most of the identified significant changes result in likely costs to implement and some do not.

Applicability and General Cost Assumptions—

- School site development and construction occurring after the effective date of the rules are subject to the requirements for site and plan review, and pre-opening inspections presented in sections 030, 040, and 050.
- Sections relating to “Construction Requirements” apply only to construction that occurs after the effective date of the rules.
- The environmental health and safety rules in effect when a complete building permit application is submitted to the jurisdictional building official to apply to construction projects underway on the effective date of the updated rules.
- Construction Requirements apply to activity established by the scope of the construction project. Portions of existing schools that are not included in addition or alteration projects, are not subject to construction requirements.
- Existing school facilities that are not undergoing additions or alterations are not subject to construction requirements.
- All other sections, including those relating to “Operation and Maintenance”, apply to all schools.

Sources of Cost Estimates—

School Construction Costs:

Department of Health (department) staff compared the existing rule requirements with those in the current draft rule to identify newly required construction elements. Department staff prepared a document that identified the changed requirements and expected impacts associated with each new requirement by rule section. The department contracted with Eric Meng, Studio Meng Strazzara, to provide likely cost estimates based on the department’s assumptions about the significant changes in the draft rule. These estimates were based on three representative schools: a 65,000 square foot elementary; 95,000 square foot middle school; and 225,000 square foot high school. The estimates also include a 12 % contractor markup costs and 23% district construction overhead costs. The department recognizes this was a difficult exercise to complete given the short time frame.

School Operation and Maintenance Costs:

Department of Health staff compared the existing rule requirements with those in the current draft rule to identify newly required operation and maintenance activities. Department staff prepared a survey tool that identified the changed requirements and expected impacts associated with each new activity by rule section. Department staff contacted approximately 15 school district staff to request assistance in gathering cost estimates for the identified activities. Six individuals from school districts throughout the state agreed to participate in the survey. Department staff provided the survey tool to these volunteers and followed-up with them two days later via telephone interviews. Participants provided both cost estimates and assumptions for those estimates for most activities. The department recognizes that there was not adequate time to collect all requested information due to the short amount of time provided to collect data. The department also recognizes that the

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

respondents based their information largely on experience and not research as time did not allow for a more thorough analysis of each changed activity. Department staff will continue to work with the participants to refine and add more detail to the cost information provided by the participants of this survey.

The department understands that schools are currently doing many activities of the proposed rule on a voluntary basis. It is important to note that school district staff provided cost information for activities in the draft rule they currently voluntarily comply with. Schools were asked to calculate the costs of these activities because they are new requirements and there will likely be a percentage of schools in the state that do not currently do these activities and so would experience added costs due to the new requirements in the draft rule. There are also several sections where schools indicated that they were already performing the required activities, but were unable to estimate the costs of those activities.

Cost estimates varied due to several factors such as school age and condition, hourly wage levels of staff performing activities, and type and size of school (elementary, middle, high). The cost estimates included in this document are a single cost estimate that represents the most conservative costs that accurately represent the intent of the requirement.

Local Health Jurisdiction Costs

The department received estimates about the increased costs associated with the increased inspection and program requirements from several jurisdictions that currently have active school environmental health and safety programs.

We'd like to express our gratitude to all the participants for their contributions to this draft analysis.

Introduction and Purpose—Section 001

INTENT: This section establishes that these rules are intended to assure the environmental health and safety of school facilities. It is not the intent of these rules to establish protection exclusively for certain subsets of people using those facilities, nor to regulate the behaviors or qualifications of users beyond what is minimally necessary for environmental health and safety.

BACKGROUND: The Board is required by the Revised Code of Washington to establish environmental health and safety rules for schools facilities. RCW 43.20.050(2) states that "to protect public health, the state board of health shall...(c) Adopt rules controlling public health related to environmental conditions including but not limited to heating, lighting, ventilation, sanitary facilities, cleanliness and space in all types of public facilities including but not limited to ... schools.¹The rules have been on the books since the 1960s and the existing framework was established in 1971. This rulemaking is part of the continuing effort to keep these rules up to current health and safety standards. These standards are intended to protect health and may not be optimum for supporting student learning.

PUBLIC HEALTH BENEFIT: Many publications make a case for policies that address environmental health and safety in schools. According to the School Health Policies and Programs Study (SHPPS) 2006:

A child typically spends about 1300 hours in a school building each year, and teachers and other staff are there even longer.... Many school buildings are in poor condition and present environmental conditions that inhibit learning and pose unnecessary, increased health risks to students and staff.... Poor indoor air quality (IAQ), diesel exhaust emitted from school buses, hazardous materials, pesticides, contaminated drinking water, and lead are

¹ Available at <http://apps.leg.wa.gov/RCW/default.aspx?cite=43.20.050>

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

environmental hazards that sometimes are found in schools and can adversely affect the health, attendance, and academic success of students, as well as the health of teachers and other staff.”²

SIGNIFICANT CHANGES: There are no significant changes to the existing rule proposed for this section, and no increased cost associated with implementing the draft rule compared to the existing rule.

Applicability—Section 005

INTENT: The intent of this section is to affirm the rules as they currently apply to schools, while explicitly including pre-schools that are part of a K-12 school facility. This section clarifies the intent that the construction sections apply to existing portions of facilities only when those portions are involved in a remodel, renovation or addition.

BACKGROUND: This is a new section. In the existing rule, applicability is determined primarily by the definition of schools in the definitions section:

“School” - Shall mean any publicly financed or private or parochial school or facility used for the purpose of school instruction, from the kindergarten through twelfth grade. This definition does not include a private residence in which parents teach their own natural or legally adopted children.

The new section is essentially the same but includes preschools that are part of a K-12 school. It more clearly excludes:

- 1) Private residences used for home-based instruction as defined by RCW 28A.225.010(4);
- 2) Facilities hosting educational programs where educational instruction is not a primary purpose, including, but not limited to, detention centers, jails, hospitals, mental health units, or long-term care facilities;
- 3) Private facilities where tutoring is the primary purpose; and
- 4) Public or private post-secondary education facilities providing instruction to students primarily enrolled in secondary school.

The Board and DOH explicitly chose not to make this rule a one-stop shopping source for all laws and regulations related to the school environment, but it did choose to cross-reference its own rules. It also wanted to make it clear the new rule was not intended to negate, compromise, or duplicate other rules. If, however, a change to an existing facility triggers a building code requirement during the overhaul of a regulated system throughout the facility—say, for example, adding an addition requires a retrofit of the entire school’s HVAC system rather than the installation of a new system serving only the addition—then these health and safety rules would apply to those whole systems because they would become part of the construction project.

Public health rules do not require vesting; however, there is a recognition that these rules could add to the price of new construction, and need to specify when a project is far enough along that it should be grandfathered in. The draft rules call for the environmental health and safety rules in effect when a complete building permit application is submitted to the jurisdictional building official to apply to construction projects underway on the effective date of the updated rules. The effective date has not been established, but the Board has heard from both schools and local health jurisdictions that they would like time to prepare for implementing updated rules.

SIGNIFICANT CHANGES: Applying these rules to pre-schools that exist in K-12 school facilities is identified as a significant rule change.

² Available at http://www.ashaweb.org/journal_schoolhealth.html#shpps

Proposed Chapter 246-366A WAC

Preliminary Cost-Benefit Analysis Summary

COST ASSUMPTIONS: The application of these rules to those portions of K-12 school facilities used for pre-school instruction may increase the inspection time needed for annual inspections.

PRELIMINARY COST ESTIMATES:

Local health jurisdictions identified that there may be an additional hour of inspection time for pre-school instruction areas. This would most likely be passed on to schools as a fee – ranging from \$100-\$200/hour.

Definitions—Section 010

INTENT: This section is intended to provide an explanation for the terms used in the rule. Selection of terms and their definitions is intended to be consistent with typical or other regulation uses of the terms. The definitions presented in this section, establish the meaning of terms as used in this rule, regardless of how they may be defined in other regulations or sources.

SIGNIFICANT CHANGES: While there are changes to this section—terms added and deleted and updated definitions—the significance of the term and definition is more accurately reflected and addressed in the sections of the rule where the term is used.

COST ASSUMPTIONS: Are addressed within the sections where the term is used.

Guidance for Rule Implementation and Compliance—Section 015

INTENT: The intent of this section is to clearly establish that the K-12 Health and Safety Guide is identified as the principal source of guidance for schools and local health jurisdictions in the application of the health and safety rules. This provides both parties with an established and consistent source of additional information to be used with complying with and applying the rules.

BACKGROUND: The current rule provides for a guide to implement the health and safety rules, developed in collaboration by the Department of Health and the Office of the Superintendent of Public Instruction. The K-12 Health and Safety Guide, the result of this collaboration, was created in December 2000, updated in January 2003, and is due to be updated following adoption of the update school health and safety rule.

PUBLIC HEALTH BENEFIT: The best crafted rules can not possibly address all of the possible health and safety hazards that may be present in a school facility. The existence of up-to-date, science-based supporting information is essential for schools to comply with the requirements and for local health jurisdictions to apply the requirements.

SIGNIFICANT CHANGES: There are no significant changes proposed for the K-12 Health and Safety Guide provisions of the existing rule, WAC 246-366-140. This section simply rearranges and restates the requirement for DOH and OSPI to continue to update the K-12 Health and Safety guide. There are no new regulatory requirements and no increased cost associated with implementing this section of the draft rule compared to the existing rule.

Responsibilities—General—Section 020

INTENT: The intent of this section is to prevent accidental injuries and reduce environmental exposures in primary and secondary schools in Washington State by requiring annual inspections and by establishing clear responsibilities for schools, local health and the Department of Health. The proposed language clarifies that school officials are responsible to “Maintain conditions within the

DRAFT DOCUMENT / This Is Not The Final Significant Analysis

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

school environment that will not endanger health and safety.” Local health officers are responsible to assure inspections are conducted annually and to consult with school officials on ways to fix potential hazards. It is also the intent of this section to promote openness and accountability; provide for notification when hazards exist; and encourage proactive risk communication.

BACKGROUND: Currently, local health officers are required to make periodic inspections of each school within the local health jurisdiction and forward a copy of the findings and recommendations for any corrections to the school board and administrator of the school. The requirement for periodic inspections has been interpreted differently throughout the state. The frequency of inspections by local health ranges from annual to only upon opening a new facility. Nine of 35 local health jurisdictions currently provide routine inspections and consultative visits of schools, covering approximately 35 percent of the children in kindergarten through twelfth grade. Complaints to the State Board of Health in the past fifteen years have raised concerns that school environmental health and safety issues are not receiving enough attention by local health in Washington State. Local health agencies that are most active with schools have demonstrated success in helping prevent and correct safety and health hazards. Local boards of health have authority to implement fees for providing services to the community, such as conducting school consultative and inspection programs under RCW 70.05.060(7); school inspection programs are typically fee-based.

PUBLIC HEALTH BENEFIT: Children are more vulnerable than adults to environmental hazards for several reasons, including their rapid physical development, higher metabolism, and age-related behaviors. “In recent years, scientists have increasingly realized that children are especially vulnerable to the effects of hazardous environmental exposures...”³ (page 5). “Children breathe more air, eat more food, and drink more water per pound of body weight than do adults. Certain behaviors, such as tactile exploration and hand-to-mouth contact, increase the probability of some exposures. As a result, environmental health scientists and regulators have recognized the need to exercise special caution in protecting children from potentially hazardous exposures – setting margins of safety to minimize children’s exposures, avoiding the use of potentially toxic chemicals near children...”⁴

Prevention of injury and health problems through environmental controls is an established science, shown to protect and improve health. Annual inspections provide an opportunity to identify and mitigate health and safety concerns before they become more dangerous and costly to address. The draft rule would require that school inspections are more consistently conducted across the state, better ensuring that the health and safety requirements of this rule are met, with oversight by trained environmental health and safety specialists. *Safe and Healthy School Environments*¹ (page 363) reports that a survey of the Los Angeles Unified School District in 2005 found nearly 40% of the schools were out of compliance with applicable health and safety regulations. It states that “safety inspections of the entire school campus, including all buildings and classrooms, should occur at least annually” (page 112) and that “the successful use of routine inspections to improve school health and safety involves a three-step process: (1) identify school safety standards, (2) evaluate compliance with the applicable standards, and (3) implement corrective action to achieve compliance with the standards” (page 364).

NATIONAL STANDARDS AND PRACTICES: There are currently no federal rules for school environmental health and safety inspection. However, there are federal guidelines for addressing some common school environmental health problems including mold from excessive moisture and lead from drinking water fixtures. National and international building codes and fire safety codes have been adopted in Washington by state and local agencies. These are enforced primarily by local building officials. Local environmental health professionals would review schools for requirements in this proposed school rule that are not addressed by building officials, including ongoing operations and maintenance issues.

³ *Ed. Howard Frumkin, MD, DrPH, Robert J. Geller, MD, I. Leslie Rubin, MD, with Janice Nodvin, eds, Safe and Healthy School Environments, Oxford University Press, 2006*

⁴ *National Research Council 1993; Lanphear et al. 2005*

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

SIGNIFICANT CHANGES: The draft rule clarifies that school officials are responsible to help identify and take actions to correct potential environmental health hazards in schools. School officials would be required to mitigate health hazards, and notify the local health officer, faculty, parents and students as appropriate for the hazard. The requirement that school officials share information with the public pertaining to the condition of school facilities would help parents know when precautions are necessary to protect their child's health while attending school. The local health officer's designee, an environmental health professional, would need to conduct an inspection of each school at least once each year, recommend actions, consult with school officials, recommend follow-up actions for violations of this rule, and re-inspect if necessary to confirm that corrections have been made. The local health officer would have authority to develop a program that designates a school official or other qualified person to conduct the required annual inspection two out of every three years. The Department of Health would be required to report every three years to the State Board of Health on variances granted by local health officers and the status of the rule's implementation. The Department would provide technical assistance and training to local health and school personnel.

COST ASSUMPTIONS:

Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Annual inspections. Costs to have school personnel or the local health officer perform inspections and to have school staff work with inspectors during and after inspections.
- 2) Inform local health officer, parents and faculty about imminent health hazards and actions taken to correct. (Not including mold, lead/copper in drinking water which are specifically called out in other sections) Assume one per year per school.
- 3) Retain for at least 6 years records about school inspections, site assessment, school and playground plan review.
- 4) Preparing an annual report for the public and the school board about environmental health and safety conditions in the schools.

Local Health Jurisdictions will likely incur expenses to implement the proposed changes for the following items:

- 1) Establish or maintain a School Environmental Health and Safety program, with the capacity to provide annual inspection of school facilities, and various consultative services required in these rules. While Local Health Jurisdictions may charge fees for program-related services, it is understood that fee structures rarely capture all program-related expenses. This requirement may not result in an additional expense, depending on a health jurisdiction's current practice for providing school-related environmental health and safety services and inspections.

PRELIMINARY COST ESTIMATES:

Schools:

- 1) Annual inspections – Periodic inspections are currently required. There will be increased inspections cost to schools depending on what the current "periodic" frequency of inspections has been. Costs will be passed on as fees from local health jurisdictions. However, it should be noted that some jurisdictions do not currently charge a fee for inspections.

Direct costs for school employees to work with inspectors:

Elementary School \$44

Middle School \$88

High School \$176

(Please see cost estimates for local health jurisdictions/fees below.)

- 2) Inform staff and parents about imminent health hazards:
\$225 per incident.
- 3) Record keeping requirements: Time/Cost Estimates - range of costs per school per year identified:
\$ 236 – 1,080 for staff time, \$1,000 for filing cabinet.
- 4) Prepare annual report: Time/Cost Estimates – range identified for staff costs per year:
\$150 to \$1,500.

Proposed Chapter 246-366A WAC

Preliminary Cost-Benefit Analysis Summary

Local Health Jurisdictions:

Cost to establish or maintain a School Environmental Health and Safety program, with the capacity to provide annual inspection of school facilities, and various consultative services required in these rules.

Annual inspections –Increased costs will vary depending on the current inspection program of the local health jurisdiction.

Hourly rates for inspections range from \$100 to \$200 hour with time for inspections varying by size and type of school.

Elementary Schools – 4 hours – average cost per school - \$693

Middle Schools - 4-6 hours - \$950

High Schools – 8 hours – average cost \$1,387 per inspection

Other costs not recovered through fees - staffing, training materials, etc. The department assumes start up costs listed here. There will also be unspecified on-going costs.
\$10,000 to \$56,000

Site Assessment, Review and Approval—Section 030

INTENT: The intent of this section is that local health officers and environmental health specialists continue to review school sites so they can apply their expertise to helping schools identify and either avoid or mitigate threats to health and safety. It maintains a longstanding requirement for review and approval of sites by local health officers or their designees, while providing additional clarity about what is expected of schools during a site assessment and of local health jurisdictions during site review and approval. It is also the intent that site reviews conducted under authority of this rule be completed in a timely fashion and focus specifically on the environmental health and safety of school facilities that will occupy the site.

BACKGROUND: Since at least 1960, local health officers or their designees have been required to review and approve school sites for health and safety. Since 1973, a noise assessment has been required for proposed school sites. Most local health jurisdictions conduct site reviews currently and may charge fees to schools for these services.

PUBLIC HEALTH BENEFIT: Early identification of environmental issues reduces the risk of adverse impacts to student health and safety. Secondly, it may avoid unnecessary remediation costs and allow for more cost-effective mitigation. Actual examples of ways that local health reviews protect health and safety and prevent unnecessary costs include:

- A local health official denied approval of a proposal to build a private school at the end of the runway serving a small airfield. The place where planes would have taxied to turnaround at the end of the runway was immediately adjacent to the proposed playground.
- A school that failed to obtain a site review for an athletic facility tore up its own drainfield.
- A school district decided against purchasing land for a future school after a local health official doing a site visit informed them that the property, which could not be served by sewer, would not accommodate a septic systems that could meet the school's needs.
- A school district built astride a swale on a piece of property with a high water table, and the school experienced constant problems with water intrusion.

Potential risks related to school siting also include contaminated soils and proximity to highways. The Department of Ecology Area Wide Soil Contamination Project⁵ reports that soil in many areas of the state are contaminated with lead and arsenic, mostly from metal smelter emissions, arsenical pesticides, and leaded gasoline. California has banned new school construction within 500 feet of busy roads and freeways in response to the respiratory and asthma impacts from vehicle exhaust.

⁵ Available at http://www.ecy.wa.gov/programs/tcp/area_wide/AW/toolbox_chap4.html

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

According to Safe and Healthy School Environments, "We have known for years that breathing high levels of air pollution (ozone, particles, and other pollutants) can cause acute changes in health, such as nasal congestion, irritated eyes, coughing, chest tightness or congestion, wheezing, and inability to breathe deeply."⁶ The school rule development committee identified a need to consider environmental health and safety issues associated with surrounding land uses in site approval. Site approval methods vary throughout the state due to a lack of specific direction in the existing rule.

NATIONAL STANDARDS AND PRACTICES: There are currently no federal standards or guidelines for school siting. The Energy Independence and Security Act of 2007 requires the U.S. Environmental Protection Agency (EPA) to issue school site selection guidelines within 18 months of enactment. The guidelines must address hazardous substances and pollution exposures, transportation availability, energy efficiency and use as an emergency shelter. A site review under authority of this rule would not address the last three items. The EPA has developed a standard for an assessment of commercial property that has become the norm for environmental due diligence. This type of assessment is called a phase I environmental site assessment (Phase I ESA)⁷ and is based on American Society for Testing Materials (ASTM) Standard #1527-05 (November 2005).⁸ According to the national School Health Policies and Programs Study (SHPPS) 2006, "More than half of states and one third of districts required phase I environmental site assessments before constructing a new school facility, although one third of districts had no new facilities planned."⁹

SIGNIFICANT CHANGES: The draft rule gives more specificity to assessment requirements, specifies the documentation that must be provided, and requires schools to make the records available to the public. A Phase I ESA that meets the requirements of the ASTM Standard #1527-05 is required for developing school facilities on undeveloped property, or property previously used for other purposes, and for establishing a school in all or part of an existing structure previously used for other purposes. For other projects, a consultation between school officials and the local health officer is required to determine the scope of the site assessment, review, and approval process. If the site assessment procedure indicates that hazardous materials may be present, soil sampling and analysis may be required. Current requirements for site assessment for excessive noise are unchanged. Health officers would no longer be responsible for determining adequate property size. They would provide written approval or describe site deficiencies needing mitigation to obtain local health officer approval, within 60 days of receiving a complete request, unless the school officials and the health officer agree to a different timeline.

COST ASSUMPTIONS:

Site assessment is required in the current rule. Incremental cost increases for schools will likely incur when implementing the proposed changes for the following items:

- 1) Contracting for a Phase 1 Environmental Site Assessment for new school sites and establishing schools in all or part of existing structures. For many schools this requirement will not result in an additional expense because a site assessment is currently required and current practice is the Phase 1 ESA or something very similar.
- 2) Soil sampling, if needed based on site assessment findings.
- 3) Consulting with the Local Health Officer regarding site development, assessment, review, and approval.

Local Health Jurisdictions will likely incur expenses to implement the proposed changes for the following items:

- 1) Reviewing a Phase 1 Environmental Site Assessment report and conducting a site inspection. Some or all of these expenses may be passed on to schools thru fees.
- 2) Consulting with schools officials regarding site development, assessment, review, and approval.

⁶ Ed. Howard Frumkin, MD, DrPH, Robert J. Geller, MD, I. Leslie Rubin, MD, with Janice Nodvin, *Safe and Healthy School Environments*, Oxford University Press, 2006, page 144.

⁷ Available at http://epa.gov/brownfields/aaj/aai_final_rule.pdf

⁸ Available at http://www.astm.org/cgi-bin/SoftCart.exe/DATABASE.CART/REDLINE_PAGES/E1527.htm

⁹ Available at http://www.ashaweb.org/journal_schoolhealth.html#shpps

Proposed Chapter 246-366A WAC

Preliminary Cost-Benefit Analysis Summary

PRELIMINARY COST ESTIMATES:

Schools:

(1) Contracting for Phase 1 ESA – The cost will likely vary with the size, previous use, and location of the site. Average estimates are provided:

Elementary Schools – \$7,700

Middle Schools - \$9,700

High Schools - - \$14,700

(2) Soil sampling if the Phase 1 ESA shows necessary – up to \$10,000

(3) Consulting with local health officers - \$6,480

Local Health Jurisdictions:

(1) Cost associated with requirement for Phase 1 ESA – local health jurisdictions indicated a range of cost impacts from the requirement for a Phase 1 ESA. Some indicated that the having a Phase 1 ESA could actually reduce their time and effort in review. Others indicated a cost increase ranging from \$300 to \$1500 per site assessment

Construction Project Review—Section 040

INTENT: The intent of section 040 is that local health officers and environmental health specialists continue to review construction plans so they can apply their expertise to helping schools identify and either avoid or mitigate threats to health and safety. It maintains a longstanding requirement for review and approval of plans by local health officers or their designees. It is also the intent that plan reviews conducted under authority of this rule be completed in a timely fashion and focus specifically on issues addressed in rule.

BACKGROUND: Since at least 1960, local health officers or their designees have been required to review and approve school construction plans. Since the 1970s, the Office of Superintendent of Public Instruction has not released state school construction funds without written plan approval from the local health officer. Pre-occupancy inspections are also required as part of the existing rule related to plan review. The draft rule divides plan review and pre-occupancy inspections into two sections. All health jurisdictions in the state conduct school plan reviews currently, although the level of review varies. Some reviews are comprehensive; others may focus on specific aspects such as the adequacy of commercial kitchens. The basic framework for the rule is similar to what has been in place since 1971. The local health officer retains the same level of discretion over the scope of the review. A perception exists that there is unnecessary overlap with local building official plan review. These rules add some requirements in addition to building and mechanical codes, and emphasize some parts of those codes that might not get the full attention of building inspections. These rules intend to avoid redundancies with state building codes.

PUBLIC HEALTH BENEFIT: The purpose of the plan review and preoccupancy inspection requirements is to have local environmental health specialists review construction projects for health and safety risks. The public health benefit for this section derives from the rationale for the construction-related sections throughout the rule. Environmental health specialists report to local health officer and are trained to assess and prevent public health risks in areas such as indoor air quality, exposure to hazardous materials, injury prevention, and control of zoonotic diseases (human diseases of animal origin). They bring a necessary and unique perspective to plan review. Early identification of environmental conditions that may adversely impact student health and safety allows more cost-effective development of necessary mitigation measures. In *Safe and Healthy School Environments*, Frumkin et al note, "Appropriate architectural design of the physical plant in schools and daycare centers can decrease the risk of infections...surfaces should be nonporous and easily cleaned by disinfectants."¹⁰ Local environmental health specialists are trained to assess facility designs that impact infection control and assist with cleaning.

¹⁰ Ed. Howard Frumkin, MD, DrPH, Robert J. Geller, MD, I. Leslie Rubin, MD, with Janice Nodvin, eds, *Safe and Healthy School Environments*, Oxford University Press, 2006, pages 428-9

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

SIGNIFICANT CHANGES: The draft rule provides more specific direction to local health officers related to approval of building plans. These new provisions require the local health officer to provide written approval or describe construction plan deficiencies needing correction to obtain local health officer approval of building plans, within 60 days unless school officials and the health officer agree to a longer time period. The scope of building plan review by the local health officer is limited to environmental health and safety issues as identified in this rule and is not intended to duplicate local building official review. There is language designed to encourage consultation between schools, local public health, and building departments as early in the planning process as possible to improve coordination, limit disruption, and control costs. The draft rule suggests a threshold that would exclude minor alterations, and possibly minor additions, from plan review unless the alterations involve a lab or shop. The current proposal would apply to projects consisting of more than 5,000 square feet of floor area or having a value of more than 10 percent of the total replacement value of the school facility. Review and approval of playground plans is handled separately in section 150.

COST ASSUMPTIONS:

Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Conducting a pre-planning conference with project planners and inviting the Local Health Officer. This requirement may not result in an additional expense, depending on a school's current practice for meeting with project planners and regulatory officials.

Local Health Jurisdictions will likely incur expenses to implement the proposed changes for the following items:

- 1) Participating in pre-planning conferences with project planners. This requirement may not result in an additional expense, depending on a Local Health Jurisdiction's current practice for meeting with school officials and project planners.
- 2) Training on the new construction related requirements of the rule.

PRELIMINARY COST ESTIMATES:

Schools

- (1) Pre-planning meetings/coordination \$3,460 per project

Local Health Jurisdictions

- (1) Pre-planning meetings/coordination – no additional costs identified.
- (2) Training on construction requirements – costs range from \$5,000 to \$18,000

Pre-Occupancy Inspections—Section 050

INTENT: The intent of section 050 is to allow local health officers to verify construction conformity with these rules.

BACKGROUND: Pre-occupancy inspection by the local health officer for new schools, additions, and renovations has been in the existing rule since 1963.

PUBLIC HEALTH BENEFIT: The purpose of the preoccupancy inspection is to have local environmental health specialists review construction projects for health and safety risks. The public health benefit for this section is based on the value of limiting exposure to potential health and safety hazards that may exist in newly constructed school facilities. Inspecting prior to allowing occupancy provides school officials with the opportunity to address identified imminent health hazards before exposing staff and students.

SIGNIFICANT CHANGES: There are no significant changes proposed for the pre-occupancy inspection requirements of the existing rule, WAC 246-366, section 040, and no increased cost associated with implementing this section of the draft rule compared to the existing rule.

Proposed Chapter 246-366A WAC

Preliminary Cost-Benefit Analysis Summary

General Construction Requirements—Section 060

General Operation and Maintenance Requirements—Section 065

INTENT: The intent of section 060 is to update existing requirements and add some new requirements to meet current best practice standards to protect student health through general construction of the school facility. The draft rule is intended to provide clarity to construction requirements and separate construction requirements from operation and maintenance requirements. Construction requirements in the draft that are not in the existing rule will not be applied retroactively – other than in a manner similar to how the building codes are applied to an alteration or addition.

The intent of section 065 is to update operation and maintenance requirements in the existing rule. Some new requirements are added to meet current best practice standards to protect student health. Health concerns addressed by these changes are asthma, allergies, and other adverse health effects associated with poor indoor air quality and exposure to chemicals and other hazardous substances.

BACKGROUND: The basic requirements in section 060 have been in place since 1960. The draft rule provides more specific requirements related to environmental health and safety issues than the building codes and emphasizes some parts of those codes that might not get the full attention of building inspectors. The draft rule would continue to provide requirements for construction contained in the existing rule that help assure environmental health and safety regarding non-slip surfaces of steps, cleanable flooring, pests (vermin), sufficient space for safe storage of instructional equipment, and control of excessive sunlight. Routine installation of window screens to control insects is not required in the draft rule.

The draft rule adds a performance standard for fall protection. The Department of Labor and Industries Core Safety Rules cover certain fall hazards, but are designed to protect only employees (WAC 296-800-260, Floor openings, floor holes, and open-sided floors). Section 410 of the International Building Code (IBC) relating to stages and platforms does not address fall protection from stages. Fall injury incidents have highlighted the need for protection from falls that can result in serious head injuries, disability, or death.

The Department of Labor & Industries Core Safety Rules are designed to protect employees. They require a workplace free from recognized hazards that are likely to cause serious injury or death (WAC 296-800-11005). Employers are required to make workplaces safe, provide and require the use of safety devices and safeguards...and to do everything reasonably necessary to protect the life and safety of employees (WAC 296-800-11010). These draft rules contain similar provisions that school officials keep school facilities safe for students.

The requirements in section 065 of these draft rules continue long standing environmental health and safety requirements for the general operation, maintenance, and safety of school facilities. The existing operation and maintenance requirements include keeping school facilities clean and in good repair; controlling pests; and storing and using toxic substances safely. There also is a provision that students have views of daylight for at least half the day.

Under the Employer Chemical Hazard Communication rule, WAC 296-800-170, schools are required to have a Material Safety Data Sheet (MSDS) for each hazardous chemical used in the school. The MSDS indicates the appropriate uses, safe procedures, and first aid for the chemicals. Indoor air quality and student health are at risk if unauthorized chemicals are brought in. The draft rules would require school officials to ensure that only safe and appropriate chemicals are used and procedures are followed for cleaning, maintenance, pest control; and for arts, science, career, and technical instruction.

Certain insect and animal pests are of public health significance because they can transmit diseases to humans. Safe pest management involves construction measures to exclude pests; maintenance; removal of food, water, and nesting materials; and judicious use of pesticides.

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

PUBLIC HEALTH BENEFIT: The requirements in draft rule section 060 can benefit all users of school facilities by providing an environmental health perspective to school facility construction to help prevent health and safety risks. "Conventional schools are typically designed just to meet building codes—that are often incomplete. Design of schools to meet minimum code performance tends to minimize initial capital costs but delivers schools that are not designed specifically to provide comfortable, productive, and healthy work environments for students and faculty...Not surprisingly, a large number of studies have found that schools across the country are unhealthy."¹¹

Insect and animal pests are potential vectors of infectious diseases that can be transmitted to humans. Rodents are carriers of hantavirus. Bats are the natural reservoir for rabies in this state. Mosquitoes carry viral diseases. Bird droppings can contain pathogenic bacteria and fungi. Mosquito breeding places can be minimized by construction that prevents ponding. This rule section would require schools be constructed to minimize exposure to such pests. This provision is not intended to require windows be screened.

Although not prohibited by the draft rule, carpets are a significant concern for indoor air quality. Carpets can be difficult to maintain; contribute to airborne dust and other allergy/asthma triggers when dirt and dust is not removed by cleaning; and contribute to mold growth when not properly dried. Carpeting specifications should consider ease of cleaning and drying, as well as low off-gassing of volatile organic compounds from the carpet and any pads or glues used. The Environmental Protection Agency (EPA) states: "Carpet ... acts as a reservoir for dust, dirt, pollen, mold spores, pesticides, and other materials which may originate indoors or be brought into the indoor environment from outside...can trap a significant amount of particles...inadequate maintenance can allow large quantities of dust and debris to build up in carpet. Some studies indicate that poorly maintained carpet can release significant quantities of particles into the air during the course of daily activity." It states that: "moisture trapped below a carpet...can result in mold growth and the release of mold spores and mold metabolic products...into indoor air." It further states that: "If carpet is specified, select a carpet that ...can be easily cleaned and maintained, is constructed to prevent liquids from penetrating the backing layer where moisture under the carpet can result in mold growth, and can be easily removed without the use of toxic chemicals..."¹²

Chromated copper arsenate and creosote treated wood are a toxic hazard to children who can absorb the chemicals through their skin or by putting their hands in their mouths. Food laid on the wood can pick up chemical residues.

The requirements in draft rule section 065 would help ensure healthy and safe environments at school facilities. Students, staff, and school visitors could benefit from the protections provided. "Many school buildings are in poor condition and present environmental conditions that inhibit learning and pose unnecessary, increased health risks to students and staff."¹³

It is important for public health that school facilities be clean. It is particularly important to keep carpeting clean to avoid indoor air quality problems. The draft adds a requirement for adequately sized walk-off mats that must be cleaned as needed. Walk-off mats are proven to reduce the amount of dirt, dust, and allergens brought into a school. They improve indoor air quality and reduce asthma triggers; thereby improving the health of students. "Entry mat systems are critical in trapping soil, pollutants, and moisture that otherwise would spread into and throughout the building, as well as in reducing the cost to properly maintain the building...The International Sanitary Supply Association reports that most

¹¹ *Greening America's Schools, Gregory Kats, www.cap-e.com, October 2006, p.4*

¹² *EPA Design Tools for Schools, www.epa.gov/iaq/schooldesign/controlling.html#Carpet*

¹³ *Chaney B, Lewis L. Public School Principals Report on Their School Facilities, Fall 2005. Washington, DC: US Department of Education, National Center for Education Statistics; 2007. NCES 2007-007 In: Jones, SE, Axelrad, R, Wattigney, WA, Healthy and Safe School Environment, Part II, Physical School Environment: Results From the School Health Policies and Programs Study 2006, Journal of School Health, October 2007, vol. 77, no. 8, p. 545*

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

of the dirt within a building is tracked in on people's shoes, and that 85 percent of this can be removed if entry mats are properly designed and maintained."¹⁴ Soil can contain allergens and irritants. "Avoiding environmental allergens and irritants is one of the primary goals of good asthma management."¹⁵

The control of weeds and pests using least hazardous methods would reduce the use of pesticides. Exposure of children to herbicides and other pesticides is a serious health issue. In general, least hazardous response to pest problems means sanitation, prevention of access to food sources, and structural repair to close off pest entry.¹⁶

SIGNIFICANT CHANGES: Some construction-related provisions in the existing rules have been removed from the draft proposal because they are adequately addressed by building codes. These include ceiling height restrictions and hand rail requirements for stairways, which are addressed in the International Building Code (IBC). Also, requirements have been modified to not require exterior measures for sun control.

Proposed new requirements include performance standards for flooring materials and fall prevention. Flooring must be appropriate for the intended use, cleanable, and able to be dried effectively to inhibit mold growth. Woven carpets with impervious backing are mentioned as allowed, when appropriate. Fall prevention measures are required for specific locations and heights such as orchestra pits; retaining walls, balconies, and similar drop-offs to a lower floor. Retaining walls, inadequate railings, half-walls, etc., have been observed in schools as a potential "attractive nuisances" where children have easy access to heights from which a fall could result in serious injury or death. The rule requires appropriate construction measures that might discourage risky behavior by students. The age of children and type of risk would be considered when determining the most appropriate preventive measure.

The draft contains a specific prohibition of wood treated with chromated copper arsenate or creosote. The manufacture of chromated copper arsenate or creosote treated wood products for use around children is banned by EPA in this country, but supplies may still exist. Another provision new to this rule would specify that health rooms meet certain construction provisions. However, the rule does not require schools to have health rooms.

Proposed new provisions in section 065 include requiring appropriately sized walk-off mats at building entrances; safe use and storage of hazardous materials; selecting supplies and procedures that reduce exposures to hazardous materials; allowing use of only cleaners, pesticides, art supplies, or hazardous materials approved by school officials; requiring immediate clean-up and disinfection of areas contaminated by sewage;

A provision is added to notify the local health officer when a sewage back up is large enough to affect more than the toilet room of a building. This is to help ensure the most appropriate clean-up methods are used in all areas of the building to reduce the possibility of contamination of food and water and to reduce exposure to students and staff.

Finally, a provision is added to require that all upholstered furniture be purchased or approved by school officials.

CONSTRUCTION-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

¹⁴ *EPA Design Tools for Schools*, www.epa.gov/iaq/schooldesign/controlling.html#Entry%20Mat%20Barriers

¹⁵ *Pediatric Environmental Health, 2nd Ed., American Academy of Pediatrics, 2003, p. 534*

¹⁶ *Pediatric Environmental Health, 2nd Ed., American Academy of Pediatrics, 2003, pp. 468-469*

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

- 1) Selecting carpet that is easily cleanable and can be dried effectively to inhibit mold growth, where carpet is selected. This may not be an additional expense, depending on a school's current practice when specifying flooring materials.
- 2) Using alternatives to chromated copper arsenate or creosote treated wood.
- 3) Meeting the fall hazard reduction requirements of these rules. This may exceed the minimum building code requirements, but may not be an additional expense, depending on a school's current practice when designing safe school facilities.
- 4) Meeting the health room requirements of these rules, when schools opt to provide a health room in school facilities constructed after the effective date of these rules. This may not be an additional expense, depending on a school's current practice for providing and designing health rooms for new school construction, addition or alteration.

OPERATION & MAINTENANCE-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Research of product hazard resulting from product use as described by manufacture's instructions. Selection of products and establishing procedures to assure that exposure to hazardous materials is reduced and that only school official-approved products are used.
- 2) Providing walk-off mats at major building and corridor entrances. This may not be an additional expense, depending on a school's current practice for the use of walk-off mats.
- 3) Notify the local health officer when sewage backups outside of restrooms occur.
- 4) Allow only upholstered furniture that school officials have purchased or approved.

PRELIMINARY COST ESTIMATES: CONSTRUCTION RELATED COSTS

(1) Potential increased costs for carpet upgrade:

Elementary Schools – \$19,790
Middle Schools - \$23,103
High Schools – \$13,522

(2) Alternatives to chromated copper arsenate or creosote treated wood. No new costs identified because most products have been removed from the marketplace and alternative treated wood is approximately the same cost.

(3) Meeting the fall hazard requirements: This cost will vary widely and depend on the hazards and topography of a particular site. The costs here are estimated based on the increased railing requirements of a sample school - 1,000 linear feet of railing on exterior retaining walls at \$55 per foot, warning strips on stages and open metal railings for orchestra pits.

Elementary Schools – \$48,233
Middle Schools – \$70,232
High Schools – \$82,350

(4) Potential health room costs, if schools choose to provide a health room.

Elementary School – \$56,416
Middle School - \$57,790
High School - \$57,940

OPERATION & MAINTENANCE COSTS

(1) Assure that school official-approved products are used: Most schools identified that they already do this activity, but identified a range of cost of compliance from \$500 to \$2,464 per year.

(2) Provide walk-off mats at major building and corridor entrances. This will be based on size and number of entrances.

Elementary Schools – \$14,364
Middle Schools - \$24,897
High Schools – \$25,650

Cleaning costs are estimated at – \$2,750 for an elementary school

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

(3) Notify local health officer when sewage backups outside of restroom areas occur. It is estimated that this might occur 1 time a year per school. Range of staff costs identified \$36-\$250.

(4) Assure only school official-approved upholstered furniture is used in schools. Most schools already have this in policy, however for those schools that do not, this requirement could require up to 4 hours of custodial time to audit a building in a year. (4 hrs-\$176). There could also be disposal costs of up to \$1,000.

Moisture Control, Mold Prevention and Remediation—Section 070

INTENT: The intent of section 070 is to require rapid control of moisture problems in schools that can lead to mold growth and well as timely mold remediation and notification of affected individuals. Mold growth is an indicator of damaging water intrusion or condensation and can contribute to respiratory health problems. Moisture control is the key to mold prevention.

BACKGROUND: The Environmental Protection Agency (EPA) has stated: “Concern about indoor exposure to mold has been increasing as the public becomes aware that exposure to mold can cause a variety of health effects and symptoms, including allergic reactions...Mold spores waft through the indoor and outdoor air continually. When mold spores land on a damp spot indoors, they begin growing...Mold can produce allergens that can trigger allergic reactions or even asthma attacks in people allergic to mold. Others are known to produce potent toxins and/or irritants.”¹⁷

The existing rule does not address mold or moisture intrusion. The State Board of Health has received extensive testimony about the adverse health effects of mold. Some of this has come from teachers and from the parents of students who have been exposed to moldy conditions in schools that might be linked to adverse health outcomes. The School Rule Development Committee had two recommendations concerning mold, and recommended they be included in guidance.

PUBLIC HEALTH BENEFIT: Mold is a known allergen and asthma trigger. Some molds also produce toxic byproducts that are released into the air. Damp environments can allow mold growth in 24-48 hours leading to respiratory health problems. Any resulting mold growth needs to be properly remediated for the health of students, staff, and visitors. Exposure to mold can cause symptoms that include sinus congestion, sneezing, sore throat, cough, skin irritation, shortness of breath, headache, watery eyes, fatigue, and severe asthma reactions in sensitive individuals.

The Institute of Medicine’s (IOM) Committee on Damp Indoor Spaces and Health¹⁸ has stated that: “Homes and other building should be designed, operated, and maintained to prevent water intrusion and excessive moisture accumulation when possible. When water intrusion or moisture accumulation is discovered, the source should be identified and eliminated as soon as practicable to reduce the possibility of problematic microbial growth and building material degradation. The most effective way to manage microbial contaminants, such as mold, that are the result of damp indoor environments is to eliminate or limit the conditions that foster its establishment and growth.”

The IOM committee further states that: “When microbial contamination is found, it should be eliminated by means that not only limit the possibility of recurrence but also limit exposure of occupants and persons conducting the remediation. Disturbance of contaminated material during remediation activities can release microbial particles and result in contamination of clean areas and exposure of occupants and remediation workers. Containment during clean-up (through the erection of barriers, application of negative air pressure, and other means) has been shown to prevent the spread of microbial particles to non-contaminated parts of a contaminated building. The amount of

¹⁷ *Mold Remediation in Schools and Commercial Buildings, EPA 402-K-01-001, March 2001*

¹⁸ *Damp Indoor Spaces and Health, Institute of Medicine, 2004, Committee on Damp Indoor spaces and Health, pp. 12-14*

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

containment and worker personal protection and the determination of whether occupant evacuation is appropriate depend on the magnitude of the contamination.”

The IOM committee concluded “that excessive indoor dampness is a public-health problem. An appropriate public health goal should thus be to prevent or reduce the incidence of potentially problematic damp indoor environments, that is, environments that may be associated with undesirable health effects, particularly in vulnerable populations.”

SIGNIFICANT CHANGES: The draft rule requires that school officials:

- ▶ Visually monitor for water intrusion and moisture accumulation;
- ▶ Begin corrective action within 24 hours of discovering water intrusion or moisture accumulation to prevent and limit mold growth; and
- ▶ Take specific actions when mold growth is suspected or observed, including
 - Eliminating the cause of moisture and drying the affected areas;
 - Investigating the extent of the mold growth;
 - Limiting student exposure;
 - Using recognized mold remediation procedures; and
 - Informing staff, students, and parents of the conditions and plans for remediation if the affected surface area is greater than 10 square feet. (The 10 square feet threshold for mandating notification is based on EPA remediation guidance.)

COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Integrating frequent visual observation of the school facility for signs of water intrusion or moisture accumulation into the routine school operations by staff and faculty.
- 2) Beginning corrective action within 24 hours in response to water intrusion, moisture accumulation or mold growth. Depending on the timing of the event relative to the standard work week, this could result in overtime costs.
- 3) Responding to water intrusion and moisture accumulation (Control water and dry facility)
- 4) Remediating mold growth.
- 5) Notifying staff, students, and parents about mold remediation.

These requirements may not result in additional expenses, depending on a school’s current practice for monitoring their facility for and responding to water intrusion, moisture accumulation or mold.

PRELIMINARY COST ESTIMATES:

(1) – (3) Schools identified that they are already observing facilities and responding to water intrusion. The requirement to begin corrective action in 24 hours may require some increase in overtime work if problems are discovered over a weekend. In order to dry facilities, schools may also need to leave HVAC systems running in a higher mode that could increase costs. Range of costs identified: \$200 - \$1,120, labor; up to \$2,000 for increased utilities.

(4) Remediation of mold growth – costs can vary widely depending on circumstances. The department assumes the requirement to begin remediation quickly combined with the requirement to observe facilities and respond to water intrusion will help prevent large and costly remediation projects. The department, however, recognizes that some remediation projects can be large with schools reporting costs of up to \$300,000 in some cases.

(5) Notify staff, students and parents about remediation: Costs reflect time to develop a letter and respond to questions. Assume not more than 1 event per year. Range of costs identified: \$75 - \$2000.

Animals in School Facilities—Section 080

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

INTENT: The intent of this section is to require school officials to develop written policies or procedures that specifically address the potential health and safety hazards associated with animals allowed in the school facility, including service animals that are regular visitors.

BACKGROUND: The existing rule does not specifically address animals in the school facility. School officials, staff, and parents have expressed concerns to DOH staff regarding the safety and health concerns related to animals in schools. DOH has received requests for prohibiting animals in schools due to these concerns and also has received complaints when animals are prohibited in schools. The SBOH was requested to address concerns about animals in this draft rule.

There are many areas in which animals might be found in schools; including as pets in elementary classrooms, in science classrooms, as teacher's pets, as service animals, for special education therapy, and even as school mascots that roam the facilities. Since 2000 the *K12 Health and Safety Guide* has provided guidance on animals in schools, based on the National Association of State Public Health Veterinarian's (NASPHV) *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings*. NASPHV "understands the positive benefits of human animal contact. Although eliminating all risk from animal contacts is not possible, [they] provide recommendations for minimizing disease and injury. NASPHV recommends that...agencies use these recommendations to establish their own guidelines or regulations for reducing the risk for disease from human-animal contact in public settings."¹⁹

Schools need to ensure that personnel providing animals for educational purposes are knowledgeable regarding animal handling and zoonotic disease issues.²⁰ Guide, hearing, or other service animals and law enforcement animals can be used when they are under the control of a person familiar with the specific animal and in accordance with recommendations from the sponsoring organizations.

PUBLIC HEALTH BENEFIT: Animals can play an important instructional role in the school setting. They can also present a risk of zoonotic disease (diseases which can be transferred from animals to humans), injuries, and allergic and asthmatic reactions. Animals require thoughtful attention to their care – including environment, climate, housing, food, exposure to other species (including humans), socialization, behavior, and appropriate clean-up of their wastes. Animals need to be kept clean and free of intestinal parasites, fleas, ticks, mites, and lice.²¹

Animal waste has the potential for disease transmission and plans for allowing animals in schools need to specify effective provisions for cleaning and sanitation. "Cleaning and disinfection of all areas where animals have been present is necessary to prevent disease transmission."²² "Infections with enteric bacteria and parasites pose the highest risk for human disease from animals in public settings. The primary mode of transmission for enteric pathogens is fecal-oral. Because animal fur, hair, skin, and saliva can become contaminated with fecal organisms, transmission can occur when persons pet, touch, feed, or are licked by animals...Animals carrying enteric organisms pathogenic to humans (e.g., *E. coli*, *Salmonella*, and *Campylobacter*) frequently exhibit no signs of illness and can shed these pathogens intermittently. Removing ill animals (especially those with diarrhea) is necessary but not sufficient to protect animal and human health. Antimicrobial treatment of animals cannot reliably eliminate infection and shedding of enteric pathogens or prevent re-infection.

All reptiles and amphibians can carry salmonella, which causes gastrointestinal illness. This is regardless of whether they were raised as pets, or test negative on occasion. Shedding of the

¹⁹ *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2007 National Association of State Public Health Veterinarians, Inc., Morbidity and Mortality Weekly Report, Recommendations and Reports July 6, 2007/Vol. 56/No. RR-5, p. 1.*

²⁰ *Ibid.* p. 19

²¹ *Ibid.* p. 19

²² *Ibid.* p. 19

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

organism can be intermittent, so despite some claims to the contrary, reptiles, amphibians (or chicks and ducks) cannot be "certified" salmonella free. School children under 12 years of age should be prohibited from handling reptiles and amphibians. Federal law prohibits ownership of turtles with carapace length less than four inches. Anyone handling a reptile, amphibian, or any other animal allowed in school, should wash their hands immediately afterward, scrubbing with soap for at least 20 seconds. Adult supervision to ensure adequate hand washing is necessary to ensure that hand washing is sufficient to reduce disease transmission.

Infections from animal bites are common and frequently require extensive treatment or hospitalization. Bacterial pathogens associated with animal bites include *Pasteurella*, *Francisella tularensis*, *Staphylococcus*, *Streptococcus*, *Capnocytophaga canimorsus*, *Bartonella henselae* (cat-scratch disease), and *Streptobacillus moniliformis* (rat-bite fever). Certain monkey species (especially macaques) kept as pets or used in public exhibits can be infected with herpes B virus, either asymptotically or with mild oral lesions. Human exposure through monkey bites or bodily fluids can result in a fatal meningoencephalitis.²³

"Psittacosis...is a bacterial infection of humans that can cause severe pneumonia and other serious health problems. It is caused by *Chlamydophila psittaci*... From 2000 through 2006, 125 human cases of psittacosis were reported to the CDC [Center for Disease Control] and most resulted from exposure to infected pet birds, usually cockatiels, parakeets, parrots, and macaws...Infected birds shed the bacteria through feces and nasal discharges, and humans become infected from exposure to these materials."²⁴ Infected birds can appear healthy and shed the organism intermittently.²⁵

"Injuries associated with animals in public settings include bites, kicks, falls, scratches, stings, crushing of the hands or feet, and being pinned between the animal and a fixed object."²⁶ Ferrets commonly bite when startled and are unsuitable in school settings. Animals may react strangely to classroom situations and it is important to have effective control methods. No animals should be allowed to roam unrestrained. Restraints should be appropriate and safe for the animal. Animals in estrus should not be in school.

Organizations allowed to bring animals into schools for educational purposes must comply with the Washington State legislation, HB 1418, *Dangerous Wild Animals*, effective 7/22/07.²⁷

There are many people who are allergic to animal dander or for whom animal fur, feathers, and dander may be asthma triggers. Plans to allow animals in schools must consider the need to protect students with allergies and asthma. "Parents should be informed of the benefits and potential risks associated with animals in school classrooms. Consult with parents to determine special considerations needed for children who are immunocompromised, who have allergies, or who have asthma."²⁸

²³ *Ibid.* p. 4, 5

²⁴ *Compendium of Measures to Control Chlamydophila psittaci Infection Among Humans (Psittacosis) and Pet Birds (Avian Chlamydiosis)*, 2008 National Association of State Public Health Veterinarians (NASPHV), p. 1. <http://www.hasphv.org/Documents/Psittacosis.pdf>

²⁵ *Ibid.* p. 4.

²⁶ *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings*, 2007 National Association of State Public Health Veterinarians, Inc., *Morbidity and Mortality Weekly Report, Recommendations and Reports July 6, 2007/Vol. 56/No. RR-5*, p. 4.

²⁷ <http://apps.leg.wa.gov/documents/billdocs/2007-08/Pdf/Bills/Session%20Law%202007/1418.SL.pdf>

²⁸ *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings*, 2007 National Association of State Public Health Veterinarians, Inc., *Morbidity and Mortality Weekly Report, Recommendations and Reports July 6, 2007/Vol. 56/No. RR-5*, p. 19.

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

SIGNIFICANT CHANGES: Section 080 would require school officials to develop a policy to prevent the spread of zoonotic disease, injuries, and allergic reactions if animals are allowed in school facilities.

COST ASSUMPTIONS: Schools will likely incur expenses to develop the required “animals in the school” policy, if such a policy does not already exist.

PRELIMINARY COST ESTIMATES:

Cost to develop an animal policy. Costs varied depending on if schools would need to develop a policy or could rely on a model. Range of costs identified: \$720 to \$4,000.

Heating and Ventilation:

Construction Requirements—Section 090

Operation and Maintenance Requirements—Section 095

INTENT: Indoor air quality (IAQ) issues in schools are important for student and staff health, productivity, and learning. The State Board of Health (SBOH) heard testimony over the past 15 years that indicates IAQ issues are not being adequately addressed in some schools. This was a major reason the SBOH directed the Department of Health to update the school environmental health and safety rules. The heating and ventilation sections of the rules are intended to provide more specific standards to help prevent school IAQ problems.

BACKGROUND: The International Mechanical Code (IMC), as adopted by Washington State (WAC 51-52) and the State Ventilation Code (WAC 51-13) specify the design of heating and ventilation systems in schools. Additional requirements in this draft rule address special school environmental health issues not fully covered by the IMC. Schools have special use areas that can produce indoor air quality (IAQ) problems not adequately addressed by the building codes, including science labs; art and vocational classrooms; health rooms; and copy or laminating machine workrooms. The IMC does not adequately address the issue of recirculation of air from such spaces as science laboratories; career and technical classrooms; and restrooms. This rule would focus school design professionals’ attention to assure that the ventilation systems are designed to prevent the types of indoor air quality (IAQ) problems in schools that have resulted in health issues for students and staff. Health complaints in schools have been associated with such things as glass fibers, dust, and automobile exhaust. L&I rules are not designed to address these issues in schools, which could have even greater impact on students than adults.

The Local Health Officer’s designee, who reviews school plans and conducts pre-opening inspections from a health perspective, can address these issues in light of the planned uses for the rooms. Their perspective, based on public health protection strategies, enhances the oversight by the local building officials, identifying conditions or issues that may not be observed by expertise grounded in other professions.

PUBLIC HEALTH BENEFIT: Environmental exposures play an important role in the development and management of asthma. The main factors responsible for triggering asthma attacks and persistent symptoms are exposure to allergens, irritants, and respiratory infections. Common allergens include animal dander, dust mites, cockroaches, and molds. Respiratory irritants include diesel exhaust, ozone, fine particles, cleaning products, and solvents. “About 120,000 Washington youth are currently affected by asthma.” “Poor air quality at school exacerbates asthma and is also associated with decreased student attendance in the general population – air in or around schools may be affected by management of ventilation and filtration systems, cleaning practices, reduction of “idling” by school bus engines or others waiting to pick up students.”²⁹

²⁹ *The Burden of Asthma in Washington State: Executive Summary, June 2005*

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

School children spend a significant part of their growing years in school facilities. The chapter on schools in Pediatric Environmental Health³⁰ states that "Exacerbation of respiratory symptoms, academic difficulties in achievement, attention, and focus; and behavioral problems...may be linked to the school environment..." (p459) "Many problems with IAQ in schools are common to all large buildings. There are, however, other pollutants unique to schools including those released into the air from art and craft supplies, chemistry and biological laboratories, and wood and metal shops." "The indoor air may directly influence a child's learning by affecting alertness, attentiveness, and absenteeism...Indoor air pollutants can originate within the building or be drawn in from outdoors and may consist of particles, fibers, mists, molds, bacteria, and gases."(p461) "Prevention [of IAQ problems] provides the greatest overall health benefit [to children.]"(p466)

SIGNIFICANT CHANGES: Schools must situate fresh air intakes away from building exhaust vents and other sources of air contaminants of public health importance in a manner that meets or exceeds the requirements in chapter 51-52 WAC. Sources of air contaminants include, but are not limited to, bus and vehicle loading zones, parking areas, and areas where pesticides or herbicides are commonly applied. The proposal also requires ducted air returns and using non-friable material when lining ducts.

The existing rule requires mechanical exhaust ventilation for sources of air contaminants of public health importance. In an effort to provide more clarity and specificity, the draft requires schools to provide mechanical exhaust ventilation that meets or exceeds the requirements in chapter 51-52 WAC for equipment or activities that produce air contaminants of public health importance. Equipment that may produce air contaminants of public health importance includes laminators, high volume copiers and high volume laser printers. The phrase "air contaminants of public health importance" is newly defined in the draft. It is understood that with the greater specificity and the new definition, that meeting the proposed rule may require some schools to provide mechanical ventilation in more situations than under the existing rule.

The draft rule continues existing requirements that the minimum temperature in facilities occupied by students be maintained at 65°F, with the exception of gymnasiums, which must be maintained at 60°F. It drops the requirement that all heating, ventilation, and air conditioning (HVAC) systems be equipped with automatic room temperature controls. School facilities constructed before the effective date of this draft rule would be required to ventilate occupied areas of school buildings during school hours and school-sponsored events and make all reasonable effort to provide outdoor air ventilation according to chapter 51-52 WAC. School facilities constructed after the effective date of this draft rule would be required to ventilate occupied areas of school buildings during school hours and school-sponsored events to provide outdoor air ventilation according to chapter 51-52 WAC.

Schools would be required to restrict the use of high volume photocopiers and laser printers, and laminators to locations with mechanical exhaust ventilation and to take corrective action when air contaminants of public health importance, such as vehicle exhaust, are drawn into the building or ventilation system.

CONSTRUCTION-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- (1) For new construction, use only ducted supply and return air systems when mechanical ventilation systems are selected. Natural ventilation systems may be used.
- (2) Use only materials that will not deteriorate and contribute particulates or other air contaminants to the air stream when insulating the interior of air handling ducts.

OPERATION & MAINTENANCE-RELATED COST ASSUMPTIONS: At the time of this writing, this section of rule text is still evolving in a way that may impact costs. For the purposes of this document and further discussion, the department is using the following assumptions about the intent of the language to estimate costs. Schools will likely incur expenses to implement the proposed changes for the following items:

³⁰ *Pediatric Environmental Health, American Academy of Pediatrics, 2nd Edition, 2003*

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

(1) Provide heat and ventilation during school sponsored events. The existing rule requires heat during school hours. This requirement may not result in additional expenses, depending on a school's current practice for heating and ventilating their buildings.

(2) Restrict the use of laminators and high-volume printers and copiers to locations with mechanical exhaust ventilation. Providing mechanical exhaust ventilation for sources of air contaminants of public health importance is an existing rule requirement. The department assumes that most newer schools house these items in an office that is ventilated. However, some older schools may need to install mechanical exhaust ventilation in more situations than currently done. The department assumes a need for one ventilated workroom.

PRELIMINARY COST ESTIMATES: CONSTRUCTION RELATED COSTS

(1) For new construction, use only ducted air supply and returns; open plenum returns may not be used:

Elementary Schools – \$98,280
Middle Schools – \$143,640
High Schools - \$340,200

(2) Use materials that will not deteriorate when insulating the interior of air handling ducts. Two options for compliance were identified: 1) Upgrade to Amtex no particulate liner; or 2) Add two duct sound chambers at each teaching station, restroom and private office.

Option 1) Upgrade insulation duct lining:
Elementary Schools - \$44,772
Middle Schools – \$66,976
High Schools - \$154,980

Option 2) Sound chambers
Elementary Schools – \$ 57,859
Middle Schools - \$81,003
High Schools – \$150,434

OPERATION & MAINTENANCE COSTS

(1) Schools identified that there would be no additional costs for heat and ventilation during schools sponsored events.

(2) Restrict the use of laminators, high-volume printers and high volume copiers to locations with mechanical exhaust ventilation. For those schools that do not have a ventilated workroom, the department assumes installation of mechanical exhaust ventilation in one workroom will be necessary. The cost to retro-fit mechanical exhaust ventilations systems in older schools could be from \$1,200 – \$10,000. Some districts identified that 30% of schools in their district may need to upgrade.

(3) Preventative or corrective action when air contaminants of public health importance are likely to be or are drawn into the building. There are a number of actions that will meet this requirement ranging from closing the windows for no new costs, to installing an air quality detection system with an automatic shutoff. The proposal would not require schools to retrofit to provide an emergency air evacuation system. The costs for an air quality detection system with an automatic shutoff are provided here.

Elementary – \$5,510
Middle School – \$8,266
High School - \$20,664

**Noise—Construction Requirements—Section 100
Noise—Operation and Maintenance—Section 105**

DRAFT DOCUMENT / This Is Not The Final Significant Analysis

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

INTENT: The intent of these two sections is to present noise control-related requirements when constructing school facilities, and for operating and maintaining existing school facilities.

BACKGROUND: The current rule requires that ventilation and mechanical noise sources be designed to not exceed the Noise Criterion-35 (NC-35) standard, and that the ambient noise in an unoccupied classroom with the mechanical systems operating not exceed 45 dBA (decibel measure, with the "A" weighted scale adjustment).

PUBLIC HEALTH BENEFIT: Control of ambient noise reduces stress and related health effects and ensures that staff will not disable ventilation systems to reduce noise and therefore contribute to poor IAQ. *Safe and Healthy School Environments* identifies health impacts of noise in the school setting:

"Teachers and teacher assistants (paraprofessionals) suffer a higher rate of voice disorders than other working people. Smith et al. (1997) compared the frequency and effects of voice symptoms in teachers to a group of people employed in other occupations."

"...the noise created by heating, ventilating, and air-conditioning (HVAC) systems, poor acoustic design in classrooms, and crowded classrooms may also contribute to teacher's straining their voices to be heard (American National Standards Institute and Acoustical Society of America 2002.)

(*Safe and Health School Environments*, Ed. Howard Frumkin, MD, DrPH, Robert J. Geller, MD, I. Leslie Rubin, MD, with Janice Nodvin, Oxford University Press, 2006, page 434-5.)

The impact of mechanical equipment noise on the classroom environment has been highlighted in *Classroom Acoustics*, published by the Technical Committee on Architectural Acoustics of the Acoustical Society of America, August 2000:

"High ambient noise from mechanical equipment such as noisy heating, ventilation and air conditioning (HVAC) systems is all too common in existing schools. This is a serious problem for teachers and students alike. Teachers must raise their voices to maintain the +10 cB signal-to-noise ratio necessary for good speech intelligibility. That results in many teachers taking several sick days each year as a result of vocal strain, costing taxpayers' money that would have been better spent on quiet mechanical equipment. At the same time, students must either struggle to hear or else become distracted and stop paying attention. Mechanical noise is primarily the result of poor planning and can be difficult and expensive to fix in existing classrooms. However, excessive mechanical noise can be eliminated at little or no extra cost if the system is designed properly in the first place."

SIGNIFICANT CHANGES: There are no significant changes proposed for the noise-related requirements of the current rule as presented in WAC 246-366, sections 100 and 105, and no increased cost associated with implementing the draft rule compared to the existing rule.

Lighting—Construction Requirements—Section 110 Lighting—Operation and Maintenance Requirements—Section 115

INTENT: The intent of these two sections is to present lighting-related requirements when constructing school facilities, and for operating and maintaining existing school facilities.

BACKGROUND: Lighting intensity requirements, a part of the 1960 school health and safety rules, have been revised over the years, with the current lighting levels established in 1982. No changes to existing lighting requirements are proposed in the draft rule.

PUBLIC HEALTH BENEFIT: Minimum lighting intensity, and the absence of glare and other lighting deficiencies, contribute to a healthy and safe school environment. Existing requirements recognize

DRAFT DOCUMENT / This Is Not The Final Significant Analysis

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

different lighting levels are needed throughout the school facility based on activity to assure a safe educational setting. Insufficient lighting, glare, and other lighting deficiencies can contribute to accidents, eye-strain and headaches.

SIGNIFICANT CHANGES: There are no significant changes proposed for the lighting-related requirements of the current rule as presented in WAC 246-366, sections 110 and 115, and no increased cost associated with implementing these sections of the draft rule compared to the existing rule.

Restrooms and Showers—Construction Requirements—Section 120 Restrooms and Showers—Operation and Maintenance Requirements—Section 125

INTENT: The intent of these two sections is to present plumbing-related requirements when constructing school facilities, and for operating and maintaining existing school facilities.

BACKGROUND: Plumbing-related requirements, a part of the 1960 school health and safety rules, have been revised over the years, with the current requirements established in 1982. Early requirements addressed many items currently addressed in building and plumbing codes. The remaining requirements in the draft rule address items not covered in the plumbing code. The current rule establishes when showers must be provided, when restrooms must be accessible, what restroom supplies must be provided and the maximum hot water temperature for showers and handwashing.

PUBLIC HEALTH BENEFIT: Providing for conditions in restrooms and showers that contribute to keeping facilities clean and dry is important to maintaining healthy spaces in schools. Ventilation helps control moisture accumulation and odors. Restrooms must be available for use of building occupants, and a maximum hot water temperature guards against scalding.

SIGNIFICANT CHANGES: The draft rule requires surfaces on floors and walls near sinks, toilets, and urinals that do not absorb liquids or odors and are easily cleanable, and tempered water (between 85 and 110 degrees Fahrenheit) for those handwashing plumbing fixtures that do not allow the user to select water temperature.

CONSTRUCTION-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Installing non-absorbing surfaces on floors and walls near sinks, toilets and urinals. This requirement may not result in an additional expense, depending on a school's current practice for selecting surfaces in these applications.

OPERATION & MAINTENANCE-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Adjusting handwashing plumbing fixtures that do not allow the user to select water temperature to provide tempered water. This requirement may not result in an additional expense, depending on the type of plumbing fixtures used in a school or a school's current practice for setting water temperature at this type of plumbing fixture.

PRELIMINARY COST ESTIMATES:

CONSTRUCTION COSTS:

1) Non-absorbing surfaces on floors and walls near sinks, toilets and urinals. No additional costs identified.

OPERATION AND MAINTENANCE COSTS:

1) Assure tempered water in sinks that do not allow users to select temperature. Approximate costs identified to adjust fixture controls: \$200 per school

Proposed Chapter 246-366A WAC

Preliminary Cost-Benefit Analysis Summary

Water Quality Monitoring for Lead—Section 130

INTENT: The intent of this section is to present the requirements for sampling drinking water for lead content. This section describes the frequency, timeline, and protocol for sampling water from plumbing fixtures used for drinking or cooking.

BACKGROUND: The current rule requires schools to provide drinking water from an approved source. Schools that receive their drinking water from a municipal or privately owned water supply are considered a customer of that water system and are not required to conduct water quality testing. Water systems that provide drinking water to schools test for lead and other contaminants in select locations throughout their distribution system. Schools on their system may or may not be part of the sampling sites. Because water quality problems at schools are often caused by plumbing conditions rather than the quality of the water being delivered, problems could go unnoticed.

From December 2004 until June 2005 the Office of Superintendent of Public Instruction and DOH jointly implemented a grant program to partially reimburse Washington elementary schools for the cost of testing for lead in their drinking water. A total of 7,728 samples were submitted by 455 different schools. Of the 7,728 samples collected, 559 or 7.2 percent were at or above the EPA lead action level of 20 parts per billion.

PUBLIC HEALTH BENEFIT: Exposure to lead is a significant health concern, especially for young children whose growing bodies tend to absorb more lead than the average adult. Excess amounts of lead in the body can damage the brain, kidneys, nervous system, and red blood cells. In children, lead has been associated with impaired mental and physical development as well as hearing problems. The harmful effects of lead in the body can be subtle and may occur without any obvious signs of lead poisoning.

Lead is a toxic with no acceptable safe exposure level. Reducing the amount of lead in drinking water is an important part of reducing a child's overall exposure to lead in the environment. The on-again, off-again water use patterns of most schools can result in elevated lead levels in drinking water. Water that remains stagnant in plumbing overnight, over a weekend, or during a vacation is in longer contact with lead – containing pipes, solders, and fixtures and may therefore contain higher levels of lead.

The benefit of the proposed rule is prevention of exposure to lead by sampling water and taking corrective action when necessary.

SIGNIFICANT CHANGES: The draft rule requires sampling and testing water for lead levels at plumbing fixtures regularly used for drinking or cooking. For elementary schools, 100% of the fixtures will need to be sampled within the first two years, fifty percent each year.

For junior high and high schools, a representative sample is required by identifying different types and ages of fixtures used in the building and sampling 25% of each type and age of fixture. For fixture types, at least these three types: drinking fountains, water coolers and faucets. For fixture age, at least these two ages: fixtures manufactured before 1999, and those fixtures manufactured since January 1, 1999. Junior highs will need to be tested within three years of the effective date of the rule and high schools within four years

The sampling procedure is repeated every five years, sampling 10% of each type and age that are a "very low lead" plumbing fixture and 25% of all other fixtures, by type and age.

If the sample results exceed 20.0 parts per billion, corrective action is required for all fixtures of the type and age generating an unacceptable sample. Corrective actions include: removing the fixture from service, providing bottled water, daily system flushing as only a temporary measure, and fixture replacement. The proposal further requires school officials to use a state-accredited laboratory to

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

analyze all samples. Samples collected after September 1, 2003 may be used to meet the first round monitoring requirement under certain conditions.

School officials must notify staff, students, parents, and the local health officer within 5 business days of receiving lead sampling results exceeding 20.0 parts per billion. They must also retain records of water sampling activities and sample results, available for public review.

The requirements in this section apply to all school facilities.

COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Sampling and analyzing fixtures used for cooking and drinking according to requirements. This will mean 100% of fixtures in elementary schools and 25% of fixtures for junior high and high schools. This expense will repeat on a five year cycle.
- 2) Implementing corrective actions when sample results exceed 20.0 parts per billion. This could include expenses for bottled water as an interim measure before replacing the fixtures, and the cost of replacement fixtures and labor for removal of old fixtures and installation of new ones.
- 3) Notifying staff, students, parents, and the local health officer within 5 business days of receiving sampling results above 20.0 parts per billion lead.

PRELIMINARY COST ESTIMATES:

(1) Sample collection and analysis:

Elementary Schools -

Based on staff surveys, the department assumes a large elementary school will have up to 30 fixtures regularly used for drinking and cooking. This does not include restroom sinks. All the fixtures will need to be tested at a cost of \$30 per test and it may take up to 2 days to develop a sample plan, collect samples, and deliver samples for testing. 16 hours @ \$45/hr.

30 x \$30/test = \$900 lab costs

16 x \$45/hr = \$720

Total for an elementary school \$1,620

Middle/High Schools

Although middle and high schools are double and sometime triple the size and number of students of an elementary, the department's analysis does not show that drinking and cooking taps increase proportionately because elementary schools have a larger number of drinking fountains per student. A large high school might have 60 drinking and cooking taps. For purposes of providing an example we have chosen a school with 48 drinking and cooking fixtures. The proposal will require 25% of the fixtures to be tested - 48 fixtures per school X 25% = 12 fixtures to be tested. Lead tests are approximately \$30 per test. The department assumes it will take about 1 day to develop a sample plan, collect samples and deliver samples for testing - 8 hours @ \$45/hr = \$360.

Sampling - \$30 x 12 fixtures = \$360

Labor - \$360

Total per school - \$720

(2) Costs for Corrective Action – Based on the results of the Governor's 2003 initiative to sample lead in school drinking water and the Seattle School District monitoring program, the department assumes up to 30% of schools will have problems with lead. Department staff further assume for the purposes of this analysis that schools will choose to replace fixtures if testing results are above 20.0 parts per billion. The department also estimates that as many as 25% of fixtures may need to be replaced.

The costs for typical fixtures are:

Drinking fountain - \$150

Water cooler - \$470

Faucet - \$70

DRAFT DOCUMENT / This Is Not The Final Significant Analysis

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

Assuming a worst case scenario that a school would need to replace 12 water cooler units, the cost would be $12 \times \$470 = \$4,230$. Additional labor costs would be in the range of 12 hours @ \$60/hr = \$720. However, the department assumes discounts would be available if fixtures were being replaced on a district wide basis and purchased in bulk. $\$4,230 + \$720 = \$4,950$.

The replaced fixtures would need to be retested for a cost of \$720

Total possible corrective action costs – $\$4,950 + \$720 = \$5,670$

(3) Costs to notify staff, students, parents, and the local health officer within 5 business days of receiving lead sampling results above 20.0 parts per billion lead. Costs reflect time to develop a letter and respond to questions. Assume not more than 1 event per year.
Range of costs identified: \$75 - \$2000.

Water Quality Monitoring for Copper—Section 135

INTENT: The intent of this section is to present the requirements for sampling drinking water for copper content. This section describes the frequency, timeline, and protocol for sampling water from plumbing fixtures regularly used for drinking or cooking.

BACKGROUND: As with lead, schools that receive their water from a municipal or private water supply are not required to test regularly for copper. Unless a school is its own water system, there are no specific requirements that water coming out of the pipes of individual schools be tested for copper. Depending on the age of a school and the kind of pipes and fixtures used, there is a possibility that copper levels in drinking water could contain copper. The EPA has established the action level for copper at 1.3 milligrams per liter (mg/L) for copper.

PUBLIC HEALTH BENEFIT: Children are more susceptible to the effects of excess copper than adults because they are smaller and metabolic capacity is less developed. Ingesting copper can cause nausea, abdominal pain, vomiting, and for sensitive individuals kidney disease and liver damage. Copper is a contaminant that most commonly enters drinking water through corrosion of copper plumbing within buildings.

Schools in this country have identified drinking water with excessive levels of copper in amounts that may have caused gastric symptoms in children and that put certain susceptible persons at risk of health problems. In limited school sampling in Washington 15 of 3,300 samples were above the Safe Drinking Water Act copper action level of 1.3 mg/L. The only way to know if there are excessive levels coming from pipes and fixtures is to test for it. Once corrective actions are taken the problem is not expected to reoccur. Use of copper water pipes for electrical grounding is the most frequent cause of excessive leaching of copper into drinking water.

The benefit of the proposed rule is prevention of exposure to copper by sampling water and taking corrective action when necessary.

SIGNIFICANT CHANGES: The draft rule requires that school officials must sample 25% of plumbing fixtures regularly used for drinking and cooking in all schools for copper content, following the same protocol as that for lead sampling. Repeat sampling for copper is not required.

School officials must notify staff, students, parents, and the local health officer within 5 business days of receiving copper sampling results above 1.3 mg/l copper. They must also contact the Department of Health, Office of Drinking Water within this timeframe to consult about a corrective action plan. School officials must develop and implement an action plan in response to copper levels exceeding 1.3 mg/l.

DRAFT DOCUMENT / This Is Not The Final Significant Analysis

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

The requirements in this section apply to all school facilities.

COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Sample collection and sample analysis for 25% of each type and age of fixture used regularly for drinking or cooking will need to be sampled. School officials are encouraged to coordinate sampling for lead and copper so that analysis for both contaminants can be performed from a single sample.
- 2) Implementing corrective actions when sample results exceed 1.3 mg/l, based on a corrective action plan developed in consultation with the Department of Health, Office of Drinking Water. Corrective action-related expenses could include the cost of bottled water as an interim measure, an automated flushing system or daily manual flushing.
- 3) Notify staff, students, parents, and the local health officer within 5 business days of receiving copper sampling results above 1.3 mg/l copper.

PRELIMINARY COST ESTIMATES:

1) Sample collection and analysis of 25% of fixtures – Assuming a school coordinates their copper testing with the lead testing, the copper requirement will add an additional one time cost ranging from \$10 - \$20 per test.

Using the numbers developed for the section -130 for middle and high schools, this would mean additional costs of up to:

$$12 \times \$20 = \$240 \text{ per school.}$$

2) Corrective action. While bottled water or treatment would be options for corrective action, for copper issues, flushing can be effective. Based on the results of the Seattle School District's copper monitoring program, less than 1% of schools will have copper problems. For those 1% of schools, a flushing program could require 1 hour of custodial staff time per day. $25/\text{hr} \times 180 \text{ school days per year} = \$4,500$.

3) Costs to notify staff students and parents. Costs reflect time to develop a letter and respond to questions. Assume not more than 1 event per year. Range of costs identified: \$75 - \$2,000.

Water Quality Monitoring for Other Contaminants—Section 140

INTENT: The intent of this section is to establish the framework by which the Local Health Officer may require sampling of drinking water when public health concerns exist about water contaminants other than lead or copper.

BACKGROUND: As with lead and copper, the current rule requires schools to provide drinking water from an approved source. Approval includes testing the system as a whole for a variety of contaminants. Not all contaminants can be detected at the source or in the system. For this reason, the proposed rule requires school officials to conduct sampling for drinking water contaminants, corrective actions, and notification when directed by the local health officer to address public health concerns.

PUBLIC HEALTH BENEFIT: There may be other potential drinking water contaminants that could affect the health of children identified by the LHO, such as the potential for excessive levels of cadmium from galvanized pipe. When the potential for these contaminants is identified, the LHO would be able to require testing and appropriate remediation to protect children's health.

SIGNIFICANT CHANGES: School officials shall perform sampling for drinking water contaminants other than lead and copper, take corrective actions and provide notification when directed by the local health officer.

DRAFT DOCUMENT / This Is Not The Final Significant Analysis

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

The requirements in this section apply to all school facilities.

COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Sampling plumbing fixtures regularly used for drinking or cooking for drinking water contaminants other than lead or copper, when public health concerns exist and directed by the local health officer.

PRELIMINARY COST ESTIMATES:

The costs in this section are indeterminate but presumed to be low because they will apply only in cases where the local health officer has identified a problem. The department assumes the local health officer would very rarely require this testing.

**Playgrounds—Construction and Installation Requirements—Section 150
Playgrounds—Operation and Maintenance Requirements—Section 155**

INTENT: The intent of these rules is to protect students from hazardous or unsafe conditions that can exist with playgrounds, playground equipment, and surfacing material under playground equipment. The existing rules contain no specific requirements for playground safety. This was identified by the School Rule Development Committee as a serious gap in the school environmental health and safety rules. The intent of these new sections is to increase safety protection for students and prevent accidental injury or death

BACKGROUND: The existing rule has a vague statement that the existence of unsafe conditions that present a potential hazard are a violation of these regulations. The existing rules have required the Department of Health (DOH) and the Office of the Superintendent of Public Instruction (OSPI) to jointly prepare a guide for use in identifying violations of good safety practices. Section N of the Health and Safety Guide for K-12 Schools directs school personnel and local health officials to the Consumer Product Safety Commission (CPSC) and American Society for Testing and Materials (ASTM) for voluntary standards for playgrounds. The K-12 Guide recommends that local health agencies conduct plan review and routine inspections of playgrounds. CPSC first issued national standards for reducing the risk of serious life-threatening injuries at public playgrounds in 1981. Although there are many schools voluntarily complying with the national standards, there is no regulation in Washington State requiring compliance.

In 1997, Spokane Regional Health District (SRHD) conducted comprehensive playground audits. Of the 18 participating elementary schools, 699 serious playground hazards were identified during the audit – such as lack of appropriate surfacing, head entrapments, and protrusions. By 2004, the schools had a correction rate of 90%. One of these schools districts tracks injury data and reported that the number of elementary school equipment-related playground and school ground injuries, from 2002-2005, averaged less than one per school year. This school district participates in SRHD's self-inspection program. Three of its elementary schools participated in the 1997 audit when 178 serious playground hazards were identified. In 2004, only three serious hazards were identified, demonstrating a 98% correction. (Reported by Julie Awbrey, SRHD)

PUBLIC HEALTH BENEFIT: There are identified national standards for reducing the risk of serious life-threatening injuries that, if applied, could help prevent injuries. Properly installed equipment, that is not adequately maintained, becomes a safety risk. "Approximately 10-25% of child and adolescent injuries occur at school...Most injuries (90%) to children and adolescents at school that result in hospitalization are unintentional, not the result of violence, and are most likely to occur on playgrounds, on athletic fields, or in gymnasiums. Such injuries are most frequently caused by falls and sports activities."³¹

³¹ *Barrios, LC, Jones, SE, Gallagher, SS, Legal Liability: The Consequences of School Injury, Journal of School Health, May 2007, vol. 77, no. 5, 2007, p. 274*

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

Playgrounds are a high risk area for student injuries. Potential hazards include entanglement, punctures, entrapment, strangulation, and falls that can result in death or disability. "Tinsworth and McDonald (2001) analyzed the U.S. CPSC data files related to 147 deaths associated with playground equipment...that occurred between 1990 and 2000...Three causes of death predominate: strangulation (54%), falls to non-resilient surfaces such as asphalt (21%), and tip-over or collapse of equipment (16%). Strangulation usually results from clothing or cords becoming entangled or caught on the equipment, especially slides. Given these fatality statistics, efforts at reducing death on playgrounds should focus on three areas: appropriate clothing (no protruding cords), adherence to the CPSC guidelines, and good maintenance of equipment."³²

CPSC addresses the importance of inspecting and maintaining playground equipment in its Handbook for Public Playground Safety, 1997, Section 7.2: "Inadequate maintenance of equipment has resulted in injuries on playgrounds. Because the safety of playground equipment and its suitability for use depend on good inspection and maintenance, the manufacturer's maintenance instructions and recommended inspection schedules should be strictly followed."

SIGNIFICANT CHANGES: The playground construction and installation requirements section 150 would specify that school officials must consult with the local health officer (LHO) regarding installation, modification, or addition of playground equipment and fall protection surfaces. The LHO could require review and approval of playground plans and equipment specifications and inspect playgrounds to verify that installation complies with requirements of this section. The draft rule would require installation of playground equipment and fall protection surfaces that meet ASTM F 1487-01: Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, and that are installed in a manner that is consistent with the manufacturer's instructions and CPSC's Handbook for Public Playground Safety, 1997. Implementing the ASTM and CPSC standards will improve the safety of newly installed equipment and help assure safe play, resulting in fewer and less severe playground injuries. The draft rule also prohibits the use of chromated copper arsenate or creosote treated wood to construct or install playground equipment. The manufacture of chromated copper arsenate or creosote treated wood products for use around children has been banned by EPA in this country; but supplies may still exist.

The playground operation and maintenance requirements section 155 would specify that school officials must monitor and operate playgrounds so that surfacing and use zones are maintained and so that equipment is properly anchored and free of puncture, crushing, shearing, entanglement, and entrapment hazards. Chromated copper arsenate or creosote treated wood to repair or maintain playground equipment would be prohibited.

CONSTRUCTION-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Consulting with the Local Health Officer regarding the need for and the scope of playground design and installation plan review and approval.
- 2) Preparing documents for plan review and payment of review fees, if required by the Local Health Officer.
- 3) Selecting and installing playground equipment and fall-protection surfaces that meet the required standards. This may not be an additional expense, depending on a school's current practice when specifying playground equipment and fall-protection surfaces.

OPERATION & MAINTENANCE-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Monitoring and maintaining playground equipment and fall-protection surfaces to reduce injury risk. This may not be an additional expense, depending on a school's current practice for monitoring and maintaining playground equipment and fall-protection surfaces.

³² Ed. Howard Frumkin, MD, DrPH, Robert J. Geller, MD, I. Leslie Rubin, MD, with Janice Nodvin, eds, *Safe and Healthy School Environments*, Oxford University Press, 2006, pp 90-93

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

- 2) Local health may have increased costs for training and inspection kits to inspect playgrounds.

PRELIMINARY COST ESTIMATES:

CONSTRUCTION RELATED COSTS: All costs for this section apply to elementary schools only.

- (1) Consult with local health officer – If a new playground is being built along with a school, no additional costs for construction review. If playground is an addition - \$2,000 meeting time.
- (2) Prepare documents for plan review \$500 - \$1,000
- (3) Increased costs for playground equipment that meets requirements compared to home-built kit equipment - \$12,000

OPERATION AND MAINTENANCE COSTS

Schools

(1) Monitor and maintain playgrounds: Time/Cost Estimate per school per year. Most schools identified that they are already doing this activity. The range of costs per year identified for any schools not regularly inspecting playgrounds: \$588 – \$4,300 daily inspections Monday – Friday. This may take more time on Mondays as a result of weekend use.

Local Health Jurisdictions

Local health jurisdictions identified increased costs for training and inspection kits ranging from \$200 – \$5,000.

Laboratories and Shops—Construction Requirements—Section 160

Laboratories and Shops—Operation and Maintenance Requirements—Section 165

INTENT: The provisions in sections 160 and 165 of the draft are intended to help prevent injuries and other adverse health impacts from hazards common to school instructional laboratories and shops. Laboratories include science laboratories for chemistry, physics, material science, and biology instruction, as well as art laboratories for print-making, photography, and ceramics instruction. Shops include metal-working, wood-working, construction, automotive, agricultural, and horticultural. Requirements that would apply only to “new construction” are separated from requirements that are operational and that would apply to all schools. These sections are intended to provide protections to students that are not provided by Washington State Department of Labor and Industries (L&I) rules without conflicting with L&I rules.

BACKGROUND: Safety issues in school laboratories and shops have been identified by numerous risk managers and environmental health specialists. The existing school rules require chemistry laboratories to have an eyewash fountain and a shower head for flushing in case of chemical spills and clothing fires. However, the existing rules are insufficient to protect student health and safety. They relegate to guidance necessary safety practices for student laboratories and shops. They have provisions that if more than one laboratory is provided, one of each fixture will be adequate if the laboratories are in close proximity. “Close proximity” is not defined and “shower heads” is not adequately descriptive and allows for emergency showers that do not meet L&I requirements. Students would be better protected by requirements that are similar to those that L&I has for employees. Chemical laboratories are not the only laboratories in schools where hazardous materials are used and where emergency showers and eyewashes should be installed. Schools use a large variety of hazardous chemicals in various instructional areas.

DOH has received numerous anecdotal reports about schools not having proper drainage for emergency showers. This results in showers not being properly tested, or even being disabled, in order to prevent flooding. DOH received a report of a junior high where the emergency shower was tripped by a student. The drain was not designed to handle the flow of the safety shower. Water flooded from the room and into the hallway. While vandalism is a legitimate concern, safety must be the primary issue. If emergency showers were better designed, with adequate plumbing, flooding and

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

subsequent damage of floors and sheet rock and the potential for molding of materials would be less likely to occur. The International Plumbing Code (IPC 411.2) does not require connection of emergency showers and eyewashes to waste water drains, but neither does it prohibit it.

The 2006 International Mechanical Code (IMC, Section 3503.1.3, Flammable Gases – Emergency Shutoff) has new requirements for “manual or automatic emergency shutoff valves that can be activated at each point of use and at each source.” However, the IMC does not address the teaching situation where one teacher is responsible for supervising a classroom and needs to be able to act quickly to protect students from injury. In regards to electrical shut-offs, L&I Core Safety Rules require employers to “identify disconnecting means...marked to show when it is open and closed and what equipment it controls, unless located and arranged so the purpose is obvious.” This does not adequately address the need for the teacher to be able to quickly shut down all stationary power equipment.

The International Mechanical Code (IMC), as adopted by Washington State (WAC 51-52) specifies the general design of ventilation systems in schools. These draft school rule sections would focus school design professionals' attention to assure added protections are provided to students in laboratories and shops. The Local Health Officer's designee, who reviews school plans and conducts pre-opening inspections from a health perspective, can address these issues in light of the planned uses for the rooms. This perspective, based on public health protection strategies, enhances the oversight by the local building officials.

PUBLIC HEALTH BENEFIT: The Utah Student Injury Report (Knight et al. 2000) found that “during the five-year period from 1992 to 1990, 7.1% of school injuries in Utah (1,008 of 14,133) occurred in shop class. Equipment use accounted for 88.4% of these injuries...Missing covers for belts of belt-driven equipment and missing blade guards are common hazards in vocational shops. Appropriate safeguards include training, close supervision, selection of safety equipment including covers and guards, and meticulous maintenance of equipment...Projectiles, falling objects, and heated objects are common hazards in physical science classes, although these dangers can also be present in other specialized classrooms. Physics assignments that may result in flying objects or debris require the use of impact-resistant (ANSI Z87.1) safety glasses by all occupants of the room. Earth science activities that involve chipping, breaking rock, or grinding also require the use of safety glasses.”³³

“Life threatening injuries can happen in the laboratory. For that reason, students need to be informed of the correct way to act...”³⁴ “Improper chemical management poses health and safety risks to students and school employees. Health, learning, and behavior risks to students are of particular concern, as children are more vulnerable than adults to chemical exposures because their bodily systems are still developing; they eat more, drink more, and breathe more in proportion to their body size; and their behavior can expose them more to chemicals than adults...It only takes one chemical incident, such as a spill, explosion, or chemical exposure, to break the trust with the community...Despite their useful purposes, chemicals can be dangerous to students and staff when managed improperly. Some chemicals that are persistent in the environment and bioaccumulate through the food chain can make exposure during childhood and adolescence especially dangerous.”³⁵

SIGNIFICANT CHANGES: The current rules require chemical laboratories in new construction to be provided with an eyewash fountain and a shower head. The proposed draft section 160 would require in the construction of new schools and new laboratories an emergency eyewash fountain and an emergency shower for each laboratory and shop where hazardous materials are used and the potential

³³ Ed. Howard Frumkin, MD, DrPH, Robert J. Geller, MD, I. Leslie Rubin, MD, with Janice Nodvin, eds, *Safe and Healthy School Environments*, Oxford University Press, 2006, pp 108-109

³⁴ *School Chemistry Laboratory Safety Guide*, CPSC, CDC, NIOSH, October 2007, DHHS (NIOSH) Publication No. 2007-107, p 6

³⁵ *Chemical Management Resource Guide for School Administrators*, December 2006, EPA 747-R-06-002, p 3 and 24

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

for chemical spills exists. The draft specifies that emergency eye washes and showers have plumbed waste drains designed to accept the rate of water flow anticipated when activated. The draft also requires handwashing and drying facilities in each laboratory and shop, and emergency shut-offs for gas and electricity. All stationary machinery in laboratories and shops would be required to have magnetic-type switches to prevent machines from automatically restarting upon restoration of power after an electrical failure or activation of the emergency shut-off. Mechanical exhaust ventilation would be required in hazardous material storerooms and in laboratories and shops where equipment or activities may produce air contaminants of public health importance. The requirement in proposed WAC 246-366A-160(7) to provide appropriate source capture systems is not considered to be a significant change because it is already required under current WAC 246-366-080.

Operation and maintenance requirements in section -165 would require school officials to select supplies and procedures that reduce exposure to hazardous materials. Use and storage of compounds that are considered shock-sensitive explosives and those that are lethal at low concentrations when inhaled or in contact with skin, would be prohibited. Additionally, school officials would be required to adopt safety procedures and ensure that students are instructed in the proper use of hazardous materials and equipment; to provide and require students to use appropriate personal protective equipment when exposed to potential hazards; and to provide situation-specific emergency and protective equipment during demonstrations with hazardous materials and with hazardous procedures. Mechanical exhaust ventilation for laboratory and shop equipment would be required to be used and maintained in accordance with manufacturer's recommendations.

CONSTRUCTION-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Installing emergency eyewashes in all laboratories and shops where hazardous materials are used or eye irritants are produced. Plumbing emergency eyewashes with warm (tepid) water and drains to accommodate the anticipated water flow.
- 2) Installing emergency showers in all laboratories where hazardous materials are used and the potential for chemical spills exist. Plumbing emergency showers with warm (tepid) water and drains to accommodate the anticipated water flow.
- 3) Installing hand-washing and drying facilities in each laboratory and shop.
- 4) Installing emergency shut-offs for gas and electricity provided to stationary machinery in each laboratory and shop.
- 5) Providing electro-magnetic power switches for stationary machinery to prevent machines from re-starting after an electrical failure or activation of an emergency shut-off switch.
- 6) Designing and installing air ventilation systems that do not recirculate air from a laboratory or shop to other parts of the school facility.

These requirements may not result in an additional expense, depending on a school's current practice for placement, design, and specifications for the required plumbing fixtures (emergency eyewash and emergency showers are required for new construction under the existing rules), utility shut-offs, machinery safety equipment, and ventilation systems.

OPERATION & MAINTENANCE-RELATED COST ASSUMPTIONS: Schools will likely incur expenses to implement the proposed changes for the following items:

- 1) Researching product hazard resulting from product use as described by manufacture's instructions. Selection of products and establishing procedures to assure exposure to hazardous materials is reduced and that only school official-approved products are used.
- 2) Adopting safety procedures and ensuring that students are instructed in the proper use of hazardous materials and equipment and provide and require students to use appropriate personal protective equipment when exposed to potential hazards.
- 3) Providing situation-specific emergency and protective equipment during demonstrations with hazardous materials and with hazardous procedures.

These requirements may not result in an additional expense, depending on a school's current practice for selecting, handling, and storing hazardous materials and for adopting and using safety procedures for the use of hazardous materials, including the provision and use of personal safety equipment for students

Proposed Chapter 246-366A WAC

Preliminary Cost-Benefit Analysis Summary

PRELIMINARY COST ESTIMATES:

CONSTRUCTION COSTS

Costs for a high school are provided here.

- 1) Installing and plumbing eye washes – For average high school 11 @ 3,200 – \$35,200
- 2) Installing additional emergency showers – For average high school this will be an increase of 11 additional showers @ 5,040 each = \$55,440
- 3) Installing hand washing facilities – 11 @ 2,016 = \$22,176
- 4) Installing emergency shutoffs for equipment – no new costs for gas. Electric shut-off switches: 22 @ \$1,500 = \$33,000
- 5) Providing electro-magnetic power switches for stationary machinery to prevent machines from re-starting after an electrical failure or activation of an emergency shut-off switch. 40 @ \$60 each = \$2,400.
- 6) Designing and installing air ventilation systems that do not recirculate air from a laboratory or shop to other parts of the school facility – \$4,536.

Total for section including professional and district process review costs – \$204,628

OPERATION & MAINTENANCE COSTS

- 1) Selecting products and establishing procedures to assure exposure to hazardous materials is reduced and that only school official-approved products are used.

No additional costs beyond those identified for section -065.

- 3) Adopting safety procedures and ensuring that students are instructed in the proper use of hazardous materials and equipment and provide and require students to use appropriate personal protective equipment when exposed to potential hazards.

No additional cost because this already being done.

- 4) Providing situation-specific emergency and protective equipment during demonstrations with hazardous materials and with hazardous procedures.

No additional costs because this is already being done.

Variations—Section 170

INTENT: This section replaces WAC 246-366-020- Substitutions and WAC 246-366-150 – Exemptions, which are being repealed. It creates a process to allow alternative methods of meeting the requirements of these rules.

SIGNIFICANT CHANGES: This is not a significant change because it does not establish a new requirement; rather it allows for alternative ways to meet the requirements of the rules.

COST ASSUMPTIONS: The department assumes a variance will result in a cost savings to schools.

Emergency Waivers—Section 175

DRAFT DOCUMENT / This Is Not The Final Significant Analysis

Proposed Chapter 246-366A WAC Preliminary Cost-Benefit Analysis Summary

INTENT: If a natural or man-made disaster occurs and leaves a school facility unusable, an emergency waiver will allow schools to relocate temporarily into another facility.

SIGNIFICANT CHANGES: This is not a significant change because it does not create a new requirement for schools; rather it allows for a temporary relaxation of the rule requirements in an emergency situation.

COST ASSUMPTIONS: The department assumes this section will not increase costs. If needed, the section will most likely represent a cost savings to schools.

Appeals—Section 180

INTENT: This section restates the appeal rights related to decisions or actions of local health officers. It does not create new appeal rights.

SIGNIFICANT CHANGES: This is not a significant change because this section does not create a new requirement for schools or local health jurisdictions. It states in rule, a statutory right that currently exists.

Complaints—Section 190

INTENT: Schools currently handle complaints of many kinds. The intent of this section is to assure that schools develop a policy to respond to complaints regarding these health and safety requirements that is clearly articulated for students and parents.

SIGNIFICANT CHANGES: The requirement to develop a policy around complaints is a significant change and schools that do not already have a policy will need to develop one. The Office of Superintendent of Public Instruction has a website describing processes for handling complaints to assist schools. The proposed rule closely follows that advice.

COST ASSUMPTIONS: Schools may incur a cost to develop a policy describing their complaint process. The addition of new requirements in other sections of the proposal may increase the kinds of complaints schools receive, however increased costs would be indeterminate.

PRELIMINARY COST ESTIMATES:

(1) Cost to develop a complaint policy: Range of costs identified: \$800 - \$4,000.