PROPOSED RULE MAKING

CR-102 (July 2022)
(Implements RCW 34.05.320)
Do NOT use for expedited rule making

Agency: Department of Labor & Industries (L&I)

☐ Original Notice
☐ Supplemental Notice to WSR
☐ Continuance of WSR ______

☐ Preproposal Statement of Inquiry was filed as WSR 21-17-135; or
☐ Expeditied Rule Making--Proposed notice was filed as WSR ______; or
☐ Proposal is exempt under RCW 34.05.310(4) or 34.05.330(1); or
☐ Proposal is exempt under RCW ______.


Hearing location(s):

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 25, 2023</td>
<td>10:00 a.m.</td>
<td>SpringHill Suites by Marriott 4040 Northwest Avenue Bellingham WA 98226</td>
<td>A pre-hearing overview will occur one hour prior to the start of each public hearing. The hearings will begin at the indicated times and will continue until all oral comments are received.</td>
</tr>
<tr>
<td>April 26, 2023</td>
<td>10:00 a.m.</td>
<td>SpringHill Suites by Marriott 7048 West Grandridge Blvd. Kennewick WA 99336</td>
<td></td>
</tr>
<tr>
<td>April 27, 2023</td>
<td>10:00 a.m.</td>
<td>Hampton Inn by Hilton 2010 S Assembly Road Spokane WA 99224</td>
<td></td>
</tr>
<tr>
<td>May 2, 2023</td>
<td>10:00 a.m.</td>
<td>Dept. of Labor &amp; Industries 12806 Gateway Drive S Tukwila WA 98168</td>
<td></td>
</tr>
<tr>
<td>May 3, 2023</td>
<td>10:00 a.m.</td>
<td>Clark College at Columbia Tech Center 18700 SE Mill Plain Blvd. Vancouver WA 98683</td>
<td></td>
</tr>
<tr>
<td>May 4, 2023</td>
<td>2:00 p.m.</td>
<td>Virtual and telephonic hearing To join electronically: <a href="https://lni-wa.gov.zoom.us/j/89566996553?pwd=QzNGMlhTT3V3RGtFTGhMS2tYYlo5UT09">https://lni-wa.gov.zoom.us/j/89566996553?pwd=QzNGMlhTT3V3RGtFTGhMS2tYYlo5UT09</a> To join by phone (audio only): 1-253-215-8782 Meeting ID: 895 6699 6553 Passcode: 678052798</td>
<td></td>
</tr>
</tbody>
</table>

Date of intended adoption: June 15, 2023 (Note: This is NOT the effective date)

Submit written comments to:
Name: Carmyn Shute, Administrative Regulations Analyst
Address: Department of Labor & Industries

Assistance for persons with disabilities:
Contact Carmyn Shute, Administrative Regulations Analyst
Phone: 360-870-4525
Purpose of the proposal and its anticipated effects, including any changes in existing rules: On June 28, 2021, L&I received a petition for rulemaking requesting changes to L&I's rules to include more specific requirements to prevent heat-related illness and injury. The petition for rulemaking was accepted recognizing the need to reexamine the current rules, especially in light of information suggesting the occurrence of heat illnesses below the current trigger temperatures and the increasing temperatures experienced in our state since the rule was first established in 2008.


WAC 296-62-09520 and 296-307-09720 Definitions. All definitions were numerated to aid in cross-referencing.
  - Broadened definition of “acclimatization” to include period of time required to become acclimatized and when acclimatization can be lost.
  - Added definition for “buddy system”.
  - Removed definition for “double-layer woven clothing” as it is no longer a key in trigger temperature table.
  - Clarified definition of “drinking water” to be suitably cool in temperature.
  - Clarified definition of “engineering controls” to be devices used to reduce heat exposure.
  - Removed definition for “Environmental factors for heat-related illness”.
  - Removed sentence in “Outdoor environment” definition regarding construction activity that may be contradictory.
  - Added definition for “Risk factors for heat-related illness”.
  - Added definition for “Shade”.
  - In “Vapor barrier clothing” definition replaced “nonbreathing” with “nonbreathable”.

WAC 296-62-09530 and 296-307-09730 Employer and employee responsibility. Adds prescriptive requirements for the Outdoor Heat Exposure Safety Plan. Adds requirement for preventative cool-down rest periods when employees begin to feel overheated. Adds Table 1 with trigger temperatures of 52° and 80° Fahrenheit depending on clothing worn and PPE used. Specifies that employees must be allowed and encouraged to take a preventative cool-down rest in the shade or using another means provided by the employer to reduce body temperature when they feel the need to do so to protect themselves from overheating. Finally, adds employee requirement to take preventative cool-down rest periods when they begin to feel overheated.

WAC 296-62-09535 and 296-307-09735 Access to shade. (NEW) Adds requirement to provide one or more areas of shade for employees that is large enough to accommodate all employees during a meal or rest period. The provided shade must also be as close to areas where employees are working. The rule also provides alternatives employers may use in lieu of shade.

WAC 296-62-09540 and 296-307-09740 Drinking water. Adds clarification that drinking water must be suitably cool in temperature which has been standard under DOSH Directive 10.15.

WAC 296-62-09545 and 296-307-09745 Acclimatization. (NEW) Adds requirement for observation for up to 14 days for newly assigned employees to ensure employees become accustomed to working at various temperatures. Adds definition of “heat wave” and adds requirement for close observation during the heat wave. Provides a “Note” that employers may consider additional acclimatization procedures recommended by NIOSH.

WAC 296-62-09547 and 296-307-09747 High heat procedures. (NEW) Adds requirement for rest periods when temperatures exceed 90 degrees or 100 degrees Fahrenheit according to new Table 2. Adds requirement to closely observe employees for signs and symptoms of heat-related illness at and above 90 degrees Fahrenheit.

WAC 296-62-09550 and 296-307-09750 Responding to signs and symptoms of heat-related illness. Adds requirement for employers to ensure there is means for effective communication between employees and supervisors.

WAC 296-62-09560 and 296-307-09760 Information and training. Adds requirement for training to be effective and performed prior to outdoor work when occupational exposure to heat might occur. Adds defined environmental factors and other work conditions that may contribute to heat-related illness. Adds physical fitness, previous heat-related illness and pregnancy as conditions that may contribute to heat-related illness. Removed caffeine use and nicotine use as contributors to heat-related illness.
Adds the importance of acclimatization and considerations for cool-down rest periods, gradual increase of work in the heat and importance that employees are unable to build tolerance to working in the heat. Adds the importance of taking preventative cool-down rest periods, and mandatory rest periods when temperatures exceed 90 degrees Fahrenheit. Adds training requirement for procedures for shade or other means to reduce body temperature, and employer’s procedures for close observation of employees. Finally, adds the importance of considering the use of engineering or administrative controls to reduce exposure.

**Reasons supporting proposal:** L&I filed emergency rules related to outdoor ambient heat in the summer of 2021 and 2022 to protect outdoor workers from heat-related illnesses due to outdoor heat exposure. The current rules do not affirmatively address preventative measures to avoid overheating other than access to drinking water. The hazards of heat are well documented and research suggests the occurrence of heat-related illnesses below the current trigger temperatures. Research also documents increased temperatures in Washington since the rule was first established. L&I has determined that rulemaking is necessary for the preservation of worker health and safety.

**Statutory authority for adoption:** RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060.

**Statute being implemented:** Chapter 49.17 RCW

**Is rule necessary because of a:**
- Federal Law? ☐ Yes ☒ No
- Federal Court Decision? ☐ Yes ☒ No
- State Court Decision? ☐ Yes ☒ No

If yes, CITATION:

**Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters:** No additional comments.

**Type of proponent:** ☑ Governmental
**Name of proponent:** (person or organization) Department of Labor & Industries

**Name of agency personnel responsible for:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Office Location</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting: Teri Neely</td>
<td>Tumwater, WA</td>
<td>360-902-6652</td>
</tr>
<tr>
<td>Implementation: Craig Blackwood</td>
<td>Tumwater, WA</td>
<td>360-902-5828</td>
</tr>
<tr>
<td>Enforcement: Craig Blackwood</td>
<td>Tumwater, WA</td>
<td>360-902-5828</td>
</tr>
</tbody>
</table>

**Is a school district fiscal impact statement required under RCW 28A.305.135?** ☒ Yes ☐ No

If yes, insert statement here:

The public may obtain a copy of the school district fiscal impact statement by contacting:

Name: 
Address: 
Phone: 
Fax: 
TTY: 
Email: 
Other:

**Is a cost-benefit analysis required under RCW 34.05.328?**

☑ Yes: A preliminary cost-benefit analysis may be obtained by contacting:

Name: Carmyn Shute, Administrative Regulations Analyst
Address: Department of Labor & Industries
Division of Occupational Safety and Health
PO Box 44620
Olympia, WA 98504-4620
Phone: 360-870-4525
Fax: 360-902-5619
TTY: 
Email: Carmyn.Shute@Lni.wa.gov
Other:

☐ No: Please explain:
(1) Identification of exemptions:
This rule proposal, or portions of the proposal, may be exempt from requirements of the Regulatory Fairness Act (see chapter 19.85 RCW). For additional information on exemptions, consult the exemption guide published by ORIA. Please check the box for any applicable exemption(s):

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.061 because this rule making is being adopted solely to conform and/or comply with federal statute or regulations. Please cite the specific federal statute or regulation this rule is being adopted to conform or comply with, and describe the consequences to the state if the rule is not adopted.

Citation and description:
☐ This rule proposal, or portions of the proposal, is exempt because the agency has completed the pilot rule process defined by RCW 34.05.313 before filing the notice of this proposed rule.

☐ This rule proposal, or portions of the proposal, is exempt under the provisions of RCW 15.65.570(2) because it was adopted by a referendum.

☒ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(3). Check all that apply:

☐ RCW 34.05.310 (4)(b) (Internal government operations)
☒ RCW 34.05.310 (4)(c) (Incorporation by reference)
☒ RCW 34.05.310 (4)(d) (Correct or clarify language)

☐ RCW 34.05.310 (4)(e) (Dictated by statute)
☐ RCW 34.05.310 (4)(f) (Set or adjust fees)
☐ RCW 34.05.310 (4)(g) ((i) Relating to agency hearings; or (ii) process requirements for applying to an agency for a license or permit)

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(4) (does not affect small businesses).

☒ This rule proposal, or portions of the proposal, is exempt under RCW ______.

Explanation of how the above exemption(s) applies to the proposed rule:

(2) Scope of exemptions: Check one.
☐ The rule proposal is fully exempt (skip section 3). Exemptions identified above apply to all portions of the rule proposal.
☒ The rule proposal is partially exempt (complete section 3). The exemptions identified above apply to portions of the rule proposal, but less than the entire rule proposal. Provide details here (consider using this template from ORIA):

<table>
<thead>
<tr>
<th>Proposed WAC Sections and Title</th>
<th>This proposed rule section is not exempt. Analysis is required</th>
<th>This proposed rule section is exempt. Provide RCW to support this exemption.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. WAC 296-62-09520 and 296-307-09720 Definitions.</td>
<td>☐</td>
<td>RCW 34.05.310(4)(d) because the proposed rule language clarifies terms used throughout the rule language without changing the effect of the rule.</td>
</tr>
<tr>
<td>5. WAC 296-62-09540 and 296-307-09740 Drinking water.</td>
<td>☐</td>
<td>RCW 34.05.310(4)(d) because the proposed rule language clarifies terms used throughout the rule language without changing the effect of the rule.</td>
</tr>
<tr>
<td>8. WAC 296-62-09550 and 296-307-09750 Responding to signs and symptoms.</td>
<td>☐</td>
<td>RCW 34.05.310(4)(d) because the proposed rule language clarifies the existing requirements.</td>
</tr>
</tbody>
</table>

☐ The rule proposal is not exempt (complete section 3). No exemptions were identified above.

(3) Small business economic impact statement: Complete this section if any portion is not exempt.
The proposed rules address minimum requirements to prevent heat-related illness and reduce traumatic injuries associated with heat exposure. The proposed rules:

- Amends the scope to be applicable year-round when workers are exposed to outdoor heat.
- Amends and adds definitions to clarify and improve understanding of the chapter.
- Amends the outdoor temperature action levels that apply to different sections of the rules to 80°F except for workers wearing nonbreathable clothing under the current action level of 52°F.
- Amends requirements for the written outdoor heat exposure safety program specifying the minimum required elements of the written program and clarifying that the written program needs to be in a language understood by employees.
- Creates specific requirements for access to shade, what is considered appropriate shade and where it should be provided.
- Amends drinking water requirements under to align with L&I’s long-standing requirement (DOSH Directive 10.15) that drinking water needs to be suitably cool in temperature such that it will not discourage employees to drink water.
- Creates requirements for acclimatization requiring close observation for 14 days for new employees and those returning from absences and for close observation of all employees during a heat wave, a sudden temperature increase that does not allow for acclimatization to occur.
- Creates high heat procedure requirements establishing mandatory cool-down rest periods and close observation of employees to help identify employees who may begin showing signs and symptoms of heat-related illness.
- Clarifies the requirement for responding to signs and symptoms of heat-related illness to explicitly requiring employers to ensure effective means of communication are available to report and respond to heat-related illness.
- Amends the training requirements under to require training when there might be an employee exposure to outdoor heat, rather than when an outdoor temperature action level has been reached. The training provisions are also amended to reflect the new and amended sections of the rule.

2. Identify which businesses are required to comply with the rule using the North American Industry Classification System (NAICS).

The proposed rule applies to all employers with employees who are exposed to outdoor heat environments. As discussed in the Section 1.3.1 of the Cost-Benefit Analysis (CBA), L&I used outdoor exposure data from Bureau of Labor Statistics (BLS) Occupational Requirements Survey (ORS) to determine the number of workers affected. Using the number of affected workers in each occupation from Section 1.3.1 of the CBA for this rulemaking, and their employment by each industry, L&I was able to estimate the number of businesses in each industry that are likely affected by this proposed rule. The share and number of affected businesses in each industry are presented in Table 2.1.

Table 2.1. Share and number of businesses that are likely affected in each industry

<table>
<thead>
<tr>
<th>NAICS</th>
<th>Sector</th>
<th>Share of affected businesses</th>
<th>Number of affected businesses</th>
<th>Affected businesses as % of total affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>53.3%</td>
<td>3,482</td>
<td>11.1%</td>
</tr>
<tr>
<td>21</td>
<td>Mining, Quarrying, and Oil and Gas Extract</td>
<td>22.2%</td>
<td>29</td>
<td>0.1%</td>
</tr>
<tr>
<td>22</td>
<td>Utilities</td>
<td>16.6%</td>
<td>38</td>
<td>0.1%</td>
</tr>
<tr>
<td>23</td>
<td>Construction</td>
<td>45.1%</td>
<td>12,744</td>
<td>40.7%</td>
</tr>
<tr>
<td>31-33</td>
<td>Manufacturing</td>
<td>6.8%</td>
<td>527</td>
<td>1.7%</td>
</tr>
<tr>
<td>42</td>
<td>Wholesale Trade</td>
<td>12.5%</td>
<td>1,544</td>
<td>4.9%</td>
</tr>
<tr>
<td>44-45</td>
<td>Retail Trade</td>
<td>5.9%</td>
<td>841</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

1 Assuming the share of affected workers in a certain industry is similar to that of affected businesses in that industry.
3. Identify and analyze the probable costs to comply with the adopted rule.

3.1 Cost of employer and employee responsibility

The amended subsections under WAC 296-62-09530 and 296-307-09730 require employers with exposed employees to (a) address their outdoor heat exposure safety program (OHESP) in a language that employees understand; (b) ensure a minimum set of six elements are included in their OHESP; (c) ensure a copy of the OHESP is made available to employees and their authorized representatives; and (d) encourage and allow employees to take paid preventative cool-down rest periods when needed. We assumed that employers would use digital methods to provide electronic copies of the OHESP to employees and their authorized representatives. Employers can easily provide digital copies to any common electronic device such as a mobile phone or tablet. In addition, we assume that employers would not incur any cost encouraging employees to take cool-down rest periods.

The costs estimated for the new requirements are administrative time needed to update the OHESP with the minimum required elements and cost of translating the updated OHESP document.

The proposed amendment affects all employers of outdoor workers exposed at or above the temperature thresholds specified in this proposed rule. Table 2.1 shows the number of affected businesses in each industry.

L&I makes available on its website a template of the OHESP document that includes the new minimum required elements, which employers could use to update their own OHESP. As discussed in Section 2.1.1 of the CBA, the cost factors and calculation for this requirement are listed below in Table 3.1.

**Table 3.1. Administrative cost to update OHESP**

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time to update OHESP</td>
<td>15-30 minutes</td>
</tr>
<tr>
<td>Hourly labor cost (wage and benefits)</td>
<td>$80.36</td>
</tr>
<tr>
<td>Average cost per business</td>
<td>$20.09 - $40.18</td>
</tr>
<tr>
<td>Number of impacted businesses</td>
<td>31,274</td>
</tr>
<tr>
<td>Total cost</td>
<td>$628,321 - $1,256,642</td>
</tr>
<tr>
<td>Annualized cost²</td>
<td>$84,189 - $168,378</td>
</tr>
</tbody>
</table>

The proposed rule also requires that employers provide the OHESP in a language understood by the employee. The distribution of workers who do not adequately understand English across all impacted industries is not known. While the Agriculture, Forestry, Fishing and Hunting, and the Construction sectors do have a significant number of workers who do not adequately understand English and would need the OHESP translated into one or more languages, not all businesses in these sectors will need translation services. For the purposes of this analysis, we assumed all businesses in these two sectors, about 52 percent of total impacted businesses, would need translation to address this requirement for employers across all industries. As discussed in Section 2.1.1 of the CBA, the cost factors and calculation for this requirement are listed below in Table 3.2.

**Table 3.2. Translation costs**

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th>Number of businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industries needing translation services:</td>
<td></td>
</tr>
<tr>
<td>- Agriculture, Forestry, Fishing &amp; Hunting</td>
<td>3,428</td>
</tr>
</tbody>
</table>

² View the “Outdoor Heat APP Addendum” at Accident Prevention Program (APP) (wa.gov)

³ The 5% discount rate is used to convert the total cost over 9-year period to the net present value and annualize it for this section and all other sections as well.
Given the cost of updating the OHESP and translating the documents, L&I estimates this proposed requirement will impose approximately a cost of $127,670 to $331,432 on impacted businesses each year (see Table 3.3).

### Table 3.3. Total compliance costs

<table>
<thead>
<tr>
<th>Cost Factor</th>
<th>Total Cost – One Time</th>
<th>Annualized Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Updating OHESP</td>
<td>$628,321 - $1,256,642</td>
<td>$127,670 - $331,432</td>
</tr>
<tr>
<td>Translation services</td>
<td>$324,508 - $1,216,906</td>
<td>$43,481 - $163,054</td>
</tr>
<tr>
<td>Total one-time cost</td>
<td>$952,829 - $2,473,548</td>
<td></td>
</tr>
<tr>
<td>Annualized cost</td>
<td>$127,670 - $331,432</td>
<td></td>
</tr>
</tbody>
</table>

#### 3.2 Access to shade

The proposed rule under WAC 296-62-09535 and 296-307-09735 require employers to (1) provide and maintain one or more areas of ventilated or cooled shade as close as possible to the worksite at all times; (2) ensure that this shade be large enough to accommodate employees on a meal or rest break so they can sit in a normal posture, and; (3) use other equally or more effective means to reduce body temperatures in lieu of shade. This could include misting stations, cooling vests, or air conditioned areas, among others.

This is a new requirement which would impose a cost on impacted businesses. To estimate this cost L&I relied upon the following assumptions:

- A typical employer would choose pop-up canopies for shade. A 10’x10’ and 12’x12’ canopy which holds 8 and 12 individuals respectively, with a chair and table included, would be some of the most likely options employers choose.
- The average time to set up and disassemble a simple pop-up canopy is 10 minutes.
- Only a proportion of workers would be working outdoors at any single point in time, and of those who are out, some would avoid exposure to outdoor heat as a result of engineering or administrative controls, so they don’t require shade.

As discussed in Section 2.1.2 of the CBA, the costs factors and total costs for this requirement are listed below in Table 3.4.

### Table 3.4. Cost of providing 10’x10’ and 12’x12’ shade canopies

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th>10’x10’ canopies</th>
<th>12’x12’ canopies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of affected workers over 9 years</td>
<td>127,658</td>
<td></td>
</tr>
<tr>
<td>Number of canopies needed</td>
<td>15,957</td>
<td>10,638</td>
</tr>
<tr>
<td>Cost of each canopy</td>
<td>$43.56 - $106.82</td>
<td>$80.66 - $217.99</td>
</tr>
<tr>
<td>Total set-up cost</td>
<td>$1,314,794</td>
<td>$876,529</td>
</tr>
<tr>
<td>Total cost in 9 years</td>
<td>$2,009,832 - $3,019,343</td>
<td>$1,734,602 - $3,195,528</td>
</tr>
<tr>
<td>Annualized cost</td>
<td>$235,018 - $368,127</td>
<td>$208,724 - $401,354</td>
</tr>
</tbody>
</table>

The proposed rule also allows employers to use other effective body temperature reducing options such as misting vests. Based on the average cost of $10.89-$21.67 per unit and the number of units needed for all impacted workers, L&I estimates the total cost of this option to be $1,390,077 to $2,766,240 over the entire period, or $183,289 to $364,743 per year (see Table 3.5).

### Table 3.5. Cost of body temperature reduction option

<table>
<thead>
<tr>
<th>Cost Factor</th>
<th>Total Cost over the Entire Period</th>
<th>Annualized</th>
<th>Cost Range of Typical Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of devices needed</td>
<td>127,658</td>
<td>$183,289 - $364,743</td>
<td>$10.89 - $21.67</td>
</tr>
<tr>
<td>Cost of devices</td>
<td>$1,390,077 - $2,766,240</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized cost</td>
<td>$183,289 - $364,743</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Considered a mix of the options available for employers to comply with this proposed section, L&I estimates a total cost of $1,390,077 - $3,195,528 over the entire period or $183,289 - $401,354 per year to impacted businesses (see Table 3.6).

Table 3.6. Total cost of providing shade

<table>
<thead>
<tr>
<th>Cost Factor</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>10’x10’ canopies</td>
<td>$2,009,832 - $3,019,343</td>
</tr>
<tr>
<td>12’x12’ canopies</td>
<td>$1,735,602 - $3,195,528</td>
</tr>
<tr>
<td>Body temp. reducing options</td>
<td>$1,390,077 - $2,766,240</td>
</tr>
<tr>
<td>Total cost range</td>
<td>$1,390,077 - $3,195,528</td>
</tr>
<tr>
<td>Annualized cost</td>
<td>$183,289 - $401,354</td>
</tr>
</tbody>
</table>

3.3 Drinking water

Under existing WAC 296-62-09540 and 296-307-09740 employers are required to provide and keep workers hydrated with drinking water of at least one quart per hour for each employee, but this requirement only applies to the period of May through September. While the requirements for drinking water have not changed, the change in temperature action levels and the change in the scope of the rule to all year have implications to the drinking water requirement. First, drinking water now also needs to be provided for the hours and days between October and April when the temperature is at or above certain thresholds for the affected workers. Secondly, the trigger temperature for providing drinking water for workers between May and September is now lowered from 89°F to 80°F, which means water needs to be provided for more hours and days during these months as well.

In order to estimate the cost of these proposed changes L&I needs to determine the amount of drinking water to be provided for the new period of October to April when the temperature is at or above 52°F for workers who wear non-breathable clothing and when the temperature is at or above 80°F for all other workers. L&I then needs to determine the amount of drinking water that would need to be provided between 80°F to 89°F for May through September.

As discussed in Section 2.1.3 of the CBA, L&I determines that the cost of this proposed requirement would be approximately $2.5 million to $8.0 million each year over a 9-year period (see Table 3.7).

Table 3.7. Cost of providing drinking water

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of affected workers in Oct.-Apr. per year</td>
<td>89,677</td>
</tr>
<tr>
<td>Average number of affected workers in May-Sept. per year</td>
<td>403,220</td>
</tr>
<tr>
<td>Average number of gallons of water required in Oct.-Apr. per year</td>
<td>667,612</td>
</tr>
<tr>
<td>Average number of gallons of water required in May-Sept. per year</td>
<td>4,721,923</td>
</tr>
<tr>
<td>Cost per gallon of water - bottled water</td>
<td>$1.29</td>
</tr>
<tr>
<td>Cost per gallon of water - using existing water source</td>
<td>$0.01</td>
</tr>
<tr>
<td>Total cost of drinking water per year:</td>
<td></td>
</tr>
<tr>
<td>Low-cost scenario: 30% of bottled water and 70% other options</td>
<td>$2,456,145</td>
</tr>
<tr>
<td>High-cost scenario: 100% bottled water:</td>
<td>$8,041,270</td>
</tr>
</tbody>
</table>

3.4 Acclimatization

WAC 296-62-09545 and 296-307-09745 are new sections which require employers to closely observe employees for signs and symptoms of heat-related illness for (1) a total of 14 days who are (a) newly assigned to outdoor work at the trigger temperatures, and (b) who are returning to work after a 7 day absence, and exposed to outdoor heat at the trigger temperatures; and (2) during a heat wave, as defined by the rule, through a mix of either (i) regular communication, (ii) a mandatory buddy system, or (iii) some other effective means.

These requirements are new and would impose a cost upon impacted businesses. To determine the probable total cost L&I analyzed the cost of each of the requirements using the first two options – regular communication and the mandatory buddy system.

---

4 Based on the recent market prices from large grocery stores such as Safeway, Fred Myers, Walmart, and Costco (after-tax prices). The prices in future years are inflation adjusted.

5 Based on the 2022 average water rate per CCF (748 gallons) of water for commercial use in selected large cities across Washington State.

6 The regular communication option is intended to be used and applied to workers who are working alone via means such as a radio or cellular phone, (See WAC 296-62-09547(2)(a).
system. L&I did not analyze cost of a third option due to data and time limitations. L&I relies upon the following major assumptions in the analysis of this section:

- On average around 6 percent of employees would be working alone in outdoor exposure conditions. This figure would vary in the colder months of October to April where the percent of exposed workers would be reduced.
- On average around 5 percent of employees working alone would be in remote locations which require long range radio signal for communication. This figure would vary depending on the time of year.
- On average two devices would be needed for each employee who needs long range communication.
- Observation time is on average about 2 minutes, meaning in some cases it may be longer and in others shorter. For instance, when the observer and the employee already work in close proximity there is likely the opportunity for ongoing visual and verbal assessment to be conducted while simultaneously carrying out normal work duties. This time may also vary depending on a number of variables, including whether or not the individual is showing any signs or symptoms of heat-related illness, the individual's location, the size of the worksite, etc.

### 14-day observation of newly assigned employees

To estimate the cost of observing newly assigned employees L&I needs to determine the number of newly assigned workers. Using the employment growth rates for new workers entering the workforce from Employment and Security Department, the total number of newly assigned workers subject to this rule are estimated at 45,131 for the next 8 years, or 5,641 each year. As discussed in Section 2.1.4 of the CBA, the costs factors and total costs for this requirement are listed below in Table 3.8.

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th>Total number of workers to be observed in 8 years</th>
<th>Number of workers needing devices</th>
<th>Total device cost</th>
<th>Observation costs</th>
<th>Total cost in 8 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Communication</td>
<td>45,131</td>
<td>124</td>
<td>$17,435</td>
<td>$5,566,237</td>
<td>$5,583,673</td>
</tr>
<tr>
<td>Buddy system</td>
<td>45,131</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>$5,566,237 - $5,583,673</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 14-day observation of return-to-work employees

To estimate the cost of workers returning to work after a 7-day absence L&I needs to determine the number of these workers. To estimate this number, L&I relies upon the average national absentee rate of 3.2 percent. As discussed in Chapter 2.1.4 of the CBA, the costs factors and total costs for this requirement are listed below in Table 3.9.

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th>Number of workers to be observed</th>
<th>Number of workers needing devices</th>
<th>Total device cost</th>
<th>Observation cost</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Communication</td>
<td>120,901</td>
<td>319</td>
<td>$44,569</td>
<td>$14,822,571</td>
<td>$14,867,141</td>
</tr>
<tr>
<td>Buddy system</td>
<td>120,901</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>$14,822,571 - $14,867,141</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

7 ESDWAGOv - Projections.
8 L&I used an 8-year period for this assessment because new employees would not count in the base year but in year 1 of the forecast period.
9 Absences from work of employed full-time wage and salary workers by occupation and industry: U.S. Bureau of Labor Statistics (bls.gov). The initial rate used in this calculation was 3.2%, but the rate shown on BLS’s website may vary due to BLS updates.
Observation during a heat wave

The third requirement under these sections is for the observation of employees during a heat wave. Based on the definition of a heat wave for this rule, there are two temperature triggers at which a heatwave is assessed and during which employees exposed to outdoor heat must be observed for signs and symptoms of heat-related illnesses: 52°F and 80°F. Examination of historical data over the 10-year period 2011-2020, shows that heat waves satisfying this definition would have occurred for approximately 14 business days and 7 business days each year at the 52°F and 80°F respectively. In assessing this requirement L&I estimated the cost when utilizing (i) the regular communications (along with any equipment cost), and (ii) the mandatory buddy system.

As discussed in Section 2.1.4 of the CBA, the costs factors and total costs for this requirement are listed below in Table 3.10.

### Table 3.10. Cost of observation during heat waves

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th>Number of workers to be observed each year</th>
<th>122,430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Communication</td>
<td>Number of workers needing devices</td>
<td>3,030</td>
</tr>
<tr>
<td></td>
<td>Total device cost in 9 years</td>
<td>$423,170</td>
</tr>
<tr>
<td></td>
<td>Total observation cost in 9 years</td>
<td>$116,135,084</td>
</tr>
<tr>
<td></td>
<td>Total cost in 9 years</td>
<td>$116,558,254</td>
</tr>
<tr>
<td>Buddy system</td>
<td>Number of workers to be observed each year</td>
<td>122,430</td>
</tr>
<tr>
<td></td>
<td>Total cost in 9 years</td>
<td>$116,135,084</td>
</tr>
<tr>
<td>Overall</td>
<td>Total cost range in 9 years</td>
<td>$116,135,084 - $116,558,254</td>
</tr>
<tr>
<td></td>
<td>Annual cost</td>
<td>$12,664,029 - $12,710,284</td>
</tr>
</tbody>
</table>

Summing the cost of the individual requirements from these proposed sections related to acclimatization, L&I estimates that the total cost is $14,941,650 to $14,994,852 per year on the impacted businesses.

3.5 High heat procedures

WAC 296-62-09547 and 296-307-09747 require employers to implement high heat procedures when the temperature is at or above 90°F, unless they can utilize engineering or administrative controls, such as changing work schedules or the use of air-conditioning, to lower the employees’ exposure to below 90°F. In particular, these proposed sections have two main parts. First, employers must ensure employees take at minimum the mandatory cool-down rest periods of (i) 10 minutes every 2 hours when the temperature is 90-100°F, and (ii) 15 minutes every hour when the temperature is at least 100°F. Secondly, employers must closely observe employees for signs and symptoms of heat-related illness by implementing one or more of either (a) regular communication with employees working alone, (b) a mandatory buddy system, or (c) other effective means of observation. Consistent with the explanation in section 3.4 above, L&I only assesses the first two observation options for cost impact.

**Mandatory cool-down rest period at 90°F**

Analysis of weather data for the period 2011-2020 shows that temperatures between 90°F to 100°F lasted on average 1.2 hours per day for an average of 7 business days per year. L&I used the starting weighted average hour wage (plus benefits) of $47.05 for the base year and adjusted for wage inflation over future years. As discussed in Section 2.1.5 of the CBA, the costs factors and total costs for this requirement are listed below in Table 3.11.

### Table 3.11. Cost of mandatory cool-down rest periods at 90°F - 100°F

<table>
<thead>
<tr>
<th>Cost Factor</th>
<th>122,430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of workers impacted over 9 years</td>
<td>122,430</td>
</tr>
<tr>
<td>Average number of affected hours per day</td>
<td>1.2</td>
</tr>
<tr>
<td>Average number of affected days per year</td>
<td>7</td>
</tr>
<tr>
<td>Average number of 10-minute breaks per year</td>
<td>516,647</td>
</tr>
<tr>
<td>Total cost over 9 years</td>
<td>$44,405,457</td>
</tr>
<tr>
<td>Annualized cost</td>
<td>$4,842,233</td>
</tr>
</tbody>
</table>

---

10 For purposes of this rule a “heat wave” is defined as any day in which the predicted high temperature for the day will be at least the temperatures listed in Table 1 of WAC 296-62-09530 and at least 10°F higher than the average high daily temperature in the preceding 5 days.

11 While the 1.2 daily rate is below the 2 hour threshold, there were days when the daily hours did exceed the 2-hour threshold.
Mandatory cool-down rest periods for 100°F temperatures

This rest period requires exposed employees to take a 15 minute break each hour when the temperature is at least 100°F or greater. Using the same historical weather data, the average number of hours per day when the temperature was at least 100°F was about 0.4 for an average of at least 1 business day. As discussed in Section 2.1.5 of the CBA, the cost factors and total costs for this requirement are listed below in Table 3.12.

Table 3.12. Cost of mandatory cool-down rest periods at 100°F

<table>
<thead>
<tr>
<th>Cost Factor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of workers impacted over 9 years</td>
<td>91,822</td>
</tr>
<tr>
<td>Average number of affected hours per day</td>
<td>0.4</td>
</tr>
<tr>
<td>Average number of affected days per year</td>
<td>1</td>
</tr>
<tr>
<td>Average number of 15-minute rest periods per year</td>
<td>774,970</td>
</tr>
<tr>
<td>Total cost over 9 years</td>
<td>$99,912,278</td>
</tr>
<tr>
<td>Annualized cost</td>
<td>$10,895,002</td>
</tr>
</tbody>
</table>

Close observations at or above 90°F

As mentioned in the section introduction, employers with employees exposed to outdoor heat temperature of at least 90°F must closely observe these employers for heat-related illness using one or more of 3 options. To determine the likely cost of this requirement L&I analyzed the first two options – regular communication and mandatory buddy system. Similar to the analysis above which required these options, L&I did not analyze the third option for cost given the wide variety of choices an employer could make.

As discussed in Section 2.1.5 of the CBA, the cost factors and total costs for this requirement are listed below in Table 3.13.

Table 3.13. Close observation cost at or above 90°F

<table>
<thead>
<tr>
<th>Cost Factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of workers to be observed each year</td>
<td>122,430</td>
</tr>
<tr>
<td>Number of workers needing devices</td>
<td>3,030</td>
</tr>
<tr>
<td>Total device cost in 9 years</td>
<td>$423,170</td>
</tr>
<tr>
<td>Total observation cost in 9 years</td>
<td>$26,775,119</td>
</tr>
<tr>
<td>Total cost in 9 years</td>
<td>$27,178,289</td>
</tr>
</tbody>
</table>

Overall  
Total cost range in 9 years | $26,775,119 - $27,178,289 |
Annual cost | $2,917,530 - $2,963,785 |

3.6 Information and training

WAC 296-62-09560 and 296-307-09760 require employees and supervisors to be trained prior to outdoor work where occupational exposure to heat may occur, and annually thereafter. Employees must be trained on acclimatization and the importance of taking preventative cool-down rest periods, among other topics. Supervisors must now be trained on the importance of considering the use of engineering or administrative controls in order to reduce employees' exposure to heat. The updates to the employee and supervisor training section would have a cost implication to impacted businesses. First, employers would need to update their training material to include the new information to which employees and supervisors must be trained. While annual training is not a new requirement, the proposed amendments would add additional time to training and so add an administrative cost. As discussed in Section 2.1.6 of the CBA, the cost factors and total costs for this requirement are listed below in Tables 3.14, 3.15, and 3.16.

Table 3.14. Cost of updating training content

<table>
<thead>
<tr>
<th>Cost factor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. time to update training material</td>
<td>1 - 2 hours</td>
</tr>
<tr>
<td>Hourly labor cost (wage and benefits)</td>
<td>$80.17</td>
</tr>
<tr>
<td>Average cost of updating training material per business</td>
<td>$80.17 - $160.34</td>
</tr>
<tr>
<td>Number of impacted businesses</td>
<td>31,274</td>
</tr>
<tr>
<td>Estimated one-time cost to update training material</td>
<td>$2,507,196 - $5,014,392</td>
</tr>
<tr>
<td>Annualized cost</td>
<td>$335,941 - $671,881</td>
</tr>
</tbody>
</table>

Table 3.15. Cost of employee training

<table>
<thead>
<tr>
<th>Cost factor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement</td>
<td>Cost range</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Employer and employee responsibility</td>
<td>$127,670 - $331,432</td>
</tr>
<tr>
<td>Access to shade</td>
<td>$183,289 - $401,354</td>
</tr>
<tr>
<td>Drinking water</td>
<td>$2,456,145 - $8,041,270</td>
</tr>
<tr>
<td>Acclimatization</td>
<td>$14,941,650 - $14,994,852</td>
</tr>
<tr>
<td>High heat procedures</td>
<td>$18,654,756 - $18,701,011</td>
</tr>
<tr>
<td>Employee training and information</td>
<td>$4,326,229 - $6,657,314</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$40,689,738 - $49,127,233</strong></td>
</tr>
</tbody>
</table>

4. **Determine whether or not the proposed rule will impose more than minor costs on businesses in an industry.**

As analyzed above, L&I estimates the total cost of compliance with the proposed rule to be $40.7 million to $49.1 million each year for all the affected businesses. Based on this cost range and the share of affected businesses in each industry estimated in Section 2 above (see Table 2.1), the average per-business cost of the proposed rule is in a range of $615 to $16,525 depending on the specific industry to which a business belongs. Comparing this per-business cost to the minor cost threshold of 1 percent of annual payroll for each industry\(^2\) shows this unit cost is far below the minor cost threshold for all industry except Educational Services (see Table 4.1). Overall, the average per-business cost is about 11 to 13 percent of the minor cost threshold.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Per-business cost</th>
<th>Minor cost threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting (11)</td>
<td>$1,587 - $1,915</td>
<td>$5,914</td>
</tr>
<tr>
<td>Mining, Quarrying, and Oil and Gas Extract (21)</td>
<td>$1,335 - $1,611</td>
<td>$12,915</td>
</tr>
<tr>
<td>Utilities (22)</td>
<td>$2,193 - $2,644</td>
<td>$28,354</td>
</tr>
<tr>
<td>Construction (23)</td>
<td>$803 - $972</td>
<td>$5,852</td>
</tr>
<tr>
<td>Manufacturing (31-33)</td>
<td>$3,019 - $3,638</td>
<td>$29,247</td>
</tr>
</tbody>
</table>

\(^2\) Based on the QCEW data for 2021 (most recent available) and adjusted to 2022 figures using 6.45% inflation rate (December 2021 to December 2022).
5. If the proposed rule is likely to impose a disproportionate impact on small businesses, identify the steps taken to reduce the costs of the rule on small businesses.

Only Educational Services exceeded the minor cost threshold. However, for Educational Services specifically and all industries impacted by the rule reliable data is lacking to differentiate the average cost for small businesses from their larger counterparts. As such, L&I assumes there is a disproportionate impact on small businesses. L&I reviewed the list of methods for reducing the impact on small businesses under RCW 19.85.030, and is taking the following steps to reduce the costs of the rule on small businesses:

- Reducing fine schedules for noncompliance for small businesses. RCW 49.17.180 addresses the civil penalties for WISHA citations and requires L&I give consideration in the penalty assessment to factors including the size of the employer’s business. WAC 296-900-14015 under Table 11 sets forth the specific process for penalty adjustments including employer size, with reductions of 20 percent up to 70 percent.
- Developing and implementing a robust outreach and education program to ensure that small businesses are informed about what they need to know to comply with the law.
- Working with employer associations and other organizations to identify opportunities for targeted outreach efforts to assist employers.
- Reducing, modifying, or eliminating substantive regulatory requirements. The proposed rules allow for mandatory cool-down rest periods to be taken concurrently with other regulatory required meal and rest breaks, and if the cool-down rest period is taken during a meal period the mandatory cool-down rest period does not need to be paid.
- Considering other mitigation techniques, including those suggested by small businesses or small business advocates.

L&I has considered the other methods of reducing costs under RCW 19.85.030 and found them inapplicable:

- Delaying compliance timetables. Given the hazard to workers and L&I’s mandate under WISHA, chapter 49.17 RCW, delaying compliance is not legal or feasible in meeting the objectives and requirements of WISHA.
- This rule does not directly impose any recordkeeping or reporting requirements. Indirectly, it may affect the number of employees for whom certain recordkeeping requirements are imposed under the statute or other rules. L&I cannot reduce the requirements set by statute in the Minimum Wage Act through this rule.
- This rule does not require inspections and presents no opportunity to reduce the frequency of inspections.

6. Describe how small businesses were involved in the development of the proposed rule.

As discussed in Section 1.2.4 of the CBA, L&I communicated on the rule development process via DOSH electronic email distribution lists, L&I rules electronic email distributions lists, and on social media in English and Spanish. Small business employers and organizations representing small businesses were involved throughout these processes and L&I considered their feedback throughout the process. Rule development efforts included:

- In February 2022, DOSH conducted an outdoor heat exposure survey, asking 10 scoping questions. The survey was sent to several DOSH electronic email distribution lists and also posted on social media in English and Spanish.
Four stakeholder meetings were held virtually and stakeholders were able to participate online or by phone. In addition, some meetings were televised on TVW.

L&I developed and shared draft proposed rules and circulated them for stakeholder feedback.

7. Identify the estimated number of jobs that will be created or lost as the result of compliance with the proposed rule.

L&I does not anticipate that the compliance with proposed rules will lead to a significant number of job creations or cuts. Employers will be able to meet the proposed requirements using existing staff without new hires. Similarly, it is unlikely that employers would need to dismiss employees as a result of the proposed rule amendments.

The public may obtain a copy of the small business economic impact statement or the detailed cost calculations by contacting:

Name: Carmyn Shute, Administrative Regulations Analyst
Address: Department of Labor and Industries
Division of Occupational Safety and Health
PO Box 44620
Olympia, WA 98504-4620

Phone: 360-870-4525
Fax: 360-902-5619
TTY:
Email: Carmyn.Shute@Lni.wa.gov
Other:

<table>
<thead>
<tr>
<th>Date: March 21, 2023</th>
<th>Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: Joel Sacks</td>
<td></td>
</tr>
<tr>
<td>Title: Director</td>
<td></td>
</tr>
</tbody>
</table>