



# PROPOSED RULE MAKING

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

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FILED

DATE: March 21, 2023

TIME: 1:01 PM

WSR 23-07-123

**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**

**Expedited 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 \_\_\_\_\_.**

**Title of rule and other identifying information:** (describe subject) Outdoor ambient heat exposures in all industries under WAC 296-62-095 through 296-62-09560, General Occupational Health Standards – Outdoor heat exposure, and WAC 296-307-097 through 296-307-09760, Safety Standards for Agriculture – Outdoor heat exposure.

**Hearing location(s):**

Date:	Time:	Location: (be specific)	Comment:
April 25, 2023	10:00 a.m.	SpringHill Suites by Marriott 4040 Northwest Avenue Bellingham WA 98226	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.
April 26, 2023	10:00 a.m.	SpringHill Suites by Marriott 7048 West Grandridge Blvd. Kennewick WA 99336	
April 27, 2023	10:00 a.m.	Hampton Inn by Hilton 2010 S Assembly Road Spokane WA 99224	
May 2, 2023	10:00 a.m.	Dept. of Labor & Industries 12806 Gateway Drive S Tukwila WA 98168	
May 3, 2023	10:00 a.m.	Clark College at Columbia Tech Center 18700 SE Mill Plain Blvd. Vancouver WA 98683	
May 4, 2023	2:00 p.m.	Virtual and telephonic hearing <b>To join electronically:</b> <a href="https://lni-wa.gov.zoom.us/j/89566996553?pwd=QzNGMIhTT3V3RGtFTGhMS2tYYlo5UT09">https://lni-wa.gov.zoom.us/j/89566996553?pwd=QzNGMIhTT3V3RGtFTGhMS2tYYlo5UT09</a> <b>To join by phone (audio only):</b> 1-253-215-8782 Meeting ID: 895 6699 6553 Passcode: 678052798	

**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

Division of Occupational Safety and Health  
PO Box 44620  
Olympia, WA 98504-4620

Email: [Carmyn.Shute@Lni.wa.gov](mailto:Carmyn.Shute@Lni.wa.gov)

Fax: 360-902-5619

Other:

By (date) 5:00 p.m. May 11, 2023

Fax: 360-902-5619

TTY:

Email: [Carmyn.Shute@Lni.wa.gov](mailto:Carmyn.Shute@Lni.wa.gov)

Other:

By (date) 5:00 p.m. April 20, 2023

**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 296-62-09510 and 296-307-09710 Outdoor heat exposure.** Sets scope of the rule to apply to all outdoor work environments year-around rather than May through September. Removed redundant WAC citations.

**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?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Federal Court Decision?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
State Court Decision?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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:**  Private  Public  Governmental

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

**Name of agency personnel responsible for:**

	Name	Office Location	Phone
Drafting:	Teri Neely	Tumwater, WA	360-902-6652
Implementation:	Craig Blackwood	Tumwater, WA	360-902-5828
Enforcement:	Craig Blackwood	Tumwater, WA	360-902-5828

**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](mailto:Carmyn.Shute@Lni.wa.gov)

Other:

No: Please explain:

**Regulatory Fairness Act and Small Business Economic Impact Statement**

Note: The [Governor's Office for Regulatory Innovation and Assistance \(ORIA\)](#) provides support in completing this part.

**(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:

- |   |  |
|---|--|
| <input type="checkbox"/> <a href="#">RCW 34.05.310</a> (4)(b)<br>(Internal government operations)         | <input type="checkbox"/> <a href="#">RCW 34.05.310</a> (4)(e)<br>(Dictated by statute)   |
| <input checked="" type="checkbox"/> <a href="#">RCW 34.05.310</a> (4)(c)<br>(Incorporation by reference)  | <input type="checkbox"/> <a href="#">RCW 34.05.310</a> (4)(f)<br>(Set or adjust fees)  |
| <input checked="" type="checkbox"/> <a href="#">RCW 34.05.310</a> (4)(d)<br>(Correct or clarify language) | <input type="checkbox"/> <a href="#">RCW 34.05.310</a> (4)(g)<br>((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](#)):

	Proposed WAC Sections and Title	This proposed rule section is <b>not exempt</b> - Analysis is required	This proposed rule section is <b>exempt</b> . Provide RCW to support this exemption.
1.	WAC 296-62-09510 and 296-307-09710 Scope and purpose.	<input checked="" type="checkbox"/>	
2.	WAC 296-62-09520 and 296-307-09720 Definitions.	<input type="checkbox"/>	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.
3.	WAC 296-62-09530 and 296-307-09730 Employer and employee responsibility.	<input checked="" type="checkbox"/>	
4.	WAC 296-62-09535 and 296-307-09735 Access to shade.	<input checked="" type="checkbox"/>	
5.	WAC 296-62-09540 and 296-307-09740 Drinking water.	<input type="checkbox"/>	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.
6.	WAC 296-62-09545 and 296-307-09745 Acclimatization.	<input checked="" type="checkbox"/>	
7.	WAC 296-62-09547 and 296-307-09747 High heat procedures.	<input checked="" type="checkbox"/>	
8.	WAC 296-62-09550 and 296-307-09750 Responding to signs and symptoms.	<input type="checkbox"/>	RCW 34.05.310(4)(d) because the proposed rule language clarifies the existing requirements.
4.	WAC 296-62-09560 and 296-307-09760 Information and training.	<input type="checkbox"/>	

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.*

If any portion of the proposed rule is **not exempt**, does it impose more-than-minor costs (as defined by RCW 19.85.020(2)) on businesses?

No Briefly summarize the agency’s minor cost analysis and how the agency determined the proposed rule did not impose more-than-minor costs.

Yes Calculations show the rule proposal likely imposes more-than-minor cost to businesses and a small business economic impact statement is required. Insert the required small business economic impact statement here:

**1. Describe the rule, including: a brief history of the issue; an explanation of why the rule is needed; and a brief description of the amendments that would impose new or additional costs on affected businesses, including small businesses.**

During the significant and unprecedented 2021 heat wave, L&I received a petition requesting the department adopt emergency rules and amend the permanent rules to address preventative measures when there is extreme high heat. L&I accepted the petition, recognizing the need to reexamine the agency’s 2008 Outdoor Heat Exposure rules, especially in light of information suggesting the occurrence of heat-related illnesses below the current temperature action levels and the increasing temperatures experienced in Washington State since the rule was first established. Emergency rules were adopted in 2021 and 2022. These 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.<sup>1</sup> 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**

NAICS	Sector	Share of affected businesses	Number of affected businesses	Affected businesses as % of total affected
11	Agriculture, Forestry, Fishing and Hunting	53.3%	3,482	11.1%
21	Mining, Quarrying, and Oil and Gas Extract	22.2%	29	0.1%
22	Utilities	16.8%	38	0.1%
23	Construction	45.1%	12,744	40.7%
31-33	Manufacturing	6.8%	527	1.7%
42	Wholesale Trade	12.5%	1,544	4.9%
44-45	Retail Trade	5.9%	841	2.7%

<sup>1</sup> Assuming the share of affected workers in a certain industry is similar to that of affected businesses in that industry.

48-49	Transportation and Warehousing	21.8%	1,098	3.5%
51	Information	3.2%	186	0.6%
52	Finance and Insurance	3.1%	201	0.6%
53	Real Estate and Rental and Leasing	16.5%	1,196	3.8%
54	Professional, Scientific, and Technical Services	2.8%	910	2.9%
55	Management of Companies and Enterprises	2.0%	14	0.0%
56	Administrative, Support and Waste Mgmt.	25.1%	3,352	10.7%
61	Educational Services	5.7%	217	0.7%
62	Health Care and Social Assistance	2.8%	1,747	5.6%
71	Arts, Entertainment, and Recreation	12.8%	392	1.3%
72	Accommodation and Food Services	4.1%	623	2.0%
81	Other services except public administration	9.2%	1,845	5.9%
99	State and Local Governments	14.5%	290	0.9%
	<b>Overall</b>	<b>11.8%</b>	<b>31,274</b>	<b>100.0%</b>

### 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.<sup>2</sup> 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**

Cost Factors	
Average time to update OHESP	15-30 minutes
Hourly labor cost (wage and benefits)	\$80.36
Average cost per business	\$20.09 - \$40.18
Number of impacted businesses	31,274
Total cost	\$628,321 - \$1,256,642
Annualized cost <sup>3</sup>	\$84,189 - \$168,378

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 total costs for this requirement are listed below in Table 3.2.

**Table 3.2. Translation costs**

Cost Factors	
Industries needing translation services:	Number of businesses
- Agriculture, Forestry, Fishing & Hunting	3,428

<sup>2</sup> View the “Outdoor Heat APP Addendum” at [Accident Prevention Program \(APP\) \(wa.gov\)](http://www.wa.gov/Accident-Prevention-Program-APP)

<sup>3</sup> 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.

- Construction	12,744
Average cost of translation services per business	\$20.00 - \$75.00
Total translation costs – one time	\$324,508 - \$1,216,906
Annualized cost	\$43,481 - \$163,054

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**

<b>Cost Factor</b>	
Updating OHESP	\$628,321 - \$1,256,642
Translation services	\$324,508 - \$1,216,906
Total one-time cost	\$952,829 - \$2,473,548
<b>Annualized cost</b>	<b>\$127,670 - \$331,432</b>

**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**

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

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**

<b>Cost Factor</b>	
Total number of devices needed	127,658
Cost range of typical devices	\$10.89 - \$21.67
Total cost over the entire period	\$1,390,077 - \$2,766,240
Annualized	\$183,289 - \$364,743

Considering 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**

Cost Factor	
10'x10' canopies	\$2,009,832 - \$3,019,343
12'x12' canopies	\$1,735,602 - \$3,195,528
Body temp. reducing options	\$1,390,077 - \$2,766,240
Total cost range	\$1,390,077 - \$3,195,528
Annualized cost	\$183,289 - \$401,354

### 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**

Cost Factors	
Average number of affected workers in Oct.-Apr. per year	89,677
Average number of affected workers in May-Sept. per year	403,220
Average number of gallons of water required in Oct.-Apr. per year	667,612
Average number of gallons of water required in May-Sept. per year	4,721,923
Cost per gallon of water- bottled water <sup>4</sup>	\$1.29
Cost per gallon of water- using existing water source <sup>5</sup>	\$0.01
Total cost of drinking water per year:	
Low-cost scenario: 30% of bottled water and 70% other options	
\$2,456,145	
High-cost scenario: 100% bottled water:	\$8,041,270

### 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,<sup>6</sup> (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

<sup>4</sup> 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.

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

<sup>6</sup> 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,<sup>7</sup> 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.<sup>8</sup> 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 3.8. Cost of observing newly assigned employees**

<b>Cost Factors</b>		
Regular Communication	Total number of workers to be observed in 8 years	45,131
	Number of workers needing devices	124
	Total device cost	\$17,435
	Observation costs	\$5,566,237
	Total cost in 8 years	\$5,583,673
Buddy system	Number of workers to be observed in 8 years	45,131
	Total cost in 8 years	\$5,566,237
Overall	Total cost range in 8-year period	\$5,566,237 - \$5,583,673
	Annual cost	\$662,720 - \$664,800

#### **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.<sup>9</sup> 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 3.9. Cost of observing return-to-work employees**

<b>Cost Factors</b>		
Regular Communication	Number of workers to be observed	120,901
	Number of workers needing devices	319
	Total device cost	\$44,569
	Observation cost	\$14,822,571
	Total cost	\$14,867,141
Buddy system	Number of workers to be observed	120,901
	Total cost	\$14,822,571
Overall	Total cost range	\$14,822,571 - \$14,867,141
	Annualized cost	\$1,614,901 - \$1,619,768

<sup>7</sup> [ESDWAGOV - Projections.](#)

<sup>8</sup> 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.

<sup>9</sup> 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.<sup>10</sup> 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**

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

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.<sup>11</sup> 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° - 100°F**

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

<sup>10</sup> 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.

<sup>11</sup> 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**

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

### **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 employees 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**

<b>Cost Factors</b>		
Regular Communication	Number of workers to be observed each year	122,430
	Number of workers needing devices	3,030
	Total device cost in 9 years	\$423,170
	Total observation cost in 9 years	\$26,775,119
	Total cost in 9 years	\$27,178,289
Buddy system	Number of workers to be observed each year	122,430
	Total cost in 9 years	\$26,775,119
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**

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

**Table 3.15. Cost of employee training**

<b>Cost factor</b>
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Average number of impacted employees per year	420,371
Average time for new training	10-15 minutes
Hourly labor cost for an employee	\$47.05
Hourly labor cost for a trainer	\$80.17
Total cost of employee training over 9-year period	\$36,153,020 - \$54,229,530
Annualized cost	\$3,939,791 - \$5,909,687

**Table 3.16. Cost of supervisor training**

Cost factor	
Average number of impacted supervisors per year	4,468
Average time for new training	10-15 minutes
Hourly labor cost for a supervisor	\$56.73
Hourly labor cost for a trainer	\$80.17
Total cost of supervisor training in 9 years	\$463,487 - \$695,230
Annualized cost	\$50,497 - \$75,746

The total cost of the proposed information and training amendments would be approximately \$4,326,229 - \$6,657,314 each year.

### 3.7 Summary of Total Compliance Cost of Proposed Rule

Overall the proposed rule amendments are estimated to impose \$40.7 million - \$49.1 million of cost on all impacted businesses each year (see Table 3.17).

**Table 3.17. Summary of total cost**

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

#### 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<sup>12</sup> 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 4.1. Average cost per business V.S. minor cost threshold by industry**

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

<sup>12</sup> 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).

Wholesale Trade (42)	\$1,037 - \$1,253	\$10,604
Retail Trade (44-45)	\$2,830 - \$3,410	\$22,588
Transportation and Warehousing (48-49)	\$2,317 - \$2,793	\$15,969
Information (51)	\$2,682 - \$3,232	\$77,467
Finance and Insurance (52)	\$1,527 - \$1,843	\$19,916
Real Estate and Rental and Leasing (53)	\$821 - \$993	\$5,647
Professional, Scientific, and Technical Services (54)	\$710 - \$860	\$9,457
Management of Companies and Enterprises (55)	\$6,502 - \$7,828	\$93,730
Administrative and Support and Waste Management (56)	\$1,261 - \$1,523	\$8,421
Educational Services (61)	\$8,024 - \$9,658	\$5,617
Health Care and Social Assistance (62)	\$774 - \$937	\$4,513
Arts, Entertainment, and Recreation (71)	\$1,841 - \$2,221	\$5,647
Accommodation and Food Services (72)	\$1,620 - \$1,955	\$4,733
Other services except public administration (81)	\$615 - \$745	\$2,542
State and Local Governments (99)	\$13,732 - \$16,525	\$203,393
Overall	\$1,301 - \$1,571	\$11,968

**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:

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Other:

<b>Date:</b> March 21, 2023	<b>Signature:</b>  
<b>Name:</b> Joel Sacks	
<b>Title:</b> Director	