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## **Cost-Benefit Analysis**

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### ***Elevator Rules (Code Adoption)***

**Chapter 296-96 WAC, Safety Regulations and Fees for All Elevators, Dumbwaiters, Escalators and Other Conveyances**

**Part A – Administration**

**Part B - Elevator Contractor and Conveyance Mechanic Licenses and Regulations and Fees**

**Part C - Regulations for New and Altered Elevators and Lifting Devices**

**Part D - Regulations for Existing Elevators, Standard Application Material Lifts, Dumbwaiters, and Escalators**

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*July 20, 2023*

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## **CHAPTER 1: Requirements of the Administrative Procedure Act**

The Administrative Procedure Act (APA; Chapter 34.05 RCW) requires that, before adopting a significant legislative rule, the Department of Labor & Industries (L&I) must analyze the probable costs and benefits of the rule, and determine that the benefits are greater than its costs, taking into account both the qualitative and quantitative benefits and costs.” RCW 34.05.328(1)(d). Under certain circumstances, a rule or rule component is exempt from this requirement. These exemption criteria are listed in RCW 34.05.328(5)(b), including:

- Emergency rules adopted under RCW 34.05.350;
- Rules relating only to internal governmental operations that are not subject to violation by a nongovernment party;
- Rules adopting or incorporating by reference without material change federal statutes or regulations, Washington state statutes, rules of other Washington state agencies, shoreline master programs other than those programs governing shorelines of statewide significance, or, as referenced by Washington state law, national consensus codes that generally establish industry standards, if the material adopted or incorporated regulates the same subject matter and conduct as the adopting or incorporating rule;
- Rules that only correct typographical errors, make address or name changes, or clarify language of a rule without changing its effect;
- Rules the content of which is explicitly and specifically dictated by statute;
- Rules that set or adjust fees under the authority of RCW 19.02.075 or that set or adjust fees or rates pursuant to legislative standards, including fees set or adjusted under the authority of RCW 19.80.045.

This cost-benefit analysis has been prepared to comply with the APA for the amendment and creation of rule sections under chapter 296-96 WAC that do not fall under the exemptions described above. The Cost-Benefit Analysis and Least-Burdensome Alternative Analysis in this report are based on the best available information at the time of publication.

The APA also requires L&I to “determine, after considering alternative versions of the rule... that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives” of the governing and authorizing statutes. RCW 34.05.328(1)(e). Chapter 6 of this document describes that determination.

## **CHAPTER 2: Background of the Adopted Rules**

### **2.1 The background of this rulemaking**

This rulemaking adopts amendments to the elevator rules under chapter 296-96 WAC, for new safety codes, updates, clarification, housekeeping, and other amendments recommended by stakeholders, a Technical Advisory Committee (TAC), Elevator Safety Advisory Committee (ESAC), and L&I to improve public safety.

The Elevator Program (Program) reviewed the existing rules and new safety codes from the 2019 edition of the American Society of Mechanic Engineers (ASME) A17.1/CSA B44 - 2019, Safety Code for Elevators and Escalators, and other related codes. The review process included an opportunity for Washington's elevator stakeholders to participate in the review of the existing rules, submit proposals for amendments, and provide recommendations to L&I on proposals. A TAC, consisting of multiple industry representatives, and the ESAC reviewed the proposals and provided advice to L&I on adoption of the rules.

This rulemaking is needed to update the rules with the latest safety code requirements, so Washington State is consistent with the national consensus codes that govern conveyances. ASME A17.1/ CSA B44 is the recognized safety standard for the elevator industry and is adopted throughout North America. The ASME standards address both new and existing elevators, escalators, dumbwaiters, moving walks, material lifts, platform lifts and stairway chairlifts, and provides requirements applying to the design, construction, installation, operation, testing, inspection, maintenance, alteration, and repair of these conveyances. The purpose of the safety codes and standards are to enhance public health and safety. Additionally, other amendments to this chapter are needed to bring the rules up-to-date and to adopt amendments requested by stakeholders.

#### **2.1.1 Rule development process**

The Elevator Program's rule development process includes an opportunity for public proposals, review, negotiation, and recommendations of all proposals by the TAC, ESAC, and the public hearing process.

This process provides Washington's elevator stakeholders the opportunity to review the existing rules, submit proposals, and provide recommendations to L&I regarding changes to the rules.

Stakeholders and other interested parties are provided notice of rulemaking activities throughout the rulemaking process via GovDelivery (Rules Update and Elevator Program email list subscribers), L&I's website, and quarterly ESAC meetings.

On September 29 and October 1, 2021, stakeholders were invited to attend a two-day code comparison presentation that highlighted the changes made between the ASME A17.1 – 2016 and 2019 codes.

On October 19, 2021, L&I filed a CR-101 Preproposal Statement of Inquiry, WSR 21-21-088 to begin rulemaking.

From November 1 to December 31, 2021, L&I invited interested parties to submit proposals for changes to the rules. L&I also solicited experts and industry representatives to participate on a TAC.

From February 8 through 10, 2022, the TAC convened meetings to review rule proposals and provide recommendations to L&I. The TAC consists of multiple representatives from across the industry. The purpose of the TAC is to evaluate rule proposals focusing on life/safety, state policies, maintaining a fair competitive environment, and correcting errors and omissions.

From March 8 through 10, 2022, the ESAC convened a “special” three-day meeting to review proposals and provide recommendations to L&I. The ESAC consists of 10 industry representatives. The purpose of the ESAC is to advise L&I on the adoption of rules that apply to conveyances; methods of enforcing and administering the Program statutes; and matters of concern to the conveyance industry and to individual installers, owners, and users of conveyances.

On July 7, 2022, the Elevator Program held a separate meeting to review and consider adopting the 2020 edition of ASME A10.5 ANSI/ASSP A10.5-2020, Safety Requirements for Material Hoists. Stakeholders were requesting the adoption of the current code.

On November 22 and 28, 2022, stakeholders were notified directly and through the Program’s interested party email list via GovDelivery a first draft of the rule language was available online.

On April 25, 2023, stakeholders were notified a second draft of the rule language was available online.

On May 2, 2023, L&I filed the proposed rules (CR-102), WSR 23-10-083.

On June 7 and June 13, 2023, public hearings were held on the proposed rules.

## **2.2 The description of the adopted rules**

### **2.2.1 Determination for significant legislative rules or exemption**

As required by the APA, L&I analyzed its adopted rules to determine whether the rules are “significant legislative rules” as defined in RCW 34.05.328(5)(a)(i). This section describes the results of the required analysis.

#### ***2.2.1.1 Changes which are not considered significant legislative rules or are exempt per RCW 34.05.328(5)(b)(iv)***

**2.2.1.1.1 Housekeeping.** Changes are housekeeping or clean-up only without changing the substance or effect of the requirements. For example, correcting typographical, grammatical, gender, or spelling errors, or to change the format.

**WAC 296-96-00600, Application of adopted standards and rules.**

00600(1), 00600(2), 00600(3),

**WAC 296-96-00650, Adopted standards.**

Table

**WAC 296-96-00675, Amendments to adopted standards.**

00675 first paragraph, 00675(1), 00675(1)(a), 00675(1)(a)(i), 00675(1)(a)(ii), 00675(1)(a)(ii)(A), 00675(1)(a)(ii)(B), 00675(1)(a)(ii)(C), 00675(1)(a)(ii)(D), 00675(1)(a)(ii)(E), 00675(1)(a)(iii), 00675(1)(b), 00675(1)(c), 00675(1)(d), 00675(1)(f), 00675(1)(h), 00675(1)(h)(iii), 00675(1)(h)(iv), 00675(2), 00675(2)(a), 00675(2)(b), 00675(2)(b)(i), 00675(2)(b)(ii), 00675(2)(b)(iii), 00675(2)(b)(iv), 00675(2)(c), 00675(2)(c) 00675(3), 00675(4), 00675(5), 00675(6), 00675(8), 00675(9), 00675(10),

**WAC 296-96-00700, Chapter definitions.**

00700, 00700(31)

**WAC 296-96-00904, License requirements for elevator contractors.**

00904(3)(b), 00904(6), 00904(7)(d), 00904(8)(b), 00904(8)(c)

**WAC 296-96-02421, Layout plans.**

02421(3), 02421(6), 02421(7), 02421(8), 02421(9)

**WAC 296-96-02460, Location.**

02460(1)(b), 02460(1)(c)

**WAC 296-96-02465, Machine rooms, control rooms, and control spaces.**

02465(1), 02465(2)

**WAC 296-96-02530, Handrails.**

02530(2)

**WAC 296-96-02580, Inspection keys.**

02580(2)(a), 02580(2)(e)

**WAC 296-96-02605, Private residence inclined stairway chairlifts.**

02605(1)

**WAC 296-96-02650, Additional required on-site documentation.**

02650(4)(a)(i), 02650(4)(a)(i)(A) through 02650(4)(a)(i)(D), 02650(4)(a)(ii)(A) through 02650(4)(a)(ii)(J), 02650(4)(a)(iii)(A) through 02650(4)(a)(iii)(I), 02650(4)(b)(i)(A) through 02650(4)(b)(i)(I), 02650(4)(b)(ii)(A) through 02650(4)(b)(ii)(N), 02650(4)(b)(iii)(A) through 02650(4)(b)(iii)(J), 02650(4)(c)(i)(A) through 02650(4)(c)(i)(I), 02650(4)(c)(ii)(A) through 02650(4)(c)(ii)(L), 02650(4)(c)(iii)(A) through 0202650(4)(c)(iii)(L), 02650(4)(c)(iv)(A) through 02650(4)(c)(iv)(C)

**WAC 296-96-02700, Machine room requirements.**

02700(2)(a)

**Amends section header for Part C1:**

**WAC 296-96-05000, Scope.**

**WAC 296-96-05010, Definition and use.**

05010(1), 05010(1)(c), 05010(1)(d), 05010(2)

**WAC 296-96-05020, Hoistway enclosure.**

05020(1), 05020(2), 05020(3), 05020(4)

**WAC 296-96-05030, Hoistway gates and doors.**

05030(3), 05030(4), 05030(7)

**WAC 296-96-05070, Car enclosures.**

05070(1), 05070(2), 05070(3)

**WAC 296-96-05080, Running clearance.**

**WAC 296-96-05090, Car and counterweight guides.**

**WAC 296-96-05190, Pits.**

05190(6), 05190(7)(a)

**WAC 296-96-05210, Signage**

05210 first paragraph to 05210(1), 05210(1) to 05210(1)(a), 05210(2) to 05210(1)(b)

**WAC 296-96-07150, Guide rails, track supports and fastenings.**

07150(1)

**Amends section header for Part D**

**WAC 296-96-23116, Car numbers.**

**WAC 296-96-23117, Car top guard railings.**

23117(1), 23117(2), 23117(3)

**WAC 296-96-23119, Low overhead signs.**

23119(1)

**WAC 296-96-23122, Machine room and machinery space illumination.**

**WAC 296-96-23126, Guarding of equipment.**

23126(3), 23126(4)

**WAC 296-96-23130, Pit access.**

**WAC 296-96-23605, Examination of standard application material lifts, special purpose elevators, electric manlifts, and hand-powered manlifts.**

Title, 23605(1), 23605(1)(b)(i) through 23605(1)(b)(xiii), 23605(1)(c)(i) through 23605(1)(c)(xx), 23605(1)(d)(i) through 23605(1)(d)(xxii), 23605(1)(e)(i) through 23605(1)(e)(viii), 23605(1)(f), 23605(1)(f)(i) through 23605(1)(f)(ix), 23605(2), 23605(2)(a), 23605(2)(a)(i) through 23605(2)(a)(xii), 23605(2)(b), 23605(2)(b)(i) through 23605(2)(b)(ix), 23605(2)(c), 23605(2)(c)(i) through 23605(2)(c)(xvi), 23605(2)(d), 23605(2)(d)(i) through 23605(2)(d)(v), 23605(2)(f) and 23605(2)(f)(i) through 23605(2)(f)(viii)

**Section header in Part D, Subpart VI**

**WAC 296-96-24000, Applicable codes and rules.**

**WAC 296-96-24112, Runway clearances.**

**WAC 296-96-24115, Landing enclosures and gates.**

24115(1), 24115(3)

**WAC 296-96-24118, Bumpers and buffers.**

24118(2)(a)

**WAC 296-96-24127, Maximum rated speed.**

**WAC 296-96-24133, Car enclosures.**

24133(1), 24133(2), 24133(4)

**WAC 296-96-24136, Car doors and gates.**

24136(1)

**WAC 296-96-24139, Capacity and data plates.**

24139(1)

**WAC 296-96-24142, Guide rails, track supports and fastenings.**

24142(2)

**WAC 296-96-24148, Safeties and governors.**

24148(3)

**WAC 296-96-24154, Driving machines and sheaves.**

24154(6)(c)

**WAC 296-96-24163, Suspension means.**

24163(3), 24163(8)(b)

**WAC 296-96-24221, Bumpers and buffers.**

24221(2)(a)

**WAC 296-96-24231, Rated speed.**



**WAC 296-96-24237, Car enclosures.**

24237(1)(b)

**WAC 296-96-24240, Capacity and data plates.**

24240(1)

**WAC 296-96-24243, Guide rails, track supports, and fastenings.**

24243(2)

**WAC 296-96-24255, Drive machines, sheaves and brakes.**

24255(6)

**WAC 296-96-24264, Suspension means.**

24264(3), 24264(8)(b)

**WAC 296-96-24279, Additional requirements.**

24279(3)

**WAC 296-96-24457, Up-limit stop devices.**

24457(2)

**WAC 296-96-24500, Scope.**

24500(2)

**WAC 296-96-24519, Hoistway and landing construction.**

24519(1), 24519(2)

**WAC 296-96-24522, Hoistway doors and gates.**

24522(1), 24522(1)(b), 24522(1)(c), 24522(2)(b)

**WAC 296-96-24525, Car enclosures and frames.**

First paragraph, 24525(1), 24525(2), 24525(4), 24525(5)(b), 24525(5)(c)

**WAC 296-96-24528, Car doors and gates.**

24528(2)(a)

**WAC 296-96-24531, Counterweight enclosures, counterweight and fastenings.**

24531(2), 24531(3)

**WAC 296-96-24534, Guide rails.**

24534(1), 24534(3)(a), 24534(5)

**WAC 296-96-24537, Suspension means.**

24537(1)(b), 24537(2)

**WAC 296-96-24543, Car safeties.**

24543(3)

**WAC 296-96-24553, Drive machines.**

24553(1)(b)

**WAC 296-96-24560, Additional applicable requirements.**

24560(1)

**WAC 296-96-24620, Landings and entrances.**

24620(2), 24620(3)(a), 24620(3)(b), 24620(3)(d)

**WAC 296-96-24635, Guide rails.**

24635(1), 24635(2), 24635(3)

**WAC 296-96-24640, Buffers.**

24640(2)

**WAC 296-96-24645, Car construction.**

24645(1)(a), 24645(2), 24645(3), 24645(9)

**WAC 296-96-24650, Counterweights.**

24650(1)(a), 24650(1)(b), 24650(5)

**WAC 296-96-24655, Sheaves and supporting members.**

24655(1)

**WAC 296-96-24660, Suspension means.**

24660(1)(a), 24660(3)

**WAC 296-96-24665, Operating ropes.**

**WAC 296-96-24670, Hoistway requirements.**

24670(1)(b), 24670(2), 24670(3)

**2.2.1.1.2 Rules adopting or incorporating by reference without material change, any of the following.** RCW 34.05.328(5)(b)(iii). National consensus codes that establish generally accepted industry standards.

**WAC 296-96-00650, Adopted standards.**

Table

**WAC 296-96-00675, Amendments to adopted standards.**

00675(7) to 00675(1)(g), 00675(4)(h)(i), 00675(7) to 00675(1)(h)(iii)

**WAC 296-96-00700, Chapter definitions.**

00700(6), 00700(8), 00700(9), 00700(10), 0700(21), 00700(26), 00700(32)

**WAC 296-96-02421, Layout plans.**

02421(6), 02421(6)(a), 02421(6)(b), 02421(6)(c)

**WAC 296-96-02452, Access to machines, overhead sheaves, shackles, and hitch supports.**

**WAC 296-96-02530, Handrails.**

02530(4)

**WAC 296-96-02605, Private residence inclined stairway chairlifts.**

Title, 02605(1)(a), 02605(1), 02605(1)(b), 02605(2), 02605(2)(a), 02605(2)(b), 02605(2)(c), 02605(2)(d), 02605(3)

**WAC 296-96-02610, Private residence platform lifts.**

02610(1)(d)(ii), 02610(1)(d)(iii), 02610(1)(d)(iv), 02610(1)(e), 02610(1)(f)

**WAC 296-96-02700, Machine room requirements.**

Title

**WAC 296-96-02705, Location of speed governor.**

**WAC 296-96-02720, Two-way communications means.**

**WAC 296-96-23701, Maintenance and tests on commercial accessibility lifts.**

23701(1), 23701(3)

**2.2.1.1.3 Interpretive RCW 34.05.328(5)(c)(ii)**

**WAC 296-96-00500, Scope, purpose, and authority.**

00500(6)

**WAC 296-96-00700, Chapter definitions.**

00700(20)

## CHAPTER 3: Probable Costs of the Adopted Rules

The estimated costs in this analysis, if any, represent only the new costs of complying with the adopted rule for the affected parties, excluding realized potential costs associated with, or originating from, the current practices or “baseline” standards under existing laws, rules, or national consensus standards. Accordingly, L&I did not analyze any cost attributed to existing standards or when a standard is not appreciably different from an existing standard.

### 3.1 Quantifiable costs of the adopted rules

#### WAC 296-96-00675, Amendments to adopted standards.

##### WAC 296-96-00675(1)(d)(i) and WAC 296-96-00675(1)(d)(ii):

**Rule Overview:** Adds new language that requires lighting of 200 lx or 19 fc in the machine room and in the truss interior as well for safety of all conveyance equipment.

**Costs:** The industry is already complying with these requirements. The 19 foot-candle bulbs are more standard lighting than the 10fc bulbs currently required by the national consensus standard of ASME A17.1 and will cost less. Nineteen foot-candle bulbs are available at prices ranging from \$1.34 to \$5.19 each<sup>1</sup>, while ten foot-candle bulbs cost from \$2.50 to \$7.00 each.<sup>2</sup> At either end of the scale, that is a saving of \$1.16 to \$1.81 per bulb. Therefore, this amendment represents savings instead of costs to the affected parties.

##### WAC 296-96-00675(1)(e)

**Rule Overview:** Adds new language to allow records to be kept remotely from the building site for the grain industry.

**Costs:** ASME A17.1, Section 8.6.1.4.1(b) currently requires all conveyance records to be kept on-site and be provided at the time of annual inspection to ensure public safety. By making this exception for the grain industry, it adopts an existing and accepted practice for this industry to remotely store records as these locations may not have a proper place to store the records on-site. Therefore, this amendment does not represent any additional costs.

##### WAC 296-96-00675(1)(h)(ii)

**Rule Overview:** This change adds a new requirement that a record of fire alarm initiating device testing to be kept on-site for inspection.

**Costs:** The industry is already required to perform the annual tests of this device. The change would require the testing results to be kept on-site for inspection. This could be as simple as recording the results on a piece of paper. Therefore, this change does not impose any significant costs.

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<sup>1</sup> [www.1000bulbs.com](http://www.1000bulbs.com), [www.amazon.com](http://www.amazon.com)

<sup>2</sup> [Grainger](http://Grainger) Industrial Supply, [Lumens.com](http://Lumens.com)

#### **WAC 296-96-00675(4)**

**Rule Overview:** Modifies existing language and removes the reference to the specific ASME code to apply to all standards for additional clarification.

**Costs:** This change coincides with current rule reference excluding the ASME A17.1 references to periodic tests being witnessed, when it is regarding all adopted codes referenced. As periodic tests are already required, a representative from the Elevator Program being present creates no new costs for the industry.

#### **WAC 296-96-00905, Primary point of contact.**

**Rule Overview:** Establishes new requirements that outline the duties and responsibilities of the elevator Primary Point of Contact (POC) for accountability.

**Costs:** These are existing duties and assignments that are being adopted into rule. Noncompliance by the POC would not result in a penalty for the contractor, and a Program request to replace a noncompliant POC would be a consultative process between the Program and the contractor. Therefore, this change does not impose new costs.

#### **WAC 296-96-00910, Elevator mechanic license categories.**

##### **WAC 296-96-00910(4)**

**Rule Overview:** Removes “special purpose elevators (SPE)” from the list of conveyances that Category 04 license holders can perform work on.

**Costs:** The hours currently allotted to attain a Category 04 license does not cover the education and maintenance requirements for special purpose elevators covered in Sections 5.7, 8.6, and 8.11 of ASME A17.1. The removal of “special purpose elevators (SPE)” does not represent a loss of work for Category (04) elevator mechanics. Those mechanics can obtain a license endorsement for SPEs without charge, as explained in 296-96-00910(11). Therefore, this change creates no new costs.

##### **WAC 296-96-00910(11)**

**Rule Overview:** Adds a new subsection to allow for licensing endorsements.

**Costs:** The purpose of this change is to allow current category 04 mechanics who choose to work on special purpose elevators to attain their ability to work on those conveyances and for all licensing categories to do other work. The fee mentioned in the new subsection already exists in the elevator fee schedule, so this change creates no new costs.

## **WAC 296-96-02400, Requests for acceptance inspections.**

### **WAC 296-96-02400(1)(a)**

**Rule Overview:** Adds a new requirement that elevator contractors must cancel scheduled inspections in writing the preceding business day if the equipment is not ready for inspection, or a re-inspection fee may apply.

**Costs:** This change reflects Elevator Program's existing practice that would help contactors avoid being charged a re-inspection fee. The new language clarifies this practice by providing more guidance for the cancelation of these inspections. Therefore, this change creates no new costs.

### **WAC 296-96-02400(1)(b)**

**Rule Overview:** Adds new language to require that L&I inspectors notify the elevator contractor in writing the proceeding business day if they are unable to make a scheduled inspection.

**Costs:** This change reflects an existing practice of L&I, which gives stakeholders the opportunity to reschedule their inspection rather than the L&I inspector simply not showing up. It is an L&I internal process designed to avoid inconveniencing stakeholders. Therefore, it creates no new costs to the industry.

## **WAC 296-96-02700, Machine room requirements.**

### **WAC 296-96-02700(1)**

**Rule Overview:** Changes to clarify the required location of disconnects in certain scenarios.

**Costs:** The new language does not create a requirement for new equipment. Rather, it clarifies the machine room/space within a residence, and requirement for disconnects in certain scenarios. As a result, the affected homeowners are provided an additional option to no longer have to partition or install guards in an area to create a dedicated space for their elevator machinery. Therefore, this change represent a saving instead of a cost to them.

## **WAC 296-96-02710, Residential governor ropes.**

**Rule Overview:** This change deviates from the ASME A18.1 code by allowing belts and other means to be used for a governor rope under certain conditions.

**Costs:** The existing code only allows for steel ropes. Residential elevators are limited in speed between 30 fpm and 40 fpm. Travelling at such low speeds makes it possible to use other than wire rope, like belts, to operate encoders. In addition, many elevators have already been or are being installed with belts. Therefore, this change would not impose any costs. Rather, it benefits the affected parties by providing additional options to allow for technology improvement in this area.

## **WAC 296-96-02715, Disconnecting means, hoistwayless elevators.**

**Rule Overview:** This change deviates from the national code under ASME A17.1 by requiring hoistwayless elevators to have the same standards as hoistway elevators for an auxiliary disconnect. The change now requires an additional location for the disconnecting means to allow for safely disconnecting the power without having to get into the elevator.

**Costs:** The new language creates a cost for installing an additional disconnect switch. The estimated average cost for this installation is \$25 per unit and less than one hour of labor at \$75 per hour.<sup>3</sup> There are less than 20 hoistwayless elevators installed each year.<sup>4</sup> Therefore, the total cost of this requirement to the industry is estimated to be \$2,000 or less per year.

## **WAC 296-96-05210, Signage.**

### **WAC 296-96-05210(2) and (2)(a) through (c)**

**Rule Overview:** Creates a definition of “code data plate” and adds this to the signage requirement for WAC material lifts.

**Costs:** This is a new requirement that applies to new WAC material lifts only, and there will be a cost for procurement of the data plates for these conveyances. It is estimated that on average, less than 20 such lifts would be installed each year in the state and the data plates are estimated to cost \$10 each.<sup>5</sup> Since no attachment method is specified, the labor cost for installation will be minimal. Therefore, the total cost of this requirement to the industry is estimated to be \$200 or less per year.

## **WAC 296-96-23102, Roof access through horizontal hatch-type covers.**

**Rule Overview:** This change adds new requirements to provide for safer access to roof doors leading to elevator machine rooms. Some access to roof areas are currently provided with wooden ladders, which do not comply with ANSI A14.3. The adopted language makes allowances where a stair or collapsible stair is not feasible.

**Costs:** This new language creates a cost for the replacement of fixed wooden ladders. The minimum requirement is that the wooden ladder be replaced with a noncombustible ladder. There are approximately 255 building under the jurisdiction of this rule that would be effected. The estimated cost for replacement of the wooden ladders is \$300 to \$500 each. Therefore, the estimated cost to property owners is a one-time cost of \$127,500 or less.

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<sup>3</sup> [Elevator Repair Cost | Elevator Repair Service \(fixr.com\)](#).

[2023 Cost of Elevator Maintenance, Modernization & Repair - HomeAdvisor](#)

<sup>4</sup> Based on the information from the technical staff of L&I’s Elevator Program.

<sup>5</sup> Based on the information from the technical staff of L&I’s Elevator Program.

## **WAC 296-96-23606, Installations placed in voluntary red tag status.**

### **WAC 296-96-23606, 23606(1) and (3)**

**Rule Overview:** Removes “voluntary” from “red tag status” throughout this section.

**Costs:** This change is adopted to better clarify that the requirements in this section shall be followed, regardless of either voluntary or Program directed red tag. Red tags have always been subject to re-inspection regardless of voluntary status, and a fee for a permit for the elevator when in “red tag” status currently exists. Therefore, this change does not impose additional costs.

## **Repealed Rules**

WAC 296-96-02640, Inclined commercial stairway chair lifts.

WAC 296-96-18010, Definition.

WAC 296-96-18011, Minimum maintenance requirements.

WAC 296-96-18020, Car and platform enclosures.

WAC 296-96-18030, Electrical wiring requirements.

WAC 296-96-18040, Brakes.

WAC 296-96-18050, Stop switches and protective devices.

WAC 296-96-18060, Reshackling and refastening of hoisting cables.

WAC 296-96-18070, Hoistway gates and doors.

WAC 296-96-18080, Hoistway enclosures.

WAC 296-96-20010, Minimum maintenance requirements.

WAC 296-96-24700, Scope.

WAC 296-96-24703, Minimum maintenance requirements.

WAC 296-96-24706, Machine rooms and machinery space.

WAC 296-96-24709, Equipment in machine rooms/spaces.

WAC 296-96-24712, Electrical wiring, pipes and ducts in hoistways and machine rooms.

WAC 296-96-24715, Pits.

WAC 296-96-24718, Hoistway door openings.

WAC 296-96-24721, Hoistway door installation.

WAC 296-96-24724, Hoistway door clearances.

WAC 296-96-24727, Hoistway door locking devices.

WAC 296-96-24730, Protection of space beneath hoistway.

WAC 296-96-24733, Car doors and gates.

WAC 296-96-24736, Car enclosure.



WAC 296-96-24739, Construction of car frames and platforms.  
WAC 296-96-24742, Connecting car frames to platforms.  
WAC 296-96-24745, Capacity.  
WAC 296-96-24748, Driving machines.  
WAC 296-96-24751, Material and grooving for sheaves and drums.  
WAC 296-96-24754, Brakes.  
WAC 296-96-24757, Terminal stopping devices.  
WAC 296-96-24760, Suspension means.  
WAC 296-96-24765, Hydraulic casket lifts.  
WAC 296-96-24770, Valves, supply piping and fittings.  
WAC 296-96-24775, Stopping devices.  
WAC 296-96-24780, Operating devices.

**Costs:** There is no cost associated with the repeal of a rule since the subject matter is regulated elsewhere, or the repeal is to streamline and reduces regulatory burden since the underlying code no longer exists.

### **3.2. Total estimated costs**

The estimated annual cost is \$129,700 or less in the first year, and \$2,200 per year in subsequent years. Initial year costs are related to the adopted changes to WAC 296-96-02715 for the installation of additional switches, WAC 296-96-05210(2)(a) through (c) for the installation of code data plates, and WAC 296-96-23102 for the replacement of roof ladders. Ongoing costs are based only on the adopted changes to WAC 296-96-02715 for the installation of additional switches, and WAC 296-96-05210(2) and (2)(a) through (c) for the installation of code data plates.

## CHAPTER 4: Probable Benefits of the Adopted Rules

### 4.1 Quantitative benefits

#### WAC 296-96-00675(1)(i)

**Rule Overview:** This change deviates from the ASME A17.3 code by allowing exceptions for some alterations from full compliance with that standard. Specifically, it would limit the application of ASME A17.3 to only major modernizations, while smaller alterations can still be performed without dealing with ASME A17.3 in its entirety.

**Benefits:** Major modernizations for full compliance with ASME A17.3 could potentially cost more than the elevator. Under the new rule language, a major modernization, which can cost up to \$250,000,<sup>6</sup> is only required when the controller is replaced. This rule amendment would lead to substantial cost savings for building owners since performing smaller alterations will no longer trigger the much more expensive major modernizations.

An elevator has an expected operating life of 25 years between major modernizations or replacements. Under the existing rules, the replacement of any one of several minor components would trigger the major modernization before the 25 years had elapsed. Based on the average cost of \$250,000 for a major modernization each year, if the major modernization is done before reaching 25 years, it would be a loss of \$10,000 of the value expected to be obtained from the previous major modernization. As exemplified in the table below,<sup>7</sup> all of the listed replacements cost much less than even one-year value of the major modernization life cycle, so any replacement of these components will trigger substantial savings for owners by not having to undergo more expensive major modernizations.

As an example, elevator traveling cables have an operational life expectancy of 20 years and each replacement has an estimated cost of \$2,500 to \$3,500.<sup>8</sup> If the traveling cable replacement triggered the requirement for a major modernization at 20 years, this would equate to a loss of \$50,000 based on the 25-year lifetime normally for a major modernization. In any given year, approximately 500 elevators under the agency's jurisdiction will reach the 20-year mark in their operational life expectancy.<sup>9</sup> Under this adopted rule, the traveling cable replacement at twenty years would not trigger a major modification and the owner will avoid the loss of \$50,000 which otherwise would occur under the current rule. For a total of 500 elevators each year, this would amount to the total savings of \$25,000,000 for the owners. Other components may need to be replaced in a much shorter timeframe, like every five years, so the potential cost savings may be greater.<sup>10</sup>

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<sup>6</sup> Based on the information from the technical staff of L&I's Elevator Program.

<sup>7</sup> Data source: Elevator Repair Cost | Elevator Repair Service (fixr.com); 2023 Cost of Elevator Maintenance, Modernization & Repair – HomeAdvisor.

<sup>8</sup> Data source: Elevator Traveling Cable - Design Evolution (prysmiangroup.com).

<sup>9</sup> Based on the information from the technical staff of L&I's Elevator Program.

<sup>10</sup> Data source: How Reliable Are Elevators and Escalators - Elevating Studio.

Type of Repair / Replacement	Installation Cost Range (parts and labor)		Cost difference from the one-year value of Major Modernization
Interior cab fixtures	\$200	\$300	\$9,700 - \$9,800
Door hardware (Electrical)	\$400	\$800	\$9,200 - \$9,600
Door hardware (Mechanical)	\$800	\$1,200	\$8,800 - \$9,200
Landing entrance doors	\$1,800	\$2,800	\$7,200 - \$8,200
Traveling cables	\$2,500	\$3,500	\$6,500 - \$7,500
Replace controller wiring	\$3,000	\$4,000	\$6,000 - \$7,000
Elevator panel	\$3,500	\$4,000	\$6,000 - \$6,500
Elevator cab wiring	\$4,000	\$4,500	\$5,500 - \$6,000

## WAC 296-96-02610, Private residence platform lifts.

### WAC 296-96-02610(1), (1)(a), (1)(b), (1)(c), (1)(d), (1)(d)(i)

**Rule Overview:** The adopted changes in this section allows a cord and plug to be used as an additional disconnecting means for the private residence platform lifts and lays out the requirements for safely implementing this option.

**Benefits:** By providing the plug-in option instead of requiring the equipment to be hard wired, it not only prevents cutting of the cord and thereby destroying the UL rating and equipment warranty, but also saves money for the affected conveyance owners by not having to hire an electrician to install and wire the disconnecting means. Based on the average cost of \$150 to \$500 for an electrician to perform this task,<sup>11</sup> and approximately 30 private residence platform lifts that are installed in the state each year,<sup>12</sup> the annual savings for consumers would be \$4,500 - \$15,000.

## 4.2 Total quantitative benefits

Based on the estimates from Section 4.1, the total quantifiable benefits of the adopted rule are estimated to be at least \$25,004,500 per year.

Changes to Section	Resulting Annual Benefit
WAC 296-96-00675(1)(i)	At least \$25,000,000
WAC 296-96-02610(1)	\$4,500 - \$15,000

<sup>11</sup> Data sources: [Elevator Repair Cost | Elevator Repair Service \(fixr.com\)](#) and [2023 Cost of Elevator Maintenance, Modernization & Repair - HomeAdvisor](#).

<sup>12</sup> Based on the information from the technical staff of L&I's Elevator Program.

### 4.3 Qualitative benefits

In addition to the quantified benefits in Section 4.1, there are other benefits from the adopted rules that are noticeable but difficult to quantify.

- **Enhanced safety for workers and the public:** This includes changes to WAC 296-96-00675(1)(d) that require lighting of 200 lx or 19 fc in the machine room and in the truss interior as well for safety purposes; changes to WAC 296-96-00675(1)(h)(ii) to require a record of fire alarm initiating device testing to be kept on-site for inspection and changes to WAC 296-96-05210 to add “code data plate” to the signage requirement for the applicable material lifts, both of which are adopted for the purpose of more accurate record keeping; changes to WAC 296-96-02715 to require hoistwayless elevators to have the same standards as hoistway elevators for an auxiliary disconnect to allow for safely disconnecting the power without having to get into the elevator; changes to WAC 296-96-23102 to provide for safer access to roof doors leading to elevator machine rooms.
- **Provision of additional options and accommodations for certain elevator owners:** This includes changes to WAC 296-96-00675(1)(e) to allow records to be kept remotely from the building site for the grain industry; changes to WAC 296-96-02700(1) to provide owners an additional option to not have to partition or install guards in an area to create a dedicated space for their elevator machinery; and changes to WAC 296-96-02710 to allow belts and other means to be used for residential governor rope under certain conditions to accommodate technology improvement and current business practices.
- **Improved clarity and ease of the rules for all regulated entities:** This include changes to WAC 296-96-02400(1)(b) to require that L&I inspectors notify the elevator contractor in writing in advance if they are unable to make a scheduled inspection, which gives stakeholders the opportunity to reschedule their inspection rather than the L&I inspector simply not showing up; and changes to WAC 296-96-23606 to remove “voluntary” from the “red tag status” to clarify that red tags have always been subject to reinspection regardless of voluntary status.

## CHAPTER 5: Cost-Benefit Determination

The adopted new rules and amendments to chapter 296-96 WAC have been assessed for both cost and benefit impact to the affected entities and individuals.

Quantifiable total costs associated with WAC 296-96-02715, WAC 296-96-05210(2) and WAC 296-96-23102 are estimated to be \$129,700 in the first year and \$2,200 in subsequent years. The total quantifiable benefits associated with WAC 296-96-02610(1) and WAC 296-96-00675(1) are estimated to be at least **\$25,004,500** per year. Given these estimates, the benefits of these rule amendments far outweigh the costs.

Category	Rule Amendment	Estimated Value First Year	Estimated Value Subsequent Years
Annual Costs	WAC 296-96-23102	\$127,500	\$0
	WAC 296-96-02715	\$2,000	\$2,000
	WAC 296-96-05210(2)	\$200	\$200
Annual Benefits	WAC 296-96-00675(1)(i)	At least \$25,000,000	At least \$25,000,000
	WAC 296-96-02610(1)	\$4,500-\$15,000	\$4,500-\$15,000
Net benefit per year		\$24,874,800	\$25,002,300

## CHAPTER 6: Least Burdensome Alternative Analysis

L&I is required to determine, after considering alternative versions of the rule and the analysis required, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives of the statute. RCW 34.05.328(1)(e).

- **Machine room and truss interior lighting.**  
This change requires lighting of 200 lx or 19 foot-candle (fc) in the machine room and in the truss interior for safety of all conveyance equipment. The rule change deviates from the national elevator safety standards, but is the best approach because it improves worker safety by establishing a universal lighting safety standard for all types of conveyances, while generating a cost savings for customers.
- **Allowing records off-site for the grain industry.**  
This change adds new language to allow records to be kept remotely from the building site for the grain industry. Some locations may not have a proper place to store records on-site. The rule change deviates from the national elevator safety standards, but is the best approach because it reduces the risk of records becoming lost or damaged, and reflects the existing work practices of the elevator industry.
- **Fire alarm initiating device testing records.**  
The rule change adds a new requirement that a record of fire alarm initiating device testing must be kept on-site for inspection. Inspectors review the records on-site at the time of inspection to verify that testing was done for safety purposes. The rule change is the best approach because it promotes uniformity with L&I's existing practice and the accepted practice of the elevator industry.
- **Exceptions to ASME A17.3 for small alterations.**  
The rule change allows exceptions for some alterations from full compliance with ASME A17.3. The rule change deviates from the national elevator safety standards, but is the best approach because it reduces the burden on building owners of having to pay for major modernizations for smaller alterations to their conveyances. Major modernizations for full compliance with ASME A17.3 could potentially cost more than the conveyance.
- **Witnessing of periodic tests.**  
This rule change removes all ASME code references pertaining to periodic tests, and clarifies that L&I is permitted to witness periodic tests when deemed necessary. L&I determined the change is the best approach because it allows a review of testing on a case-by-case basis when deemed necessary, rather than having to test the entire elevator system.
- **Duties of an elevator primary point of contact.**  
The rule change establishes new requirements that outline the duties and responsibilities of the elevator Primary Point of Contact (POC) for accountability. The rule change is the best approach because it clarifies the existing expectations of an elevator POC and for uniformity with L&I's existing practice.

- **Changes to Category (04) elevator mechanic license.**  
 This change removes “special purpose elevators (SPE)” from the list of conveyances that Category 04 license holders can perform work on. The addition of special purpose elevators to this licensing category was inadvertently included during a previous rulemaking. The change is the best approach for making the correction, as (04) elevator mechanics do not have the education and training to perform work on this type of equipment, which jeopardizes worker and public safety.
- **Elevator mechanic licensing endorsements.**  
 This rule change adds a new subsection to allow for licensing endorsements. The change allows licensed elevator mechanics to obtain an endorsement to work on other types of conveyances subject to approval by the Elevator Program. The rule change is the best approach because it allows a pathway for licensed elevator mechanics to perform work in more than one licensing category, which helps to meet the business needs of the industry.
- **Cancellation of inspections by contractors.**  
 The rule change adds a new requirement that elevator contractors must cancel scheduled inspections in writing the preceding business day if the equipment is not ready for inspection, or a re-inspection fee may apply. The rule change is the best approach because it clarifies the timeframe and expectations for cancellation of inspections that will assist Contractors in avoiding a reinspection fee. The change also provides uniformity with L&I’s existing practice.
- **Cancellation of inspections by L&I inspectors.**  
 Adds new language to require that L&I inspectors notify the elevator contractor in writing the preceding business day if they are unable to make a scheduled inspection. The rule change is the best approach because it clarifies the timeframe and expectations for cancellation of inspections by L&I inspectors to improve customer service. The change also provides uniformity with L&I’s existing practice.
- **Cord and plug requirements for private residence platform lifts.**  
 The adopted changes in this section allows a cord and plug to be used as an additional disconnecting means for the private residence platform lifts and lays out the requirements for safely implementing this option. The rule change is the best approach because it provides an alternative option for customers by allowing the use of a cord and plug, which is a cost savings opportunity for them. The change is already L&I’s existing practice and an accepted practice of the elevator industry.
- **Location of disconnects.**  
 The rule change clarifies the required location of disconnects in certain scenarios. The rule change is the best approach because it provides homeowners with the option of having a dedicated room for their elevator machinery, as long as the guards remain in place, which is a cost savings opportunity for them.
- **Belts for residential elevators.**  
 This change deviates from the ASME A18.1 code by allowing belts and other means to be used for a governor rope under certain conditions. The rule change is the best approach because it provides options for customers other than having iron, steel, metal, or

bronze cables and allows for technology improvements. Many elevators are already being installed with belts.

- **Hoistwayless elevators requirements.**

The rule change requires hoistwayless elevators to have the same standards as hoistway elevators for an auxiliary disconnect. The change also requires an additional location for the disconnecting means to allow for safely disconnecting the power without having to get into the elevator. The rule change deviates from the national elevator safety standards, but is the best approach because it prevents workers from climbing under the car when there is no hoistway and being exposed to unnecessary risks and danger.

- **Replacement of wooden ladders for roof access.**

The rule change provides for safer access to roof doors leading to elevator machine rooms. Some access to roof areas are currently provided with wooden ladders, which do not comply with ANSI A14.3. The access is not through a conventional vertical door, but through a horizontal hatch cover. In some cases, personnel are expected to grasp the ladder with one hand while unlocking and opening the hatch cover with the other. This creates a potential fall hazard. All customers with existing elevators would need to replace their wooden ladders that provide access to elevator equipment areas with metal ladders in kind. The rule change is the best approach because it eliminates safety hazards and protects worker safety for those that use these ladders.

- **Red-tagged elevator inspection requirements.**

The rule change removes “voluntary” from “red tag status” to clarify the requirements are to be followed, regardless of either voluntary or red tag status. Red tags have always been subject to reinspection regardless of voluntary status. The rule change is the best approach for clarifying the necessity for reinspection after a conveyance has been out of service to show safety compliance.

- **Repeal of rules for inclined commercial stairway chair lifts.**

The rule change repeals the rules for inclined commercial stairway chair lifts because commercial stairway chair lifts fall under the same category or design as residential inclined chairlifts under ASME A18.1, Section 10.4. The rule change is the best approach because there is no longer a distinction between residential and commercial stairway chair lift products and it provides uniformity with the national elevator safety standards.

- **Repeal of rules for boat launching elevators.**

The rule change repeals the rules pertaining to Boat Launching Elevators. The Elevator Program is no longer regulating this type of equipment, as there is no national standard that exists and no longer a need. The rule change is the best approach because it reduces the regulatory burden on customers when no longer necessary.

- **Repeal of rules for mechanized parking garages.**

The rule change repeals the rule pertaining to mechanized parking garages. The Elevator Program is no longer regulating this type of equipment, as a national standard for it no longer exists. The rule change is the best approach because it reduces the regulatory burden on customers when no longer necessary.



- **Repeal of rules for casket lifts.**

The rule change repeals the rules pertaining to casket lifts. The Elevator Program is no longer regulating this type of equipment, as a national standard for it no longer exists.

The rule change is the best approach because it reduces the regulatory burden on customers when no longer necessary.