# Background on Rules Development for HB 1257

The Department of Commerce is authorized by HB 1257 to develop rules for the adoption of the Washington State Energy Performance Standard for Commercial Buildings. HB 1257 requires Commerce to use ANSI/ASHRAE/IES standard 100-2018, Energy Efficiency in Existing Buildings (standard) as the basis for these rules. Rules will be implemented that adopt the standard by reference, with amendments.

Amendments to the standard will be made to make the standard consistent with the features prescribed in HB 1257. The standard will also be modified to clarify administrative procedures. Additional rules may be required outside of this standard as well.

The following draft rule has been developed by Commerce staff. Then modifications to the various sections of the standard are made to provide consistency between the rule and HB 1257.

Interested parties are encouraged to review standard 100 and modifications made by Commerce staff. Input can be provided on any element that will align the standard with the legislation or existing state laws, clarify application, or improve administrative procedures.

Stakeholders are invited to participate in workshops scheduled to review specific sections of this work. Commerce request that written post workshop comments relating to sections covered at each workshop be received within by the scheduled time period posted on the Commerce Clean Buildings Web site. All comments will be posted on the buildings web site.

Submit comments via email; buildings@commerce.wa.gov.

Review comments and schedules on the Commerce Clean Buildings web site: <http://commerce.wa.gov/buildings>

When editing the standard, please use a standard markup format that includes the following:

* Copy the entire sub-section to be edited
* Underline text to be added
* Use cross out text to indicate deletions
* Provide a reason statement for the change

For any new sections, provide suggested location in the document by referencing the previous section.

### 3. DEFINITIONS

***applicable building codes***means the comprehensive set of Washington State Building Codes adopted by the Washington State Building Code Council. Most relevant to application of this standard is the Washington State Energy Code*.*

### 6. OPERATIONS AND MAINTENANCE REQUIREMENTS

**6.1 Scope.** Section 6 applies to the *building* envelope, *building* systems, and *building* equipment that directly or indirectly consume energy.

**6.2 Operations and Maintenance Program.** A formal operations and maintenance (O&M) program shall be established and implemented in order that the *building* energy-using systems achieve their intended energy efficiency throughout their service life. It documents the O&M objectives, establishes the criteria for evaluation, and commits the *building operator* and maintenance personnel to basic goals of performance (such as minimizing equipment failures, ensuring ongoing efficient operation, and performing identified maintenance requirements).

**6.3 Operation and Maintenance Implementation.** The O&M program shall be implemented in accordance with Normative Annex L.

**Exception:** O&M programs developed and implemented by the building’s serving utility or local government and approved as equivalent by the *AHJ* may be used as an alternate to this requirement.

##### 6.4 Operations and Maintenance Tasks

**6.4.1** Maintenance for all equipment, components, and systems shall be in accordance with applicable manufacturers’ requirements and shall also include tasks that minimize failures and *maintain* energy consumption efficiency, such as those found in Informative Annex D for the following *building* systems:

* *Building* envelope
* Domestic hot water
* Heating, ventilation, and air conditioning
* Refrigeration
* Lighting
* Controls
* Electric power distribution and on-site power generation

**6.4.2** Safe and reasonable access shall be provided to all equipment covered by the O&M program for inspection, maintenance, and repairs.

**6.4.3** The O&M requirements shall be reevaluated when *building* use changes or renovations/alterations are made that affect the facility’s operations.

**6.5 Tenant Improvements.** The *energy manager* (*EM*) shall put in place a formal process to ensure that any tenant improvements involving a change in space use or the relocation of partitions (including partial height partitions) do not change the annual *net energy* use except to the extent that the annual *net energy* use change (increase or decrease) is consistent with any change in the *building*’s *energy target*.

##### 6.6 Equipment and Component Replacement

**6.6.1** When HVAC, domestic hot-water heating, or refrigeration equipment or appliances are replaced, the replacement equipment shall meet the most stringent energy efficiency requirements in the federal equipment standards, *state equipment standards*, and ~~in~~ the *applicable building codes*, ~~in ASHRAE/IES Standard 90.1~~~~2~~~~, or in ASHRAE Standard 90.2~~ ~~3~~.

**~~Exception to 6.6.1:~~** ~~Equipment intended for standby or emergency use only.~~

###### **6.6.2 Lighting Replacement**

**6.6.2.1** When lighting equipment is replaced, the replacement equipment shall meet the most stringent energy efficiency requirements in ~~both~~ the federal equipment standards, *state equipment standards* and in the applicable *building* codes.

**6.6.2.2** The replacement of any lighting equipment shall not increase the existing installed lighting power demand.

**Exception to 6.6.2.2:** The existing installed lighting power may proportionally increase when the current light levels are below those recommended in the IES *Lighting Handbook* 4.

**(This is a normative annex and is a part of this standard.)**

**NORMATIVE ANNEX L OPERATIONS AND MAINTENANCE IMPLEMENTATION**

***Informative Note:*** This annex is based on Section 4 of ANSI/ASHRAE/ACCA Standard 180-2012, *Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems*, with application to the operations and maintenance (O&M) of all *building* systems.

**L1. RESPONSIBLE PARTY**

The *building owner* shall be responsible for meeting the requirements of this standard. The owner may designate other parties that shall be authorized and contractually obligated to fulfill the owner’s responsibility.

**L2. OPERATIONS AND MAINTENANCE PROGRAM**

Each *building* system shall have an O&M program that, at a minimum, preserves the condition of the system and its elements in a manner that enables the system to provide the intended thermal and visual comfort, energy efficiency, and helps to achieve the intended indoor environmental quality required for the *building*.

At a minimum, the O&M program shall contain an inventory of equipment ~~and~~, systems and controls to be inspected and maintained and a maintenance plan describing the goals, objectives, and execution of the systems maintenance program.

**L2.1 Inventory of Items to be Inspected and Maintained.** Components of *building* systems that impact the *building*’s performance shall be inventoried. This detailed list shall be used to establish unacceptable system condition indicators, inspection frequencies, and maintenance tasks.

**L2.2 Maintenance Plan Development.** For any given facility, the maintenance plan shall be written and developed specifically to meet the size, design, scope, and complexity of the systems serving that facility. The plan shall describe required tasks, identify the party responsible for performing these tasks, specify the authorizing party, document completion of required tasks, and subsequently monitor the results. The plan shall include all of the following information.

**L2.2.1 Performance Objectives.** Performance objectives shall incorporate thermal and visual comfort, energy efficiency, and indoor environmental quality metrics. Performance objectives shall be based on design intent and operational criteria specific to a particular system. The source of the performance objectives shall be documented.

**L2.2.2 Condition Indicators.** Indicators of unacceptable system and equipment conditions shall be established. These indicators are measurements or observations of conditions that could lead to failure or performance degradation.

**L2.2.3 Inspection and Maintenance Tasks.** Inspection and maintenance tasks for inventoried equipment ~~and~~ systems and controls shall be established. Inspection shall include the physical assessment of system components and may include measurement of operating parameters and data provided by sensors or a *building* management system (BMS). Maintenance tasks shall include adjustment, service, or replacement of inventoried equipment and systems. Control systems settings, including but not limited to, set points, schedules and sequence of operations shall be inspected and maintained.

**L2.2.4 Inspection and Maintenance Task Frequencies.** Frequency of inspection and maintenance tasks for inventoried equipment ~~and~~ systems and controls shall be established. If unacceptable condition indicators or unacceptable performance is found during two successive inspections, the owner or owner’s designated representative shall investigate and analyze possible causes. At a minimum, the following possible causes shall be investigated:

* *Poor field practices.* Review inspection documentation and/or technician execution to ensure maintenance tasks are performed correctly.
* *Insufficient time budgeted for tasks.* Review time budgeted to the technician to ensure that reasonable time has been given to perform the tasks.
* *Component repairs noted/pending/not made*. Inspect documentation to determine that repair or component replacement has been undertaken.
* *Design issues.* Determine whether underlying design issues are causing successive failures
* *Obsolete equipment or components*. Determine whether the equipment or component has been in service beyond its useful life.
* *Conditions outside of the building system causing failure.* Investigate whether water leaks, vandalism, a problem in the *building* envelope, a problem with the power supplied to the *building*, or some other external factor is causing the problem.

Based on the analysis, the inspection frequency or the maintenance task shall be modified to resolve the deficiency.

If acceptable condition indicators or acceptable performance is found during three successive inspections, the inspection frequency for that task may be reduced from the existing frequency. The reduced frequency shall be based on the specific findings and shall be documented.

Frequency may be adjusted for climate related or operational reasons. Each adjusted frequency shall be documented, including the reason for the adjustment.

***Informative Note:*** Examples include the following:

* **Cooling tower shutdown during the winter.** Inspection and maintenance may be suspended during the shutdown period.
* **A new chiller is installed and the old chiller is retained as a backup.** Inspection and maintenance of the backup unit may be adjusted to reflect fewer operating hours.
* **A new lighting fixture and lamp is installed with a much longer life expectancy.** Inspection and *lamp* replacement frequency may be extended to reflect the new device.

**L2.2.5 Documentation.** A minimum inspection and maintenance documentation package shall consist of the following items:

1. Listings of *building* systems and system components with associated performance criteria pertinent to the facility
2. Inspection and maintenance tasks and the method of tracking (automated or manual)
3. Sufficient record detail and verification (written or electronic) to demonstrate implementation of the maintenance plan.

The inspection and maintenance document directory shall provide easy access and be well organized and clearly identified. Emergency information shall be immediately available and shall include emergency staff and/or agency notification procedures.

**L2.3 Maintenance Plan Authorization and Execution.** Inspection and maintenance tasks shall be performed on an established frequency or upon a documented observance of unacceptable condition. Whether authorized by written or verbal instructions, execution of the task shall be documented and archived for future reference.

**L2.4 Revision of the Maintenance Program.** The O&M program shall be reviewed, and revision considered, in any of the following situations:

1. Modifications to the *building* that impact *building* system performance objectives have occurred.
2. The *building* function or its use has changed in a way that impacts *building* system performance objectives.
3. *Building* system component changes have occurred.
4. One or more systems are found to be incapable of achieving their performance objectives.

Upon documented recommendation from the maintenance provider.