



122-2018 Revised  
7/26/18

STATE OF WASHINGTON  
**STATE BUILDING CODE COUNCIL**

Washington State Energy Code Development  
**Standard Energy Code Proposal Form**

Code being amended:  Commercial Provisions  Residential Provisions

Code Section # C401.2 & C402.2

**Brief Description:**

The Washington Commercial Energy Code currently requires that 100 watts and higher exterior light sources meet minimum efficacy requirements. This proposal reduces the wattage to 50 watts to include more lights and increases the efficacy requirements for these lights to 100 lu/W. Requiring minimum efficacy requirements for exterior light sources provides easy source of energy savings.

**Proposed code change text:** (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

Revise C405.5.1 as follows:

**C405.5.1 Exterior building grounds lighting.** All exterior building grounds luminaires that operate at greater than ~~100~~ 50 watts shall have a minimum efficacy of ~~80~~ 100 lumens per watt unless the luminaire ~~is controlled by a motion sensor or~~ qualifies for one of the exceptions under Section C405.5.2 ~~All other luminaires used for exterior lighting shall have a minimum efficacy of no less than 80 lumens/Watt.. or shall be provided with a lamp greater than or equal to 90 lu/w.~~

**Exceptions:**

1. Solar-powered lamps not connected to any electrical service
2. Luminaires controlled by a motion sensor
3. Luminaires that qualify for one of the exceptions under Section C405.5.2.

**Purpose of code change:**

This proposal requires that exterior grounds lighting greater than 50 watts meet minimum efficacy requirements of 100 lumens/watt or greater or 80 lumens per watt if less than or equal to 50 watts. The proposal also allows for lower efficacy luminaire sources if they are connected by automatic lighting controls, are solar-powered or exempted.

**Your amendment must meet one of the following criteria. Select at least one:**

- Addresses a critical life/safety need.  Addresses a specific state policy or statute.

(Note that energy conservation is a state policy)

Addresses a unique character of the state.

Consistency with state or federal regulations.

Corrects errors and omissions.

Check the building types that would be impacted by your code change:

Single family/duplex/townhome

Multi-family 4 + stories

Institutional

Multi-family 1 – 3 stories

Commercial / Retail

Industrial

Your name Eric Makela

Email address ericm@newbuildings.org

Your organization New Buildings Institute

Phone number 208 863-6924

Other contact name Sean Denniston

**Instructions:** Send this form as an email attachment, along with any other documentation available, to: [sbcc@des.wa.gov](mailto:sbcc@des.wa.gov). For further information, call the State Building Code Council at 360-407-9278.

## **Economic Impact Data Sheet**

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

This proposal will increase the light efficacy requirements for grounds lighting over 50 watts to 100 lumens/watt thereby reducing the energy use of the lighting for larger exterior light sources. This will result in a reduction in exterior lighting energy use benefiting the building owner and potentially the multifamily unit tenant if exterior lighting costs are factored into the apartment rent.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$0.14 square foot (For residential projects, also provide \$[Click here to enter text.](#)/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

- Base light fixture cost of 70 W halogen fixture that will meet the existing energy code requirements: \$118 .00  
<https://www.lightingsupply.com/stonco-sla71mal-6>
- Enhanced 80 W LED light fixture that will meet the proposed efficacy requirements: \$158.33  
<https://www.lightingsupply.com/best-lighting-products-ledmpal80-t-5k>
- Total lumens needed to meet the allowed exterior lighting power allowance for Lighting Zone 3: 182,770 (calculated based on DOE Midrise Prototype Model and total watts allowed / an assumed 55 Lumens/watt light source allowed under the existing requirements)
- Total number of halogen lamps need to provide the required lumens = Total lumens/55 lumens/watt = 114 fixtures
- Total fixture costs of halogen: \$13,515.84
- Total number of LED fixtures needed to provide the required lumens = Total lumens/100 lumens/watt = 21 fixtures
- Total fixture cost of LED: \$18,086.23

Building simulation included exterior of lighting in addition to the building. Total project floor area is 33,700 Sf

Incremental cost per square foot: Total cost difference of lights / floor area = \$0.14/sf

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

0.178 KWH/ square foot (or) [Click here to enter text.](#)KBTU/ square foot

(For residential projects, also provide [Click here to enter text.](#)KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

**Incremental savings data taken from:**

**Technical Document: Energy Savings Study for NBI's *Building Innovation – Multifamily* June, 2017**

All other information included in the LCC Analysis tool and attached as part of this submission.

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

**All questions must be answered to be considered complete. Incomplete proposals will not be accepted.**

No additional enforcement time is required. This requirement is currently in the code and is just being updated.

**All questions must be answered to be considered complete. Incomplete proposals will not be accepted.**