



Oregon

Kate Brown, Governor

Department of Consumer and Business Services

Building Codes Division

1535 Edgewater Street NW

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oregon.gov/bcd

Residential and Manufactured Structures Board

Regular meeting agenda

Wednesday, July 11, 2018, 9:30 a.m.

Conference Room A

Late submission now included, Item VII.B.

Board meetings are broadcast live via the Internet at

<http://www.oregon.gov/bcd>

Click on "View live meetings"

I. Board business

- A. Call to order
- B. Roll call
- C. Approval of agenda and order of business
- D. Approval of the [January 10, 2018](#), board meeting draft minutes
- E. Date of the next scheduled meeting: October 3, 2018
- F. Farewell to leaving member Bruce Dobbs, representative of utility or energy supplier. Also, farewell as a member of the Construction Industry Energy Board
- G. Welcome new member Eli Volem, filling Bruce Dobbs position on this board
- H. Board vote on vice-chair position of this board
- I. Board vote on a member of this board to be represented on the Construction Industry Energy Board

II. Public comment

*This time is available for individuals wanting to address the Board on **non-agenda items only**. The Board will not take action on non-agenda items raised under public comment at this meeting. Testimony on agenda items will be heard when the item is called. (See "Issues to remember when addressing the Board" at the end of this agenda).*

III. Reports

Residential structures program update

IV. Communications - None

V. Appeals - None

VI. Unfinished business - None

VII. New business

- A. Board review and provide a recommendation to the Administrator for proposed amendment to the 2017 Oregon Residential Specialty Code, [Appendix W](#) - Wildfire Hazard Mitigation

- B. Board review and provide comments to the Administrator for changes to the [2018 Oregon Reach Code, Part II Tiny Homes](#) (*Late submission now included*)

VIII. Announcements - None

IX. Adjournment

Issues to remember when addressing the board:

- All public participation is subject to the discretion of the board chair for order of testimony, length and relevance.
- Speakers are generally limited to five minutes.
- Please register on the attendance registration form and on the public testimony registration form, listing the appropriate agenda item.
- The board chair will call you to the front testimony table.
- Please state your name and the organization you represent (if any).
- Always address your comments through the chair.
- If written material is included, please provide 20 three-hole-punched copies of all information to the boards administrator prior to the start of the meeting and, when possible, [staff](#) respectfully requests an electronic copy of materials 24 hours prior to the meeting.

Interpreter services or auxiliary aids for persons with disabilities are available upon advance request. Persons making presentations including the use of video, DVD, PowerPoint, or overhead projection equipment are asked to contact boards coordinator 24 hours prior to the meeting. For assistance, please contact [Debi Barnes-Woods](#) at 503-378-6787.

Please do not park vehicles with "E" plates in "customer only" spaces.

Note: For information regarding re-appointments or board vacancies, please visit the [Governor's website](#).

**State of Oregon
Draft**

Agenda Item I.D

**Residential and Manufactured Structures meeting
Draft meeting minutes
January 10, 2018**

RMSB members present: Jan Lewis, chair, residential structural contractor
Bruce Dobbs, vice-chair, utility/energy supplier
Gordon Anslow, home designer
Forrest Barnes, seller/distributor of new manufactured dwellings
John Chmelir, multi-family contractor
Tonya Halog, structural engineer
Emily Kemper, public member
Douglas Lethin, remodeler residential structural contractor
John Mills, residential building trade sub-contractor
Rebai Tamerhoulet, building official

RMSB members absent: Vacant, manufacturer of manufactured dwellings

Staff present: Mark Long, Administrator of Building Codes Division
Tom Phillips, manager, Regional Program and Training Services
Shane Sumption, manager, Policy and Technical Services
Tony Rocco, structural program chief, Policy and Technical Services
Mark Heizer, P.E., mechanical and energy systems engineer, Policy and Technical Services
Jeremy Williams, P.E., structural program engineer, Policy and Technical Services
Eric McMullen, building codes specialist, Policy and Technical Services
Alana Cox, senior policy advisor, Policy and Technical Services
Richard Baumann, policy analyst, Policy and Technical Services
Holly Tucker, administrative specialist, Policy and Technical Services
Debi Barnes-Woods, boards administrator/coordinator, Policy and Technical Services

Guests present: Blake Shelide, Oregon Department of Energy
Warren Cook, Oregon Department of Energy
James Bela, Earthquake Awareness

I. Board business

A. Call to order

Chair Jan Lewis called the Residential and Manufactured Structures Board meeting to order at 9:30 a.m. The meeting was held at the Building Codes Division in Conference Room A, 1535 Edgewater Street NW, Salem, Oregon.

B. Roll call

All members were present in Conference Room A.

This board has one vacant position: Manufacturer of manufactured dwellings.

C. Approval of agenda and order of business

Chair Lewis amended the agenda by moving Item IV. Communications before Item II. Public comment.

Chair Lewis **RULED** the amended agenda and new order of business approved.

D. Approval of the board meeting draft minutes of November 30, 2017.

Chair Lewis **RULED** the draft meeting minutes of November 30, 2017, final.

E. Date of the next regularly scheduled meeting

The next meeting date is scheduled for April 4, 2018.

F. Welcome new member Forrest Barnes, filling the vacant position for manufactured dwellings

Mr. Barnes was welcomed to the board filling the vacant position of seller or distributor of new manufactured dwellings. Mr. Barnes has worked at Palm Harbor Homes for the last 22 years.

Tony Rocco was also introduced as the new structural program chief in the Policy and Technical Services section. Mr. Rocco has worked at the division since 2010.

Agenda out-of-order

IV. Communications

Governor's Energy Efficiency Executive Orders: No. 17-20 and 17-21

Administrator of Building Codes Division Mark Long said that the division is focusing on the Governor's Executive Order No. 17-20. A series of action items are asked of the division that are included in the order:

- Solar Ready Building Construction and Electric Vehicle Ready Building Construction. (Impacts the space in the electrical panel, which is a significant cost to the consumer). A place holder for these two items was

left to be included in the 2017 Oregon Residential Specialty Code. The work the division did during code review is now captured in Executive Order No. 17-20. Solar is due by October of 2020 and Electric Vehicle is due by October 2022.

- Zero-Energy Ready Homes. The appropriate advisory boards for newly constructed residential buildings are to achieve at least equivalent performance levels with the 2017 Oregon Department of Energy Zero Energy Ready Standard by October 1, 2023. That standard is to include:
 - Additional air-sealing for the envelope cavity
 - Air change handling and exchange equipment
 - Additional envelope insulation
 - Ducts inside the building cavity
 - Robust discussion about privatization, or these items remain through building inspections
- High Efficiency Water Fixtures. This has already been addressed in the 2017 Oregon Residential Specialty Code through efficient showers and water closets. Lavatories and sinks still need to be addressed by January 2020.
- Increased Water Efficiency in On-Site Reuse. For all constructed commercial building to recapture water for irrigation in commercial applications.

The Governor put together a group from four agencies that worked on the executive order for each division and their boards to implement each directive in this order using existing internal processes and established rulemaking procedures.

Administrator Long said he will be asking each board to form a group with stakeholder involvement, to work on cost analysis using the least cost methods available.

Agenda back in order

II. Public comment – None

III. Reports

Residential structures program update

Tony Rocco, structural program chief, briefly discussed code change classes being taught throughout jurisdictions in Oregon for building inspector certifications.

Chief Rocco introduced Eric McMullen, building codes specialist, Policy and Technical Services, as the newest team member. Eric comes with extensive background experience in Fire & Life Safety working in that industry for over 26 years.

Shane Sumption, manager, Policy and Technical Services, provided a short presentation on House Bill 2737, which required sleeping lofts and ladders or alternating tread devices as the primary means of egress from a sleeping loft, for small homes. He simplified the definition of small homes by showing pictures to clarify the difference between recreational vehicles and structures.

Manager Sumption explained that the code amendments for sleeping loft and ladders are now part of the residential specialty code. HB 2737 brought some of the components of a sleeping area found in a fifth wheeler, as an example, from the recreational vehicle into the standard building code, while keeping in mind life/safety issues. The primary responsibility of the state is found in ORS 455.020 where the state shall establish uniform performance standards providing reasonable safeguards for health, and safety for the occupants and users.

The division will be bring this back to the board at a later date for permanent adoption.

As per Administrator Long's earlier request during the discussion of Governor's Energy Efficiency Executive Order No. 17-20, Chair Lewis mentioned the development of the cost analysis committee and outreach. She will reach out to the board for committee membership with plans of having the committee ready to start its work by April 2018.

VII. New business - None

V. Announcements - None

VI. Adjournment

Chair Lewis adjourned the Residential and Manufactured Structures Board at 11:07 a.m.

Respectfully submitted by Debi Barnes-Woods Boards
Administrator/Coordinator.

State of Oregon

Board memo

Building Codes Division

July 11, 2018

To: Residential and Manufactured Structures Board

From: Richard S. Rogers, chief building official, Policy and Technical Services

Subject: Reconsideration of Amendment to the 2017 Oregon Residential Specialty Code (ORSC), Appendix W - Wildfire Hazard Mitigation

Action requested:

Board reconsideration of a public code change proposal originally submitted during the public proposal process for the 2017 ORSC.

Background:

Included in the proposals received from the public was a new “Appendix W” intended to be available for local adoption. The proposed amendment captured various fire-resistant roofing and cladding materials. Local governments would then be able to adopt the appendix as part of its overall wildfire hazard mitigation strategy.

The proposal was reviewed by the 2017 ORSC committee and the Residential and Manufactured Structures Board with a recommendation for the division to proceed to rulemaking.

Upon review by the division, three specific areas of concern were identified. In a May 16, 2017, letter to the board, the division returned the proposal for further action. The areas of concern were identified as follows:

- The proposal appeared to be granting “pre-approval” for certain proprietary products and vendors. The division noted that such endorsements were inappropriate for inclusion in the state building code.
- It was not clear as part of the record, whether the issue is mapping or code standards or both. Testimony provided to the board included descriptions of a fire that may be outside of the wildfire zone and thus not subject to a standard. The division was concerned that the official record may be unclear whether code or locations should change. This confusion, with the unusual documents included in the record suggested that further work was necessary.

- There was conflicting testimony regarding cost impact. Proponents suggested that a California study indicated that the proposed measures had a low cost impact. Other estimates indicated that costs could be between \$6k and \$12k per home.

On May 29, 2018, the division received notice from the City of Ashland's Division Chief Ralph Sartain, of their desire to have Appendix W reconsidered by the board. In his letter to the board, Mr. Sartain reports that he has responded to the concerns raised by the division.

Options:

The division respectfully requests that the board review Mr. Sartain's attached documents and pass a motion providing for one of the following options:

- Approve the proposed code amendment and forward to the Administrator for rule making and subsequent adoption, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.
- Revise and approve the proposed code amendment and forward to the Administrator for rule making and subsequent adoption, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.
- Disapprove the proposed code amendment and state the reason for the disapproval for the record.

PAM MARSH
STATE REPRESENTATIVE
DISTRICT 5
SOUTHERN JACKSON COUNTY



HOUSE OF REPRESENTATIVES

May 29, 2018

Jan Lewis, Chair
Residential and Manufacturing Structures Board
Building Codes Division
State of Oregon

Dear Chair Lewis and members of the Board:

I understand that the Residential and Manufacturing Structures Board is scheduled to consider a submittal from Ashland Fire and Rescue for adoption of Appendix W to the Oregon Residential Specialty Code to address wildfire hazard mitigation. I am writing to convey my strong support of Ashland's proposal.

Appendix W will allow local jurisdictions that have designated hazardous wildfire areas to adopt community-specific mitigation measures in order to reduce conflagration potential and help protect residents, first responders, and property. While it is true that individual cities can currently pursue their own path toward more rigorous requirements, adoption of a statewide standard will promote code consistency by providing a common path in the ORSC.

The code language in Appendix W allows materials/assemblies that have passed recognized standardized tests to be acceptable for use. The language also provides a path for acceptance of new materials/assemblies to be accepted if they pass a standardized testing process.

Given the kind of summer we had last year here in Oregon, and the wildfire experience that we saw devastate whole communities in California, wildfire mitigation measures will be a critical tool in our vulnerable regions. A new home constructed with fire resistant materials and using appropriate building techniques can protect the structure, as well as inhibit the fire's progress deeper into the neighborhood.

I understand that Appendix W was forwarded for review in another request last year. The current submission has addressed the deficiencies cited at that time by Mark Long, BCD Administrator.

For towns and cities like Ashland that adjoin the state's forested lands, wildfire mitigation measures will be an integral component of the community's fire prevention strategy. I urge you to support adoption of Appendix W.

Regards,

A handwritten signature in black ink that reads "Pam Marsh". The signature is written in a cursive, flowing style.

Pam Marsh

Representative House District 05
Southern Jackson County

May 29, 2018

To: Jan Lewis, Chair – Residential and Manufactured Structures Board
RE: Appendix W, Re-review/Update
From: Ralph Sartain, Ashland Fire & Rescue

Re: Appendix W

Chairperson Lewis,

I am formally requesting that Appendix W be re-considered for inclusion into the 2017 Oregon Residential Specialty Code. This letter is intended to give you a background of Appendix W and hopes to address the concerns which the Building Codes Division brought up last year following testimony.

Background:

Deputy Chief/Fire Marshal Greg Kleinberg (DC/FM) first submitted a wildfire hazard mitigation code amendment in September 2016. In February 2017, he testified in front of the Code Review Committee with widespread support. At that meeting, changes to the original submittal were suggested by the Code Review Committee and it was also suggested that a workgroup be formed. The workgroup was formed and they improved the original proposal which was then developed into an appendix version, as suggested by the Committee.

On April 5th, 2017, DC/FM Kleinberg again testified in front of the Code Change Committee along with several supporters of Appendix W. At the conclusion of the testimonies, the Code Review Committee **voted 6-1 to recommend** Appendix W be included in the 2017 Oregon Residential Specialty Code.

On May 10th, 2017, DC/FM Kleinberg testified in front of the Oregon Residential and Manufactured Structures Board along with other supporters. At this meeting, there was no opposition presented and there were comments from the Board that wildfire mitigation construction standards were long overdue in Oregon because of the wildfire threat in certain areas. One homebuilder on the Board, who is also a leader in a Homebuilders Association, stated that the Association supported this because they were allowed to be part of the process. The Board **unanimously approved** the Code Change Committee's recommendation to move the 2017 Oregon Residential Specialty Code forward including Appendix W.

On the afternoon of May 16, 2017, DC/FM Kleinberg received an email regarding Appendix W from the Building Codes Division with an attached letter signed by Administrator Mark Long to the Board Chair stating among other things that “I am returning this proposal to the Board for further action, if any”. Also on May 16th an agenda was sent out by mass email from BCD for the next public hearing in the process on June 20th. It was a surprise to see on the June 20, 2017 agenda that Appendix W was listed as denied.

ASHLAND FIRE & RESCUE

455 Siskiyou Boulevard
Ashland, OR 97520
(541) 482-2770 • Fax (541) 488-5318
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On June 20, 2017 Deputy Fire Marshal Tanner Fairrington testified in front of the Oregon Residential and Manufactured Structures Board, on behalf of DC/FM Kleinberg, about Appendix W, as a sensible and reasonable measure to better protect communities in wildfire prone areas from wildfire disasters.

Throughout the testimonies the following information was conveyed:

1. Oregon has many areas throughout the state that are threatened each year by wildfire risks. Communities and first responders are at risk. Appendix W would make homes more ignition resistant in wildfire hazard zones, reducing the risk of conflagrations. Reducing the conflagration threat will lead to lives being saved, injuries prevented, and property preserved. We have mitigation requirements for flooding, freezing, earthquakes, severe winds, snow loading, etc. in the Oregon Residential Specialty Code (ORSC), yet, no significant measures to protect homes from wildfire threats.
2. This appendix is not a statewide mandate, but would allow local jurisdictions that have designated wildfire hazard zones, to adopt mitigation measures that specifically apply to new homes built in those areas. This would reduce the conflagration potential and help protect their community, first responders, and property. The local adoption process would require public hearings and be a local decision.
3. This proposal supports the following purposes spelled out in section R101.4 of the ORSC:
 - a. To establish minimum requirements to safeguard the public safety
 - b. To safeguard the general welfare through safety to life and property from fire
 - c. To provide safety to firefighters and emergency responders during emergency operations
4. This would promote the Building Codes Division goal of statewide code consistency by providing common language and code requirements in the ORSC.
5. There are many approved materials that have already passed standardized tests for use in hazardous wildfire areas, including 79 siding products and 43 decking products. The intent of this code language in Appendix W is to allow materials/assemblies that have passed recognized standardized tests to be acceptable for use. The language also provides a path for acceptance of new materials/assemblies to be accepted if they pass a standardized testing process. The testing requirements in the appendix follow the initial California testing requirements which later developed into ASTM standards.
6. The cost per home is minimal (Note: this cost would only affect homes built in wildfire hazard zones if Appendix W is adopted in that jurisdiction).

On September 6, 2017 I was hired as the Division Chief of Fire and Life Safety for the City of Ashland. Upon being hired I was asked to help bring life back into Appendix W. I reached out to Mark Long who advised me of the reasons he denied Appendix W and he asked that I address the issues and re-submit for clarification. Please find the attached explanations for the issues provided to me. I hope this delivers the information needed so that we can bring this code amendment to communities who wish to help reduce their risk from wildfire on new construction.

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Addressed Building Code Division Concerns:

#1) Clarification of Reason for the proposal:

The Appendix information is a combination of established building practices to help reduce the propagation of fire in the wildland areas. The Appendix is not mandatory statewide, but allows for local adoption of wildfire mitigation construction standards in the wildfire hazard zones to help reduce ignition potential of homes.

The City of Ashland looked at attempting to put in place a local adoption option, however, we found several neighboring jurisdictions, communities and counties who want the ability to bring Appendix W into their jurisdictions as well. Because we do not want to cause additional work for the State or this Board, we decided to address the original concerns and we are asking for Appendix W to be added as a locally adoptable Appendix to the 2017 Oregon Residential Specialty Code.

Last fall showed us just how quickly fire loss can spread and the devastation that can follow. The fires in Northern California were horrific with thousands of home and business destroyed. People can argue their population is far denser than that of Southern Oregon and, even though they have far more resources to throw at the fires, they were no match for the devastation that followed. While this adoption would not have prevented every loss, as many of the residences were built prior to wildfire mitigation codes, it could have helped reduce the spread of wildfire in new construction.

It is important to note that there is not a retroactive component on this Appendix and we are not seeking a state retroactive mandate. Only the ability to adopt the code at a local level to help reduce the spread of wildfire in new construction in our beautiful communities. We must start somewhere and at some point, to use our built environment to help us fight the spread of wildfire as we continue to push further and further with homes into the majestic beauty that is Southern Oregon.

Here are some statistics to help understand the reason for this code adoption:

- In 2017:
 - 10,026,086 acres burned in 71,499 wildfires across the U.S.,
https://www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html
 - 2017 was the most expensive wildfire season on record, taking 43 lives and costing nearly \$12 Billion in insurance claims in California alone.
<https://www.iii.org/fact-statistic/facts-statistics-wildfires>
 - Oregon experienced 665,000 acres of forest that burned in more than 2,000 fires, threatening more than 7,000 people who needed to be evacuated. During the peak season in early September, 8,000 firefighters were working in Oregon trying to suppress the fires. Total fire suppression cost for these fires was \$454,000,000.
<https://oregonforests.org/sites/default/files/2018-01/OFRI%202017%20Wildfire%20Report%20-%20FINAL%2001-02-18.pdf>

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- More than 72,000 U.S. communities are at risk from wildfires
- Long-term trends reveal the cost and dangers of defending homes in the WUI will continue to increase
- Wildfires are primarily occurring in the west
- Effects of a trending warming climate include wildfires that are bigger, wildfires that burn longer, an increase in length of fire season, and more acres burned
- Since 1960, 60% of new homes in the U.S. have been built in the WUI
- 40% of single family homes currently in the U.S. are in the WUI
- Since 1990 the average number of structures burned per year in U.S. has more than tripled
- Insurance losses from wildfires keep rising
- The average number of firefighter deaths per year is increasing for wildland fires
- One study has shown average cost of defending a home from a wildfire is \$82,000 per home and sometimes as high as \$400,000-600,000 per home
- Programs such as Firewise Communities and Ready, Set Go! promote more ignition resistant homes as part of the overall strategy to reduce wildfire loss

#2) Oak Knoll Fire:

During testimony the Oak Knoll fire in Ashland was discussed. While this fire was just outside of the designated wildfire hazard zone, it was brought up as an example of how quickly multiple homes can burn in a wildfire. This Appendix would not have been applicable at the time of the fire as the homes had already been constructed and as previously stated there is not a retroactive component to this Appendix.

The Oak Knoll fire was an illustration of how quickly fire can spread and what barriers (such as I-5) can and cannot do to help alleviate the spread of fire. It was also an illustration of the ultimate sacrifice of a Battalion Chief to protect a community from the spread of wildfire. Wildfire in Southern Oregon is everyone's fight regardless of a line on a map. While the Oak Knoll fire did not originate in the designated wildfire hazard zone of Ashland, it originated just over 4,000 feet from that designated area on a map.

The fires in the fall of 2017 in Northern Oregon showed us that embers of a wildfire can travel more than 2 miles and even jump over a natural barrier like the Columbia River starting fires in a neighboring state. Fire does not care about a designated map area. While we are not stating and do not believe this appendix is for every city, county or jurisdiction, we are asking for the ability to enforce this stricter standard, and provide a platform for builders around the state to use one document and one unified approach to reduce fire risk in the built environment if adopted.

Since the submission of the original Appendix W the City of Ashland has taken steps and is going through the process to make the entire city a wildfire hazard zone. Our topography and size has shown that all portions of our community are well within the ember spread of a mass wildfire. If approved, we understand that our entire community will fall under this Appendix for all new construction in the City of Ashland and have the support of our Mayor. (See attached letter of support).

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#3) BCD Logo and State Seal:

An additional issue appeared when a booklet as an exhibit was presented that bared the Oregon State Seal as well as Buildings Codes Division, Office of the State Fire Marshal and Oregon Department of Forestry names into the record. The handbook was not an endorsement of a specific product and was only prepared as a draft document for testimony to show products/assemblies and companies which provide the products which have been tested to be ignition resistant.

The booklet was created by one member in the workgroup for testimony showing that there are many materials/assemblies available which can be used to mitigate ignition potential. This booklet was not intended as an endorsement of specific products, but rather a resource manual. This submittal was a possible tool to assist local builders and AHJ's in being able to locate products which meet ignition-resistant criteria. While it would be nice for the State to provide such a resource booklet, it is not necessary for the approval of Appendix W and can be omitted.

Again, this booklet is not an endorsement of any specific product/assembly and was not presented to the board in an attempt to show acceptance or endorsement of one product over another.

#4) Reference to Hardie Siding®

In the original testimony the word "Hardie Siding ®" was used relating to a type of ignition resistive material. Hardie Siding® is just one example of many ignition resistive materials. It was a mistake to name a product rather than a material reference. I too, would have made this error in testimony had I been the one giving the initial testimony. While training to testify before a hearing or in court we are taught to use illustrations that most people can understand or associate with, Hardie Siding® would be just that type of word or illustration.

The reference to Hardie Siding ® was not an endorsement of this product but an illustration. Please note that no proprietary products are listed in Appendix W. Each component listed in Appendix W has a referenced ASTM standard. The manner and product the contractor/homeowner uses to meet the Appendix W is strictly up to them.

#5) Cost disparity in construction:

During Testimony the initial submittal for the construction of a home to meet the state requirement of a 1200 square foot entry level home was \$3,200. This submittal was presented by DC/FM Kleinberg via a construction quote from Dean Ledbetter construction and described where there would be cost increases. On 12-29-2016, Riley Hayes a global purchasing manager for Pahlisch Homes, Inc. submitted a cost analysis of a home and stated the cost submitted by the original petitioner was... "grossly under exaggerated" ... and submitted their own copy showing a cost of \$12,502.23 to meet the requirements of Appendix W.

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I have reviewed the letter submitted by Mr. Hayes and find the amount of \$12,502.23 to be unsubstantiated. At no point in this letter is there a statement as to what the square footage of the home is in their estimate. Nor do they break down on what they are basing the cost increase.

One substantial increase in the letter comes in the form of framing and framing labor costs. In framing material costs Mr. Hayes stated the cost would rise from \$15,253.00 to \$18,142.10, and the corresponding labor would rise from \$12,900.00 to \$14,400.00. The total framing increase amounts to \$4,300.00. Appendix W does not modify the internal framing of a home. The only possible framing modifications are for enclosed eaves. Additionally, Mr. Hayes stated the window cost would increase from \$5,781.19 to \$7,988.56, an increase of \$2,207.37. Currently homes in Oregon are required by code to use dual-pane glass. There should be no increase for window products because of Appendix W.

Also in the quote Mr. Hayes noted a \$1,100 increase in roofing material and labor. Most homes being built currently use an asphalt type roofing which already has a Class A rating. There should be no increase in roofing material and labor. Finally, he quotes a \$4,500 increase in siding materials and labor. Again, this is dependent on what type of siding was used which is not addressed in Mr. Hayes submittal. If a contractor already uses one of the compliant ignition-resistant siding materials on the homes they build, there would be no increase in material and labor.

Without understanding where Mr. Hayes calculated the numbers, the amount of \$12,502.23 provided cannot be substantiated. Because I am not a contractor and I want to present this as openly as I can, and knowing that Ashland is one of the most expensive places in Oregon to build and live, I reached out our local contractors to obtain bids for construction of a home using Appendix W.

I provided the contractors with a copy of the Draft Appendix and asked them to provide a cost based on the required 1,200 square foot starter home. The first contractor is Dave DeCarlow. His email and cost break down is attached. Dave's cost to build the Appendix W starter home, as required by BCD for the analysis, was an increase of \$2,302.00 (see attached email). As Dave clearly states in the email some larger custom homes would see a significant cost increase, however, we are required to address the 1,200-square foot starter home.

The second submittal came from Jason Eaton of Conscious Construction. Jason advised the cost of applying Appendix W on a starter home would be \$1,970 (see attached email). These two amounts are a far cry from the \$12,502.23 of Riley Hayes. Jason also stated the cost would be significantly more on any custom homes. Please understand by requirements we have to address a 1,200-square foot starter home, but to be open and honest we must realize this is not the cost of a larger custom home on the hillside of Ashland.

During his initial testimony DC/FM Kleinberg testified the following information which I believe to be accurate:

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- Roof: Should be no cost increase for roof covering: Asphalt shingles are the most prevalent roof covering in Oregon and due to materials used in their construction, most asphalt shingle roof assemblies already have a Class A fire resistance rating.
- Vertical Walls, Wall Covering: Should be no cost increase for ignition-resistant siding: Many of the listed materials are already being widely used
- Vents: Added cost for ember and flame intrusion resistant
- Roof gutters: Minimal cost increase for screening.

Fire in Southern Oregon wildland is not just a Southern Oregon fight, but a State of Oregon fight. While we can put a dollar amount on, and replace the loss of a structure or certain material items, there cannot be a dollar amount put on the devastation in the human element. We cannot put a dollar amount on lost photos, sentimental items, heirlooms or the loss of a pet. We cannot put a dollar amount on the feelings of loss and displacement a person harbors following a fire loss. We can only do our part to help protect our communities before the loss by using the built environment to help mitigate the loss and spread from a wildfire.

In closing, I hope this letter provides the information you need to move Appendix W forward once again to BCD Administrator Mark Long for his approval. Please accept my sincerest apology for any misunderstandings or misspoken words before the committee as I do not believe that was anyone's intention. I thank you for the opportunity to address the issues. Our goal is to provide one code that can be adopted locally, so there is not a difference in the built environment in wildfire hazard zones from one jurisdiction to the next. Also, please find additional letters of support for Appendix W. I look forward to speaking with you and if you have any questions or comments please do not hesitate to contact me.

Sincerely,



Ralph Sartain,
Division Chief Fire and Life Safety
Ashland Fire & Rescue

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Appendix W

Wildfire Hazard Mitigation

(Not adopted by the State of Oregon, but may be adopted by local municipalities)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION W101 GENERAL

W101.1 Scope. The provisions of this chapter shall apply to new dwellings and their accessory structures located in a wildfire hazard zone.

W101.2 Objective. The objective of this chapter is to establish minimum standards for the protection of life and property by increasing the ability of dwellings and their accessory structures located in or adjacent to vegetated areas subject to wildfires, to resist the intrusion of flames or burning embers presented by such fires.

W101.3 Wildfire Hazard Zone Determination. A wildfire hazard zone is an area legally determined by a jurisdiction to have special hazards caused by a combination of combustible natural fuels, topography and climatic conditions that result in a significant hazard of catastrophic fire over relatively long periods each year. Wildfire hazard zones shall be determined using criteria established by the Oregon Department of Forestry.

SECTION W102 DEFINITIONS

W102.1 Definitions. The following words and terms shall, for purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of the International Building Code for general definitions.

Heavy Timber. For the use in this Section, heavy timber shall be sawn lumber or glue laminated wood with the smallest minimum nominal dimension of 4 inches (102 mm). Heavy timber walls or floors shall be sawn or glue-laminated planks splined, tongue-and-groove, or set close together and well spiked.

Ignition-Resistant Material. A type of building material that resists ignition or sustained flaming combustion sufficiently so as to reduce losses from

wildland-urban interface conflagrations under worst-case weather and fuel conditions with wildfire exposure of burning embers and small flames. Such materials include any product designed for exterior exposure that, when tested in accordance with ASTM E84 or UL 723 for surface burning characteristics of building materials, extended to a 30-minute duration, exhibits a flame spread index of not more than 25, shows no evidence of significant progressive combustion, and whose flame front does not progress more than 10 ½ feet (3.2 m) beyond the centerline of the burner at any time during the test.

Wildfire. Any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources.

Wildfire Exposure. One or a combination of circumstances exposing a structure to ignition, including radiant heat, convective heat, direct flame contact and burning embers being projected by a vegetation fire to a structure and its immediate environment.

Wildland-urban interface area. That geographical area where structures and other human development meets or intermingles with wildland or vegetative fuels.

SECTION W103 APPLICABILITY

W103.1 Wildfire hazard zone requirements. Dwellings and their accessory structures shall be protected against wildfire in accordance with the requirements of Appendix W in addition to other requirements of this code.

Exceptions:

1. Buildings of an accessory character having a Class A or B roof and not exceeding 120 square feet in floor area, when located at least 30 feet from the applicable building.
2. Buildings of an accessory character of any size having a Class A or B roof and

located at least 50 feet from an applicable building.

3. Buildings classified as an Agricultural Building, having a Class A or B roof and when located at least 50 feet from an applicable building.
4. Additions to and remodels of buildings originally constructed prior to the adoption date of this code where the addition or remodel increases the total square footage of the structure by less than 100%.

SECTION W104 ROOFING

W104.1 Roofing. Roofing shall be asphalt shingles in accordance with Section R905.2, slate shingles in accordance with Section R905.6, metal roofing in accordance with Section R905.4, tile, clay or concrete shingles in accordance with Section R905.3 or other approved roofing which is deemed to be equivalent to a minimum Class B rated roof assembly. Wood shingle and shake roofs are not permitted in a wildfire hazard zone as defined by Section W103.

Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.

Where valley flashing is installed, the flashing shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72 pound (32.4 kg) mineral-surfaced non-perforated cap sheet complying with ASTM D3909 at least 36-inch-wide (914 mm) running the full length of the valley.

W104.1.1 Reroofing or repair of roofing of existing buildings. When 50 percent or more of the roof covering of any building is repaired or replaced within one year, the roof covering shall be made to comply with Section W104.1.

W104.2 Roof gutters. Roof gutters shall be constructed of noncombustible materials and be provided with the means to prevent the accumulation of leaves and debris in the gutter.

SECTION W105

VENTILATION

W105.1 Ventilation. Where provided, ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation shall be in accordance with Sections R408.1 and R806 and be designed to resist building ignition from the intrusion of burning embers and flame through the ventilation openings. Ventilation openings shall be fully covered with noncombustible corrosion-resistant metal wire mesh, vents, other materials or other devices. The dimensions of the vent screening shall be a minimum of 1/16-inch (1.6mm) and a maximum of 1/8-inch (3.2mm).

W105.1.1 Ventilation opening on the underside of eaves and cornices. Vents shall not be installed on the underside of eaves and cornices.

Exceptions:

1. The Building Official may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.
2. Vents complying with the requirements of Section W105.1 may be installed on the underside of eaves and cornices if the exterior wall covering and exposed underside of the eave are of non-combustible material or ignition resistant material and the vent is located more than 12 feet from the ground or walking surface of a deck, porch, patio or similar surface.

SECTION W106 EXTERIOR WALLS

W106.1 Exterior vertical walls. The exterior wall covering or wall assembly shall comply with one of the following requirements:

1. Noncombustible material
2. Ignition-resistant material
3. Heavy timber exterior wall assembly
4. Log wall construction assembly
5. Wall assemblies that have been tested in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in ASTM E2707 with the conditions of acceptance shown in Section W106.2.

Exception: Any of the following shall be deemed to meet the assembly performance criteria and intent of this section:

1. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing
2. The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

W106.1.1 Extent of exterior wall covering. Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2 inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

W106.2 Conditions of acceptance when tested in accordance with ASTM E2707. The test shall be conducted in triplicate and the conditions of acceptance in 1 and 2 below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be run. All of the additional tests shall meet the conditions of acceptance.

1. Absence of flame penetration through the wall assembly at any time.
2. Absence of evidence of glowing combustion on the interior surface of the assembly at the end of the 70-min test.

SECTION W107 OVERHANGING PROJECTIONS

W107.1 Overhanging projections. All projections (exterior balconies, carports, decks, patio covers, porch ceilings, unenclosed roofs and floors, overhanging buildings and similar architectural appendages and projections) shall be protected.

W107.1.1 Enclosed roof eaves and roof eave soffits. The exposed underside of enclosed roof eaves having either a boxed-in roof eave soffit with a horizontal underside, or sloping rafter tails with an exterior covering applied to the underside of the rafter tails, shall be protected by one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum

sheathing applied behind an exterior covering on the underside of the rafter tails or soffit

4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter tails or soffit including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
5. Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in Section W107.2 when tested in accordance with the test procedures set forth in ASTM E2957

Exceptions: The following materials do not require protection:

1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails
2. Fascia and other architectural trim boards

W107.1.2 Exterior porch ceilings. The exposed underside of exterior porch ceilings shall be protected by one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind the exterior covering on the underside of the ceiling
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the ceiling assembly including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
5. Porch ceiling assemblies with a horizontal underside that meet the performance criteria in Section W107.2 when tested in accordance with the test procedures set forth in ASTM E2957

Exception: Architectural trim boards.

W107.1.3 Floor projections. The exposed underside of a cantilevered floor projection where a floor assembly extends over an exterior wall shall be protected by one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside

of the floor projection including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual

5. The underside of a floor projection assembly that meet the performance criteria in Section W107.2 when tested in accordance with the test procedures set forth in ASTM E2957

Exception: Architectural trim boards.

W107.1.4 Underfloor protection. The underfloor area of elevated or overhanging buildings shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed underfloor shall consist of one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the floor including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
5. The underside of a floor assembly that meets the performance criteria in Section W107.2 when tested in accordance with the test procedures set forth in ASTM E2957

Exception: Heavy timber structural columns and beams do not require protection

W107.2 Conditions of acceptance when tested in accordance with ASTM E2957. The test shall be conducted in triplicate and the conditions of acceptance in 1 through 3 below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be run. All of the additional tests shall meet the conditions of acceptance.

1. Absence of flame penetration of the eaves or horizontal projection assembly at any time.
2. Absence of structural failure of the eaves or horizontal projection subassembly at any time.
3. Absence of sustained combustion of any kind at the conclusion of the 40-minute test.

SECTION W108 DECKING SURFACES

W108.1 Decking Surfaces. The walking surface material of decks, porches, balconies and stairs shall

be constructed with one of the following materials:

1. Material that complies with all of the performance requirements of Section W108.2 when tested in accordance with both ASTM E2632 and ASTM E2726.
2. Ignition resistant material that complies with the performance requirements of Section W102 when tested in accordance with ASTM E84 or UL 723.
3. Exterior fire retardant treated wood
4. Noncombustible material
5. Any material that complies with the performance requirements of Section W108.3 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also either noncombustible or ignition-resistant material.
6. Any material that complies with the performance requirements of ASTM E2632 when attached exterior wall covering is also either noncombustible or ignition-resistant material.

Exception (to items 6): Wall material may be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements ASTM E 84 with a Class B flame spread rating.

W108.2 Requirements for type of ignition-resistant material in Section W108.1, item (1). The material shall be tested in accordance with ASTM E2632 and in accordance with ASTM E2726 and shall comply with the conditions of acceptance shown below. The material shall also comply with the performance requirements of Section W103 for ignition resistant material when tested in accordance with ASTM E84 or UL 723.

W108.2.1 Conditions of acceptance for ASTM E2632: The test shall be conducted in triplicate and the conditions of acceptance in 1 through 3 below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be run. All of the additional tests shall meet the conditions of acceptance.

1. Peak heat release rate of less than or equal to 25 kW/ft² (269 kW/m²)
2. Absence of sustained flaming or glowing combustion of any kind at the conclusion of the 40-min observation period.
3. Absence of falling particles that are still burning when reaching the burner or floor.

W108.2.2 Conditions of acceptance for ASTM

E2726: The test shall be conducted in triplicate and the conditions of acceptance in 1 and 2 below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be run. All of the additional tests shall meet the conditions of acceptance.

1. Absence of sustained flaming or glowing combustion of any kind at the conclusion of the 40-min observation period
2. Absence of falling particles that are still burning when reaching the burner or floor.

W108.3 Requirements for type of ignition-resistant material in Section W108.1, item (6):

The material shall be tested in accordance with ASTM E2632 and shall comply with the following condition of acceptance. The test shall be conducted in triplicate and the peak heat release rate shall be less than or equal to 25 kW/ft² (269 kW/m²). If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be run. All of the additional tests shall meet the condition of acceptance.

SECTION W109 WINDOWS, SKYLIGHTS, AND DOORS

W109.1 Windows and skylights. Exterior windows, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block, or have a fire resistance rating of no less than 20 minutes.

W109.2 Doors. Exterior doors shall comply with one of the following:

1. Shall have an non-combustible or ignition-resistant exterior surface material or cladding, or
2. Shall be constructed of solid wood core with a minimum 1 3/8 inch thickness of stiles and rails and a minimum 1 1/4 inch thickness of raised panels, except for the exterior perimeter of the raised panel that may taper to a tongue not less than 3/8 inch thick, or
3. Shall have a fire-resistance rating of not less than 20 minutes when tested in accordance to NFPA 252.

**Agenda
Item
VII.B.**

State of Oregon

Board memo

Building Codes Division

July 11, 2018

To: The Residential and Manufactured Structures Board

From: Richard Rogers, chief building official, Policy and Technical Services

Subject: Tiny House Reach Code

Action requested:

Provide input to the division. No motion or approval is required.

Background:

Under ORS 455.500, the division may adopt Reach Code standards. Reach Code standards are a voluntary set of standards and are not limited to energy issues. Working with the Department of Justice, the division has identified a customer choice path for builders of tiny house projects to use the Reach Code. The Reach Code is not part of the state specialty codes and does not require or mandate all of the processes for adoption as the codes adopted under the state building code system. The division is presenting these Reach Code concepts for the board to comment and make suggestions. These Reach Code provisions do not change or eliminate the building codes previously adopted by the division as required by HB 2737 (2017).

Under this concept a builder can chose to use either the two occupancy classification paths available through the Reach Code or build to the state building code. Since the Reach Code provides a choice to use the 2018 IRC model code in its entirety, the areas the division anticipates comments are on the policy issues identified in the Reach Code document. Those issues include the use of the new R5 classification, the role of the local building official and the builder responsibilities. Builders now have multiple choices to provide temporary, transitional and/or permanent housing using tiny house products. Local government must accept the standards built to the Reach Code, but retain the ability to determine land use, length of stay, temporary or permanent uses and how these types of structures will be used outside of established recreational vehicle, mobile home and transitional housing areas. The division anticipates adoption by September 1, 2018.



2018 Oregon Reach Code

(Ref.: ORS 455.500)

The **Oregon Reach Code** is a statewide optional construction standard approved by the Building Codes Division in consultation with the appropriate advisory board. This code:

- Is separate from the state building code;
- Is administered at the local level;
- Requires building officials to recognize and accept the standard, method, installation, product, equipment or device if a person applies to construct, reconstruct, alter or repair a building in conformance with the Oregon Reach Code;
- Is applicable at the designer's and contractor's discretion; and
- Does not limit the authority of the building official to consider other proposed alternate methods, modifications, and/or waivers encompassing the same subject matter.

Background:

Under Oregon Revised Statute (ORS) 455.500, the division, after consultation with the appropriate advisory board, may establish a "Reach Code." The Oregon Reach Code is an optional set of standards that all municipalities must accept. Local adoption is not needed as the Oregon Reach Code provides a choice for builders, consumers, contractors, and others to use. The choice customers have is either to build to the codes adopted as the "State Building Code" or the optional code known as the "Oregon Reach Code". When adopting this code, the Agency considers: economic and technical feasibility and any published codes that are newly developed for construction.

The Oregon Reach Code is not limited to energy provisions and may include other matters. The division proposes to break this code into two parts. Part I includes optional energy standards for commercial and residential buildings. Because the current codes adopted by the division exceed national standards that are technically and economically feasible for residential structures, a minimum modification is proposed for residential structures. For commercial structures, the Division proposes the *2018 International Energy Conservation Code (IECC)* standard which are the highest national construction standards available. For Part II, the division believes the statute may help those builders and contractors wanting to build to the *2018 International Residential Code (IRC)* and Appendix Q. Under the statute, the division is not required to achieve the same level of care as the State Building Code. The Oregon Reach Code is not applicable in areas of state administration. The division also believes the statute provides a framework to establish a new occupancy classification for the tiny house on wheels product. The specific provision in statute that is helpful is the exemption of product certification requirements under the electrical and plumbing statutes. Many wheeled-typed structures may use recreational vehicle-type products that are not typically allowed for permanent dwelling use. The Oregon Reach Code provides a solution for contractors wanting to incorporate these products.



For the tiny house portion of the Oregon Reach Code (Part II) to remain in compliance with the statute the division must propose a higher energy requirement than the State Building Code. The division proposes requiring high-efficiency LED lighting to meet this requirement. The following information is presented for stakeholder and Board consideration before agency adoption. The division plans to have both Part I and Part II available to builders no later than Sept. 1, 2018.

This *2018 Oregon Reach Code* proposal updates the previous version and includes two significant changes:

- Recognizes the latest national energy code, the *2018 IECC (Part I)* Provides construction standards for tiny homes intended for use on wheels or foundation systems under the *2018 IRC* and Appendix Q. (*Part II*)

2018 Oregon Reach Code:

Part I - The *2018 International Energy Conservation Code (IECC)* is a contemporary code that advances energy efficiency through a timely evaluation and recognition of the latest advancements in construction techniques, emerging technologies and science related to the built environment. The *2018 IECC* is recognized by the U.S. Department of Energy as the most current national energy efficiency construction code. For commercial structures, the 2018 IECC represents an improvement over the 2014 OSSC/2014 OEESC. The 2017 ORSC Chapter 11 energy provisions are more stringent than the 2018 IECC residential chapters.

Part II - The *2018 International Residential Code (IRC)* including Appendix Q provides minimum standards for the construction of Tiny Homes, 400 square feet or less in floor area, not including loft areas.

Part 1 – 2018 IECC

The Division, after consultation with the Building Code Structures Board, has adopted the *2018 International Energy Conservation Code* with the following Oregon modifications:

Commercial Provisions:

Chapter 1 [CE]

Summary of Revisions:

Chapter 1 of the *2018 IECC* is deleted in its entirety and replaced with the following:

SECTION 101 GENERAL

101.1 Title. Chapter 1 of these regulations shall be known as the Oregon Commercial Reach Code, hereinafter referred to as “this code.”

101.2 Scope. The provisions of this code shall apply to the design, construction, *addition, alteration, replacement, repair*, equipment, and site orientation, of every *building or structure* or any appurtenances connected or attached to such *buildings or structures* and to the site on which the *building* is located. Occupancy classifications shall be determined in accordance with the *Building Code*.

This code shall not apply to the following:

1. Where an owner or designer has not opted to build under this code.
2. Any Group R, residential occupancies constructed under the *Residential Code*.
3. Equipment or systems that are used primarily for industrial or manufacturing processes.

101.2.1 Appendices. Provisions in the appendices shall not apply.

101.3 Intent. This code shall be an optional set of construction standards and methods that are economically and technically feasible, to regulate the design and construction of buildings for the effective use of energy and the employment of renewable energy technologies. This code is intended to provide flexibility to permit the use of innovative approaches and techniques to achieve the effective use of energy, and to reduce the negative potential impacts of the built environment. This code is intended to be used as an alternate compliance method for Chapter 13 of the *Building Code*. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes and ordinances.

SECTION 102 APPLICABILITY

102.1 General. This code is an overlay to the other Oregon Specialty Codes. This code is not intended to be used as a standalone construction regulation document or to abridge or supersede safety, health or environmental requirements under other applicable codes or ordinances.

102.1.1 Code conflicts. Where there is a conflict between a general requirement and a specific requirement of this code, the specific requirement shall be applicable.

Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most practical and effective requirement to meet the intent of the code shall govern.

102.1.2 Innovative approaches. It is intended that the provisions of this code provide flexibility to allow and encourage the use of innovative approaches, techniques and technology to achieve compliance with the intent of the code.

102.2 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

102.3 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

102.4 Reference codes and standards. The provisions of Chapter 1 of the *Building Code* shall apply. The codes and standards referenced in this code and the *Building Code* shall be considered as part of the requirements of this code to the prescribed extent of such reference. It is the expressed intent of this code to require higher minimum standards relating to building energy performance than the corresponding minimum standards set by Chapter 13 of the *Building Code*, and in such cases, the higher minimum standards of this code shall take precedence.

102.4.1 Conflicting provisions. Where the extent of the reference to referenced code or standard includes subject matter that is within the scope of this code or the *Building Code*, the provisions of this code or the *Building Code* as applicable, shall take precedence over the provisions in the referenced code or standard.

102.4.2 Residential occupancies. The residential provisions of the *Reach Code* shall apply to the design and construction of *buildings* or portions thereof of detached one-and two-family dwellings and townhouses not more than three stories above grade in height with a separate means of egress.

Exception: Buildings permitted under the *Building Code* shall comply with the Commercial Reach Code provisions.

102.5 Partial invalidity. In the event that any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.

102.6 Existing structures. The legal occupancy of any *structure* existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the *Building Code*, the *International Existing Building Code as adopted by Oregon*, or the *International Fire Code*, or as is deemed necessary by the *code official* for the general safety and welfare of *building* occupants and the public.

102.7 Mixed occupancy buildings. In mixed occupancy *buildings*, each portion of a *building* shall comply with the specific requirements of this code applicable to each specific occupancy.

Section 2 --- ADMINISTRATION AND ENFORCEMENT

This code is administered and enforced under the provisions and authority of Chapter 1 of the *Building Code*.

Chapter 2 [CE]

Summary of Revisions:

Definitions in Chapter 2 of the 2018 IECC are modified in part to add or be replaced by the following definitions from Chapter 2 of the 2014 OSSC.

Oregon Revisions:

BUILDING CODE. The Oregon Structural Specialty Code

BUILDING OFFICIAL. The officer charged with the administration and enforcement of this code, or a duly authorized representative

CODE OFFICIAL. See "Building Official"

ELECTRICAL CODE. The Oregon Electrical Specialty Code

MECHANICAL CODE. The Oregon Mechanical Specialty Code

FIRE CODE. As referenced in this code for construction, alteration and repair of buildings and structures is the Oregon Fire Code as adopted and amended by the State of Oregon Fire Marshal

~~**RESIDENTIAL BUILDING.** For this code, includes detached one- and two-family dwellings, and multiple single-family dwellings (townhouses) as well as Group R-2, R-3 and R-4 buildings three stories or less in height above grade plane.~~

RESIDENTIAL BUILDING. For this code, includes R-3 buildings regulated under the *Residential Code*: one- and two-family dwellings and townhomes.

RESIDENTIAL CODE. The Oregon Residential Specialty Code

PLUMBING CODE. The Oregon Plumbing Specialty Code

Chapter 4 [CE]

Summary of Revisions:

Delete Section C407. Total Building Performance in its entirety.

Residential Provisions:

Residential buildings must meet Chapter 11 of the Oregon Residential Specialty Code with the following amendment:

N1101.1 General. The provisions of this chapter regulate the exterior envelope, as well as the design, construction and selection of heating, ventilating and air-conditioning systems, lighting and piping insulation required for the purpose of effective conservation of energy within a building or structure governed by this code.

All conditioned spaces within residential buildings shall comply with Table N1101.1(1) and ~~two~~three additional measures from Table N1101.1(2).

Part II – Tiny Homes

The Reach Code provisions for Tiny Homes consists of the *2018 International Residential Code (IRC)*, including Appendix Q with the following Oregon modifications:

Chapter 1

Summary of Revisions:

Chapter 1 of the *2018 IRC* is deleted in its entirety and replaced with Chapter 1 of the *2017 Oregon Residential Specialty Code* as amended by the following:

Replace Section R101 of the 2018 IRC with the following:

SECTION R101 GENERAL

R101.1 Title. Chapter 1 of these regulations shall be known as the *Oregon Reach Code Part II* and shall be cited as such and will be referred to herein as “this code.”

R101.2 Scope. The Oregon Reach Code Part II provisions shall apply to the construction, *alteration*, enlargement, replacement, *repair*, equipment, use and occupancy of the following:

1. *Tiny Homes* classified as a Group R-3 occupancy, one-family *dwelling unit* as defined in the *Oregon Residential Specialty Code (ORSC)* intended for permanent living.
2. *Tiny Homes* on wheels classified as a Group R-5 occupancy intended for temporary, emergency or recreational use.

This code shall not apply:

1. Where an owner or the owner’s authorized agent has not voluntarily opted to build under this code.
2. To any Group R residential occupancy constructed under the *ORSC* or the *Oregon Structural Specialty Code (OSSC)*.
3. Any structure over 400 square feet in *building area* as defined by the *OSSC*.

R101.2.1 Appendices. Provisions in Appendix Q of the 2018 *IRC* are adopted as a part of this code, all other appendices shall not apply.

R101.3 Intent. This code shall be an optional set of construction standards and methods that are economically and technically feasible, to establish minimum standards for the design and construction of *Tiny Homes* incorporating effective use of energy while accommodating both temporary (wheeled) and permanent (dwelling) uses.

SECTION R102 APPLICABILITY

R102.1 General. The use of this code is at the discretion of the permit applicant and must be accepted by the local jurisdiction.

R102.1.1 Code conflicts. Where there is a conflict between a general requirement and a specific requirement of this code, the specific requirement shall be applicable. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most practical and effective requirement to meet the intent of the code shall govern.

R102.1.2 Innovative approaches. It is intended that the provisions of this code provide flexibility to allow and encourage the use of innovative approaches, techniques and technology to achieve compliance with the intent of the code.

R102.1.3 Separate compliance path. The use of the Reach code constitutes a separate compliance path from the *ORSC* in that designs must comply with the 2018 Oregon Reach Code Part II in its entirety. Mixing of standards or cross-over applications with other codes is not allowed.

**SECTION R104
DUTIES AND POWERS OF THE BUILDING OFFICIAL**

The building official may take any action, including but not limited to, waiving a Reach Code requirement, modifying a Reach Code requirement and/or accepting an alternate method to the Reach Code requirement for residential type structures 400 square feet or less. A building official may not fail to enforce a Reach Code provision that would create an imminent threat to public health or safety, and may not enforce requirements that are in addition to the Reach Code when built under the Reach code by the permit applicant.

R104.10.2 (Modifications) Subsequent placement. Modifications granted by the municipality of record shall not be binding upon a receiving municipality. The applicant must include any such modifications with the construction documents when applying to the receiving municipality for review.

**SECTION R106
CONSTRUCTION DOCUMENTS**

R106.2 Site plan or plot plan. The construction documents submitted with the application for permit shall be accompanied by a site plan showing the size and location of new construction and existing structures on the site and distances from lot lines. The *building official* is authorized to waive or modify the requirements for a site plan where the application for permit is for alteration or repair or where otherwise warranted.

Exception: Site plans for occupancy Group R-5 Tiny Home or Park Model type recreational structures are only required at the time of application for placement in a jurisdiction.

**SECTION R107
TEMPORARY STRUCTURES AND USES**

R107.3 Temporary power. Temporary power for Tiny Homes intended to be permanent installations see the electrical code. Tiny Homes intended for temporary use, temporary “Recreation Vehicle” type electrical connections (cord and plug) complying with Article 551 of the *Electrical Code* are permissible.

R107.3.1 Temporary plumbing connections. Tiny Homes intended for temporary use may utilize plumbing systems, fixtures, methods and materials listed for Recreational Vehicle use.

**SECTION R119
TINY HOME OCCUPANCY CLASSIFICATION**

R119.1 Occupancy classification. Occupancy classifications shall be determined by the *building official* as requested by the applicant in accordance with Section R119.1.1 or R119.1.2. and may be converted in accordance with Section R110.2.

R119.1.1 Group R-3 permanent one-family dwelling. Permit applicants seeking Group R-3 occupancy classification under the current Reach Code must include in their permit application submittal to the local jurisdiction adequate information demonstrating how the structure meets minimum Reach code standards including how it will be permanently anchored to the ground to meet minimum standards for resisting seismic and wind forces such as, construction details, calculations and other information necessary.

Where the frame of the chassis is a structural component of the floor system, the applicant must include adequate information demonstrating that the minimum floor loads are met and that the frame is capable of providing the necessary support to carry the load of the structure including connections. No temporary type cord and hose connections as allowed in R107.3 and R107.3.1 are allowed for a Group R-3 occupancy under the Reach Code.

R119.1.2 Group R-5 wheeled residential & recreational structure 400 sq. ft. or less (May be referred to as a Park Model, Tiny Home or Tiny Home on Wheels). Permit applicants seeking Group R-5 occupancy classification must include in their permit application submittal to the local jurisdiction adequate information demonstrating how the structure meets minimum code standards.

Where the frame of the chassis is a structural component of the floor system, the building official is not required to review this equipment for approval as a R-5.

R-5 structures are recreational-type structures on wheels approved by the local building official under the Reach Code (2018 IRC with Appendix Q). An R-5 structure must be built on a chassis with cord and hose utility connections in accordance with R107.3 and R107.3.2. An R-5 is limited to: temporary living quarters for seasonal or emergency use. The duration of stay may be determined by local ordinance or local administrative rule.

Exception: R-5 structures located in approved recreational vehicle, manufactured housing, or transitional housing parks may not be subject to limitation on use and period of stay. See ORS 197.493

R119.2 Occupancy classification conversion. Group R-5 wheeled residential structures constructed in accordance with this code may be converted to a Group R-3 permanent one-family dwelling provided that upon application to the local jurisdiction for change of occupancy, the applicant provides adequate information demonstrating how the structure will meet minimum standards for connection of electrical and plumbing systems and be permanently anchored to the ground to meet minimum standards for resisting seismic and wind forces such as, construction details, design drawings, calculations and other information necessary, including how the chassis and floor system is anchored to the proposed foundation system, and any products or equipment that may not meet minimum safety standards of the 2018 IRC including Appendix Q.

R119.2.1 Applicant responsibility. Applicants must keep all permit, inspection, Certificate of Occupancy and Certificate of Completion records for the life of the structure. Such records shall be presented to the building official upon request. The applicant must meet all Construction Contractor's Board, Building Codes Division and local licensing requirements.

R119.2.2 Building Official Right of Refusal. A building official may refuse to accept a request for occupancy classification, conversion, alteration or installation where permit, inspection, certificate of occupancy and certificate of completion records and/or other

documentation fail to clearly demonstrate that all applicable laws have been followed.

SECTION R120 CERTIFICATE OF COMPLETION

R120.1 Certificate of completion issued. Where tiny homes are constructed off-site, the applicant may request a “Certificate of Completion.” After the building official inspects the tiny home and does not find violations of the provisions of this code, the building official shall, at the applicants request, issue a certificate of completion containing the following:

1. The building permit number.
2. The name and address of the owner or the owner’s authorized agent.
3. A description of that portion of the structure for which the certificate is issued.
4. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code.
5. The name of the building official.
6. The edition of the Reach Code under which the permit was issued.
7. If an automatic sprinkler system is provided and whether the sprinkler system is required
8. Any special stipulations and conditions of the building permit.

R120.2 Revocation. The building official is authorized to, in writing, suspend or revoke a certificate of completion issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the tiny home or portion thereof is in violation of any of the provisions of this code.

Chapter 11

Summary of Revisions:

Structures built under Part II of the Reach code as an R-3 or R-5 occupancy must meet the provisions of Chapter 11 of the ORSC with the modifications of sections N1107.2 and N1107.3 provided herein.

Chapter 11 of the *2018 IRC* is deleted in its entirety and replaced with Chapter 11 of the *2017 Oregon Residential Specialty Code* as amended by the following:

N1107.2 High-efficacy lamps. All permanently installed lighting fixtures shall contain high-efficacy LED lamps. ~~Screw-in compact fluorescent and LED lamps comply with this requirement.~~The building official shall be notified in writing at the final inspection that the permanently installed lighting fixtures have met this requirement.

~~**Exception:** Two permanently installed lighting fixtures are not required to have high-efficacy lamps.~~

N1107.3 High-efficacy exterior lighting. All exterior lighting fixtures affixed to the exterior of the building shall contain high-efficacy **LED** lamps.

~~**Exception:** Two permanently installed lighting fixtures are not required to have high-efficacy lamps.~~