Oregon
Kate Brown, Governor

Department of Consumer and Business Services
Building Codes Division
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Residential and Manufactured Structures Board
Regular meeting agenda
Friday, April 10, 2015, 9:30 a.m.
Conference Room A
Board meetings are broadcast live via the Internet at
http://bcd.oregon.gov/
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 9, 2015, board meeting minutes
E. Date of the next scheduled meeting: July 10, 2015

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 theboard"* at the end of this agenda).

III. Reports

A. Building Codes Division report
B. Residential structures program update
C. Manufactured structures program update

IV. Communications

Update on Statewide Alternate Method No. 15-02; Electronic Snow Load Locator

V. Appeals - None

VI. Unfinished business - None

VII. New business

A. Board review and recommend to the Administrator proposed amendments to align federal requirements with the minimum SEER standards for residential heat pumps in the 2014 Oregon Residential Specialty Code
B. Board review and recommend to the Administrator proposed amendments to align the underground residential gas piping requirements in the 2014 Oregon Residential Specialty Code with the 2014 Oregon Mechanical Specialty Code gas burial requirements

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 coordinator 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 Board
Regular board meeting minutes
January 09, 2015

Members present:
Jan Lewis, Chair, residential structural contractor
Bruce Dobbs, Vice-chair, utility/energy supplier
Richard Bonheimer, seller or 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

Members absent:
Kathryn Gray, home designer
Vacant, manufacturer of manufactured dwellings

Staff present:
Mark Long, administrator, Building Codes Division
Shane Sumption, manager, statewide and field services sections
Brett Salmon, manager, policy and technical services
Steve Judson, P.E., commercial structures and accessibility code specialist
Rex Turner, structural program chief
Richard Rogers, chief building official
Tony Rocco, building code specialist
Mark Heizer, P.E., technical policy analyst
Shawn Haggin, electrical program assistant chief
Richard Baumann, policy analyst
Debi Barnes-Woods, boards coordinator

Guests present:
Genoa Ingram, Oregon Manufactured Housing Association (OMHA)
Jessica Carpenter, OMHA
G.F. Scheuermann, IAPMO
Howard Asch, Oregon Home Builders Association (OHBA)
James Bela, Oregon Earthquake Awareness

I. Board business

A. Call to order

Chair Jan Lewis called the Residential and Manufactured Structures Board meeting to order at 9:31 a.m. The meeting was held at the Building Codes Division in Conference Room A, 1535 Edgewater Street NW, Salem, Oregon.

B. Roll call

Kathryn Grey was absent excused.

Following roll call, Chair Lewis called for a moment of silence to honor the memory of board member Rick Torgerson, who passed away suddenly. She also gave thanks to all his hard work on the board. Rick was serving his second four year term.

C. Approval of agenda and order of business

Chair Lewis **RULED** the agenda approved.

D. Approval of the board meeting minutes of May 9, 2014

Chair Lewis **RULED** the meeting minutes of May 9, 2014, approved as written.

E. Date of the next regularly scheduled meeting

The next meeting date is scheduled for April 10, 2015.

F. 2015 board meeting dates

II. Public comment - None

III. Reports

A. Building Codes Division report

Mark Long, Administrator, Building Codes Division, presented a PowerPoint presentation regarding the annual report pertaining to Senate Bill 582.

Administrator Long highlighted three external goals across the organization:

- Having a well trained workforce
- Assuring Oregonians are aware of the statewide preemptive code
- Reducing duplicated efforts put forth by sister agencies concerning building regulations

Administrator Long also discussed and distributed handouts pertaining to the new IPhone App “eComment” input about the building permit application and inspection process statewide.

B. Residential program update
Rex Turner, structural program chief, Policy and Technical Services, briefly discussed Statewide Code Interpretation for Safety Glazing in and Around Tub/Shower Enclosures.

Mr. Turner used a PowerPoint presentation to briefly demonstrate the division's code-change training.

C. Manufactured structures program update
Shane Sumption, manager, Field Services, gave the update on the growth of manufactured homes.

IV. Communications - None

V. Appeals – None

VI. Unfinished business – None

(Board members took a 5-minute break to resume at 10:30 a.m.)

Chair Lewis asked for a motion to hear Item VII.D., before Item VII.A. Vice-chair Dobbs made such motion. Motion was carried unanimously.

VII. New business

D. Board approve the low-rise plumbing provision of the 2014 Oregon Residential Specialty Code related to Oregon Plumbing Specialty Code proposal 14-12 Removable fixture traps
Andy Skinner, plumbing program chief, explained an error was made in disapproving this item when the committee actually recommended approval of code proposal OPSC 14-12.

Motion by Emily Kemper to approve the committee's recommendation to adopt the proposed language in OPSC 14-12 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.
Motion carried unanimously

A. Board review and provide a recommendation to the Administrator for revisions to Section R202 and the addition of Section R325 Group R Accessory Buildings in the 2014 Oregon Residential Specialty Code
Rex Turner, structural program chief, said the division is requesting that the board consider and make changes related to the proposed requirements for tabulated

allowable area increases based on the availability of "open spaces" between adjacent buildings and/or property lines.

James Bela, President, Oregon Earthquake Awareness, urged the board not to consider the code-change. He said there is not enough supporting documentation for this change and added that the separation may be fine where there is no wind.

Motion by John Chmiler to approve the division proposal to modify Section R202 and add Section R325 for adoption in the 2014 ORSC, 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.
Motion carried unanimously

B. Board review and provide a recommendation to the Administrator for the proposed solar photovoltaic provisions of the 2014 Oregon Residential Specialty Code and modification addressing the fastening of arrays
Steve Judson, commercial structures and accessibility code specialist, explained that the 2010 Oregon Solar Installation Specialty Code provisions are being moved into the 2014 Oregon Structural Specialty Code and because this code covers both residential and commercial applications, a new reference must be made in the residential code.

Motion by Vice-chair Dobbs to approve the adoption of the modifications as presented regarding the solar photovoltaic provisions in the 2014 ORSC 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.
Motion carried unanimously

C. Board recommendation for the technical and scientific facts of Statewide Alternate Method No. 15-02 for use of the Oregon 2013 Electronic Snow Load Map to the snow load provisions in the 2014 Oregon Residential Specialty Code

Motion by Rebai Tamerhoulet to approve the technical and scientific facts of the proposed alternate method.
Motion carried unanimously

VIII. Announcements

Richard Baumann, policy analyst, said a notice will be filed with the Secretary of State for February public hearings for the code change items discussed today.

IX. Adjournment

The Residential and Manufactured Structures Board meeting was adjourned at 11:30 a.m.

Respectfully submitted by Debi Barnes-Woods
Boards Administrator/Coordinator

Statewide Alternate Method
March 2015

State of Oregon
Building Codes Division
Better Buildings for Oregon

No. 15-02
Electronic Snow Load Locator

(Ref.: ORS 455.060)

Agenda Item IV.

Statewide Alternate Methods *are approved by the Division administrator in consultation with the appropriate advisory board. The advisory board's review includes technical and scientific facts of the proposed alternate method. In addition:*

- *Building officials shall approve the use of any material, design or method of construction addressed in a statewide alternate method;*
- *The decision to use a statewide alternate method is at the discretion of the designer; and*
- *Statewide alternate methods do not limit the authority of the building official to consider other proposed alternate methods encompassing the same subject matter.*

Code Edition: 2014 Oregon Structural Specialty Code (OSSC)
2014 Oregon Residential Specialty Code (ORSC)

Code Section: OSSC Section 1608, Snow Load
ORSC Section R301.2.3, Snow Loads, and Table R301.2(1)

Date: March 17, 2015

Initiated by: Structural Engineer's Association of Oregon (SEAO)

Subject:

Use of the Oregon 2013 Electronic Snow Load Map as created by the Structural Engineer's Association of Oregon as an alternate method to the snow load provisions in the 2014 OSSC and the 2014 ORSC.

Background:

Shortly after publication of the 2007 edition of the *Snow Load Analysis of Oregon*, areas of Northwestern Oregon experienced record setting snowfall. The SEAO Snow Load Committee began reviewing the data in early 2009 to see if it would affect the 50-year mean recurrence interval (MRI) snow load at certain sites. After researching the snowfall from that winter, the committee found that the snowfall from that year at a number of mid-elevation sites exceeded those predicted on the map. They realized the 50-year MRI Station values for some locations were much lower than the surrounding snow load contour lines.

After researching the methods used for development of the 2007 map, the committee published a white paper explaining where the methodology needed to be revised and suggested an interim method to enable the use of the 2007 map. This was sent to everyone who purchased the 2007 Manual and Map. The 2013 electronic map is the result of the 2007 map modified by the white paper recommendations.

Discussion:

The mapping procedures for the 2013 Snow Load revisions provided for more accurate snow load values due to the refined field data and analysis. Snow data in the 2007 approach used a constant depth to density conversion, whereas the revised 2013 mapping uses the ASCE-7 method where density increases as depth increases. This made for small changes at lower and higher elevations but resulted in increases for the predicted snow load values at mid elevation sites.

Most of Northern Oregon saw record setting snow fall in 2007-2008. The station snow load and snow depth values are included in the new information. The recorded snow load data is used in the modeling program to give ground snow loads occurring in the state by dividing it into 4 kilometer square cells and calculating specific load values for each cell. The program accounts for elevation, rain shadows, coastal proximity, terrain configuration, temperature inversions and cold air pooling on precipitation and temperature. Provisions for dealing with micro climates within the state are included which involves submission of data and engineering analysis..

Conclusion:

The Structural Engineer's Association of Oregon 2013 Electronic Snow Load Map is a more direct way to determine the snow loads from the combination of the 2007 map and the 2011 white paper. The use of the 2007 map and 2011 white paper loads are already required by the OSSC and in footnote "a" of Table R301.2(1) of the ORSC. All information required for the proper use of the map is contained on the web site. The 2013 map is based on analysis procedures that better follow current snow load development standards. The 2013 map corrects the under-predicted snow load values at mid-elevations from the 2007 Map.

Ground Snow Loads. The ground snow loads to be used in determining the design snow loads for buildings and other structures can be determined using the online lookup tool http://snowload.seao.org/lookup.html or the online map at http://snowload.seao.org/mapserver.phtml , published by the Structural Engineers Association of Oregon.

The design roof snow load shall not be less than 20 psf x Importance factor plus rain on snow (where applies).

Exception: Based on local knowledge, the ground snow load may be adjusted by the building official when a registered design professional submits data substantiating the adjustments. The data shall be adjusted for a 50-year recurrence and shall include measured water equivalent of snow. This snow load data may then be used in potential accumulation calculations, however in no case shall the adjusted ground snow load used for design be less than 20 psf.

Contact:

Steve Judson P.E.
Facilities Engineer
503-378-4635
Steven.W.Judson@oregon.gov

The technical and scientific facts for this Statewide Alternate Method are approved.

(Signature on File) — March 23, 2015

Mark Long, Administrator — Date
Building Codes Division

Agenda Item VII.A.

State of Oregon **Board memo**

Building Codes Division **April 10, 2015**

To: The Residential and Manufactured Structures Board

From: Mark Heizer, technical policy analyst, Policy and Technical Services

Subject: 2014 Oregon Residential Specialty Code, residential equipment performance requirements

Action requested:
The division requests that the board review and approve amendments to the residential equipment performance requirements of the 2014 Oregon Residential Specialty Code (ORSC) for public hearing.

Background:
As of January 1, 2015, the United States Department of Energy requires manufacturers of heat pumps to ensure their products meet higher minimum seasonal energy efficiency ratio (SEER) and heating seasonal performance factor (HSPF) standards. With this change, the current federal efficiency standards for manufacturers of heat pumps are now higher than what is required by the 2014 Oregon Residential Specialty Code (ORSC).

Discussion:
The proposed amendments bring the 2014 ORSC minimum energy efficiency standards for residential heat pumps into alignment with the current federal manufacturing requirements.

Options:
- Approve the proposed amendments to the residential equipment performance requirements for the 2014 ORSC and recommend them to the Administrator for public hearing 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;
- Amend and approve the proposed amendments to the residential equipment performance requirements for the 2014 ORSC and recommend them to the Administrator for public hearing 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; or,

- Disapprove the proposed amendments to the residential equipment performance requirements for the 2014 ORSC and continue to use the current 2014 ORSC as adopted.

Recommendation:
Approve the proposed amendments to the residential equipment performance requirements for the 2014 ORSC and recommend them to the Administrator for public hearing 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.

Code Change:
Suggested changes (~~strikeout text~~ denotes deletion**, <u>bold/underline denotes addition</u>)**

N1105.5.1 Heat pumps. Single phase, air-cooled split ~~and packaged system~~ heat pumps of less than 65,000 Btu/h capacity shall have a heating seasonal performance factor (HSPF) of not less than ~~7.7~~ **<u>8.2</u>** and seasonal energy efficiency ratio (SEER) of not less than ~~13~~**<u>14</u>**. **<u>Single phase, packaged heat pumps of less than 65,000 Btu/h capacity shall have a heating seasonal performance factor (HSPF) of not less than 8.0 and SEER of not less than 14.</u>**

2014 ORSC Amendments
DRAFT
April 10, 2015

918-480-0010
Amendments to the Oregon Residential Specialty Code

(1) The **Oregon Residential Specialty Code** is amended pursuant to OAR chapter 918, division 8. Amendments adopted for inclusion into the **Oregon Residential Specialty Code** are placed in this rule, showing the section reference and a descriptive caption.

(2) Effective April 1, 2015 the Oregon Residential Specialty Code is amended according to the following:

(a) Amend Section R202 – definition for "Accessory Structure" and Section R325 Detached Group R Accessory Structures (Group U) for allowable area increases to detached Group R accessory structures; and

(b) Amend Section M2301 Solar Energy Systems specifying that residential solar photovoltaic installation requirements are now located in Section 3111 of the Oregon Structural Specialty Code.

(3) Effective July 1, 2015 the Oregon Residential Specialty Code is amended according to the following:

(a) Amend Section N1105.5.1 "Heat pumps" to align the minimum energy efficiency standards for residential heat pumps with federal manufacturing requirements; and

(b) Amend Sections G2415.10 "Minimum burial depth", G2415.10.1 "Individual outside appliances", G2415.11 "Trenches, and repeal Section G2415.11.1 "Underground gas pipe separation." These amendments align the underground residential gas piping burial and separation requirements of the Oregon Residential Specialty Code more closely with the Oregon Mechanical Specialty Code and national model codes.

[Publications: Publications referenced are available for review at the division. See division website for information on where to purchase publications.]

Stat. Auth.: ORS 455.020, 455.110, 455.496, 455.610 & 455.485
Stats. Implemented: ORS 455.610
Hist.: BCA 18-1993, f. 8-24-93, cert. ef. 8-29-93; BCA 28-1993, f. 10-22-93, cert. ef. 1-1-94; BCA 29-1993, f. 11-24-93, cert. ef. 12-1-93; BCD 6-1995, f. 3-31-95, cert. ef. 4-1-95; BCD 3-1996, f. 2-2-96, cert. ef. 4-1-96; BCD 22-1996(Temp), f. 10-1-96, cert. ef. 10-4-96; BCD 5-1997, f. 3-21-97, cert. ef. 4-1-97; Administrative Reformatting 1-19-98; BCD 3-1998, f. 1-29-98, cert. ef. 4-1-98; BCD 19-1998, f. 9-30-98, cert. ef. 10-1-98; BCD 3-2000, f. 1-14-00 cert. ef. 4-1-00; BCD 19-2000(Temp), f.& cert. ef. 8-15-00 thru 2-10-01; BCD 32-2000, f. 12-27-00, cert. ef. 1-1-01; BCD 3-2001, f. 2-9-01, cert. ef. 3-1-01; BCD 2-2002, f. 3-5-02, cert. ef. 4-1-02; BCD 22-2002(Temp), f. 9-13-02 cert. ef. 10-1-02 thru 3-29-03; BCD 30-2002, f. 12-6-02, cert. ef. 1-1-03; BCD 1-2003(Temp), f. & cert. ef. 1-10-03 thru 3-31-03; BCD 33-2002, f. 12-20-02 cert. ef. 4-1-03; BCD 15-2004, f. 9-10-04, cert. ef. 10-1-04; BCD 5-2005, f. & cert. ef. 3-28-05; BCD 9-2006,

f. 6-30-06, cert. ef. 7-1-06; BCD 1-2007, f. 2-15-07, cert. ef. 4-1-07; BCD 5-2008, f. 2-22-08, cert. ef. 4-1-08; BCD 13-2008(Temp), f. & cert. ef. 7-3-08 thru 12-30-08; BCD 21-2008, f. 9-30-08, cert. ef. 10-1-08; BCD 24-2008(Temp), f. & cert. ef. 10-6-08 thru 4-1-09; BCD 1-2009, f. 1-30-09, cert. ef. 2-1-09; BCD 8-2009, f. 9-30-09, cert. ef. 10-1-09; BCD 5-2010, f. 5-14-10, cert. ef. 7-1-10; BCD 1-2011, f. 2-15-11, cert. ef. 4-1-11; BCD 10-2011(Temp), f. & cert. ef. 4-15-11 thru 9-30-11; BCD 13-2011, f. 5-13-11, cert.ef. 7-1-11; BCD 9-2014, f. 9-25-14, cert. ef. 10-1-14

Agenda Item VII.B.

State of Oregon **Board memo**

Building Codes Division **April 10, 2015**

To: The Residential and Manufactured Structures Board

From: Mark Heizer, technical policy analyst, Policy and Technical Services

Subject: 2014 Oregon Residential Specialty Code, underground residential natural gas piping requirements

Action requested:
The division requests that the board review and approve amendments to the underground residential natural gas piping requirements of the 2014 Oregon Residential Specialty Code (ORSC) for public hearing.

Background:
The 2014 Oregon Mechanical Specialty Code (OMSC), based on the 2012 International Mechanical Code, was adopted without modification to the underground piping installation requirements in Sections C404.12 and C404.13. Oregon specific amendments in the prior versions of the OMSC were not re-adopted. The more restrictive burial depth and separation requirements of the Oregon amendments were considered obsolete and resulted in additional, unnecessary construction costs.

The proposed amendment aligns the underground residential gas piping requirements of the ORSC more closely with the commercial code gas burial requirements. For over 20 years, model code has had a minimum pipe burial depth of 12" and no requirement for separation to other building services.

Discussion:
The proposed amendment aligns the ORSC gas piping burial requirements with the OMSC and model code language.

Options:
- Approve the proposed amendments to the residential gas pipe burial requirements in the 2014 ORSC and recommend them to the Administrator for public hearing 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;

- Amend and approve the proposed amendments to the residential gas pipe burial requirements in the 2014 ORSC and recommend them to the Administrator for public hearing 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; or,
- Disapprove the proposed amendments to the residential gas pipe burial requirements in the 2014 ORSC and continue to use the current 2014 ORSC.

Recommendation:
Approve the proposed amendments to the residential gas pipe burial requirements in the 2014 ORSC and recommend them to the Administrator for public hearing 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.

Proposed code amendments to match OMSC C404.12 and C404.13:
Note: All strikethrough language is current Oregon amendment.

Suggested changes (~~strikeout text~~ denotes deletion**, <u>bold/underline denotes addition</u>)**

G2415.10 Minimum burial depth. Underground piping systems shall be installed a minimum depth of **<u>12</u>** ~~**18**~~ inches (**<u>305</u>** ~~**457**~~ mm) below grade, except as provided for in Section ~~G2416.10.1~~ **<u>G2415.10.1.</u>**

G2415.10.1 Individual outside appliances. Individual lines to outside lights, grills or other *appliances* shall be installed a minimum of 8 inches (203 mm) below finished grade, provided that such installation is *approved* and is installed in locations not susceptible to physical damage.

G2415.11 Trenches. The trench shall be graded so that the *pipe* has a firm, substantially continuous bearing on the bottom of the trench.

~~**G2415.11.1 Underground gas pipe separation.** Underground gas piping shall be separated vertically or horizontally from other underground piping as follows:~~

~~**1. Sewer pipe** – not less than 18 inches (457 mm) from any underground sewer line.~~

~~**2. Water pipe** – not less than 12 inches (305 mm) from any underground water line.~~

~~**3. Drainage pipe** – not less than 12 inches (305 mm) from any underground drainage line.~~

2014 ORSC Amendments
DRAFT
April 10, 2015

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(b) Amend Section M2301 Solar Energy Systems specifying that residential solar photovoltaic installation requirements are now located in Section 3111 of the Oregon Structural Specialty Code.

(3) Effective July 1, 2015 the Oregon Residential Specialty Code is amended according to the following:

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(b) Amend Sections G2415.10 "Minimum burial depth", G2415.10.1 "Individual outside appliances", G2415.11 "Trenches, and repeal Section G2415.11.1 "Underground gas pipe separation." These amendments align the underground residential gas piping burial and separation requirements of the Oregon Residential Specialty Code more closely with the Oregon Mechanical Specialty Code and national model codes.

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f. 6-30-06, cert. ef. 7-1-06; BCD 1-2007, f. 2-15-07, cert. ef. 4-1-07; BCD 5-2008, f. 2-22-08, cert. ef. 4-1-08; BCD 13-2008(Temp), f. & cert. ef. 7-3-08 thru 12-30-08; BCD 21-2008, f. 9-30-08, cert. ef. 10-1-08; BCD 24-2008(Temp), f. & cert. ef. 10-6-08 thru 4-1-09; BCD 1-2009, f. 1-30-09, cert. ef. 2-1-09; BCD 8-2009, f. 9-30-09, cert. ef. 10-1-09; BCD 5-2010, f. 5-14-10, cert. ef. 7-1-10; BCD 1-2011, f. 2-15-11, cert. ef. 4-1-11; BCD 10-2011(Temp), f. & cert. ef. 4-15-11 thru 9-30-11; BCD 13-2011, f. 5-13-11, cert.ef. 7-1-11; BCD 9-2014, f. 9-25-14, cert. ef. 10-1-14