

Rhode Island Office of Energy Resources

*In RE: Proposed Rhode Island Residential Stretch Code and Compliance Packet*

**RESPONSE TO COMMENTS**

**Introduction**

On November 21, 2017, a notice was posted on the websites of the Rhode Island Office of Energy Resources (OER) and the Rhode Island Office Secretary of State, and was forwarded to interested parties, announcing a public comment period to accept comments on the adoption of the “Proposed Rhode Island Residential Stretch Code” and its associated “Compliance Packet”. Copies of the proposed documents were made available at the OER offices, on OER’s website ([www.energy.ri.gov](http://www.energy.ri.gov)), by calling OER at (401) 574-9106 or by writing to Rhode Island Department of Administration, Office of Energy Resources, One Capitol Hill, Providence, Rhode Island. A Public Meeting notice stating that a public meeting would be held on December 7, 2017 at 5:00 pm, at the Department of Administration, Conference Room B, Second Floor, One Capitol Hill, Providence, Rhode Island was also posted on November 21, 2017. The public meeting provided an overview of the proposed Residential Stretch Code and allowed the public to share their comments and insights. Meeting minutes and the PowerPoint presentation from the public meeting are available on the Rhode Island Secretary of State website.

The Rhode Island Residential Stretch Code is a voluntary code that provides guidance and best practice requirements intended to reduce the negative impacts and increase the overall positive impacts of the built environment. It is consistent with the Rhode Island Office of Energy Resources’ mission to lead Rhode Island to a secure, cost-effective, and sustainable energy future and supports the Governor’s energy efficiency and renewable energy goals for State-owned facilities ([Executive Order 15-17](#)).

**Response to Comments**

The following are the paraphrased comments of James Lyons, PE, CEM, Technical Director at Newport Partners – a main implementation contractor for US Department of Energy’s Zero Energy Ready Home program – submitted via email, followed by OER’s responses:

**Comment:**

*Consider if the Residential Stretch Code could also apply to low rise multifamily buildings, in the same way that the Department of Energy’s Zero Energy Ready Home program (DOE ZERH) covers these building types. You can see the DOE ZERH eligible building types in the [program specs here](#), and they also mirror eligible building types for ENERGY STAR Homes. At the same time, RESNET is developing expanded standards to cover the rating of MF buildings.*

**Response:**

*In order to avoid confusion, the same language used in Rhode Island’s base codes was used in the residential stretch code to define building applicability. Therefore, multifamily buildings should use the Rhode Island Commercial Stretch Code instead of the Residential Stretch Code. To comply with the Commercial Stretch Code, any certification program can be used as long as the certification program requirements meet or exceed the Commercial Stretch Code requirements and this equivalency is verified by a third party. Therefore, no change was made to the Residential Stretch Code document.*

**Comment:**

*Figure 1 in the draft might benefit from a legend indicating that the hatched boxes represent Alternative Compliance Paths.*

**Response:**

*OER has added this note to Figure 1 to improve clarity.*

**Comment:**

*Section 4.4.1: Note that under the Prescriptive Path all of the Mandatory Items must be met, just like for the Performance Path.*

**Response:**

*The following sentences have been added to the end of Section 4.4.1 to address this comment: “The prescriptive path provides a single, comprehensive set of required measures. Modeling is not required, but no measure tradeoffs are allowed.”*

**Comment:**

*Section 4.6: You might want to note that the conduits should be capped and labeled, consistent with the DOE ZERH PV Ready checklist.*

**Response:**

*The following sentence has been added to the first cell in the PV Installation Preparation Requirements table in 4.6 to address this comment: “Conduits for future PV installations are to be capped and labeled at both ends.”*

**Comment:**

*Section 4.6: In general, we heard from some stakeholders that they had concerns about putting too much detail around a future PV installation that they themselves won't design or construct. This might be a concern with the section included about ground-mounted systems.*

**Response:**

*To increase flexibility in the ground-mounted system requirements, the following changes were made to Section 4.6: “For ground-mounted systems – ~~The~~ **Possible** location(s) of the panels must be identified in the submitted construction plans, and **be supported by a solar site evaluation. At least one potential** ~~the~~ location must be identified in the construction plans for the future installation of the panels.”*

**Comment:**

*Footnote 4: might consider using the URL [www.buildings.energy.gov/zero](http://www.buildings.energy.gov/zero) and then adding the instruction to click on Program Requirements. This URL is a bit easier and the Program Requirements link will to a User to a landing page for the latest ZERH requirements.*

**Response:**

*Another public comment encouraged OER to tie the Residential Stretch Code requirements to a specific version of the DOE ZERH program in order to avoid any unexpected rollback or advancement in program requirements. Changes were therefore made to the Residential Stretch Code to specifically reference the DOE ZERH requirements labeled as Rev. 06 and dated April 20, 2017. For this reason, the more complicated URL was retained as footnote 4 since it brings users to the correct version of the program requirements.*

**Comment:**

*Section 4.8.2: Consider mentioning that DOE ZERH certification is actually required for Passive House (PH) projects. This dovetails with the statement that PH goes above and beyond the requirements of the Stretch Code.*

**Response:**

*The following sentence edit was made to address this comment in Section 4.8.2: “**ZERH certification is currently a requirement for Passive House certification, and in many ways, Passive House goes above and beyond the requirements of this code.**”*

**Comment:**

*In Section 7 on Indoor Environmental Quality, it is stated that one of a few certifications is required for low volatile organic compound (VOC) products. This list doesn't include or mention the Indoor airPLUS (IAP) provisions (which are embedded within DOE ZERH). IAP provisions cover low emission cabinets, pressed wood products, carpets/padding, and paints - and reference GreenGuard, KCMA, MPI, CA Phase 2, and other industry standards and labels which have been vetted by EPA. Depending on how much detail needs to be included here - you might mention IAP's coverage of low emission materials just to clarify its role within DOE ZERH. Further, IAP has a fact sheet on how to specify low emission materials meeting the IAP spec - available online here: <https://www.epa.gov/indoorairplus/indoor-airplus-compliant-low-emission-products>*

**Response:**

*This section has been edited as follows to clarify and make current with ZERH guidelines: “**For compliance with this code, certification with the EPA Indoor AirPLUS is a requirement of the ZERH Program certification. If following an alternative compliance path for energy, applicants may obtain Indoor AirPLUS certification separately, or may meet the VOC content criteria of one of the following programs, or an equivalent.**”*

The following is the letter submitted via email by the New Buildings Institute (NBI). Below the letter are the paraphrased comments from NBI followed by OER’s responses:

Thank you for the opportunity to comment on the Rhode Island Stretch Code.

The draft Residential Stretch Code that Rhode Island has developed is an important document. It contains some very good provisions that demonstrate a lot of foresight. It wisely references other Green standards that already have a lot of market penetration to be used for compliance, making it easier to take on the Stretch Code. It is especially heartening to see the sophisticated way that Rhode Island has made provisions for a Zero Energy future with thoughtful requirements that will ensure that projects are ready for the future addition of onsite renewables and Electric Vehicle infrastructure. It is also good to see the recognition of the importance of operations and maintenance in homes with the requirement for a home "User Manual."

New Buildings Institute believes strongly in the role that Stretch Codes can play in moving our building stock toward greater energy efficiency and advancing base energy codes. The first Massachusetts Reach Code, perhaps the first stretch code in the nation, was based on NBI's *Core Performance Guide*, a prescriptive guide for achieving significant energy savings in commercial buildings. NBI has continuously worked in this space, creating stretch code recommendations for Washington State, the City of Boulder. NBI is also completing a 20% Stretch Code Solution that will be released later this summer. The 20% Stretch Code Solution describes a set of efficiency measures that targets energy savings of 20% beyond ASHRAE 90.1-2013 (comparable to 2015 IECC). And, NBI is also currently leading the development of the New York State Stretch Energy Code.

Based on this extensive history in stretch codes, NBI sees some important ways that this draft of the Rhode Island Stretch Code could be made even better. It can be augmented to both improve the energy performance of the Stretch Code and improve the impact the stretch code can make in Rhode Island. We see a few reasons to refine the provisions of the stretch code even further.

1. Rhode Island utilities are a key to the ultimate success of the Stretch Code. The likeliest and biggest support for homeowners to use the Stretch Code would be if there were programs and incentives available for Stretch Code compliance. Utilities could incentivize compliance with the whole stretch code or incentivize individual requirements from the stretch code. In either scenario, the stretch code will need to deliver sufficient savings for the utilities to be able to offer incentives. This is especially important since the Rhode Island base energy code likely will be updated before the stretch code is updated again, and the savings from certain stretch code measures will be eroded or erased. Therefore it is important to strengthen the stretch code so that it can deliver savings in the widest range of measures.
2. Market penetration of the stretch code in Rhode Island can be aided by greater alignment with other regional stretch code efforts. At a fundamental level, alignment will add credibility to the Rhode Island Stretch Code. Additionally, the Stretch Code being finalized for nearby New York State will likely be mandatory in many communities, including New York City. It will therefore create market capacity for the equipment and building approaches required in New York's stretch code. Regional builders will be more likely to utilize the Rhode Island stretch code if its provisions align with the requirements they are already following for New York State stretch code projects. The draft Rhode Island

#### Board of Directors

*President:*  
David B. Goldstein  
NRDC

*Vice President:*  
Michael McAteer  
National Grid, USA

*Treasurer:*  
Edward McGlynn  
Franklin Energy

*Clerk:*  
Douglas Baston  
North Atlantic  
Energy Advisors

Gregg Ander  
Consultant

Marge Anderson  
Seventhwave

Jeff Harris  
NEEA

Nancy Jenkins Ander  
California Department  
of General Services

Mark MacCracken  
CALMAC  
Manufacturing  
Corporation

George Malek  
ComEd

Steven Nadel  
ACEEE

Patrick O'Shei  
NYSERDA

Brendan Owens  
USGBC

Peter Turnbull  
Pacific Gas  
and Electric

#### CEO

Ralph DiNola

Home of:



[www.newbuildings.org](http://www.newbuildings.org)

Stretch Code already largely aligns with the draft New York State Stretch Code. With the adjustment of a couple of key provisions, the two codes could be brought into substantial parity, fostering this regional consistency.

3. Rhode Island's "Energy 2035, State Energy Plan" Greenhouse Gas (GHG) reduction goals will require aggressive energy codes. Right now, the base energy code in Rhode Island is falling behind what will be needed to meet that goal. The leadership provided by the Stretch Code is important, and it is also important that the requirements in the stretch code demonstrate leadership on all energy issues.

NBI sees two primary opportunities for improvement in the Rhode Island Stretch Code: envelope insulation and water heating equipment efficiency. These two issues are directly related to the two largest loads in a home in Rhode Island's climate: space heating and water heating. These are therefore critical issues that Rhode Island needs to ensure are sufficiently addressed in the stretch code if it is going to deliver the level of energy savings to be successful for all of the stakeholders in Rhode Island.

#### Insulation

The prescriptive path for the stretch code is based on the Department of Energy's *Zero Energy Ready Home Program*. One of the primary weaknesses of this standard is the set of provisions for insulation in the opaque thermal envelope. Water heating and space heating are the two biggest loads in homes in northeast climates like Rhode Island's. It would allow projects in Rhode Island to use the envelope requirements in the 2015 edition of the IECC. This represents only a very modest improvement over the base code and would do little to help reduce one of the biggest loads in the home, especially once the Rhode Island base code moves to the 2015 IECC. It is unlikely that a thermal envelope that only meets these requirements would deliver a zero energy home, especially not in a climate like Rhode Island's. The opaque envelope is the energy system in homes that is likely going to have the longest service life, especially enclosed insulation such as that in walls and under slabs. It is therefore essential to get this system right. A good envelope will continue to deliver savings after heating, cooling, water heating and lighting equipment have been replaced, sometimes multiple times.

**Recommendation:** *NBI recommends that Rhode Island adopt the envelope requirements from the New York State Residential Stretch Code. These have been vetted through that code development process and represent more substantial and more lasting savings. Those requirements are in the table below.*

Envelope Component	Ceiling	Wood Frame Wall	Mass Wall	Floor	Below Grade Wall
U-factor Requirement	0.026	0.056	0.056	0.029	0.042

## Water Heating

Domestic water heating can account for over 30% of the total energy consumption of a home. Water Heating Efficiency is therefore an essential element of total home efficiency. The Department of Energy's *Zero Energy Ready Home Program* has some great requirements for low-flow *Water Sense* fixtures, efficient hot water distribution design and recirculation pump controls. However, its requirements for hot water equipment are not as strong. The standard uses the Energy Star label as the basis for equipment efficiency. Unfortunately, although the Energy Star specification creates very real energy savings, technology is outpacing that standard and more efficient equipment is available that could be easily leveraged in Rhode Island.

For example, a 40-gallon electric water heater that meets the federal minimums would need to have an Energy Factor of 0.95, while it would need to have an EF of 2.0 to meet Energy Star (that's effectively a requirement for a Heat Pump Water Heater). But the best in class electric water heaters have an EF around 3.7, and the average EF for an Energy Star water heater is around 3. For gas water heaters, the difference is more pronounced. A 40-gallon gas water heater that meets the federal minimums would need to have an Energy Factor of 0.62, while it would need to have an EF of only 0.67 to meet Energy Star. But the best in class gas storage water heaters have an EF of around 0.83, and the best in class tankless gas water heaters have an EF of 1.0. For all its many strengths, there is a tremendous missed opportunity if Rhode Island sticks with Energy Star as the basis for water heating equipment efficiency.

**Recommendation:** *NBI recommends that Rhode Island adopt the high performance water heating requirement from the New York Stretch Code: a Unified Energy Factor of 0.97 for gas water heaters and 2.5 for electric water heaters. This allows for considerably more savings while preserving market availability. This is less than the optional super-efficient water heating option included in that code.*

---

New Buildings Institute (NBI) is a nonprofit organization driving better energy performance in commercial buildings. We work collaboratively with industry market players—governments, utilities, energy efficiency advocates and building professionals—to promote advanced design practices, innovative technologies, public policies and programs that improve energy efficiency. We also develop and offer guidance and tools to support the design and construction of energy efficient buildings.

Throughout its 20-year history, NBI has become a trusted and independent resource helping to drive buildings that are better for people and the environment. Our theory of change includes setting a vision and defining a path forward. We then set out to create the research that serves as the basis for tool and policy development necessary to create market change.

**Comment:**

*The prescriptive path for the stretch code is based on the Department of Energy's Zero Energy Ready Home Program. One of the primary weaknesses of this standard is the set of provisions for insulation in the opaque thermal envelope. Water heating and space heating are the two biggest loads in homes in northeast climates like Rhode Island's. It would allow projects in Rhode Island to use the envelope requirements in the 2015 edition of the IECC. This represents only a very modest improvement over the base code and would do little to help reduce one of the biggest loads in the home, especially once the Rhode Island base code moves to the 2015 IECC. It is unlikely that a thermal envelope that only meets these requirements would deliver a zero energy home, especially not in a climate like Rhode Island's. The opaque envelope is the energy system in homes that is likely going to have the longest service life, especially enclosed insulation such as that in walls and under slabs. It is therefore essential to get this system right. A good envelope will continue to deliver savings after heating, cooling, water heating and lighting equipment have been replaced, sometimes multiple times.*

*Recommendation: NBI recommends that Rhode Island adopt the envelope requirements from the New York State Residential Stretch Code. These have been vetted through that code development process and represent more substantial and more lasting savings. Those requirements are in the table below.*

<b>Envelope Component</b>	<b>Ceiling</b>	<b>Wood Frame Wall</b>	<b>Mass Wall</b>	<b>Floor</b>	<b>Below Grade Wall</b>
U-factor Requirement	0.026	0.056	0.056	0.029	0.042

**Response:**

*Alternative building envelope provisions were considered. However, the OER and its advisory committee believed it was advantageous to reference as much as possible the ZERH requirements. Also, although we agree that the standard envelope insulation requirements referenced in the ZERH program are less than optimal, the ZERH rules require Rhode Island and other states that now use IECC 2012 as a base code to comply with IECC 2015 insulation requirements for the Rhode Island climate zone. Those requirements are basically aligned with the NY Stretch Code values and for ceilings and wood frame walls are stricter. As a result, no change was made to the document.*

**Comment:**

*Domestic water heating can account for over 30% of the total energy consumption of a home. Water Heating Efficiency is therefore an essential element of total home efficiency. The Department of Energy's Zero Energy Ready Home Program has some great requirements for low-flow Water Sense fixtures, efficient hot water distribution design and recirculation pump controls. However, its requirements for hot water equipment are not as strong. The standard uses the Energy Star label as the basis for equipment efficiency. Unfortunately, although the Energy Star specification creates very real energy savings, technology is outpacing that standard and more efficient equipment is available that could be easily leveraged in Rhode Island. For example, a 40-gallon electric water heater that meets the federal minimums would need to have an Energy Factor of 0.95, while it would need to have an EF of 2.0 to meet Energy Star (that's effectively a requirement for a Heat Pump Water Heater). But the best in class electric water heaters have an EF around 3.7, and the average EF for an Energy Star water heater is around 3. For gas water heaters, the difference is more pronounced. A 40-gallon gas water heater that meets the federal minimums would need to have an Energy Factor of 0.62, while it would need to have an EF of only 0.67 to meet Energy Star. But the best in class gas storage water heaters have*

*an EF of around 0.83, and the best in class tankless gas water heaters have an EF of 1.0. For all its many strengths, there is a tremendous missed opportunity if Rhode Island sticks with Energy Star as the basis for water heating equipment efficiency.*

*Recommendation: NBI recommends that Rhode Island adopt the high performance water heating requirement from the New York Stretch Code: a Unified Energy Factor of 0.97 for gas water heaters and 2.5 for electric water heaters. This allows for considerably more savings while preserving market availability. This is less than the optional superefficient water heating option included in that code.*

**Response:**

*As with envelope provisions, a decision was made to reference ZERH provisions as much as possible. We do agree that the water heater market is changing rapidly, and we also believe that builders of low energy usage homes will select water heaters representing the more efficient models in the Energy Star range. Future versions of the stretch code will consider changes to the water heater provisions, as performance of water heaters improve.*

*No changes were made to the document.*

The following is a letter of support submitted via email by the City of Providence regarding the Residential Stretch Code document. No changes were made to the document based on this letter.

Mayor Jorge O. Elorza

Leah Bamberger



CITY OF PROVIDENCE

December 21, 2017

Becca Trietch  
Chief Program Development  
Office of Energy Resources  
One Capitol Hill, 4<sup>th</sup> Floor  
Providence, RI 02908

RE: PROPOSED RHODE ISLAND RESIDENTIAL AND COMMERCIAL STRETCH CODES

Dear Ms. Trietch,

On behalf of the City of Providence, it is my pleasure to write in full support of the proposed Rhode Island Residential and Commercial Stretch Codes. Our goal is to aid the State of Rhode Island, the Office of Energy Resources (OER), and ultimately the people of Providence in securing a more affordable, cleaner, and sustainable energy future.

Last year Mayor Elorza signed an executive order on climate action, committing Providence to become a carbon neutral city by 2050. Since buildings account for 70% of our carbon emissions, the City is working with stakeholders to develop a plan to reduce energy use from existing buildings. A stretch code will be a critical component to help address energy efficiency in new construction.

A strong building energy code is one of the most affordable and effective mechanisms for advancing energy efficiency in buildings. The national model building energy codes have increased energy-saving potential by nearly 30 percent from 2006 to 2015. Encouraging developers in Providence to use the stretch codes will help us achieve our carbon neutral by 2050 goal. Additionally, these codes will yield cost savings for local residents and businesses and will increase design and construction firm competitiveness in the marketplace.

Thank you for the opportunity to comment and participate in this process. We look forward to working with you on this important effort in capturing the many benefits energy efficiency offers.

Sincerely,

A handwritten signature in black ink, appearing to read "Leah Bamberger".

Leah Bamberger  
Director

OFFICE OF SUSTAINABILITY  
Room 501 B  
25 Dorrance Street  
Providence, RI 02903  
[www.providenceri.com](http://www.providenceri.com)

The following are the paraphrased comments of David Weitz, Senior Program Consultant, New England Region at CLEAResult, submitted via email and followed by OER's responses:

**Comment:**

*You will see that my comments are almost entirely about format rather than the requirements, and are focused on getting the document to be in more of a traditional code structure. While this might seem peripheral, I believe it is important for two reasons: (1) it will carry more weight with and be more accessible to building officials if it is in a familiar format, and (2) it will ensure that the requirements are enforceable rather than suggestive. You will also see that many of my comments are about removing descriptions of related programs and stakeholders. (e.g., National Grid) I think that all such information would be better in an appendix or supporting document, not within the covers of the actual code. Moving those descriptions will help make the Stretch Code easier to read by concentrating the actual requirements, and will also make it shorter and therefore less daunting.*

1. *General – There is no Definitions section, and there are terms that should be defined. (e.g., “Residential Energy Specialist”). While these terms are immediately understood by the folks who developed the Stretch Code, they will not be understood by all users.*

**Response:**

*There was a lot of deliberation about the format developed for the Residential Stretch Code document. Although formatting the document to better resemble a traditional code document would be beneficial for the reasons mentioned above, it can also be duplicative and confusing. Currently, the Residential Stretch Code document references multiple programs that use their own definitions. For this reason, no definition section was included in the document. However, to address this comment, the following sentence was added to the end of the fourth paragraph on page 4 (Section 2): “Each of the referenced programs maintains a list of definitions. It is the responsibility of the user of this code to review the definitions used by specific programs referenced within this code, unless a definition is explicitly provided within this document.”*

**Comment:**

2. *Cover page – Does the enabling legislation give OER the binding authority to issue a building code? If so, there should be a brief statement to that effect either on the cover or the next page so that building officials understand that the Stretch Code is legitimate. The statement should cite the enabling legislation, executive order, or whatever instrument grants the authority. EO 15-17 specifies that the Stretch Code gets developed and made available, but where is the Order that allows building officials to accept it in lieu of the building code?*

**Response:**

*As stated in the Introduction, OER has been tasked with developing and issuing stretch codes by Executive Order 15-17. Building officials are able to accept compliance with the stretch code in lieu of the energy efficiency requirements of the base code because of language contained within Rhode Island's current base code. This language is referenced and cited on page 8. However, to help clarify this authority, the following sentence was added to the upper-most call-out box on page 8 of the document: “The following excerpt is from Rhode Island's current (2017) base code, and gives code officials the authority to accept compliance with this stretch code document as a compliance path for the energy efficiency provisions of the base codes.” In addition, the following sentence was added to the end of the Introduction section on page 2: “This authority is given to code officials in section R102.1.1 of Rhode Island's current (2017) Residential Building Code (SBC-2) and Energy Conservation Code (SBC-8).” No changes were made to the Cover*

Page of the document.

**Comment:**

3. p 1 – While it’s nice to recognize all the people who worked to create the Stretch Code, I don’t think it adds value to the document to name them all. It is common to see a list of committee members in standards (e.g., ASHRAE 90.1) but not in codes.

**Response:**

Because the development of the Residential Stretch Code document would not have been possible without the many volunteer-hours provided by some of the individuals noted in the Acknowledgements section, OER believes this section should remain. No changes were made to the document based on this comment.

**Comment:**

4. p 2 – Despite their substantial support, it is peculiar to discuss National Grid, their research, and their programmatic needs. Also, the last sentence reads “Code officials, at their own discretion, may accept compliance with the energy efficiency provisions of this code, as a compliance path for similar provisions in the base Residential Building Code, SBC-2, and Residential Energy Code, SBC-8”, but related to comment 1, where is that authority granted?

**Response:**

OER believes that National Grid’s Zero Energy Buildings whitepaper is an appropriate document to reference in the introduction because it directly supports the primary State goal of reducing state-wide greenhouse gas emissions. To make this connection clearer, the following changes were made to the first paragraph in the Introduction section: “The Rhode Island Residential Stretch Code is an important part of a comprehensive effort to reduce long term energy consumption, support Rhode Island’s growing green economy, increase the affordability of home utility costs, and meet the state’s greenhouse gas (GHG) reduction targets which aim to reduce state-wide GHG emissions to 80% below 1990 levels by 2050 (§ 42-6.2-2). **As referenced in the document also supports National Grid’s Zero Energy Buildings whitepaper, which sets a goal to establishing zero-energy building energy codes in Rhode Island by 2035 will be an important component to achieving these goals. This Residential Stretch Code is meant to serve as a stepping stone towards these ambitious targets.**”

Regarding the second component of Mr. Weitz’s comment #4, OER believes the change made to address Mr. Weitz’s comment #2 (see above) addresses the question posed here regarding the authority of code officials to accept the stretch code in lieu of complying with the energy efficiency provisions of Rhode Island’s current base code. Therefore, no further changes were made to page 2 of the document to address this comment.

**Comment:**

5. p 4 – The description in the Applicability section again references outside entities: “Compliance with this document allows users to maximize incentives from available energy efficiency programs...” I think this kind of description does not belong in the body of the code, but instead in an appendix. Also, the 4th paragraph (starting with “The developers of this code...” ) similarly belongs in an explanatory appendix.

**Response:**

If a traditional code format had been used for this document, OER would agree with Mr. Weitz’s

comment #5. However, the decision was made to relax the formatting requirements for the Residential Stretch Code, in an effort to simplify the document and include non-traditional sections that describe the benefits of using the stretch code and how it was developed. It is hoped that these explanatory sections will help encourage more users of the stretch code. For this reason, these sections were placed near the front of the document.

No changes were made to the document based on this comment.

**Comment:**

6. p 4 – The section title Compliance Verification includes non-mandatory language that should be avoided in codes. Specifically, it says that “...documentation of compliance with the selected program **should be** submitted...” (emphasis added) This makes it unenforceable, and in general words like “should”, “may”, and “can” should be avoided in favor of “will”, “must”, and “shall”.

**Response:**

To address this comment, the “should be” was changed to “shall be” in the document.

**Comment:**

7. p 8 – All of Section 3 (Effective Use of This Code), except for the final bullet on page 9, belongs in an informative appendix, not in the body of the code. That bullet could be moved to Section 2.

**Response:**

OER believes that an explanation on how to best use the Residential Stretch Code document belongs near the front of the document. This is especially true because use of the stretch code is voluntary and users will want to know how to receive incentives from National Grid for using the stretch code.

No changes were made to the document based on this comment.

**Comment:**

8. p 10
  - a. 4.1 Scope – Buildings codes generally do not include operation in their scope because the oversight of the code official ends once the Certificate of Occupancy is issued. I suggest striking the phrase “...and operation of buildings...”
  - b. 4.2.1 Design and construction incentives – This section doesn’t carry any weight; it is just another pointer to the appendix and promotion of National Grid’s incentive programs. Don’t get me wrong; of course, I understand the value of those programs and how they can help promote voluntary use of the Stretch Code. It just doesn’t belong in the body of the code, as I mention above.
  - c. 4.4 Energy Performance – It is problematic to reference standards (in this case DOE ZERH) as they might appear in the future. This is because we have no idea what the future versions might look like. I can imagine, for example, an administration that seeks to weaken the energy efficiency programs of federal agencies. What if the next version is a green washing document; you wouldn’t want to support that, right? It’s better to reference a specific version. Also in this section (and true elsewhere in the document) is a sentence that reads “ZERH program homes are verified by a qualified third-party and, according to DOE, are a minimum of 40%-50% more energy efficient than a typical new

*home on a national average basis.” This is educational, but not enforceable and so should not be in the body of the code.*

**Response:**

*8.a. Although it is recognized that the building code official oversight ends with the issuance of the Certificate of Occupancy. The effect of many of the code provisions continue during occupancy, and this code includes specific requirements for delivering systems operating instructions. Current ASHRAE standards and IECC codes include provisions for building operations and performance monitoring, and those provisions are likely to be adopted in Rhode Island in the near future. For these reasons, we feel it appropriate to reference building operations. No changes were made to the document.*

*8.b. There was considerable discussion regarding this issue. It was concluded that as a voluntary code, the stretch code would often be used as a high-performance construction program, and National Grid’s financial support, through incentives, was an integral component. No changes were made to the document.*

*8.c. The code has been amended to reference a particular version of the ZERH program, and the OER has taken steps to document those requirements in the event the federal program is weakened or discontinued. Regarding the DOE quote on performance, the document is designed to be educational as well as enforceable. The OER also recognizes that code compliance relies on both enforcement and informed compliance by building professionals. No changes were made to the document.*

**Comment:**

*9. p 12*

- a. 4.7.1. Wireless “smart” thermostat – As above, it is problematic to reference something like National Grid’s programs. (“For the control of HVAC systems, wireless “smart” thermostats as defined by the ENERGY STAR program and meeting the requirements of National Grid’s Residential New Construction Program must be installed.”) What if National Grid stops requiring smart thermostats in the RNC program?*

**Response:**

*If National Grid stops supporting such thermostats, the stretch code requirement would simply default to the ENERGY STAR definition. National Grid requested that the thermostats meet their requirements as they may wish to enable communication features for future demand response programs. The inclusion of the wording will help avoid participants installing a thermostat that does not qualify for National Grid incentives. No changes were made to the document.*

**Comment:**

*10. pp 12-14 – Much of the language in section 4.8 is descriptive of the alternative paths (LEED, Passive House, LBC), and belongs in an informative appendix rather than in the body of the code.*

**Response:**

*This was considered, and it was decided that as a voluntary code there should be as much flexibility as possible in terms of compliance paths. The descriptive language was included to familiarize applicants with the referenced programs. No changes were made to the document.*

**Comment:**

*11. p 14, Water Efficiency*

- a. *As in comment 8 above, referring to a future version of a program or standard (in this case EPA’s WaterSense) is risky and uncharacteristic in a code.*
- b. *There is a typo in the 2nd sentence of the 2nd paragraph: “The program was designed to encourage water efficiency through voluntary action and **the promote** products that use less water.” It should read either “...the promotion of...” or “...to promote...”.*
- c. *footnote #5 allows the applicant to “...provide documentation that the home meets the WaterSense criteria,” but it does not specify who is authorized to make the assessment.*

**Response:**

*11.a. The EPA has not assigned version identifiers for this program. Instead it has evolved over the years. But the point is valid and the following language has been added: “To comply with this stretch code, verification of compliance<sup>1</sup> with the provisions of the 2017 version of the U.S. Environmental Protection Agency’s (EPA’s) WaterSense program, or an equivalent alternative compliance path, is required.”*

*11.b. Thank you, this has been corrected.*

*11.c. The following footnote has been added: “Applicants may provide a copy of WaterSense certification, or if not obtaining certification, may complete the WaterSense checklist and have it signed by the licensed plumber responsible for the installation of plumbing fixtures.”*

**Comment:**

*12. p 15, Optional paths to WaterSense for water compliance – Similar to comment 11c, this section specifies that “...it must be documented by a third-party verifier...” but does not provide guidance on who qualifies as an allowable third party.*

**Response:**

*The following statement has been added to section 5.3: “To use these alternative paths for compliance with this code, the applicant may use the documentation checklist or specifications for the referenced program and submit a copy signed by the licensed plumber responsible for the installation of plumbing fixtures.*

The following are paraphrased comments from Ms. Kat Burnham, Energy Program Manager at People’s Power and Light presented at the public meeting, followed by OER’s responses. Only comments related to the content of the Residential Stretch Code document are shown below. For all comments from Ms. Burnham please see the public meeting minutes on the Secretary of State’s website (<http://sos.ri.gov/openmeetings/?page=meeting&id=226409>):

**Comment:**

*Ms. Burnham asked if there was anything in the Stretch Code that would prevent the requirements from being weakened overtime. She specifically referenced the fact that federal programs which are used by the Stretch Code document could change or roll backwards.*

**Response:**

*Ms. Trietch and Mr. McCowan assured her that the intent was to reference specific versions of the federal programs. The following changes were made to the Residential Stretch Code to specify the use of the current DOE ZERH program requirements:*

- *The document has been amended to specifically reference DOE ZERH requirements labeled as Rev. 06 and dated April 20, 2017*
- *Similar amendments reference the current versions of the EPA programs.*

- *The OER will monitor updates to these programs and will issue addenda as appropriate.*

**Comment:**

*In reviewing the Electric Vehicle (EV)-ready and solar-ready requirements, Ms. Burnham was reminded that current solar system size requirements in Rhode Island prevent homeowners from over-sizing their systems. Therefore, if they purchase an EV after installing solar, the system size is often not appropriate. She wondered if there was anything in the stretch code to address this problem.*

**Response:**

*Ms. Trietch and Mr. McCowan stated that there was nothing in the code to address this issue, but that the Office of Energy Resources is aware of this problem and is hopeful that a solution can be found in the future. No changes were made to the Residential Stretch Code document based on this comment/question.*

**Comment:**

*Ms. Burnham asked how builders, architects and the general public will be able to access the Stretch Code document? In addition, the Stretch Code requires that information on currently available solar, energy efficiency and EV programs be shared with a homeowner. Ms. Burnham wondered where builders/contractors would get this information to distribute.*

**Response:**

*Ms. Trietch responded that the Stretch Code, once finalized, will be available on OER's website and the Code Commission website. In addition, both sites will provide information on currently available energy programs within the State to ensure that builders can deliver accurate information to homeowners. No changes were made to the Residential Stretch Code document based on this question.*

**Comment:**

*Ms. Burnham asked if any smart meter requirements were included in the Stretch Code.*

**Response:**

*Ms. Trietch and Mr. McCowan responded that smart meter requirements were not included as there was concern regarding the cost of these meters. However, Ms. Trietch hopes to revisit this topic in the next iteration of the stretch code. No changes were made to the Residential Stretch Code document based on this question.*

**Comment:**

*Ms. Burnham wondered if multifamily homes fell under this Stretch Code or if they would be covered by the Commercial Stretch Code.*

**Response:**

*Ms. Trietch and Mr. McCowan responded that the same building applicability definitions as Rhode Island's current base codes were used in the Stretch Code documents. These definitions were used to ensure consistency and to prevent confusion. Therefore, the majority of multifamily homes fall under the Commercial Stretch Code. No changes were made to the Residential Stretch Code document based on this question.*

The following are the paraphrased comments of Mr. Peter Friedrichs, Director of the City of Central Falls Department of Planning and Economic Development presented at the public meeting, followed by OER's responses:

**Comment:**

*Mr. Peter Friedrichs asked if any funding or technical assistance will be provided to Municipalities interested in using the stretch code.*

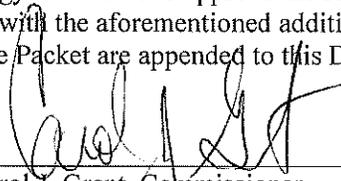
**Response:**

*Ms. Trietch responded that because the stretch code will only be used on a voluntary basis, no additional funds have been allocated to support its use. However, National Grid does provide trainings for code officials and will be creating trainings in 2018 about the Residential Stretch Code. In addition, OER is working closely with the Building Code Commission to make sure that the process for approving a stretch code compliant home will be simple and similar to the process used by code officials for base code compliance. No changes were made to the Residential Stretch Code document based on this question.*

**Decision**

It is the decision of the Rhode Island Office of Energy Resources to approve the Rhode Island Residential Stretch Code and its associated Compliance Packet with the aforementioned additions and edits. The final 2018 Residential Stretch Code and Compliance Packet are appended to this Decision.

2/16/18  
Date

  
\_\_\_\_\_  
Carol J. Grant, Commissioner  
Office of Energy Resources

A Copy of Decision has been posted on the following webpage: <http://www.energy.ri.gov/policies-programs/lead-by-example/case-studies/stretch-code-development.php>