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October 20, 2026

North Carolina Housing Finance Agency
3508 Bush Street
Raleigh, North Carolina 27609

RE: 2027 Qualified Allocation Plan

Dear Ms. Meredith:

The City of Charlotte, Town of Boone, and Chatham County (the undersigned) appreciate the opportunity to comment on the 2027 Qualified Allocation Plan (QAP). Together, we represent over 1 million residents, many of whom will benefit from affordable housing built under the QAP guidelines. As localities, we have a vested interest in advancing affordable housing opportunities statewide. We applaud the North Carolina Housing Finance Agency (NCHFA) for its work to ensure affordable housing is safe, livable, and efficient.

The undersigned hope the final 2027 QAP includes energy efficiency requirements that best address the rising energy burden and affordability concerns affordable housing residents face. The current 2027 proposed QAP requires "new construction projects to achieve ENERGY STAR Multifamily New Construction Program certification version 1.1 or the current version as of construction permitting."[1] The undersigned believes that requiring only v1.1 could lead to higher energy bills for residents and could reduce long-term affordability. ENERGY STAR v1.2 is a more updated version that builds off v1.1. V1.2 tightens efficiency requirements and simplifies compliance. V1.2 certified buildings achieve better overall energy performance than v1.1.

In a review conducted by the Southeast Energy Efficiency Alliance (SEEA) on behalf of the Southeast Sustainability Directors Network, SEEA compared ENERGY STAR's Multifamily New Construction v1.1 with v1.2. SEEA found that tenants of new multifamily buildings would likely save about 2-5% per unit. These savings would come from adopting a more updated ASHRAE Path Baseline, more efficient water-heating requirements, updated space-heating and cooling equipment, higher-quality HVAC installation, improved ductwork approaches, and higher-efficiency lighting and appliances.[2] ENERGY STAR v1.2 is designed to deliver roughly 10% energy savings compared to a home built to the 2021 International Energy Conservation Code. Based on these numbers, it's likely that energy savings would be even higher than those predicted in the referenced study.[3]

Energy bills are likely to increase in North Carolina as demand for electricity rises from expanding business and residential sectors, and the NCHFA has an excellent opportunity to build savings into affordable housing by requiring more stringent energy-efficiency measures in

[1] https://www.nchfa.com/sites/default/files/2026-09/2027QAP%E2%80%94FirstDraftAppendixB.pdf
[2] See attached memo
[3] ENERGY STAR Residential New Construction Program Roadmap

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its QAP. This update would create opportunities to enhance North Carolinians' quality of life and reduce residential energy consumption.

We thank you for your commitment to investing in equitable, affordable housing, and look forward to future collaboration between our offices and the NCHFA.

Thank you for your time and consideration.

Sincerely,

Signed by:
Pat Robertson
6BBF484703874EC...

Pat Robertson Energy Policy Analyst

City of Charlotte

Signed by:
Kevin Lindley
5452713B835F4D5...

Kevin Lindley Solid Waste and Sustainability Director

Chatham County

Signed by:
Hank Perkins
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Hank Perkins Interim Town Manager

Town of Boone

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To: Southeast Sustainability Directors' Network (SSDN)

FROM: William D. Bryan; Amy Lovell; Laura Diaz-Villaquiran

DATE: October 2, 2026

RE: ENERGY STAR Multifamily New Construction v1.1 and v1.2: Implications for Updating the North Carolina Qualified Allocation Plan (QAP)

INTRODUCTION

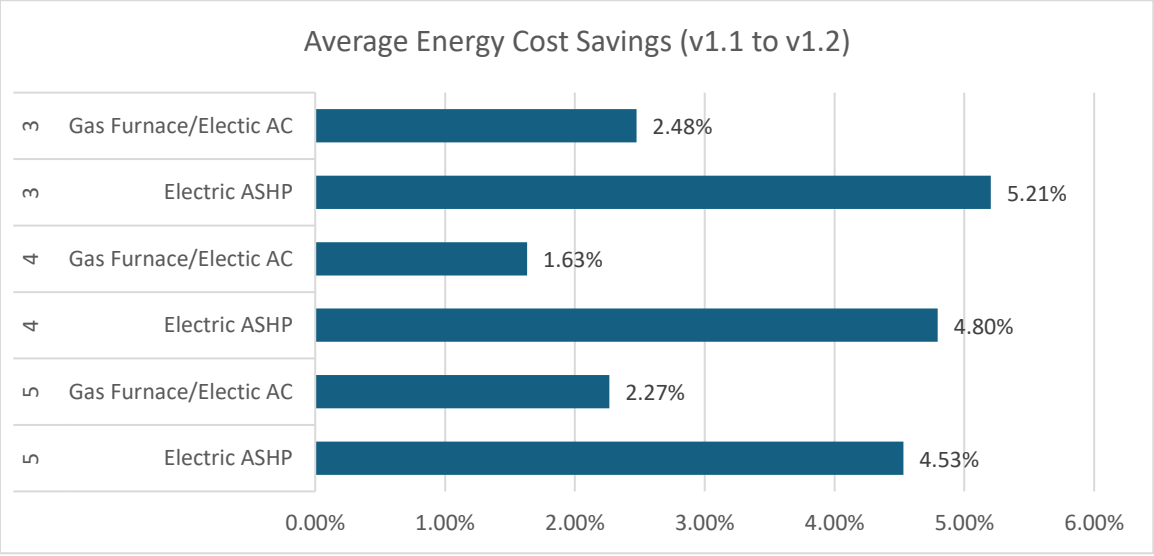
North Carolina's Qualified Allocation Plan (QAP) is currently in the process of being updated and may soon require ENERGY STAR Multifamily New Construction (MFNC) v1.2 instead of v1.1 for LIHTC-funded projects. This memo outlines SEEA's research to understand the impacts of switching from MFNC v1.1 to MFNC v1.2 for energy use and costs in new affordable housing.

KEY FINDINGS

Our analysis finds that shifting the QAP from ENERGY STAR MFNC v1.2 instead of v1.1 would deliver energy and cost savings to tenants of new multifamily buildings. We estimate that this savings will be roughly 2-5% in energy cost savings per unit, depending on the HVAC system used:

- Buildings with electric heat pumps would get around 5% savings
- Buildings with gas furnaces would get around 2% savings

This savings pattern is similar across the state's three climate zones (climate zones 3, 4, and 5). Full results are included at the end of this document.



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WHAT CHANGED FROM V1.1 TO V1.2?

In comparing the Energy STAR Program Requirements between v1.1 and v1.2, v1.2 is meaningfully more stringent on water heating (especially electric water heating) and lighting. The newer version tightens the ASHRAE performance baseline, standardizes HVAC equipment toward ENERGY STAR-certified minimums with explicit install-quality tolerances, and changes the duct-leakage strategy. Between the two versions, the IECC climate zones shifted somewhat, and this also affects the envelope U-factors and insulation guidelines for locations that have a new climate zone designation.

- **ASHRAE Path Baseline:** v1.2 targets 15% savings over ASHRAE 90.1-2019, which is a more stringent baseline than the 2016 baseline in v1.1.
- **Water heating:** Water heating represents a big single jump for v1.2 over v1.1, because of a simplification in the requirement to flat targets rather than tiered uniform energy factor (UEF) requirements by fuel or tank size. v1.2 targets 0.90 UEF for gas water heaters and 1.49 UEF for electric water heating in dwelling units. An electric UEF of 1.49 is well above standard resistance electric water heating (~0.93) and effectively requires heat pump water heaters.
- **Space heating and cooling:** v1.2 requires higher SEER for ENERGY STAR certified equipment at 16 SEER AC (hot climates) or 14 SEER (mixed-cold), and 9.2 HSPF / 16 SEER for air-source heat pumps uniformly. In v1.1, SEER2 minimums were lower and varied more by climate zone (12.3-15.2).
- **HVAC installation quality:** v1.2 adds explicit installation tolerances, including ≤20% blower fan airflow deviation, 0.52 W/CFM fan efficiency, Grade III refrigerant charge.
- **Ductwork approach:** v1.1 requires ducts and air handler to be located in 100% conditioned space. v1.2 requires ducts and air handlers within conditioned space, uninsulated, with no exterior leakage, which goes beyond a location rule.
- **Lighting:** v1.2 requires Tier II-efficacy LED fixtures in 100% of qualifying locations, plus exterior/common-space fixtures at 90% integrated LED. V1.1 had a lower threshold at 90% fluorescent or LED.
- **Appliances**: v1.2 lists ENERGY STAR refrigerators and dishwashers, no longer listing laundry equipment certification.

METHODS

EPA publishes cost and savings estimates for both v1.1 and v1.2, but each version of the standard is benchmarked against a different energy cost baseline, in different modeled cities per climate zone. V1.1 is benchmarked against the model 2012 International Energy Conservation Code (IECC), while v1.2 is benchmarked against the 2021 IECC. This means that each report cannot be directly compared to each other.

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Rather than building an independent energy model, we used official determinations of code energy savings, which are developed by the U.S. Department of Energy and Pacific Northwest National Laboratory (PNNL) and published in the Federal Register, to create a conversion factor between the 2012 IECC and the 2021 IECC (2012→2015→2018→2021 IECC). Through this process, we found that a building built to the 2021 IECC uses 88.22% of the energy that a building built to the 2012 IECC would, or that the 2021 IECC is 11.78% more efficient than the 2012 IECC.

From there, we pulled each climate zone's data from EPA's Assessments of v1.1 and v1.2 (Appendix A). Potential savings are modeled based on several factors: climate zone, building location (ground corner, middle interior, top interior, top corner), and HVAC type (electric air source heat pump or gas furnace/electric air conditioning). We pulled savings data—compared to the applicable IECC version—for each factor listed. We used climate zones 3, 4, and 5, which are the three climate zones that apply to portions of North Carolina.

We rescaled v1.1's energy cost savings baseline to the 2021 IECC by multiplying by 88.22% and then compared savings from the rescaled v1.1 to v1.2's savings figures to establish overall savings between each version.

LIMITATIONS

There are several limitations to this approach. For one, rescaling these studies to the 2021 IECC makes it possible to compare, but is not necessarily a 1:1 view of what's happening on the ground. This does not shed light on what North Carolina requires buildings to do, given that the QAP is a scoring/eligibility guide for LIHTC projects and not a minimum standard building code.

This approach also relies on different modeled cities per climate zone, as v1.1 and v1.2 used different cities to model savings for the same climate zone (e.g. zone 3 is Fort Worth in v1.1 but Memphis in v1.2; see below for a full accounting of modeled cities in each study). There is also significant variation in the results depending on the location of the unit within a building. Units at the top of the building tended to have the least savings, though these were averaged out across the entire building. In the chart at the end of this document, any negative values (i.e. where energy costs have theoretically increased between v1.1 and v1.2) have been indicated as N/A to suggest that it falls within the error margins of 0 and to avoid confusion.

Climate Zone	V1.1 Modeled City (2012 IECC)	V1.2 Modeled City (2021 IECC)
3	Fort Worth, TX	Memphis, TN
4	St. Louis, MO	St. Louis, MO
5	Indianapolis, IN	Chicago, IL

Docusign Envelope ID: 801213A7-45E5-8DD9-83B6-6DC56007FCFD

REFERENCES

2015-06-11 Determination Regarding Energy Efficiency Improvements in the 2015 International Energy Conservation Code (IECC); Notice of determination. 80 Fed. Reg. 33250. June 11, 2015.

2019-12-10 Final Determination Regarding Energy Efficiency Improvements in the 2018 International Energy Conservation Code (IECC); Notice of determination. 84 Fed. Reg. 67435. December 10, 2019.

Analysis Regarding Energy Efficiency Improvements in the 2021 International Energy Conservation Code. 86 Fed. Reg. 40529. July 28, 2021.

Cost & Savings Estimates: ENERGY STAR Multifamily New Construction, Version 1.1 (Washington, DC: U.S. Environmental Protection Agency, 2018).

Cost & Savings Estimates: ENERGY STAR Multifamily New Construction, Version 1.2, Rev. 04 (Washington, DC: U.S. Environmental Protection Agency, 2024).

Docusign Envelope ID: 801213A7-45E5-8DD9-83B6-6DC56007FCFD

Climate Zone/Building Location/HVAC Type	2021 IECC Baseline	V1.2 Costs ($)	V1.2 Savings ($)	savings %	v1.1 %	Total Savings (v1.2 vs. v1.1)
3; Ground Corner; Electric ASHP	$1,024	$916	$108	11%	2.28%	8.27%
3; Middle Interior; Electric ASHP	$922	$819	$104	11%	2.16%	9.01%
3; Top Interior; Electric ASHP	$961	$856	$105	11%	9.70%	1.23%
3; Top Corner; Electric ASHP	$998	$888	$110	11%	8.71%	2.31%
3; Ground Corner; Gas Furnace / Elec. AC	$812	$733	$79	10%	3.21%	6.51%
3; Middle Interior; Gas Furnace / Elec. AC	$727	$647	$81	11%	4.15%	6.85%
3; Top Interior; Gas Furnace / Elec. AC	$757	$678	$79	10%	12.36%	N/A
3; Top Corner; Gas Furnace / Elec. AC	$788	$707	$81	10%	11.82%	N/A
4; Ground Corner; Electric ASHP	$1,158	$1,037	$121	10%	2.70%	7.75%
4; Middle Interior; Electric ASHP	$1,022	$908	$114	11%	2.13%	9.03%
4; Top Interior; Electric ASHP	$1,071	$954	$117	11%	10.41%	0.52%
4; Top Corner; Electric ASHP	$1,112	$992	$120	11%	8.91%	1.88%
4; Ground Corner; Gas Furnace / Elec. AC	$856	$768	$88	10%	5.34%	4.94%
4; Middle Interior; Gas Furnace / Elec. AC	$748	$669	$79	11%	3.88%	6.69%
4; Top Interior; Gas Furnace / Elec. AC	$784	$703	$81	10%	13.57%	N/A
4; Top Corner; Gas Furnace / Elec. AC	$817	$733	$84	10%	12.14%	N/A
5; Ground Corner; Electric ASHP	$1,321	$1,174	$147	11%	3.24%	7.89%
5; Middle Interior; Electric ASHP	$1,135	$1,003	$132	12%	2.89%	8.74%
5; Top Interior; Electric ASHP	$1,200	$1,064	$136	11%	11.57%	N/A
5; Top Corner; Electric ASHP	$1,256	$1,111	$145	12%	9.81%	1.73%
5; Ground Corner; Gas Furnace / Elec. AC	$921	$814	$107	12%	5.13%	6.49%
5; Middle Interior; Gas Furnace / Elec. AC	$783	$698	$85	11%	4.47%	6.38%
5; Top Interior; Gas Furnace / Elec. AC	$828	$737	$91	11%	13.81%	N/A
5; Top Corner; Gas Furnace / Elec. AC	$868	$769	$98	11%	12.39%	N/A