



# **Lifecycle Underwriting: Potential Policy and Practical Implications**

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## Executive Summary

In current practice, affordable rental housing properties typically are expected to be financially and physically viable for only a limited period of time—generally around 15 years. This leads to expensive and relatively frequent recapitalization transactions which may, over the long run, reduce the number of affordable units able to be produced at current funding levels. At least in part because of concerns regarding financial and physical viability, many states choose not to require affordable properties to remain affordable over their full lifecycle, leading to difficult public-policy decisions regarding whether to allow properties to leave the regulated affordable stock at the end of their compliance periods.

We recently completed research which suggests that a substantial fraction of all affordable rental housing properties (in our sample, it was roughly half) could be financially and physically viable for a full 50-year lifecycle if the properties had complete access to cash flow and refinancing proceeds to supplement their initial and annual replacement reserve funding. This research also suggests that a modest additional investment at the time of development would have allowed the remaining properties in our sample to stay viable for a full 50 years. The cost of this additional investment is quite small relative to the costs of recapitalizing the properties later, suggesting that over time the number of units produced at current funding levels could be increased by making this additional investment to ensure viability over a 50-year lifecycle.

We readily acknowledge that the ability to finance a property so that it remains viable over a 50-year lifecycle does not necessarily mean that one should do so. There are many trade-offs involved, including temporarily reduced production during the initial years in which this policy might be adopted (due to increases in reserve levels for new projects) and higher reserve levels, which later could become targets for zealous budget cutters. The purpose of this paper is not to solve the debate, but rather to introduce and encourage it.

Accordingly, we describe and explore the policy and practical implications of a new approach to underwriting that we call “lifecycle underwriting.” Under this approach, properties are initially structured to remain viable over a full lifecycle (which could be 50 years or some other duration) and have complete access to cash flow and/or refinancing proceeds as needed to pay for major maintenance costs. For projects underwritten in this way, public funders could generally expect they would no longer need to fund expensive recapitalization transactions. Over the long term, the result would be resources that were freed-up for increased production.

## Introduction

In current practice, affordable housing programs generally underwrite multifamily rental properties for 15 years and set replacement reserves too low to sustain properties much beyond this length of time, if they reach even that far. Many properties are discouraged or prohibited from using the cash flow they generate or refinancing their mortgages<sup>1</sup> to create funds for addressing capital needs—the roofs, boilers, siding, and other building systems that need replacement when they wear out. The result is periodic, complex, and often expensive transactions to recapitalize those properties by bringing in new affordability resources.

But, what if we underwrote to 50 years? What if we gave properties more ability to use cash flow and refinance to address capital needs? Could we produce more units at less cost over the long term? Recent research from the Center for Housing Policy, Compass, and Summit Consulting Group, funded by the John D. and Catherine T. MacArthur Foundation, provides a way to start thinking about these questions through the development of a new methodology for lifecycle cost analysis (or lifecycle underwriting). We recognize this new approach has many practical and policy implications. Through this paper, and through the development of a new online tool, L-Cycle<sup>2</sup>, that allows users to apply lifecycle cost underwriting to their own properties, we hope to stimulate a thoughtful and vigorous discussion among practitioners, policymakers, and other stakeholders about the potential uses and ramifications of this new approach.

This working paper discusses both the policy and practical implications of a shift to creating affordable rental housing properties with a 50-year viability—that is, with the capacity to maintain the property for 50 years using the income generated by rents but without requiring external resources such as new subsidies. We call planning financially for the 50-year property lifecycle “lifecycle underwriting.” By doing a “lifecycle cost analysis,” a developer, lender, investor, or other funder can estimate whether a potential development is likely to be able to fund its long-term capital needs over a lifecycle of 20 to 50 years. Our L-Cycle software is a new, extremely low cost method for carrying out a rough lifecycle cost analysis during the early stages of underwriting. A more precise lifecycle cost analysis would require a property-specific engineering study, often called a capital needs assessment or CNA, which is not usually available at these early stages.

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<sup>1</sup> In the status quo, owners are likely to encounter a number of barriers to carrying out a no-cash-out refinancing. We discuss this issue in more detail on pages 12 and 13.

<sup>2</sup> L-Cycle is free Web-based software that allows users to evaluate the likely adequacy of the Replacement Reserve over a 50-year lifecycle for specific properties, using data that the users supply. L-Cycle was funded by the John D. and Catherine T. MacArthur Foundation and was developed by the Compass Group (a co-author of this working paper). L-Cycle is available at [www.HousingPolicy.org/Lcycle](http://www.HousingPolicy.org/Lcycle).

The basic proposition is that, since there is a strong predisposition to preserve existing affordable rental housing when its relatively short affordability period ends, and since preservation transactions are expensive—both because of the soft costs involved and because they often require the use of additional Low-Income Housing Tax Credits—it may be less costly over the long run to structure properties financially so they will be viable for a longer period of time, without needing future expensive preservation transactions. The L-Cycle tool (see footnote 2 above and the discussion below) has the potential to facilitate this type of analysis.

### ***Why 50 Years?***

L-Cycle uses a 50-year analysis period on the theory that this is the longest period over which a typical property might remain competitive without needing re-development (i.e., reconfiguration of the unit layouts and/or unit mix). One way of thinking about this is to recognize that in 2013, a property originally developed prior to 1963 is likely to have kitchens and bathrooms that are too small in comparison to competing properties, fewer bathrooms than competing properties, and units that are too small when compared to competing properties. There might be valid policy reasons to utilize a shorter timeframe than 50 years; for example, policy makers might want the opportunity to re-evaluate the desirability of preservation after, say, 30 years. Accordingly, we anticipate that policy makers who want to strengthen initial underwriting might choose a variety of lifecycles, with 30, 40, and 50 years all being likely choices. As one would expect, the lifecycle cost adjustment necessary to produce 50-year viability is larger than the lifecycle cost adjustment necessary to produce 30-year viability, but only modestly so. We provide data on this point later in this paper, but for now, the key point is that long-term underwriting is a useful tool regardless of what time frame one chooses to examine.

### ***Lifecycle Cost Analysis Methodology***

The Compass Group developed the lifecycle cost analysis methodology as part of a research project comparing the costs of two forms of producing multifamily affordable rental housing—new construction and acquisition-rehab. We used this methodology to adjust for differences in initial unit quality and thus facilitate an apples-to-apples comparison of the lifecycle costs of different properties. Separate papers summarize the key findings from that research<sup>3</sup> and provide technical details about the methodology itself.<sup>4</sup>

During the course of this study, we found that roughly half of the 269 affordable rental housing properties in our sample were likely to be viable over a 50-year lifecycle with no additional future funding, assuming they had access to the proceeds of a refinancing and/or a portion of cash flow. A small number (18) were even viable for 50 years while relying only on replacement reserve funding to

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<sup>3</sup> See *Comparing the Costs of New Construction and Acquisition-Rehab in Affordable Multifamily Rental Housing: Applying a New Methodology for Estimating Lifecycle Costs*. Available at: [www.nhc.org/media/files/CostComparison\\_NC\\_AR.pdf](http://www.nhc.org/media/files/CostComparison_NC_AR.pdf)

<sup>4</sup> See *The Lifecycle Cost Adjustment Methodology: An Exploration of the Baseline and Alternative Assumptions*. Available at: [www.nhc.org/media/files/LifecycleCostAdjustmentMethodology.pdf](http://www.nhc.org/media/files/LifecycleCostAdjustmentMethodology.pdf)

meet capital needs. While these 269 properties are not necessarily representative of any larger universe of properties<sup>5</sup>, this analysis nevertheless suggests that 50-year viability is a realistic goal and many existing properties may already be able to achieve it if they have the ability to refinance and have access to cash flow.

This working paper recognizes that various participants in the affordable rental housing arena may want to utilize lifecycle underwriting and/or the lifecycle cost analysis methodology to assess the likelihood a property's reserve funding will prove adequate; to assess the likelihood a property might require future additional external funding; or to change a property's financial structure to provide for greater assurance of viability over an extended lifecycle, such as the 30-year Low Income Housing Tax Credit (LIHTC) extended affordability period or the longer periods required by some state Qualified Allocation Plans. This paper also recognizes that such decisions have policy implications and entail practical considerations including (without limitation) implications for: development costs, the mix of acquisition-rehab versus new construction transactions, property feasibility, production levels, the need for future recapitalization transactions, and asset management.

Starting on the following page, we report some of the key findings from our research that have implications for the use of lifecycle cost underwriting. Based on the sample of properties we examined, our research findings suggest some practical conclusions:

- In the status quo, the typical property will need to supplement its replacement reserve funding with cash flow or capital injections by year 15.
- In the status quo, many properties could be 50-year viable if they had the flexibility to use cash flow and refinancing proceeds for capital needs, though we understand that many are restricted from doing so.
- The incremental cost for a property to become 50-year viable, beyond the property's own income, is likely to be modest for the fraction of properties that would not otherwise meet that standard (again, assuming the ability to refinance and access cash flow).

Put simply, the data show that a 50-year viability standard is probably achievable. Whether it makes sense to move policy and practice in that direction depends on the answers to many questions. To explore those questions, the remainder of this paper will discuss:

- Findings from our research that answer the question, "Are existing properties viable for a full 50-year lifecycle?"

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<sup>5</sup> The sample of property data that underlie this analysis was provided by nine non-profit affordable housing developers and two syndicators of low-income housing tax credits. The sample properties include 125 acquisition-rehab properties and 144 new construction properties from across the US. They were constructed between 1999 and 2010, with approximately half (48 percent) constructed or rehabbed between 2005 and 2007.

- Ways in which various stakeholders might utilize lifecycle cost analysis and lifecycle underwriting
- Potential implications of a more widespread adoption of lifecycle underwriting
- Pros and cons of adopting lifecycle underwriting
- Issues in developing and implementing lifecycle underwriting

## Are Existing Properties Viable for a Full 50-Year Lifecycle?

Our research, carried out on a sample of existing affordable housing properties, suggests the existing portfolio is closer to 50-year viable than one might suspect. (Please see our research and technical papers, released separately, for additional information; this is a brief summary only.)

**Table 1: Summary of Research Results**

	Number of Properties	Percent	Additional \$/Unit Needed
50-year viable <i>using only reserves</i>	18	7%	\$0
50-year viable <i>using cash flow and refinancing</i>	124	46%	\$0
Not 50-year viable	127	47%	\$6,558
<b>Total</b>	269	100%	--

**Many Properties Could Be 50-Year Viable Already.** Our research indicates it is reasonable to expect many affordable rental housing properties to remain viable over a 50-year lifecycle without requiring additional public investment, provided they can use some or all of their cash flow or refinancing proceeds to help pay for capital needs. Of our research sample of 269 properties, 18 were 50-year viable *without* needing to utilize cash flow or refinancing, and another 124 (46 percent) were 50-year viable if some or all cash flow and refinancing proceeds supplemented the replacement reserve. For similar properties, public funders might be able to negotiate 50-year affordability, without necessarily needing to provide additional funding.<sup>6</sup>

<sup>6</sup> We recognize some developers value the potential residual profits that might be earned at the end of a shorter affordability period, such as 15 years. However, as a matter of economics, because those residual profits are uncertain, and because they would be earned a long time in the future, their present value (in an economic sense) is not large in relation to the relatively immediate profit opportunity from the developer fee. For example, at a discount rate of 10 percent per year, and estimating that any given property has a one-in-three chance of producing residual profits, a potential residual profit of \$1 million that might be earned 15 years from now is worth

For this reason, we recommend that policymakers consider providing properties with greater flexibility for using cash flow and refinancing proceeds to meet capital needs over the course of the property's lifecycle.

**For Those Properties That Fail the 50-Year Viability Test, the Incremental Cost to Achieve 50-Year Viability is Modest.** For the 127 properties (47 percent) in our sample that failed the 50-year viability standard, we estimated that if an additional \$6,558 per unit (on average; in 2009 dollars) had been deposited into the replacement reserve at the time of development, the average property would have met the standard for 50 years provided they had access to cash flow and refinancing proceeds. This represents a 4.3 percent increase in initial project cost for 47 percent of projects, or roughly, a two percent increase in initial costs if amortized over the full sample of 269 properties. Arguably, this is a small price to pay in order to lessen the risk of a future workout or recapitalization. An additional investment in long-term viability would be particularly attractive in the context of an extended affordability commitment.

It should also be recognized that for many properties, alternative methods of improving viability might be more cost-effective than making a higher initial deposit to the replacement reserve, and so the cost might be lower using an alternative financial strategy, such as replacing some of the first mortgage loan with a soft loan to allow a higher monthly reserve deposit.

**The Costs of Achieving 50-Year Viability Are Only Marginally Higher than the Costs of Achieving 30-Year Viability.** In our sample of 269 properties, the same 127 properties that required a lifecycle cost adjustment to be 50-year viable needed a lifecycle cost adjustment to be 30-year viable. In those 127 properties, a 2.9 percent increase in initial project cost would be required to support 30-year viability—about 1.4 percentage points less than the 4.3 percent cost required for 50-year viability. Essentially, this means one can buy an additional 20 years of viability (from year 30 to year 50) by increasing initial project costs by 1.4 percent. Again, this is just for the 127 properties that required a lifecycle cost adjustment. Amortized over the full portfolio of 269 properties in our sample, the incremental cost of going from 30 to 50 years of viability was in the range of 0.7 percent of initial project costs.

**Reserves Alone Are Generally Inadequate to Meet Capital Needs for *Fifteen* Years, Let Alone *Fifty* Years.** Without access to cash flow or refinancing proceeds, only 18 properties (seven percent) in our sample had replacement reserve funding that was adequate to meet 50-year capital needs. Of the remaining 251 properties whose reserve funding was not adequate, we found: 66 (25 percent) faced their first replacement reserve deficit in the first ten years after development; an additional 155 (58 percent) faced their first deficit in years 11-20; an additional 28 (ten percent) faced their first deficit in years 21-30; and the remaining two properties (one percent) faced their first deficit in years 31-40. Two hundred properties (74 percent) faced their first deficit in or prior to year 15.

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only \$80,000 today. Accordingly, it would be reasonable for a public funder to expect that the cost of acquiring an extended affordability commitment typically would be small—and might even be zero—for a property already expected to be viable for the extended affordability period.

The picture changed significantly when we assumed the properties would have access to cash flow and/or the proceeds of refinancing when needing to address a reserve deficiency. Instead of only 18 properties with adequate reserves, 142 could achieve 50-year viability by accessing these additional funds.

**LIHTC Properties and Year 15.** We recognize that in the LIHTC program there is already some prevalence of a *de facto* lifecycle underwriting policy (practiced by some state LIHTC allocating agencies, some LIHTC investors, and some first mortgage lenders) requiring adequate replacement reserves for a 15-year lifecycle. However, our research findings as reported above suggest that typical properties would fail such a standard without access to cash flow or refinancing. Stated differently, our research suggests that typical properties' replacement reserve funding is not adequate to cover 15 years of capital needs and thus reliance on some combination of property cash flow, owner capital contributions, refinancing, and/or additional external funding during the first 15 years is likely to be widespread in the industry. This also suggests a significant risk that maintenance will be deferred (that is, needed replacements will not be made) toward the end of the 15-year initial compliance period.

## Potential Uses of Lifecycle Cost Analysis and Lifecycle Underwriting

Developers, lenders, investors, allocating agencies, various funders, regulators, and others can each make lifecycle underwriting part of their process. Changes will have the most impact if multiple participants in the production of affordable housing coordinate their approach. Here, we simply sketch some of the many possibilities.

**Variation in Lifecycle Underwriting Approaches.** Lifecycle underwriting policies could vary in terms of the fraction of capital needs to be funded from the replacement reserve versus from cash flow or refinancing. Policies might differ in terms of the length of the lifecycle. For example, a state LIHTC allocating agency that has adopted a 40-year LIHTC affordability period might specify a 40-year lifecycle, while a different funder wishing to maximize the affordability period might specify a 50-year lifecycle, and a HOME program participating jurisdiction (PJ) might require a lifecycle equal to the HOME affordability period. Lifecycle underwriting policies could require a CNA, a lifecycle cost analysis using software such as L-Cycle, or both at different stages in the process.

**Developers.** Mission-oriented developers who commit their properties to perpetual affordability might voluntarily adopt lifecycle underwriting, whether or not funders require it. Other developers might adopt lifecycle underwriting from a desire to make proposed projects more attractive to investors and other funders. Because L-Cycle makes lifecycle cost analysis inexpensive and easy to do, developers might well use it during the underwriting process in order to be better prepared for lifecycle viability discussions with lenders and funders.

**Lenders.** While their time horizons are generally much shorter than the 30 to 50 years we utilize, many lenders have already adopted a shorter-term form of lifecycle underwriting, at least in theory, because



they want to be sure a property will be viable for the life of the loan. For example, Fannie Mae and Freddie Mac already have lifecycle underwriting policies for both market rate and affordable apartment properties; conceptually, replacement reserve funding must be adequate to cover capital needs for a lifecycle equal to the maturity term of the loan plus two years (for example, a 12-year lifecycle for a loan maturing in ten years), according to a CNA meeting lender requirements. As another example, FHA's healthcare business unit<sup>7</sup> has a lifecycle underwriting policy which requires that (a) the replacement reserve funding adequately covers a ten-year lifecycle, according to a CNA meeting FHA requirements, and (b) the reserve deposit will be adjusted every ten years to ensure adequacy over the succeeding ten years, in accordance with a new CNA. For lenders, a CNA is often (perhaps typically) required when refinancing an existing property, because a CNA serves a dual purpose: it estimates lifecycle costs, but it also provides independent verification of a property's physical condition. Conversely, it is unusual for a CNA to be required by the lender in connection with a new construction transaction.

**LIHTC Investors.** Some LIHTC investors have already adopted lifecycle underwriting, at least regarding the 15-year initial LIHTC affordability period, because they want to be sure their investment is secure with respect to the property's capital needs. Although we recognize that mission-driven investors face many of the same incentives as other investors, we suspect that some might be interested in adopting lifecycle underwriting if their analysis confirmed our conclusion that a small marginal cost could facilitate long-term affordability and reduce the costs of maintaining a property as affordable over its full lifecycle. Other investors might voluntarily adopt lifecycle underwriting in order to enhance the likelihood that properties will not need bail-outs during the investment period.

**LIHTC Allocating Agencies, In the Origination Process.** LIHTC allocating agencies typically have minimum requirements for replacement reserve funding. Allocating agencies could use L-Cycle or other software to refine these requirements. Since virtually all LIHTC properties now have affordability periods of at least 30 years (a 15-year compliance period plus a 15-year extended use period), allocating agencies could require viability over the full 30 years, or whatever longer period is specified in the Qualified Allocation Plan. Adopting a lifecycle underwriting approach at allocation would enhance the likelihood that properties could remain viable and affordable over an extended lifecycle without additional funding from the agency.

**Other Funders, In the Origination Process.** Some funders already have lifecycle underwriting policies that generally follow the principle of matching the underwriting to the affordability commitment. For example, HUD's Mark-to-Market program requires replacement reserve funding that will meet all capital needs for 20 years, based on a CNA meeting HUD requirements. Their Rental Assistance Demonstration (RAD) program has a similar requirement. Other funders might voluntarily adopt lifecycle underwriting. For example, a HOME PJ that utilizes a 30-year required affordability period could adopt lifecycle underwriting requiring viability for a 30-year lifecycle. A state affordable housing trust fund might adopt lifecycle underwriting consistent with the trust fund's authorizing legislation. The proposed National

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<sup>7</sup> The Office of Healthcare Programs provides FHA mortgage insurance to skilled nursing facilities and assisted living facilities.

Housing Trust Fund (which seeks to create permanently affordable units for households with incomes at or below 30 percent of area median income) might be a good candidate for lifecycle underwriting over a full 50-year period.

**Regulators, In Asset Management.** Software such as L-Cycle might be useful for screening existing properties for potential viability problems. In this way, potential problem properties could be identified many years prior to the point at which the replacement reserve runs out of money. One possible approach would be to utilize software to identify candidates for property-specific engineering studies. Another approach would be to utilize software to carry out portfolio-wide analysis.

## Potential Implications of Adopting Lifecycle Underwriting

As a thought experiment, let's assume lifecycle underwriting were to be widely adopted in affordable rental housing. For example, let's say there was a general consensus in favor of reserve funding that is adequate for 20 years and that, when supplemented with cash flow and refinancing proceeds, would make properties viable for 50 years with a parallel affordability commitment of 50 years.<sup>8</sup> What would this mean for the public and private resources that produce affordable housing, the properties those resources create, and the overall ability of the delivery system to provide affordable housing?

**Implications for Development Costs.** If we assume, for purposes of this thought experiment, that our convenience sample was representative of the full universe of affordable rental properties, our research findings suggest that initial public funding would need to be 4.3 percent higher for roughly 47 percent of properties, implying an overall two percent rise (roughly) in the publicly funded portion of development cost.<sup>9</sup> However, there could be more subtle effects, such as a shift toward projects that are more likely to be viable without needing additional funding. If this were to occur, there might be less—or even no—impact on development costs, although somewhat different properties would be created.

**Implications for Future Recapitalization Transactions.** A shift toward lifecycle underwriting would ultimately result in a decreased need for public funding for preservation because in the future, fewer properties would require additional funding to meet capital needs that could not be financed internally. The shift would be gradual, as existing properties created under the 15-year-or-less approach would still need preservation. If adoption of lifecycle underwriting were combined with longer affordability periods, the demand for future recapitalization funding would be decreased further, because there would be no need to “buy back” affordability by compensating owners for the residual profits they

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<sup>8</sup> The numbers we report are for a 50-year lifecycle, but users could change the viability and affordability periods to shorter time frames, such as 30 or 40 years.

<sup>9</sup> We recognize that our sample is not in fact representative of any larger universe. However, since every user of lifecycle cost analysis will be looking at a different universe of properties, the exact percentages in need of an adjustment will vary from context to context. The L-Cycle software can be used to develop more precise estimates for any user's universe of properties.

would otherwise stand to earn by terminating affordability. Accordingly, it would not be surprising if, starting roughly 15 years after adoption of lifecycle underwriting, the demand for preservation funding were to drop significantly, thereby freeing up more public funding for new production. Conversely, during these first 15 years, public funding would need to cope with the modestly higher cost of lifecycle underwriting while still addressing preservation needs of properties that were not originally underwritten to the same level of rigor.

**Savings from Fewer Recapitalizations.** Our research sample included 49 acquisition-rehab transactions utilizing 4% LIHTCs; this is a reasonable proxy for the type of year 15 recapitalization a lifecycle approach would avoid. These transactions averaged \$135,586 per unit in total development cost (in 2009 dollars)<sup>10</sup>, of which \$63,985 per unit was a combination of LIHTC equity and soft debt (i.e., public funding). If a small up-front investment could eliminate the need for costly recapitalizations, the tradeoff could well be worthwhile.

**Implications for Production Levels.** If public funding were to be held constant during a shift to lifecycle underwriting, the higher per-unit up-front costs initially would reduce production during the year of change over. For illustration, a two percent higher public funding cost, on average, would in turn suggest a (roughly) two percent reduction in the number of new affordable rental housing units produced or preserved annually. Since the impact would be temporary, we expect it would be more than offset later through decreased demand for preservation funding. It would also be possible to ease the transition through a temporary increase in public resources during the transition to lifecycle underwriting.

Let's continue the thought experiment with some hypothetical figures. Let's say that today we are producing or preserving 150,000 units of affordable rental housing annually, and that one out of three transactions is a preservation transaction (involving a property that is already in the restricted affordable stock). This means we are adding to the affordable stock at the rate of 100,000 units per year (the 50,000 preservation units are already in the stock and are given longer life via preservation). Suppose further that the public cost for a preservation transaction is \$65,000 per unit<sup>11</sup> and that the public cost for a new production transaction is \$150,000 per unit<sup>12</sup>. Additionally, suppose that increasing public funding for new production by five percent will largely avoid the need for future preservation transactions, although a small percentage of public resources would likely still be needed for preservation in the event of unforeseen circumstances. In this thought experiment:

1. We are now spending  $100,000 \times \$150,000$  (\$15 billion) plus  $50,000 \times \$65,000$  (\$3.25 billion) in public funding annually = \$18.25 billion. In the status quo, that would be the sum of 9% LIHTC

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<sup>10</sup> On average, the \$136K per unit for total development cost was composed of \$57,000 (42 percent) for acquisition; \$41,000 (30 percent) for construction, including general contractor fees; \$11,000 (eight percent) for developer fees; \$5,000 (four percent) for initial reserves, and \$21,000 (16 percent) for other soft costs.

<sup>11</sup> See the section above.

<sup>12</sup> In our sample, the public funding component of new construction properties averaged \$150,595 per unit in 2009 dollars.

equity, 4% LIHTC equity, equity from other tax credits used for affordable rental housing<sup>13</sup>, the portion of HOME devoted to affordable rental housing production, and the portion of community development block grants (CDBG) devoted to affordable rental housing production, plus state housing trust funds and other sources of soft debt.

2. The public cost to produce new units using lifecycle underwriting would be \$157,500 per unit (\$150,000 plus five percent).
3. If that same public cost were devoted solely to new production—since preservation would no longer be needed except in unforeseen circumstances—using lifecycle underwriting, we would be able to fund  $\$18.25 \text{ billion} \div \$157,500 = 116,000$  units, a 16 percent increase in new production relative to today's 100,000 unit level at roughly the same cost.
4. We would reach that 16 percent increase after roughly 15-20 years, by which time the existing affordable properties that are reaching age 15-20 would not need recapitalization due to the use of lifecycle underwriting.
5. In the meantime (during the first 15 to 20 years), the \$15 billion that we are devoting to new production would support 95,000 units each year using lifecycle underwriting ( $\$15 \text{ billion} \div \$157,500 = 95,240$ ), rather than the 100,000 units currently supported.
6. So at constant funding levels, we would produce roughly 5,000 fewer units each year for 15 to 20 years, followed by roughly 16,000 *more* units per year for every year thereafter. After roughly 20 to 25 years, the increased number of units produced from the long-term savings generated through lifecycle underwriting will have caught up with the modestly lower levels of initial production in the transition period. Thereafter, we would be producing roughly 16 percent more units per year (at current funding levels).
7. The preceding assumes that, after a 15-year transition period, zero public funding would be devoted to preservation (as opposed to 18 percent in the status quo<sup>14</sup>). If instead we adopted the more conservative assumption that some small percentage of public funds—say, five percent—still would need to be devoted to preservation after the transition period, the thought experiment would yield a net gain of 10,000 units rather than 16,000 after the transition period, as shown in the table below.
8. This estimate may well be conservative because it assumes that the share of public funds spent on preservation stays constant over time, rather than growing as the size of the national inventory of affordable rental units grows.

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<sup>13</sup> Other tax credits include federal and state historic credits, state low income housing credits, and brownfield credits, among others.

<sup>14</sup> Specifically,  $\$3.25 \text{ billion for preservation} \div \$18.25 \text{ billion total public funding} = 18\%$  for preservation.

**Table 2: Implications for Production Levels: A Thought Experiment**

	Status quo	Lifecycle approach	Difference
<b>Total public funding</b>	\$18,250,000,000	\$18,250,000,000	\$0
<b>Cost per unit of new production</b>	\$150,000	\$157,500	\$7,500
<b>Cost per unit of preservation</b>	\$65,000	65,000	\$0
<b>Percent allocated to preservation</b>	18%	5%	-13 pct. points
<b>Public funding available for new production</b>	\$15,000,000	\$17,337,500	\$2,337,500
<b>Total units of new production</b>	100,000	110,000	10,000

**Implications for Properties with Particularly Low Rents.** There is a practical limit to a property’s ability to self-fund its capital needs. That limit is reached once the property has no ‘must pay’ debt (i.e., when all development costs have been paid with equity or soft debt), and all available net operating income has already been devoted to meeting ongoing capital needs. This primarily affects properties that have particularly low rents (either because they are located in neighborhoods with particularly low market rents, or because of ‘deep targeting’ to serve residents with particularly low incomes), since their net operating income will be consumed more quickly. For these properties, it may not be possible to meet lifecycle underwriting requirements except by making an unusually large initial deposit to the replacement reserve. A shift to lifecycle underwriting might result in fewer such properties being developed, but it is more likely that a shift to lifecycle underwriting would result in underwriting changes such that deep targeting, for example, is not taken to extremes that jeopardize a property’s long-term viability. It should also be noted that, concerning areas with particularly low market rents, some may argue it does not make sense to spend significant public resources to develop a regulated affordable rental housing property with rents that will be, in fact, at or above market levels.<sup>15</sup>

**Implications for Transaction Mix.** If lifecycle underwriting were to be more widely adopted, developers might find it advantageous to pursue different types of projects. For example:

- **Less concentration of rehab at transaction time.** In acquisition-rehab transactions, it might be sensible to carry out less initial rehab (borrowing less in the form of a first mortgage loan) and to utilize a higher replacement reserve deposit, thereby meeting lifecycle underwriting requirements and reducing total development costs at the same time. Current policy makes this difficult, because rehab adds to LIHTC basis and thus to the amount of LIHTC equity that can be raised. In other words, concentrating rehab work at the LIHTC transaction generates more

<sup>15</sup> Whenever the particularly low market rents are caused by particularly high vacancy rates and/or particularly weak population growth, a sound case often can be made against developing new affordable rental housing. However, it may be politically difficult to concentrate development of affordable rental housing only in areas experiencing high growth and low vacancy, even though that may be an appropriate strategy from an economic perspective.

subsidy. State allocating agencies would have to adjust their Qualified Allocation Plans to provide counter-incentives or Congress would have to amend the LIHTC statute to change this policy.

- **More durable and low-maintenance materials.** Developers might make more use of zero-maintenance products such as masonry exteriors and vinyl-covered windows and trim. Currently, the financial benefit from these materials does not affect public subsidy or overall property underwriting greatly since much of the benefit falls outside the underwriting time horizon. This approach would also generate long-term cost savings whenever the incremental up-front cost was more than outweighed by the extended useful life of the zero-maintenance component.
- **Fewer historic and adaptive re-use projects.** Developers might find it particularly expensive to meet lifecycle underwriting requirements for historic rehab and adaptive re-use transactions<sup>16</sup>; if this becomes the case, then a shift toward lifecycle underwriting could result in fewer such transactions unless countervailing public policies were put into place.

**Implications for Financial Structuring.** The simplest way to structure properties for lifecycle viability, at least at first glance, would be to increase the initial deposit to the replacement reserve. Doing so, however, would create other challenges for regulating the use of a large pool of funds that would sit unused for years (see further discussion, below). For many properties, it would be more efficient to increase the annual deposit paid out of cash flow which may, in turn, reduce the funds available to pay debt service on the first mortgage and require substitution of more soft debt for hard debt. A more subtle strategy would be to utilize a shorter amortization period for the hard debt, facilitating later refinancing. Another creative strategy would be to calculate the additional initial reserve deposit needed, but then have the state LIHTC allocating agency hold and invest that additional funding. In effect, the agency would be holding this money in trust for the property, but with assurances the funds would be provided later, when needed.

**Implications for Asset Management.** If lifecycle underwriting were to be widely implemented, there would be a much lower prevalence of properties facing financial stress because of inadequate reserve funding. The asset management departments of lenders, state LIHTC allocating agencies, and LIHTC investors could shift more toward portfolio management and longer-term planning, and away from crisis management. Conversely, with larger initial public investments being made, there might be sound public-policy grounds to increase—not decrease—government oversight.

**Issues in Designing the New Funding Approach.** Widespread adoption of lifecycle underwriting would lead to a new funding approach in which government would provide a modestly higher amount of funding initially, and then generally would not re-invest during the 50-year lifecycle. A likely effect would

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<sup>16</sup> For example, the lifecycle costs to maintain a historic façade might be much higher than the lifecycle costs to maintain a similar façade using standard materials. Similarly, the lifecycle costs to maintain a school that has been re-purposed into apartments might be quite high as a result of the higher ceilings and wider hallways typically found in school buildings.

be a reduction in complex and expensive recapitalization transactions and an increase in simple no-cash-out refinance transactions (not involving government funding). In turn, this may require a shift in owner and regulator expectations about where developer profits will come from and oversight of these profits by the government. A few issues that affect the achievability and desirability of such a shift are:

- **The risk of back-sliding.** Some properties, though initially structured using lifecycle underwriting, will still fail. In the status quo, government generally leans in favor of re-investing; in the new funding approach, government likely would lean against re-investing or may indeed have a presumption against re-investment. However, it may be hard for government to refuse properties applying for capital needs funding, particularly if residents are politically active in support of the request. It will take concerted, long-term effort (and probably a few unpleasant public confrontations) to change expectations.
- **No-cash-out refinancing has to become easier.** If properties are to rely on more frequent refinancing to address capital needs, such transactions will have to become less complex and less expensive. Government will have to work with lenders and owners to create loan products and approval processes that assure no-cash-out refinancings are truly that—without a heavy oversight burden. For instance, government could commit in advance to roll over subordinate (soft) loans when there is a no-cash-out refinancing of the senior loan consistent with the long-term affordability commitment.
- **Owners need a reasonable expectation of adequate financial return, taking into account initial developer fees, ongoing management fees, ongoing cash flow, and potential residual profits.** Otherwise, few will want to develop properties, whether they are seeking profit or funds to support their affordable housing mission. There still will need to be a way for owners to access equity value in their property without having to sell it; without it, there will be many needless and expensive sale transactions. In practice, this will likely mean greater access to cash flow and accumulated equity value under government regulation, available to both for-profits and nonprofits. Owners must be able to rely on government's commitment to sufficient rent levels, and government must be able to rely on owners' commitment to maintain property quality.
- **Property standards must be clear and must be enforced efficiently.** Inherent in a lifecycle underwriting approach is a baseline expectation that properties will be well-maintained. This standard is never as clear as we might hope, and it will ultimately fall to government to define it. Existing approaches, such as the HUD Real Estate Assessment Center and state-level standards for LIHTC properties, are a mixed bag—more clarity, more predictable enforcement, and more cost-benefit analysis are needed. Achieving these improvements would be a nontrivial accomplishment.

## Pros and Cons of Lifecycle Underwriting

The discussion above highlights some of the implications of using lifecycle underwriting. In this section, we summarize the major cost-benefit factors as a way to stimulate thought and debate about whether—and under what circumstances—to use this new underwriting approach.

**Pro: Reduced Likelihood of Financial and Physical Stress.** Properties that are 50-year viable would have adequate reserves and access to cash flow to address capital needs before they turn into crises. This involves, at minimum, the following important dimensions:

- Property stress has a negative impact on low-income tenants and the surrounding neighborhood; leaky roofs, broken pavement, poor heating, inadequate security systems, and other system failures affect everyone who interacts with the property. Avoiding these stresses would be a significant achievement.
- It is expensive to correct the problem after the property fails; that is, in financial terms, preventive maintenance pays off. As noted above, preservation transactions in our sample averaged \$63,985 per unit in public funding. Correcting the problem after the property fails also is labor-intensive, requiring the efforts of owners, managers, lenders, public funders, attorneys, and consultants.
- It's smart to reduce the amount of decision making carried out under stress. The choice about whether to invest additional public resources in a property can be made less frequently and without the threat of immediate displacement.

**Con: In the Short Run, Reduced Production Levels.** As noted above, our research suggests an early short-term reduction, somewhere in the two percent range (perhaps less), in the number of affordable rental housing units produced annually, compared to production levels prior to implementing lifecycle underwriting.

**Pro: In the Long Run, Increased Production Levels.** As noted above, as lifecycle underwriting-compliant properties age, fewer of them will require recapitalization, freeing up public funding for new production.

**Con: Early Funding of Reserves Not Needed for Many Years in the Future.** Care would need to be taken in designing financial viability plans to reduce the risks associated with large reserves. All else being equal, it is undesirable to allow the replacement reserve to build up to very large levels many years before the funds are needed. One potential problem might be an adverse income tax impact to the property owner: interest earnings on the reserve are taxable and would probably have to remain in the reserve, but reserve deposits are not a tax-deductible expense. A more subtle problem is that various stakeholders may be tempted to “raid” the reserve for various short-term (perhaps also short-sighted) purposes. Another troubling issue is that when a property is sold, both the purchaser and seller will be strongly tempted to find ways to pocket some of the reserve funds.



As noted above, there are a number of options for addressing these concerns that could help to mitigate or eliminate them.

**Con: Some Properties May Not Be Desirable in the Long Run.** Neighborhoods change, so a location that is desirable now may be undesirable 30 years from now. Similarly, if local population declines, the future demand for affordable rental housing may be lower than it is today. In these types of situations, earlier decisions—in favor of a 50-year affordability period, for example—will have turned out poorly.

## Questions Likely to Arise in Implementing Lifecycle Underwriting

Beyond an initial list of pros and cons, there are many implementation questions that affect how a lifecycle approach would work in practice.

**Addressing Capital Needs Through a Mix of Reserve Funding, Cash Flow, and Refinancing Proceeds.** As noted above, a policy that relies solely on the replacement reserve during early years, with the reserve being supplemented with cash flow and refinancing proceeds later, would address some challenges that arise from large pre-funded reserves. There are a number of ways to structure this approach. We discuss two options below: coordinating the reserve fund with the maturity of the first mortgage, and coordinating the reserve fund with the likely refinancing date of the first mortgage.

1. **Coordination with First Mortgage Maturity.** For example, a combination of reliance on the reserve alone for 20 years, and a 20-year amortization and maturity term on the first mortgage would be one good way to provide 50-year viability<sup>17</sup>. Using this approach, after year 20, net operating income formerly devoted to paying the mortgage would be available to supplement the replacement reserve.<sup>18</sup>
2. **Coordination with First Mortgage Refinancing.** A combination of sizing the reserve funding to provide adequate coverage for 20 years, and a 25-year amortization and maturity term on the first mortgage might be another good approach for some properties. After year 20, if it became necessary to refinance, the first mortgage balance would be low enough that the property likely

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<sup>17</sup> After year 20, the hard debt would be completely repaid, and there would be no need to make a monthly mortgage payment after year 20. Thus, the monthly reserve deposit could be increased significantly, the property could be refinanced to raise capital for repairs, or both.

<sup>18</sup> It should be pointed out that typical affordable rental properties have quite limited amounts of hard debt; thus, the increase in debt service that would result from shortening first mortgage maturity from 30 years to 20 years might be quite modest. For example, if hard debt is \$30,000 per unit at an interest rate of six percent, the monthly principal and interest payment at a 30-year loan term is \$126 per unit, versus \$166 per unit at a 20-year loan term—only a \$40 per unit per month difference.

could be refinanced to solve any reserve inadequacy problems. The same might not be true if the first mortgage amortization term were 30 years or longer.<sup>19</sup>

**Asset Management Policy Questions.** During a period in which a property is relying in part on cash flow and/or refinancing, regulators would want to make sure the owner did not distribute cash flow that was actually needed to address long-term capital needs. In order to implement such a policy, a regulator would need a method for forecasting long-term capital needs, and a protocol for determining how much of the current year's cash flow should be deposited into the replacement reserve. One approach would be to require a CNA every five or ten years and require that the monthly reserve deposit be re-sized based on the new CNA. With larger reserves at stake, asset management would need both staff and agency support to withstand continual pressure from owners to release funds earlier. Owners would need to be assured that the process for determining releases was fair and evidence-based.

**Property-Specific Financial Strategy.** When changing the financial structure of a property, either during underwriting or post-completion, there are typically a variety of feasible financial solutions. For example, the mix of initial and annual deposits to the replacement reserve can be adjusted. As another example, a strategy of utilizing less hard debt and more soft debt often should be considered during underwriting. Throughout operations, often decisions will often need to be made between refinancing the property and simply using annual cash flow to supplement the replacement reserve.

**Control of Reserve Funds.** As discussed above, if a property is likely to build large reserve balances it may be appropriate to consider alternative approaches. For example, the Michigan State Housing Development Agency (MSHDA) requires very large initial reserves for projects that are at risk of negative cash flow under stress-test conditions (in which expenses grow significantly faster than revenues). MSHDA agrees to pay an advantageous rate of interest on the reserves, but in exchange requires that the reserves be deposited with MSHDA and that the project owner not have any ownership in the reserves.

## Conclusion

Our research suggests there are good reasons for policy makers to consider adopting lifecycle underwriting approaches and longer required affordability periods. Shifting to lifecycle underwriting and a longer affordability period will require careful consideration, however, to reduce unintended consequences. We hope this paper will help all stakeholders reflect on these important questions, and lead to a productive discussion within the affordable rental housing community.

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<sup>19</sup> Let's say the hard debt is \$30,000 per unit, at a six percent interest rate. If the first mortgage term is 25 years, the remaining balance of the first mortgage would be just under \$8,000 per unit after 20 years. For many properties, it might be readily feasible to refinance at such a point, raising sufficient capital to support viability for the remainder of an intended 50-year viability period.

## Study Team

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## About the Authors

The **Center for Housing Policy** is the research affiliate of the **National Housing Conference** (NHC) and specializes in developing solutions through research. In partnership with NHC members, the Center works to broaden understanding of the nation's housing challenges and to examine the impact of policies and programs developed to address these needs. Combining research and practical, real-world expertise, the Center helps to develop effective policy solutions at the national, state and local levels that increase the availability of affordable homes.

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