Maybe it Really Does Take a Village: Supporting the Creation of High-Quality Unsubsidized Affordable Rental Housing in Legacy Cities—Working Paper

Authors: Ira Goldstein, Emily Dowdall, Jacob Rosch and Kevin Reeves
Policy Solutions, Reinvestment Fund

Executive Summary

Naturally Occurring Affordable Housing (NOAH) has attracted considerable interest in the housing and community development fields as a potential solution to several long-running challenges that have grown more acute in recent years across the United States: the insufficient supply of decent housing units at affordable price points for low and moderate-income households; the concentration of new housing production at the high end of the market and, to a lesser extent, in subsidized low-income units, resulting in a "missing middle"; and the loss of existing middle-quality housing units through, on one hand, disinvestment in destabilized middle neighborhoods and, on the other hand, the upgrading of middle quality stock to luxury prices in appreciating markets. The preservation and production of NOAH is seen a strategy to provide an adequate supply of middle market stock, stabilize neighborhoods at risk of decline, and maintain economic diversity and access to opportunity.

Through extensive interviews and analysis of national and local data, this paper sets out to move toward a shared definition of NOAH, describe the national supply of this market segment and its variations in four cities (Baltimore, MD, Philadelphia and Pittsburgh, PA, Richmond, VA), catalog the unique challenges producing and maintaining it, and explore policy and investment strategies for NOAH that account for market context. We conclude that there are significant opportunities for the diverse set of actors engaged with NOAH (Community Development Financial Institutions, policy makers, nonprofit developers and entrepreneurs) to apply existing tools and new approaches to expand this essential housing market segment, and a number of unresolved questions for further research.

Introduction

The proverb "It takes a village to raise a child" suggests the necessity of a web of actors acknowledging and sharing a collective responsibility for protecting and nurturing growth and maturation to ensure success; it is also applicable to addressing complex societal issues. In the sphere of housing policy, that "village" has historically included a web of public and private (for- and not-for-profit) actors responsive to a private market and a set of federal, state and local programs that support affordable housing for the nation's low and modest-income households. Some of these actors have coordinated efforts in working to a particular goal (e.g., producing housing subsidized through the nation's tax code) while others have been individual market actors, seeing opportunity to serve a market and seizing it (e.g., producing unsubsidized for-sale or rental housing).

But things are changing, especially in a world where leadership and resources from the government are increasingly inadequate. As Katz and Nowak argue, the power that previously rested with federal and state governments is both drifting downward from, as well as horizontally to, "…networks of public, private and civic actors…".[1] Over the past dozen years, market and policy shifts coupled with relatively low real income growth for all but the highest income households have left a gap in the segment of the

[1] Katz and Nowak, 2018.

housing market serving lower income households and the middle class, especially in older urban areas. As this gap becomes wider, the village will take on added importance to ensure that there is adequate housing for all income levels.

Concomitant with the evolution of the policy landscape, and in response to the foreclosure crisis coming out of the recession between December 2007 and June 2009[2], the demand for rental units grew nationally by approximately 1 million per year since 2010. Between 2006 and 2016, the supply of single-family rental units grew to almost 40% of the total rental stock, although growth has slowed recently. Robust growth in the multi-family rental stock continues. Yet although the increased demand for rental housing has been evident up and down the economic spectrum, over the last several years the share of units renting at levels affordable to higher income households increased dramatically while the share that is affordable to modest or lower income households declined.[3]

At the same time, subsidies for very low-income households have grown slowly—increases in Housing Choice Vouchers have been offset by losses in place-based public and assisted housing stock—and have not kept pace with the growing number of renters at these subsidy-eligible income levels. The Low Income Housing Tax Credit program (LIHTC) addresses a significant part of the unmet demand[4] but recent tax reform will likely reduce the number of units produced.[5] To make matters even more challenging, experts project that more than a million units created or preserved with LIHTC, project-based Housing Choice Vouchers and other programs may lose their affordability commitment between 2017 and 2026.[6] Best estimates are that across the nation, there is subsidy support for 25% of the nation's lowest income renters who need it.[7] The resulting current reality for many households is either high cost burdens or very poor-quality housing—or both.

Rental housing shortages and cost burdens are not limited to the nation's lowest income households. For example, 25.7% (3.2 million) of the nation's renters with annual incomes between $40,000 and $80,00 are cost burdened and another 5.3% (660 thousand) are severely cost burdened.[8] These *moderate and middle-income households* would benefit from increases in the supply of high-quality, affordable rental housing. Housing at these incomes levels does not require deep subsidy, but may require some organization of financers, property managers, and policy makers to produce enough units to meet demand.

Some point to *filtering* as the vehicle by which housing needs are met at different income levels. Filtering in the housing market is a process whereby prices and rents in the existing housing stock are lowered when new, higher priced housing is created, which has the impact of making that devalued stock available to households with less income than the prior residents. It is generally seen as a process that is driven by changes in both demand and supply. Some scholarship asserts that creating new high-

[2] See: National Bureau of Economic Research, *US Business Cycle Expansions and Contractions*. Accessed April 25, 2019. http://www.nber.org/cycles/cyclesmain.html.
[3] Joint Center for Housing Studies of Harvard University. "America's Rental Housing 2017."
[4] Joint Center for Housing Studies of Harvard University. "The State of the Nation's Housing 2018".
[5] Novogradac, Michael. "Final Tax Reform Bill Would Reduce Affordable Rental Housing Production by Nearly 235,000 Homes," last modified December 19, 2017. Accessed April 25, 2019. https://www.novoco.com/notes-from-novogradac/final-tax-reform-bill-would-reduce-affordable-rental-housing-production-nearly-235000-homes
[6] See: https://www.urban.org/sites/default/files/publication/93601/housing-as-an-asset-class_1.pdf
[7] Joint Center for Housing Studies of Harvard University. "The State of the Nation's Housing 2018".
[8] Reinvestment Fund calculations based on the 2017 American Housing Survey.

quality stock creates a situation in which existing stock filters down to households further down the income spectrum, making filtering critical to meeting housing needs at different income levels. However, Been et al., (2018) evaluate the filtering literature and conclude that while the evidence suggests some filtering in the housing market does occur, imperfections in the filtering process require additional housing unit creation at varying price points in the market.

> …adding new homes moderates price increases and therefore makes housing more affordable to low- and moderate-income families … new market-rate housing is necessary but not sufficient. Government intervention is critical to ensure that supply is added at prices affordable to a range of incomes… (p. 25)

In short, filtering may help, but filtering alone cannot solve the housing problem across the US. An additional limitation of filtering is that devalued housing stock may deteriorate to the point of uninhabitability or abandonment. Absent household wealth or access to financing sufficient to maintain the existing supply of affordable housing, these units are at risk of loss to physical deterioration.

Over the last few years there has been increasing discussion of Naturally Occurring Affordable Housing (NOAH)—loosely defined as housing units that are affordable to modest-income families without subsidy such as LIHTC.[9] Several of the nation's Community Development Financial Institutions, or CDFIs, (e.g., Chicago CDFI Collaborative—including Community Investment Corporation, Greater Minnesota Housing Fund, Chicago Community Loan Fund, Atlanta Neighborhood Development Partnership, Low Income Investment Fund, Virginia Community Capital, Bridgeway Capital, and the Neighborhood Lending Services, Enterprise, LISC, Reinvestment Fund, to name a few) have become financiers of—and policy advocates for—unsubsidized affordable rental housing. Those developing and/or rehabilitating housing that falls within the NOAH category are a varied group, including small entrepreneurs, REITS, some of the nation's publicly traded homebuilders (in some markets)[10], and nonprofit housing developers (e.g., Mercy Housing which both develops and finances housing).

What follows is a summary of the NOAH phenomenon derived from 31 interviews conducted with the organizations listed above as well as other practitioners, funders, developers and policymakers. From these learnings, we work toward a common definition of NOAH, which is currently lacking in the field. Next, we examine existing data representing the NOAH stock, primarily COSTAR data and REIS reports, and explore the types of markets wherein NOAH seems to be most effectively created. Finally, we conclude with a thought experiment about how the power of the market could be harnessed to support the production and preservation of NOAH for modest-income households in a way that is both responsive to the realities of the housing market in general as well as to local market conditions.

---

[9] See, for example, Lupton, Shaw and Ethan Vaisman. "Naturally Occurring Affordable Housing". NAAHL & ULI Symposium, October 11, 2016. Accessed April 25, 2019. http://uli.org/wp-content/uploads/ULI-Documents/ULI_NAAHL_Presentation.pdf.; National Low Income Housing Coalition. "Naturally Occurring Affordable Housing Benefits Moderate Income Households, But Not the Poor," last modified November 07, 2016. Accessed April 29, 2019. https://nlihc.org/resource/naturally-occurring-affordable-housing-benefits-moderate-income-households-not-poor, etc.

[10] While prices of new housing have been rising (45.7% since 2010), the median sale price of new housing stood at $323,000 in 2017 (Census's report on the characteristics of new single-family homes sold). Regional median prices range from $284,000 in the Midwest to $490,400 in the Northeast.

Towards a Common Definition of Naturally Occurring Affordable Housing

There is no bright-line definition of NOAH among the practitioners we interviewed or in the literature. Different understandings of "natural", "affordable", and the housing types (tenure, age, etc.) that can be considered NOAH contribute to the lack of a standard definition.

Some experts avoid the term NOAH altogether for fear of reifying an economic market. As Cortright states, "There's nothing 'natural' about it."[11] The production and preservation of housing in the right price range does not occur absent a set of public policies (e.g., local zoning and fees) and economic realities (e.g., local incomes and costs of land and labor). For these reasons, some in the field prefer terms such as "unsubsidized affordable housing" or "market affordable housing."

Those who do use the term NOAH generally use "natural" to indicate that units do not have "significant" subsidy (e.g., LIHTC). Beyond that, however, experts interviewed in the housing and development fields label units with varying levels and types of subsidy as "NOAH." For example, interviewees noted that local real estate tax abatements, land provided at a low cost by a land bank, or low interest rates subsidized by state housing finance agencies are helpful in the transaction, but not considered subsidy for purposes of defining NOAH.[12] Similarly, while Housing Choice Vouchers (HCVs) are most certainly a subsidy, interviewees still consider housing units paid for with HCVs to be NOAH. In other words, the NOAH unit cannot be subsidized but the tenant might be. Some go further and call HCVs in NOAH essential, because the allowable fair market rents provide a financial floor that make the finances of NOAH transactions viable.

While most interviewees accept "affordable" to mean housing that costs no more than 30% of a household's income, there is wide variation in the target income levels for NOAH. Some in the NOAH space target 80% to 120% Area Median Income (AMI). Indianapolis Housing Neighborhood Partnership (INHP) employs a mixed-income strategy for small to mid-sized multi-family properties with a portion of units set aside for households closer to 75% AMI. Others (e.g., NOAH Impact Fund) drop the lower bound to 60% AMI. While targeting incomes under 60% AMI is unusual, there are others who see the potential of NOAH as "…an effective component of an affordable housing strategy for families between 30% and 80% of Area Median Income."[13,14] Often, the income level served is dictated by the rents required to make a project work, rather than set independently as a goal or standard.

Real estate prices and rents and income distributions vary greatly across the country, and in higher priced markets, the economics of NOAH transactions make it necessary to focus on serving those households closer to 100% AMI. Commenters generally recognize that percentages of AMI of 80% and

---

[11] Cortright, Joe. "The myth of naturally occurring affordable housing," City Observatory, last modified October 10, 2017. Accessed April 29, 2019. http://cityobservatory.org/the-myth-of-naturally-occurring-affordable-housing/.

[12] For example, the Virginia Housing Development Authority (VHDA) has a Reach Virginia program that brings reduced interest capital—currently carrying a 2.95% interest rate—to specific housing that can be defined as NOAH (see: https://www.vhda.com/BusinessPartners/MFDevelopers/MFFinancing/Pages/MF-Loan-Program-Info.aspx#.XLDaNKQpDIU).

[13] Bhatia and Keller. "Preserving Naturally-Occurring Housing Affordability".

[14] The Fund to Preserve Affordable Communities (FPAC), a partnership between the Low Income Investment Fund, National Affordable Housing Trust and Morgan Stanley, has a 120-unit transaction that will have rents affordable to families at up to 60% AMI and 50 units affordable to those at 30%. See: "Princess Anne". Accessed April 29, 2019. http://www.liifund.org/projects/homes/princess-anne/ .

higher will disadvantage those who live in the central cities of the metropolitan areas for which AMI is established. Table 1 shows central city median family income and AMI for Baltimore, Philadelphia, Pittsburgh and Richmond. Baltimore and Philadelphia residents have incomes substantially below the larger metropolitan area; 80% of AMI therefore substantially exceeds the cities' respective medians. In Pittsburgh 80% AMI is below the city's median family income while AMI is 10% above the city median. And in Richmond, while the AMI is substantially above the city's median, 80% of AMI is close to the city's median family income.

Family Income, 2017	Baltimore	Philadelphia	Pittsburgh	Richmond
Median Family Income	$58,613	$54,431	$66,263	$61,338
Area Median Income (2017)	$91,100	$83,200	$72,600	$78,700
60% Area Median	$54,660	$49,920	$43,560	$47,220
80% Area Median	$72,880	$66,560	$58,080	$62,960
120% Area Median	$109,320	$99,840	$87,120	$94,440

Table 1: Family and Area Median Income for Selected Cities and Areas; 2017

We observed variation in the type of housing that comprises NOAH across different regions. In Minneapolis, Atlanta and Chesterfield County, VA, for example, most NOAH is in the medium sized multi-family sector. In Chicago, NOAH is concentrated in the smaller multi-family sector (2-4 units) as well as structures with both owner- and renter-occupied units. These observations align with An, et al. (2015), who focus on small and medium multi-family housing (SMMF) buildings—structures with 2 through 49 units—as a critical part of the affordable housing stock.[15] (Although An, et al. do not use the term, their conceptualization is emblematic of the NOAH stock described by our interviewees from these regions). In contrast, in Baltimore, Philadelphia, and Pittsburgh, much of the NOAH stock is renter-occupied single-family row homes.

Interviewees report that a total purchase and rehabilitation cost of approximately $80,000-$125,000 per-unit—whether in a single- or multi-family structure—and a reasonable capitalization rate[16] is necessary to produce housing that is affordable to low-to-moderate income households. Generally this means NOAH transactions are most viable in "middle market," areas where both housing prices and housing quality are neither the highest nor lowest in a region, and in weaker markets where levels of distress (as measured by vacancy, foreclosure, etc.) are not too severe and some level of market activity exists.[17] Reinvestment Fund's lenders have observed that the lower cost of acquisition in these markets help make NOAH redevelopment work, "assuming the units are in decent physical condition, and that the rents in those places are relatively in line with average rents in the market." Similarly, ULI Terwilliger Center for Housing (2016) and Nordby, et al. (2017) identify NOAH based on a grade of 1 or 2 Stars out

[15] An, Yeokwang, Raphael W. Bostic, Andrew Jakabovics, Anthony W. Orlando and Seva Rodnyansky. "Small and Medium Multifamily Housing Units: Affordability, distribution, and trends." Enterprise Community Partners. November 3, 2015. Accessed April 25, 2019.
https://www.enterprisecommunity.org/download?fid=5019&nid=3417

[16] The COSTAR report commissioned by ULI and the Terwilliger Center for Housing notes that capitalization ratios in the 1 and 2 Star multi-family stock for the period 2012 through 2016 generally ranged between 6% and 8%. Nordby, et al report NOAH capitalization ratios from 2007 through 2016 ranging from just under 6.5%, peaking between 2010 and 2011 at just under 8%.

[17] Reinvestment Fund's approach to categorizing residential markets is described on pages 16-17.

of a possible 3 Stars determined by the commercial real estate analysis firm COSTAR.[18,19] This stock, much of which dates to the 1960s and 1970s, is generally considered to need anywhere from moderate to significant rehabilitation.[20]

NOAH therefore represents a housing stock that serves a community's middle neighborhoods. This is important because these areas generally *do not* receive the attention of nonprofits, CDCs, or city leaders who tend to focus on either the most distressed areas (where federal dollars are more easily deployed) or rapidly appreciating areas (which are both celebrated for growth and criticized for the adverse consequences of gentrification)." Some argue that these middle neighborhoods are the precise place in many of America's legacy cities where organized support for NOAH can both serve modest-income families and inoculate middle neighborhoods against the "…worst-case inefficiencies and inequities" of filtering that lead to disinvestment in communities.[21]

Lastly, as it relates to the management of NOAH, developers and funders vary substantially in their practices around tenant income verification. The NOAH Impact Fund, for example, does income verification at lease signing (along with ongoing compliance reporting) to ensure that the occupant's income is in the target range—a practice they report is required by their investors.[22] Others use the rent or price as the defining character of NOAH (e.g., a rent of one-third of the monthly income of an 80% of AMI family) and do not verify (or limit occupancy based on) the occupant's income. The importance of income verification would be most critical, interviewees noted, where NOAH properties are created in areas that are rapidly appreciating. Virginia Community Capital (VCC) notes that they monitor their borrowers for management and rent levels; if rents rise too much during an initial loan, VCC will not refinance the loan.

***Example—Baltimore**: One Baltimore developer has focused his company's efforts in middle-market areas (using Reinvestment Fund's MVA) for a single-family purchase/rehab model. He states he can profitably acquire and rehab properties for less than $110,000 and then charge rents of approximately $1,200. These rents are easily affordable to households with annual income around $45,000 (or about citywide median). In more distressed markets, he argues, the acquisition prices are lower, but the rehab costs are higher, and the rents that he could charge (closer to $1,000) do not make the transactions work.*

***Example—Chicago & Philadelphia**: In Chicago and Philadelphia there are some approaches to NOAH focused on single-family or small multi-family (2-4 unit) privately-owned properties in need of rehabilitation. The Chicago CDFI Collaborative (supported by JP Morgan Chase's Pro Neighborhoods program) and JumpStart[23] in Philadelphia each bundle together funding and technical assistance as a*

[18] See: "About CoStar," CoStar, https://www.costar.com/about.
[19] See: Lupton and Vaisman. "Naturally Occurring Affordable Housing".
[20] COSTAR rates multi-family properties along five dimensions: architectural design; structure/systems; amenities; site/landscaping; certifications. In general, the 1 and 2-Star units are those that need modest to significant renovation to bring them to market standard. Amenities are below average, and the structure is generally no more than "functional". See: http://www.buildingratingsystem.com/Source/CoStar_BuildingRatingSystem.pdf.
[21] Galster, George. "The Case for Intervention in Middle Neighborhoods." In On the Edge: America's Middle Neighborhoods, edited by Paul Brophy, 9-20. New York: The American Assembly, 2016.
[22] Mattson-Teig (2018) reports that the NOAH Impact Fund investors include McKnight Foundation, Bremer Bank, Sunrise Banks and Western Bank.
[23] See: Jumpstart, https://www.gojumpstart.org/.

vehicle to develop a community of small-scale entrepreneurs, many of them people of color, who see opportunity in the NOAH market. In both Philadelphia and Chicago, these developers are typically part-time and fall in the category of "mom and pop" or "family" developers. Shift Capital is a Philadelphia-based B-Corp developer endeavoring to stabilize communities through responsible redevelopment and management. Some of these new developers have a personal tie to a community—others are mission-driven. Chicago's all-in per-unit price points are similar to those in Philadelphia.

In some cases, NOAH is presented as a homeownership strategy; Chicago has a tradition of owners living in a building and renting out the other units in order to afford a mortgage in a neighborhood where they otherwise might be unable to buy. In Philadelphia, JumpStart's outputs have been about evenly split between rental and ownership units, and nearly all single-family regardless of tenure.

In the end, Philadelphia's program aims for developers to achieve about a 20% "profit." Chicago production is reported at about 600 units while Philadelphia's program is newer and reports about 130 units/loans.

Obtaining properties where total costs allow for affordable rents or sale prices and this relatively modest profit remains a challenge. CDFIs in Chicago reported that deep familiarity with the neighborhoods and the 1-4-unit asset class give them sufficient comfort to exceed typical loan-to value ratios on acquisition and rehabilitation loans because they understand that "the cash-flow is there." JumpStart and Shift Capital also pointed to their knowledge and experience within a limited geographic footprint as a valuable asset for accurately judging rental income and sale price projections. In both cases, extensive understanding of the local market was critical for understanding the feasibility of individual projects.

The next section of this paper describes the makeup of the NOAH segment nationally. In doing so, we adopt a provisional definition of NOAH as housing units without federal subsidy that are affordable to moderate-income households (roughly 80% of AMI or below) and that are of a quality characteristic of, but not limited to, middle markets.

Describing the National Supply of NOAH

Three recent publications have attempted to quantify and describe the nation's supply of NOAH, or at least its multi-family component. Using multi-family properties in COSTAR's 1 or 2-Star category as a proxy for NOAH, ULI Terwilliger Center for Housing finds roughly 5.6 million units (or 36.2% of the national market) in 2016. This inventory is found across the US and can represent upwards of 50% of the rental stock in some city sub-markets. Asking rents range between $610 (Oklahoma City) to $2,589 (San Francisco) with a median market rent of $882 (Minneapolis). Overall, COSTAR data showed that for a median renter, rents in 1 and 2-Star units would comprise only 16.5% of household income—substantially below the 30% cost threshold. Of course, some of the tenants in these units may earn well below AMI, meaning rents for these units would be closer to, or even greater than, 30% of income for those tenants. COSTAR represents that vacancies in this stock have trended down while rents have increased (about 5% per year between 2013 and 2016). Average capitalization rates have ranged between approximately 6% and 8%[24] and have tended to be less volatile than more highly rated multi-family inventory. Using the same data, Nordby, et al. look at building ownership and report that unlike the luxury multi-family rental stock, the NOAH category of buildings is more likely owned by local and regional investors; luxury rentals are more frequently owned by national institutional investors.

Using the 2013 American Housing Survey (AHS), An, et al. estimated that SMMF buildings, essentially analogous to NOAH, comprise approximately 28 million units nationwide, of which 73.7% are rented. Of those SMMF units that are rented, 87% are not subsidized; 3% of SMMF are public housing, 6.3% have a voucher subsidy and 3.5% are privately-owned subsidized housing.

Looking at the same SMMF category using 2017 AHS data, we observe 23.5 million units, of which 21 million (89.3%) are rented. 5.6% of the SMMF stock is within public housing and 5.5% is subsidized with vouchers; 89% is without subsidy. We also observe that 92% of the rented SMMF stock is categorized as "adequate" while 5.9% is "moderately inadequate and 1.9% is severely inadequate".

Rents among the SMMF stock, compared to other rented units, are relatively modest, and even at the 75th percentile, are generally affordable to households at or near typical family income. Fifty percent of households without rental subsidies in the SMMF stock pay rents between $630 and $1,300. This compares to a median renter household income of $36,240 (25th percentile - $17,100; 75th percentile - $66,000).

	Monthly Rent			
	25th Percentile	50th Percentile	75th Percentile	Mean
1 Unit	$ 580.00	$ 880.00	$ 1,300.00	$ 1,084.67
All SMMF	$ 570.00	$ 830.00	$ 1,200.00	$ 996.70
SMMF in Public Housing	$ 150.00	$ 250.00	$ 500.00	$ 391.12
SMMF with Voucher	$ 200.00	$ 430.00	$ 750.00	$ 526.60
SMMF Other	$ 630.00	$ 880.00	$ 1,300.00	$ 1,062.80
50+ Units	$ 490.00	$ 1,000.00	$ 1,700.00	$ 1,344.26
Public Housing	$ 210.00	$ 280.00	$ 400.00	$ 382.67
Voucher	$ 210.00	$ 320.00	$ 750.00	$ 533.40
Other Rental	$ 800.00	$ 1,200.00	$ 1,900.00	$ 1,626.53

Table 2: Rent by Structure Type and Subsidy (AHS, 2017)

[24] Interviewees that use capitalization ratios to evaluate transactions report the 7-8% range as the target.

Among renters with incomes between the 25th and 50th percentiles, or $24,601 through $51,000, 49% live in SMMF; 44.9% of renters with incomes between the 50th and 75th percentile live in SMMF. SMMF remains, as An, et al (2015) and others note, a critical part of the affordable housing stock for America's modest-income families: "…it is the most affordable segment of the market, as judged by the lowest rents and the least rent-burdened residents…"[25]

NOAH in Four Mid-Atlantic Cities

The focus of this paper turns now to four cities where Reinvestment Fund has recently completely in-depth housing market analyses. We begin with a high-level description of the demographics and economics of those cities and then turn to the observed NOAH patterns and practices.

Philadelphia is the most populous of these cities, with a population of 1.58 million—off its peak population of 2.07 million in 1950 but above its decennial low of 1.51 million in 2000. Baltimore and Pittsburgh also had peak populations in 1950 but did not experience the post-2000 population recovery observed in Philadelphia. Richmond's population, like Philadelphia's, declined to its post-1950 low in 2000 (197 thousand), but experienced a much steeper estimated rise since.

City Name	1950	1960	1970	1980	1990	2000	2010	2017	Change, 2007-2017	Change, 2000-2017
Philadelphia, PA	2,071,605	2,002,512	1,948,609	1,688,210	1,585,577	1,517,550	1,526,006	1,580,863	3.6%	4.2%
Baltimore, MD	949,708	939,024	905,759	786,775	736,014	651,154	620,961	611,648	-1.5%	-6.1%
Pittsburgh, PA	676,806	604,332	520,117	423,938	369,879	334,563	305,704	302,414	-1.1%	-9.6%
Richmond, VA	230,310	219,958	249,621	219,214	203,056	197,790	204,214	227,032	11.2%	14.8%

Table 3: Selected City Population, 1950-2017, U.S. Census Bureau

The number of occupied housing units has been virtually unchanged between 2010 and 2017 in Baltimore and Pittsburgh while it has increased by about 7% in Richmond and Philadelphia. In all cities, to a greater or lesser degree, the number of owner-occupied units has declined while the number of renter-occupied units has grown both in absolute terms and as a percentage of the total.

	Baltimore				Philadelphia			
	Owner	Renter	Total	% Renter	Owner	Renter	Total	% Renter
2006-2010	118655	119737	238392	50.2%	317755	256733	574488	44.7%
2008-2012	117500	123130	240630	51.2%	314076	266433	580509	45.9%
2013-2017	113558	126233	239791	52.6%	308695	282585	591280	47.8%
% Change	-4.3%	5.4%	0.6%		-2.9%	10.1%	7.2%	

	Pittsburgh				Richmond			
	Owner	Renter	Total	% Renter	Owner	Renter	Total	% Renter
2006-2010	69292	65661	134953	48.7%	37507	45991	83498	55.1%
2008-2012	65291	67901	133192	51.0%	36905	46870	83775	55.9%
2013-2017	64886	69934	134820	51.9%	37190	52048	89238	58.3%
% Change	-6.4%	6.5%	-0.1%		-0.8%	13.2%	6.9%	

Table 4: Tenure for Selected Cities, 2010-2017, U.S. Census Bureau

These cities vary in terms of housing stock characteristics. Richmond, for example, has the lowest percentage single-family of all units (57.8%) while Philadelphia has the highest (68.3%). Philadelphia and Pittsburgh have higher owner occupancy rates in their single-family stock than Baltimore and Richmond.

[25] An, et al, p. 20

But Baltimore and Philadelphia differ from Pittsburgh and Richmond in that substantially higher percentages of their rental units are in single-family homes (approximately 10 percentage points).

	Baltimore					Philadelphia				
	Owner	Renter	Total	Pct Renter	% of All Units	Owner	Renter	Total	Pct Renter	% of All Units
Single Family	105949	52156	158105	33.0%	66.0%	283955	118693	402648	29.5%	68.3%
2-49 Units	4817	52493	57310	91.6%	23.9%	15121	119124	134245	88.7%	22.8%
50+ Units	2644	21398	24042	89.0%	10.0%	8389	43878	52267	83.9%	8.9%
Total	113410	126047	239457	52.6%		307465	281695	589160	47.8%	

	Pittsburgh					Richmond				
	Owner	Renter	Total	Pct Renter	% of All Units	Owner	Renter	Total	Pct Renter	% of All Units
Single Family	59283	22821	82104	27.8%	61.0%	35169	16159	51328	31.5%	57.8%
2-49 Units	3815	35381	39196	90.3%	29.1%	1274	26919	28193	95.5%	31.8%
50+ Units	1550	11647	13197	88.3%	9.8%	466	8754	9220	94.9%	10.4%
Total	64648	69849	134497	51.9%		36909	51832	88741	58.4%	

Table 5: Tenure by Structure Type for Selected Cities, 2013-2017, U.S. Census Bureau [26]

Median family incomes vary substantially between these cities (see Table 1). Pittsburgh, with a median family income of $66,263 in 2017 leads the group while Philadelphia's at $54,431 is almost 18% lower. Philadelphia and Baltimore have the greatest shares of families clustered in the lowest income grouping.

To understand the supply of NOAH in each city, we relied on REIS data, which describes the availability and characteristics of large multi-family properties in each city. REIS classifies properties into Class A and Class B/C; Class B/C roughly corresponds to COSTAR 1- and 2-Star properties.[27,28,29] By focusing on REIS we are effectively delimiting our estimation in this section of trends in the NOAH stock to that which is multi-family and of below luxury standard.

As observed in Table 6, the Class A multi-family inventory in all four regions grew quite substantially, ranging from a rise of 23% in the Philadelphia region to 35% in the other regions. The picture of the multi-family NOAH (i.e., Class B/C) stock is quite different. Over the 12-year period, the NOAH inventory was flat—or even slightly declining in Philadelphia.

With additions to the Class A stock and stagnation in the NOAH stock, the percent of all multi-family units in the NOAH category declined. Despite this shift in all four cities, NOAH remained the largest part of the rental market in all but Philadelphia, where it dropped below 50% of all multi-family stock. Rising rates of vacancy in the A stock were the norm along with tightening occupancy in the multi-family NOAH rental stock—a pattern observed nationally by Nordby, et al. (2017).

[26] Total housing unit counts in this table do not include boats, mobile homes, etc.

[27] Class A multi-family rental housing is generally that which one might consider "luxury". It tends to be newer—less than 10 years old—and have more amenities. Class B and C multi-family housing tends to be in less desirable locations and require minor to significant upgrading and replacement.

[28] REIS multifamily housing stock reports reference the entire region rather than the selected cities.

[29] See definition of asset class: https://se.reis.com/ReisSEGlossary.pdf

Year	Baltimore						Philadelphia					
	Class A			Class B/C			Class A			Class B/C		
	Inventory (Units)	Comple-tions	Vac %	Inventory (Units)	Comple-tions	Vac %	Inventory (Units)	Comple-tions	Vac %	Inventory (Units)	Comple-tions	Vac %
2007	54,116	1,949	5.70%	85,126	0	4.40%	95,548	643	4.40%	103,087	0	4.00%
2008	55,053	937	5.70%	85,133	55	5.80%	96,871	1,323	6.40%	103,087	0	5.10%
2009	56,114	1,061	5.70%	85,133	0	6.10%	97,541	670	7.00%	103,222	215	6.20%
2010	57,039	925	4.50%	85,133	0	5.20%	98,404	863	6.00%	103,122	0	5.20%
2011	57,568	529	3.80%	85,189	56	4.30%	98,502	98	4.90%	103,031	0	4.30%
2012	60,295	2,727	4.40%	85,189	0	4.20%	100,201	1,699	4.50%	103,031	0	3.40%
2013	63,162	2,867	5.10%	85,125	0	3.80%	101,808	1,607	5.00%	102,945	0	3.00%
2014	66,520	3,358	5.70%	85,125	0	3.20%	104,130	2,322	4.50%	102,945	0	2.80%
2015	68,130	1,610	5.20%	85,162	37	3.00%	107,922	3,792	5.00%	101,334	0	3.10%
2016	70,776	2,646	5.50%	85,162	0	2.70%	111,742	3,820	5.00%	101,466	132	2.40%
2017	72,728	1,952	5.40%	85,162	0	2.60%	116,680	4,938	5.20%	101,466	0	2.60%
2018	76,988	4,260	5.90%	85,162	0	3.10%	121,246	4,566	5.50%	101,658	192	3.40%

Year	Pittsburgh						Richmond					
	Class A			Class B/C			Class A			Class B/C		
	Inventory (Units)	Comple-tions	Vac %	Inventory (Units)	Comple-tions	Vac %	Inventory (Units)	Comple-tions	Vac %	Inventory (Units)	Comple-tions	Vac %
2007	26,393	251	6.90%	57,942	0	5.70%	26,299	483	6.20%	39,683	180	6.20%
2008	26,393	0	4.70%	57,942	0	5.10%	26,658	359	5.70%	39,683	0	6.60%
2009	26,393	0	5.60%	58,445	503	5.90%	27,373	715	8.30%	39,832	149	8.40%
2010	26,460	67	3.30%	58,445	0	4.50%	27,886	513	6.50%	39,832	0	6.90%
2011	26,702	242	2.70%	58,445	0	3.70%	28,649	763	5.50%	39,832	0	5.40%
2012	27,321	619	3.80%	58,445	0	2.50%	29,344	695	4.80%	39,872	40	5.20%
2013	27,895	574	4.40%	58,445	0	3.10%	30,295	951	3.50%	39,872	0	4.50%
2014	28,593	698	5.30%	58,445	0	2.60%	31,395	1,100	4.00%	39,872	0	3.80%
2015	30,236	1,643	7.30%	58,445	0	3.30%	33,356	1,961	4.80%	39,872	0	3.60%
2016	32,875	2,639	7.80%	58,445	0	3.60%	34,140	784	4.10%	39,872	0	2.90%
2017	33,998	1,123	6.90%	58,445	0	4.50%	35,674	1,534	4.20%	39,872	0	3.60%
2018	35,619	1,621	5.90%	58,445	0	4.40%	37,525	1,851	5.00%	39,872	0	3.30%

Table 6: Inventory, Completions and Percent Vacant by Region; 2007-2018, U.S. Census Bureau

Year	Baltimore				Philadelphia				Pittsburgh				Richmond			
	Class A		Class B/C		Class A		Class B/C		Class A		Class B/C		Class A		Class B/C	
	Asking Rent ($)	Gr Rev. Unit ($)	Asking Rent ($)	Gr Rev. Unit ($)	Asking Rent ($)	Gr Rev. Unit ($)	Asking Rent ($)	Gr Rev. Unit ($)	Asking Rent ($)	Gr Rev. Unit ($)	Asking Rent ($)	Gr Rev. Unit ($)	Asking Rent ($)	Gr Rev. Unit ($)	Asking Rent ($)	Gr Rev. Unit ($)
2007	$1,164	$1,098	$832	$796	$1,192	$1,140	$820	$788	$1,046	$973	$712	$671	$913	$857	$694	$651
2008	$1,184	$1,117	$847	$798	$1,215	$1,138	$838	$795	$1,070	$1,020	$728	$691	$927	$874	$705	$659
2009	$1,183	$1,115	$849	$797	$1,218	$1,133	$837	$785	$1,048	$989	$735	$692	$909	$834	$699	$641
2010	$1,202	$1,148	$867	$822	$1,241	$1,167	$851	$807	$1,051	$1,016	$747	$713	$915	$855	$708	$659
2011	$1,228	$1,182	$885	$847	$1,269	$1,207	$867	$830	$1,084	$1,055	$755	$727	$929	$878	$714	$676
2012	$1,276	$1,220	$924	$885	$1,302	$1,244	$883	$853	$1,124	$1,081	$770	$751	$949	$904	$728	$690
2013	$1,314	$1,246	$943	$907	$1,333	$1,267	$904	$876	$1,160	$1,109	$782	$758	$985	$951	$742	$709
2014	$1,354	$1,277	$961	$930	$1,371	$1,309	$926	$900	$1,232	$1,167	$804	$783	$1,002	$962	$750	$721
2015	$1,382	$1,311	$990	$960	$1,423	$1,352	$939	$910	$1,276	$1,183	$821	$794	$1,033	$983	$771	$743
2016	$1,411	$1,334	$1,011	$984	$1,490	$1,416	$966	$943	$1,346	$1,241	$841	$810	$1,075	$1,031	$789	$766
2017	$1,463	$1,384	$1,028	$1,001	$1,557	$1,475	$1,000	$974	$1,389	$1,293	$862	$823	$1,124	$1,077	$819	$790
2018	$1,502	$1,414	$1,056	$1,023	$1,666	$1,575	$1,055	$1,019	$1,462	$1,376	$887	$848	$1,165	$1,106	$859	$831
% Change 07-18	29.0%	28.8%	26.9%	28.6%	39.8%	38.2%	28.7%	29.4%	39.8%	41.3%	24.6%	26.4%	27.6%	29.2%	23.8%	27.6%
% Change 10-18	25.0%	23.2%	21.8%	24.5%	34.2%	35.0%	24.0%	26.3%	39.1%	35.3%	18.7%	19.0%	27.3%	29.3%	21.3%	26.1%
% Change 15-18	8.7%	7.9%	6.7%	6.6%	17.1%	16.5%	12.4%	12.0%	14.6%	16.2%	8.0%	6.9%	12.8%	12.5%	11.4%	11.8%

Table 7: Characteristics of the A and B/C Multi-Family Stock by Region; 2007-2018, REIS Metro Reports

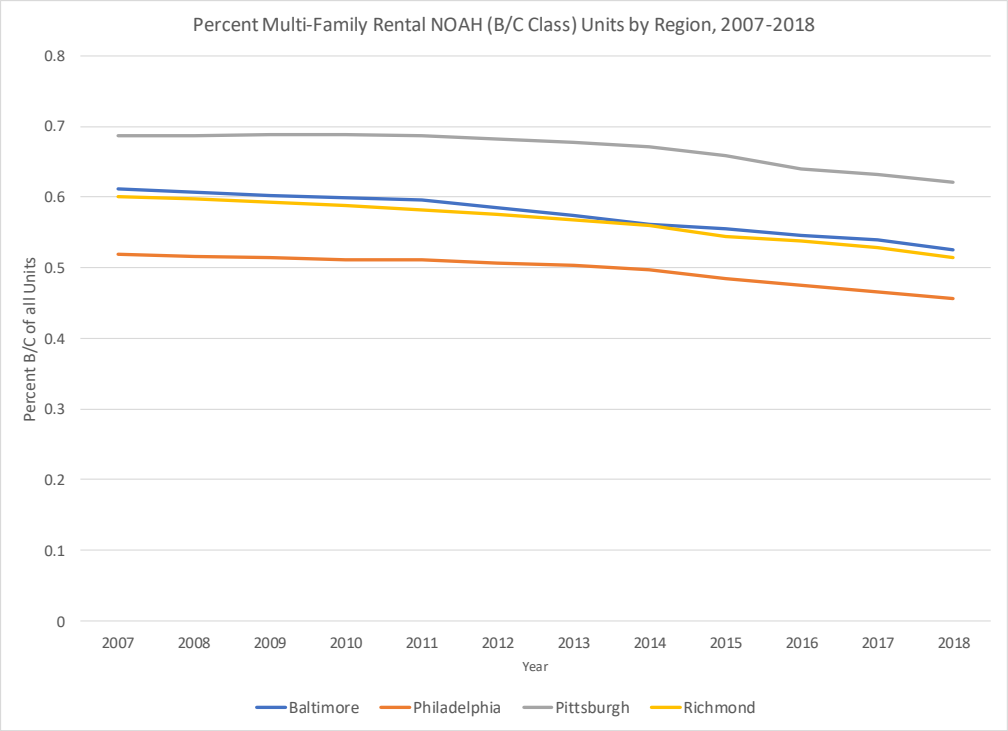


Figure 1: B/C Class Units as a Percent of All Units for Selected Regions, 2007-2018, REIS Metro Reports

Across all cities, inflation-adjusted asking rents and gross rents per-unit in the multi-family NOAH stock have risen, but at a more moderate rate than in the respective Class A stock. The range of A-class rents ranged from a high in Philadelphia of $1,666 to a low in Richmond of $1,165. The multi-family rental NOAH rents were however much more consistent across cities, ranging from $859 in Richmond to $1,056 in Baltimore.[30]

[30] The Fair Market Rent (FMR) established by HUD for 2018 (2-bedroom unit) varies in the degree to which it is consistent with the average monthly rent by stock. For example, in Baltimore, the A-class rent is quite similar to the FMR while in Philadelphia, the SAFMR range is below A-class but reasonably consistent with the multi-family NOAH asking rent.

Baltimore	$1411
Philadelphia	*$1090-1750
Pittsburgh	* $740-$1330
Richmond	$1042

Given this and not surprisingly, interviewees in Baltimore and Richmond both noted that they preferred tenants with Housing Choice Vouchers because the rents that they could get exceeded that which they could get from tenants without subsidy.

*Range of Small Area FMRs (SAFMR) in these communities. SAFMRs adjust FMRs to zip codes so that households with Housing Choice Vouchers have greater opportunity across metro areas to obtain housing. For more information about SAFMRs see: https://www.hudexchange.info/programs/public-housing/small-area-fair-market-rents/.

Challenges for NOAH Developers and Funders

Interviewees were asked about the challenges they face creating and preserving the NOAH stock. The most common challenges are described below, along with identified opportunities and strategies to overcome those issues.

1) ***Shortage of / Competition for NOAH Stock***: Interviewees report the NOAH stock is a "hot commodity", especially for out of town buyers. Buyers from more expensive markets (e.g., New York, Washington, DC) see the lower-priced markets, like Richmond or Baltimore, and reasonable cash-flow as a good investment opportunity. They bid up prices, making it financially difficult for those trying to create or preserve NOAH stock. NOAH developers/rehabbers in the Twin Cities and Chicago say they affirmatively reach out to multi-family apartment owners who have not even listed their buildings for sale. Some have sought to purchase or refinance units coming out of LIHTC restrictions. Some of the increase in Class A supply seen in the REIS data may be formerly Class B/C stock that was upgraded by investors.

2) ***Costs***: Interviewees noted that the high costs of construction make of the creation of new NOAH units a challenge. There was widespread agreement across interviewees that, as a result, new NOAH can only be produced as rehab, and that efforts to preserve existing NOAH stock are essential to ensuring sufficient stock. Interviewees noted that, notwithstanding the generally high cost of acquisition and rehabilitation, costs are more manageable than when federal subsidies are used in a project. Specific additional costs associated with federal subsidies noted by interviewees include the increased cost of a union labor requirement and Davis-Bacon obligations, building codes and amenity requirements

Several interviewees note that 50+ year-old multi-family buildings have become an eagerly sought-after asset class, with quickly rising prices, making preservation of these units as NOAH by mission-based developers and lenders difficult. "Out-of-town investors" (New York City, Washington DC, international) are frequently referenced; one interviewee in Richmond, VA added that these properties are being acquired through IRS Section 1031 (i.e., Like-kind) exchanges.[*] This has prompted several interviewees to affirmatively seek these properties out before they are listed for sale.

[*] *"Like-kind exchanges -- when you exchange real property used for business or held as an investment solely for other business or investment property that is the same type or "like-kind" -- have long been permitted under the Internal Revenue Code. Generally,* ***if you make a like-kind exchange, you are not required to recognize a gain or loss under Internal Revenue Code Section 1031****." [emphasis added] See: https://bit.ly/2l4Nb7P*

In addition to construction costs, interviewees noted the cost of property taxes. For example, in the City of Philadelphia a unit valued at $125,000 will have annual property taxes of approximately $1,750 or approximately $145/month, which are typically reflected in the rents charged. As markets have recovered from the recession, property taxes in many communities have risen along with assessed values, making the taxes more likely to push rents out of the affordable range for low- or moderate-income households.

Simply reducing property taxes, however, will not necessarily result in more NOAH units. Philadelphia has an untargeted, unrestricted by-right 10-year property tax abatement on new construction for the value of the improvement and a companion abatement on the increase in value attributable to the rehabilitation (land is still taxed). Based on recent data, use of the abatement has been notably concentrated in the city's highest value markets,[31] where the typical new construction or rehab product is Class A rental or high-end single-family. Our analysis of REIS data showed the number of Class A units in Philadelphia rising over the last decade while the supply of B/C has declined. In contrast Minneapolis introduced a new 10-year property tax abatement in 2018 for owners that agree to keep 20% of their units affordable to people at 60% of AMI over the life of the abatement.[32] Although it is too early to evaluate the results, the Minneapolis approach seems more conducive to the preservation of NOAH than Philadelphia's unrestricted approach.

The JumpStart program in Philadelphia, managed by a private sector developer, makes loans to cover acquisition and rehab costs, seeking to close out each loan in 9-12 months in order to keep moving new participants through the program. No appraisal is done; loans are instead based on a loan-to-cost basis and projected income. Also, critically, participants are not subject to the credit score requirements often associated with bank loans; from JumpStart's perspective, the technical assistance provided mitigates the risk of lending to inexperienced and non-traditional developers. One of the early challenges has been helping loan recipients refinance at the end of that period. A related success of the program has been to establish a "set of comps" in a heavily rental, low-value part of the Germantown neighborhood that, it is hoped, will encourage traditional banks to refinance JumpStart projects going forward.

3) ***Appraisal Gap***: Particularly for those producing NOAH stock through rehabilitation of single-family rental units, there is a gap between the appraised value of the unimproved property and its income-producing potential post-rehabilitation that impedes a developer's ability to access capital—from traditional lenders as well as CDFIs. This is particularly true when the property is located in a more distressed market where nearby properties used for appraisal comps have low values. Because of that, interviewees note that it would be more appropriate to underwrite loans on a cost or cash-flow basis.

[31] See "An Analysis of Tax Abatements in Philadelphia," City of Philadelphia, PA, Office of the Controller. (https://controller.phila.gov/office-of-the-city-controller-releases-ten-year-tax-abatement-policy-analysis/

[32] See "4d Affordable Housing Incentive Program," City of Minneapolis, MN, Community Planning & Economic Development. (http://www.minneapolismn.gov/cped/housing/WCMSP-214366)

4) ***Risky Nature of New Entrepreneurs***: Interviewees noted that NOAH is not only producing affordable housing for modest-income people, it is also creating an opportunity for entrepreneurs. However, while those entrepreneurs may be excellent contractors with a strong mission focus, they may have limited experience in property management or other aspects of running a development business. Many do not have established credit histories (or may have impaired histories), which may limit their access to the financing necessary to execute NOAH transactions. Lastly, the time necessary to obtain financing, complete a project, and get a tenant is a serious challenge for small developers. As one interviewee noted, for those new entrepreneurs who have just three units, if one is vacant, cash-flow is impaired by 33%. Many of these challenges are addressed by JumpStart in Philadelphia.

In Philadelphia, Shift Capital has been active in developing and managing single-family row houses in the Kensington area, drawing primarily on funds from impact investors. Their typical property is acquired for $25,000 and rehabbed for $75,000, a total cost that can be recouped with rents affordable to households earning just 60% of AMI. Like other NOAH developers, they point to the difficulty of securing traditional financing when neighborhood sales values hover around $60,000, well below the costs to make a shell habitable. Shift opines that financing based on rental income, or a loan guarantee fund could help others enter this critical market segment.

5) ***Other Financing Challenges***: Interviewees noted a range of other issues including that banks are slow; "hard-money lenders," who have less stringent credit requirements, are expensive; CDFIs may be cheaper or more flexible than banks, but they still adhere to relatively stringent underwriting standards. Interest rates are sometimes an issue but usually not a major one because the duration of loans is typically not long. The speed of bringing a transaction to conclusion is a bigger factor; waiting for funds can cost a developer an opportunity in those sub-markets where potential multi-family NOAH properties are an eagerly sought-after commodity. Required loan-to-value ratios (e.g., 65%) can be impactful for a thinly capitalized NOAH developer. Finally, some lenders have strict minimum per-unit values (e.g., $50,000) that may have the effect of cutting off parts of the NOAH market from reinvestment, even where the appraisal gap or LTV issues can be addressed.

Opportunity: Can the Characteristics of a Market Be Used to Influence Affordability Depth or Duration for NOAH?

Interviewees acknowledge the economic challenges associated with creating NOAH. The routine costs associated with acquisition, rehabilitation, property management, taxes/insurance and allowance for vacancy can quickly rise to the point where either a transaction is not viable or occupants with low or moderate incomes are priced out—especially when targeting households at or below the city's, rather than the region's, typical family income.

The interviews and data analysis suggested that certain types of markets are better suited to NOAH efforts than others. Not all sub-markets within a city are the same; some are strong appreciating markets, others are stable middle markets, and others are persistently distressed places. The costs of

development can vary quite significantly from one submarket to another.[33] Most interviewees see the NOAH strategy as one that fits best in what are often termed "middle markets", although some describe their work as fitting in lightly distressed areas which is in keeping with the mandate of CDFIs to be active in low-income, high-poverty tracts. Neither the of these broad categories is an undifferentiated group, especially when location is considered. Proximity to stronger markets can provide the market support for stabilization and revitalization efforts, which allows for slightly higher asking rents.

Two analyses created by Reinvestment Fund can help identify areas where NOAH transactions may be most needed and more likely to succeed. To analyze a community's real estate market, Reinvestment Fund created the Market Value Analysis (MVA).[34] The MVA is a multivariate, geographically precise (census block group level), field validated description of a market's vitality and challenges. The component data include a range of indicators that collectively represent the relative strength of real estate markets within a city or region. Typical MVA indicators include home sales transactions, permit activity, new construction, foreclosures, building condition, code violations, and subsidy usage. The MVA usually identifies eight to 10 market types from strongest (designated A) through most challenged (designated H, I, or J depending on the number of sub-markets identified). Generally, A, B, and C markets are characterized by the highest prices, low levels of foreclosure, significant investment in new construction and rehabilitation, low vacancy, etc. Those in H and below have low prices, high vacancy, little evidence of investment, poor property conditions, and so on. The remaining types fall within what we consider *middle markets*. As reported elsewhere, middle markets "…are home to a substantial segment of a city's population … have relatively stable populations … are generally racially mixed and residents are reasonably well educated, employed, and in households with modest (or higher) incomes."[35]

> Governments, philanthropy and private (for-profit and not-for-profit) market actors are increasingly using analytics descriptive of their housing markets to target resources and activities. One such analytic is the MVA created by Reinvestment Fund in 2001. The MVA is based on detailed administrative data, which is field validated, and feedback from local subject matter experts. The multivariate cluster analysis that forms the MVA identifies geographic clusters in a city's or region's real estate market, the components of which are census block groups. The MVA's uses range from targeting CDBG and related resources to informing Land Bank strategies and LIHTC QAPs. It has been an essential tool in support of the growing middle neighborhoods movement.

While the MVA represents a snapshot in time, the Displacement Risk Ratio (DRR) adds a sense of direction and extent of market change. The DRR measures the extent to which home prices in an area are rising more quickly than incomes adjusted only by inflation. Large increases in the DRR are indicative of displacement pressure due to rising prices, stable DRR values indicate an area keeping pace with citywide changes, and declining DRRs indicate an area's failure to keep pace with the city or disinvestment. Taken together and observed spatially, the MVA and DRR provide a data-based sense of

[33] Rothenberg, J., Galster G., Butler, R. and Pitkin, J. 1991. The Maze of Urban Housing Markets. Chicago: University of Chicago Press.

[34] See: "Making Sense of Markets," What Counts, accessed April 29, 2019, http://www.whatcountsforamerica.org/portfolio/making-sense-of-markets-using-data-to-guide-reinvestment-strategies/ for a description of the MVA process.

[35] Goldstein, Schrecker, and Rosch. "Demographics and Characteristics of Middle Neighborhoods in Legacy Cities."

a submarket's current state and recent direction of change—useful for identifying areas facing displacement pressure, where NOAH transactions can help preserve affordability for modest-income households, as well as other middle-market areas experiencing downward trends, where NOAH transactions might be part of a neighborhood stabilization strategy.

For purposes of this analysis, MVA sub-markets were designated middle-market areas based on average block group sales price and local incomes, resulting in slightly different ranges in each city: C-F in Baltimore, with average sale prices ranging from $191,953 to $52,015 (See Figure 3); D-F in Philadelphia with average block group sale prices ranging from $217,500 to $78,927 (See Figure 4); C-F in Pittsburgh with average block group sale prices ranging from $134,783 to $65,096 (See Figure 5); and D-G in the Richmond area with average block group sale prices ranging from $195,175 to $117,611 (See Figure 6). Notably, these middle-market areas generally afford their residents a decent quality of life, with housing stock that is typically sound, although not necessarily updated, and some portion of it suffers from some deferred maintenance.

The middle markets are different in each city in terms of owner occupancy, vacancy, subsidized rental stock and investment, but there is great similarity in the distribution of people, housing units and structure types. For example, in all four cities, these areas were home to between 40% and 50% of the population. Baltimore, Philadelphia, and Pittsburgh are remarkably similar in terms of unit types and tenure: single-family homes account for about two-thirds of the stock, and just over half of residents were homeowners (close to 55% in each city). Richmond's middle neighborhoods, in contrast, are almost 62% renter-occupied and have a higher share of buildings with 50+ units. As shown in Table 8, larger multi-family buildings are more common in strong markets in the other cities.[36] Of all interviewees, those active in in Baltimore, Philadelphia, and Pittsburgh were most likely to describe NOAH activity as focused on the rehabilitation of single-family homes, likely a reflection of the local middle-market housing stock in contrast to the general focus on multi-family housing stock elsewhere.

[36] "Other" refers to a variety of areas including largely non-residential block groups, block groups that are entirely public housing or areas for which complete data were not available.

		Population		Owner Units		Renter Units			Housing Units					
		#	%	#	%	#	%	% Renter Occupied	1 Unit	2-49 Unit	50+ Units	% 1 Unit	% 2-49 Units	% 50+ Units
Baltimore	Strong	139,845	23%	30,485	27%	31,151	25%	51%	38,581	16,715	14,111	56%	24%	20%
	Middle	281,880	45%	57,764	51%	51,770	41%	47%	83,714	36,840	7,390	65%	29%	6%
	Weak	179,697	29%	24,930	22%	38,004	30%	60%	71,225	15,048	4,165	79%	17%	5%
	Other	18,375	3%	370	0%	5,309	4%	93%	2,754	2,128	1,769	41%	32%	27%
Philadelphia	Strong	479,641	31%	117,629	38%	83,516	31%	42%	129,498	60,730	31,023	59%	27%	14%
	Middle	623,978	41%	120,771	39%	104,835	38%	46%	175,703	62,925	15,819	69%	25%	6%
	Weak	426,671	28%	68,930	22%	84,096	31%	55%	148,348	33,489	6,332	79%	18%	3%
	Other	3,329	0%	131	0%	232	0%	64%	147	189	79	35%	46%	19%
Pittsburgh	Strong	69,641	23%	12,574	19%	20,821	29%	62%	13,813	15,669	7,168	38%	43%	20%
	Middle	145,882	47%	37,571	57%	29,373	42%	44%	51,846	20,489	4,070	68%	27%	5%
	Weak	62,425	20%	13,515	21%	14,275	20%	51%	25,363	7,727	1,678	73%	22%	5%
	Other	30,428	10%	1,795	3%	6,135	9%	77%	3,988	3,156	2,261	42%	34%	24%
Richmond	Strong	64,894	29%	16,698	45%	14,227	27%	46%	19,525	11,463	2,951	58%	34%	9%
	Middle	97,192	44%	14,924	40%	24,043	46%	62%	24,104	13,037	6,350	55%	30%	15%
	Weak	47,262	21%	5,537	15%	11,022	21%	67%	12,472	5,281	765	67%	29%	4%
	Other	11,544	5%	31	0%	2,756	5%	99%	400	2,291	548	12%	71%	17%

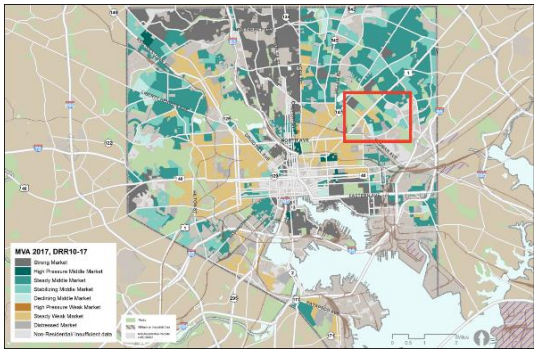
Table 8: Distribution of Population, Housing Units, Tenure and Structure Size by Broad MVA Market Categories

Producing NOAH in appreciating middle or weak sub-markets presents a complex set of risks and opportunities. For a mission-driven investor, mitigation of the financial risk of the transaction is straightforward: the property appreciates, so if the developer does not perform, the collateral is more than adequate. Opportunity, in this context, is multi-dimensional. First there is the opportunity for low-to-moderate income households to reside in an appreciating area, which generally brings better community assets and quality of life Second, there is the related opportunity to hold on to some income diversity in communities that may otherwise vanish. Third, market strength may allow for lending to new entrepreneurs, particularly people of color, who may lack credit history and/or equity to justify the risk of loans in weaker markets. However, there is mission risk in a sense if there are no income restrictions to prevent displacement of low-income renters or if the property is quickly refinanced or flipped. Finally, there is the opportunity for the investors and developers to accumulate a greater potential future return as the market pressure will increase the value of their real estate. This also represents a limitation on long-term community income diversity goals: the housing may not remain affordable for very long. Thus, the importance of meaningful income / rent limitations on the transaction.

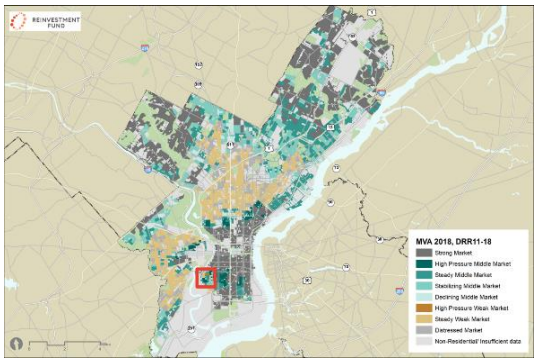
In a high-pressure middle market area in Richmond, one developer has brought together several sources of funds (including a VHDA REACH loan) to revitalize a now-vacant industrial building into a mixed-use NOAH development with a significant commitment around tenant affordability (down to 60% AMI); the REACH loan's low interest rate carries an affordability provision. Overall, the project uses a combination of loans and equity.

Located in an Opportunity Zone, one of the highlighted features of this transaction is the appreciation of the market and the significant after-tax return for the Opportunity Fund investors.

Figures 7 through 10 bring together the MVA broad market categories with the DRR (i.e., market pressure) indicator. Areas shaded green are middle-market areas, and those shaded most deeply are experiencing upward market pressure. Weak markets are shown in the tan tones, and again the deepest shaded areas are experiencing market pressure. Strong markets are shaded grey and are essentially excluded from consideration for NOAH given the price of real estate in these sub-markets (along with interviewees' representation that the prices are out of the NOAH range). Below we highlight a series of neighborhoods in each of our four focus cities as examples of the types of market/pressure combinations and their implications for applying NOAH strategies.

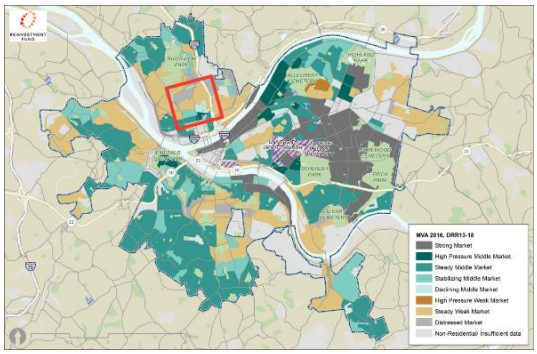


Steady and Mixed Middle Markets: The area highlighted on the map is Baltimore's Belair-Edison section, a predominantly middle-market area of the city with an active community-based organization participating in the renowned Healthy Neighborhoods program (see: https://healthyneighborhoods.org/). It is a set of neighborhoods with generally modest home prices and little market pressure. It is home to about 13,000 people, the majority of whom are African American with incomes around 80% of the city average. In most parts of this section, homeownership is the predominant tenure and single-family units comprise 80% or more of the local stock. This is an ideal area for a single-family NOAH housing and neighborhood preservation strategy.

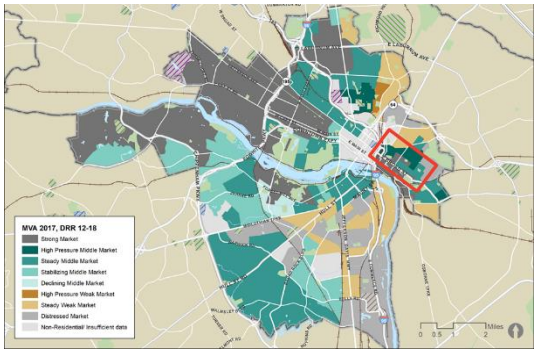


High Pressure Weak Markets: Philadelphia's Grays Ferry area is beginning to experience the market pressure felt in neighborhoods to the east (Point Breeze) and North (Graduate Hospital) in past years. It is overwhelmingly comprised of single-family rowhomes, though ownership rates vary considerably across the area. Including high pressure middle and weak block groups, it could be suitable as a priority area for NOAH preservation activity.

The apparent market pressure in these areas demonstrates that the value of the properties will likely rise faster than other properties in Philadelphia thus giving the developer/owner a more significant rate of return. In a situation such as this, mission-driven lenders might be motivated to negotiate affordability restrictions in exchange for more flexible financing without which residents of NOAH units might be vulnerable to displacement. Several interviewees expressed an openness to this concept.



Steady Weak and Stabilizing Middle Markets: Pittsburgh's unique topography separates the Fineview and Perry South neighborhoods from rapidly appreciating areas on the city's Northside. The housing stock in these block groups comes at affordable prices (median sale prices ranging from $36,800-$96,333) but needs substantial repair. Block groups are steadily weak or stable middle markets. Incomes range from about $24,00-$52,000 and the population is racially mixed. Fineview/Perry South is predominantly single-family, with the exception of a large housing authority development. This area is appropriate for NOAH aimed at improving housing quality and preventing loss to deterioration in an affordable yet opportune area.



High Pressure Middle and Steadily Weak Markets: The Church Hill section of Richmond is predominantly middle-market, and, in some areas, is experiencing rising market pressure. It is core to historic Richmond, renowned as the site of Patrick Henry's "give me liberty" speech and has, for many years, been home to a middle-class African American community. In part, this area remains a largely African American community, although the percent African American has declined in recent years. Advantageously located near the downtown section of Richmond, and ringed by designated Opportunity Zones, local stakeholders fear displacement as a result of a gentrification process (as evidenced on the map in those "high pressure middle markets"). Because of the rising market pressure, this area (like Philadelphia's Grays Ferry neighborhood) represents the kind of market wherein financing tradeoffs could be implemented in return for longer and deeper affordability in order to both maintain economic diversity and sustain affordability in opportune areas.

Table 9 represents an effort to conceptually join market strength and trajectory with an idea of how NOAH can work (and, as reported in interviews with financers and developers, is working now). As an example, market pressure as evidenced by the DRR, whether it be in a middle or weak sub-market, suggests that the value of real estate will rise at an extraordinary rate. That higher pressure also portends an affordability crunch for the lower- or moderate-income households in the area, thus elevating the importance of more predictable affordability for the beneficiaries of the NOAH.

At the same time, the greater-than-typical higher future property value does two things in the transaction: (1) It gives comfort to the lender that the collateral will appreciate – always a consideration in a real estate appraisal, thus reducing the risk of the transaction; (2) The developer/owner can anticipate not only a cash flow from their investment but also, likely, higher capital appreciation than investments in other submarkets without pressure.

Given the foreseeable affordability crunch in a higher-pressure sub-market could a mission-based lender responsibly liberalize some underwriting criteria because the transaction risk is reduced by the future value of the collateral? With respect to the second condition, could a mission-based developer/owner accede to greater affordability limits or controls because the expected future value of their property is greater than it might be in other sub-markets? If both are possible, this situation presents an opportunity to create NOAH that has a reasonable, negotiated depth and term of affordability.

Interviewees suggest that NOAH production is an activity that generally occurs in small doses in a neighborhood, even when a multi-family building is acquired and rehabilitated. At the same time, interviewees present NOAH preservation and development as much more than creating/preserving a housing unit. NOAH can address distressed property and stabilize neighborhoods. It is a vehicle to build wealth and economic opportunity for a new group of entrepreneurs (many of whom are people of color and/or female). Although this is not a place-based impact, it is an impact that aligns with the goals of many mission-based funders and policymakers. Aside from market pressure, consideration of sub-market characteristics (as evidenced by the MVA or other analyses) by mission-based investors and policymakers provides a better understanding of whether the NOAH is sufficient in scale to help stabilize an area. Weak markets that are not experiencing market pressure, for example, will have so much vacancy that NOAH will not likely have a place-based impact. The strength of the sub-market can also signal whether the units produced/preserved at the given price point will support income diversity in the community. Stated differently, consideration of the characteristics of the market and the pressure it is under may serve to increase the likelihood that the NOAH endeavor is more than "just" creating an unsubsidized housing unit.

<table>
<tr><th></th><th>Declining</th><th>Stabilizing</th><th>Steady</th><th colspan="2">High Pressure</th></tr>
<tr><td>Weak</td><td>Likely not appropriate for NOAH as vacancies too high, deterioration great and rehab costs too high.</td><td>Possibly appropriate for NOAH as the market is stabilizing. Prices are low but physical deterioration high. Not the most opportune areas.</td><td>More appropriate for NOAH as the market is showing signs of appreciation. Prices remain lower; physical deterioration high. Good if proximate to stronger markets.</td><td>Could work for NOAH; risk of the "flip" / displacement if proper assurances not part of the transaction. Explore incentives for duration / depth of affordability.</td><td rowspan="2">Given the prospects for appreciation, do NOAH transactions in "high pressure" areas create an opportunity to trade off financing terms around depth / duration of affordability?</td></tr>
<tr><td>Middle</td><td>Possibly good for NOAH if the destabilizing influences are controlled and vacancy in relation to NOAH is not severe. Opportunity to preserve / improve the neighborhood.</td><td colspan="2">Appropriate for NOAH as prices are modest and areas are not heavily deteriorated keeping the acquisition/rehabilitation cost in the NOAH range; can operate as an effective neighborhood preservation / improvement strategy.</td><td>A high priority for NOAH as a preservation and anti-displacement strategy. Prospects for long term appreciation could translate into concessions around affordability.</td></tr>
</table>

Table 9: Role of NOAH in Various Markets

Conclusion:

The NOAH market segment has a growing web of supporters, including CDFIs, private investors like Shift Capital and JumpStart, and local officials. Yet the current volume of activity is insufficient to match the estimated number of moderate and low-income households in need of high-quality affordable housing. From a national perspective, 50% of new homes in 2017 sold for $320,000 or less and the median household income was approximately $60,000. This suggests that at least some portion of those new homes were priced in a NOAH range (three times household income) for households earning at or near the US median. That said, homes produced at a price affordable to households typical of a region will generally be out of reach to many city households. Interviewees in the regions we examined noted the presence of inner-ring suburban communities with similar economic profiles and housing markets to those urban middle neighborhoods that are also not sufficiently served by current housing production. Given the important role of these middle areas, the prohibitive costs of new construction and other challenges cited by interviewees, and the limits of housing market filtering, there is a need to transform the existing constellation of NOAH actors into a complete *village* that will nurture this critical housing segment.

Given all of the benefits of NOAH, mission-driven lenders (including both banks with CRA obligations and CDFIs with a dedicated public purpose) could play a critical role in creating the conditions necessary for increased NOAH production and preservation. Can we envision a circumstance wherein lenders responsibly loosen underwriting criteria or reduce transaction costs or processing times in exchange for commitments around the depth or duration of affordability? This is something we were not able to fully resolve through our interviews and thus it represents an area of further research. At least among CDFI interviewees, there was some receptivity to this notion, especially when the CDFIs' investors placed limits on them. Models like VHDA's REACH Virginia program, with its lower interest rate but stringent affordability requirements, allow developers to add to the housing supply (through rehabilitation or construction) for the "missing middle."

Although NOAH is fundamentally about producing and preserving unsubsidized housing for modest-income people and middle neighborhoods, there are a handful of promising approaches to lightly subsidize or incent housing affordable to targeted income groups. Several jurisdictions have real estate tax abatements. Can other jurisdictions follow the lead of Minneapolis and make them more valuable for NOAH properties with a commensurate affordability obligation? Are there ways that philanthropy or government could establish pools of money to backstop risk for CDFIs that engage in NOAH transactions in exchange for affordability commitments and more lenient loan underwriting? Experts and practitioners note that subsidy constraints increase the cost of construction thereby reducing the number of units created, which also raises the cost of unsubsidized housing. Are there, as ULI/Terwilliger (2013) posit, strategies to bend the cost curve? And finally, are there ways to develop differentiated strategies based on market condition? These are not wholly new ideas, but they are part and parcel of creating the village in which private market investors and developers, nonprofit lenders and housing providers, and local governments can together to support a housing product that has a multi-faceted set of public benefits.

Market	Number of BG	Median Sales Price	Sales Price Variance	Foreclosures as pct of sales	Percent of land that is vac building or land	Percent owner occupied	Pct Subsidized housing units	Pct Res w>$10k permits	Housing units per acre
A	42	$ 403,995	0.53	8%	0%	61%	4%	5%	8.2
B	78	$ 223,970	0.48	10%	1%	56%	3%	5%	33.4
C	23	$ 191,953	0.56	14%	6%	21%	58%	5%	32.1
D	92	$ 102,989	0.53	27%	1%	78%	4%	3%	10.0
E	57	$ 89,397	0.64	25%	4%	32%	17%	4%	23.2
F	85	$ 52,015	0.71	30%	4%	56%	12%	3%	18.5
G	26	$ 34,827	0.97	25%	9%	20%	78%	2%	32.9
H	74	$ 31,332	0.82	26%	7%	51%	13%	2%	26.5
I	82	$ 16,508	1.10	20%	16%	42%	18%	1%	33.8
J	46	$ 9,249	1.16	16%	21%	33%	22%	1%	38.5
Split	10	$ 124,461	0.54	20%	5%	49%	20%	4%	27.0
Other	38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Figure 3: Baltimore MVA Market Characteristics

	Count	Median Sales Price	Variance of Sales Price	Permits	New Construction	Vacant Homes	Foreclosures	Owner Occupied Homes	Renter Subsidy	Parcel Per Housing Unit	Condos
A	31	$960,792	0.773	6.39%	2.69%	0.41%	1.99%	36.06%	1.76%	1.47	70.40%
B	123	$432,951	0.472	8.93%	4.96%	2.98%	5.23%	43.55%	8.53%	0.25	21.08%
C	212	$217,500	0.344	4.04%	0.70%	1.45%	12.71%	74.91%	2.57%	0.06	2.71%
D	116	$204,364	0.488	7.55%	2.33%	7.52%	9.99%	34.13%	12.33%	0.16	7.84%
E	203	$128,176	0.381	2.88%	0.11%	2.22%	24.00%	64.56%	8.99%	0.09	1.06%
F	195	$78,927	0.561	3.81%	0.09%	5.41%	28.46%	58.81%	17.25%	0.1	1.04%
G	162	$44,612	0.770	4.36%	0.07%	11.24%	22.52%	51.73%	24.11%	0.11	0.01%
H	170	$25,929	0.831	4.55%	0.12%	16.75%	15.45%	44.00%	18.88%	0.12	0.09%
I	84	$13,210	1.011	4.65%	0.01%	24.93%	7.97%	46.07%	15.30%	0.14	0.00%

Figure 4: Philadelphia MVA Market Characteristics

Cluster Letter	Number	Median Sales Price 2013q34 – 2016q12	Variance Sales Price 2013q34 – 2016q12	Percent Owner Occupied 2010 - 2014	Percent Residential Vacancy 2015	Percent Poor or Worse Condition Parcels	Percent Subsidized Housing Units	Percent Parcels With a Permit	Foreclosures as a Percentage of Sales 2013 - 2015	Density of Housing Units Per Sq. Mile
A	30	$404,230	0.52	60.2%	1.8%	0.5%	1.5%	4.3%	9.2%	7,116
B	33	$228,045	0.47	23.6%	2.3%	0.5%	1.8%	1.5%	9.9%	29,964
C	42	$134,783	0.55	37.1%	4.7%	2.4%	7.8%	2.2%	25.3%	15,232
D	35	$122,335	0.46	78.8%	2.1%	1.4%	5.6%	1.3%	28.5%	5,830
E	30	$75,396	0.83	44.7%	7.1%	4.2%	4.0%	3.4%	21.0%	13,061
F	57	$65,096	0.53	69.2%	4.1%	1.5%	8.5%	0.8%	49.0%	5,612
G	40	$37,344	0.82	50.0%	8.9%	5.7%	14.5%	1.1%	54.0%	9,217
H	32	$20,416	0.87	52.7%	12.4%	7.0%	25.4%	0.9%	62.8%	7,539
I	23	$9,933	1.13	54.3%	14.5%	9.0%	22.7%	0.8%	48.4%	7,128

Figure 5: Pittsburgh MVA Market Characteristics

	Number of Block Groups	Median Sales Price 2015-2016	Sales Price Variance	Percent Bank Sales	Owner Occupancy	Percent Subsidized Rental	Percent Vacant Residential	Housing Units per Acre	Percent Residential Parcels Built 2008-up	Percent Residential Parcels with Permits 2015-2016
A	32	$501,292	0.39	3%	90%	0%	0.4%	1.9	5.9%	11.6%
B	23	$425,851	0.47	3%	33%	10%	1.5%	17.2	4.7%	5.0%
C	82	$274,479	0.34	6%	83%	3%	0.6%	3.2	2.7%	7.2%
D	53	$195,175	0.35	9%	29%	7%	1.2%	9.8	3.4%	5.7%
E	103	$182,686	0.32	13%	80%	3%	0.9%	2.8	2.6%	5.5%
F	30	$140,358	0.38	21%	48%	77%	1.8%	4.0	2.5%	4.0%
G	62	$117,611	0.39	29%	59%	7%	3.0%	4.2	2.7%	4.9%
H	31	$ 63,465	0.61	33%	41%	12%	8.5%	5.6	1.9%	3.7%
I	18	$ 53,597	0.60	37%	30%	89%	3.2%	7.2	2.0%	2.0%

Figure 6: Richmond Area MVA Market Characteristics

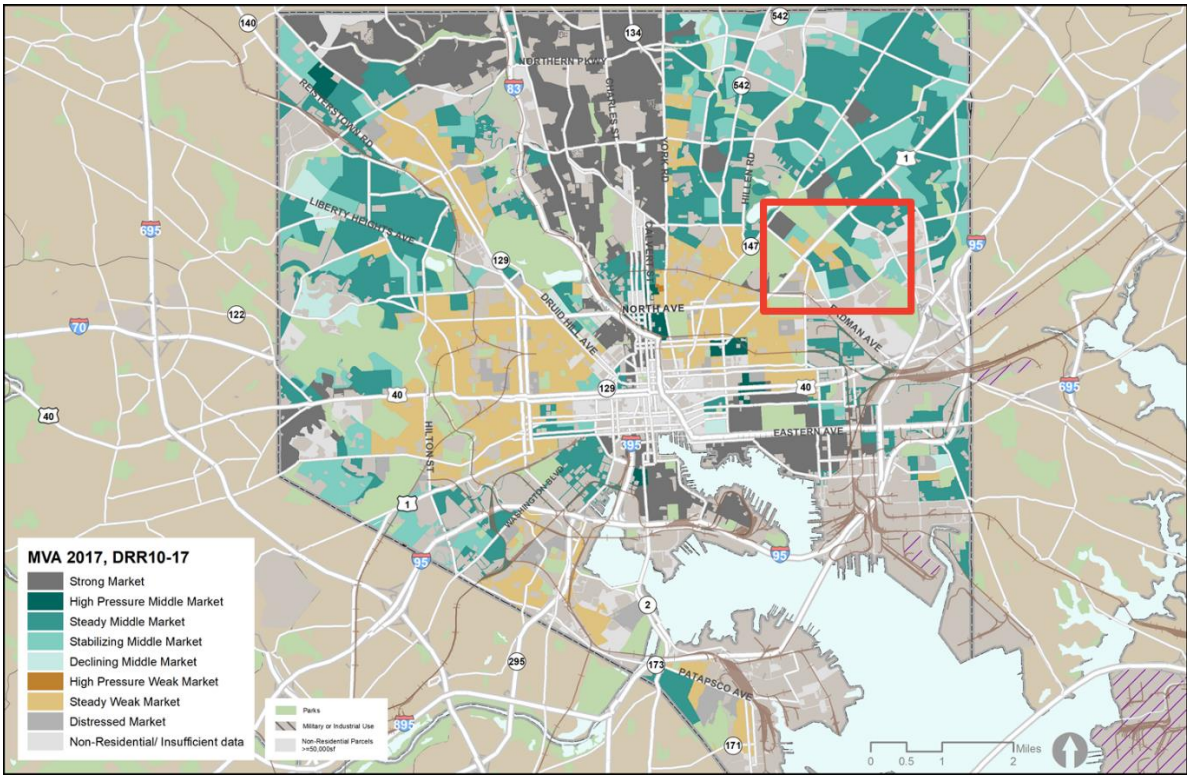


Figure 7: Baltimore MVA and Market Pressure

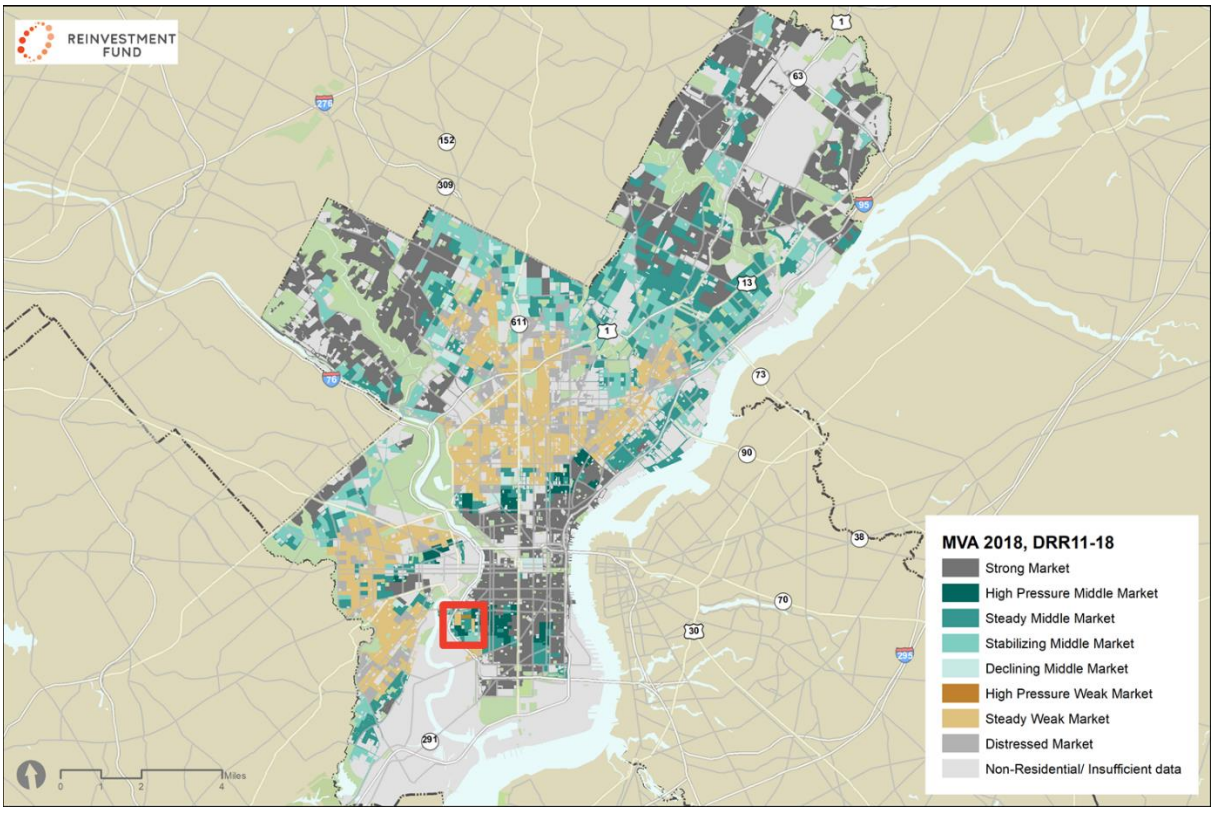


Figure 8: Philadelphia MVA and Market Pressure

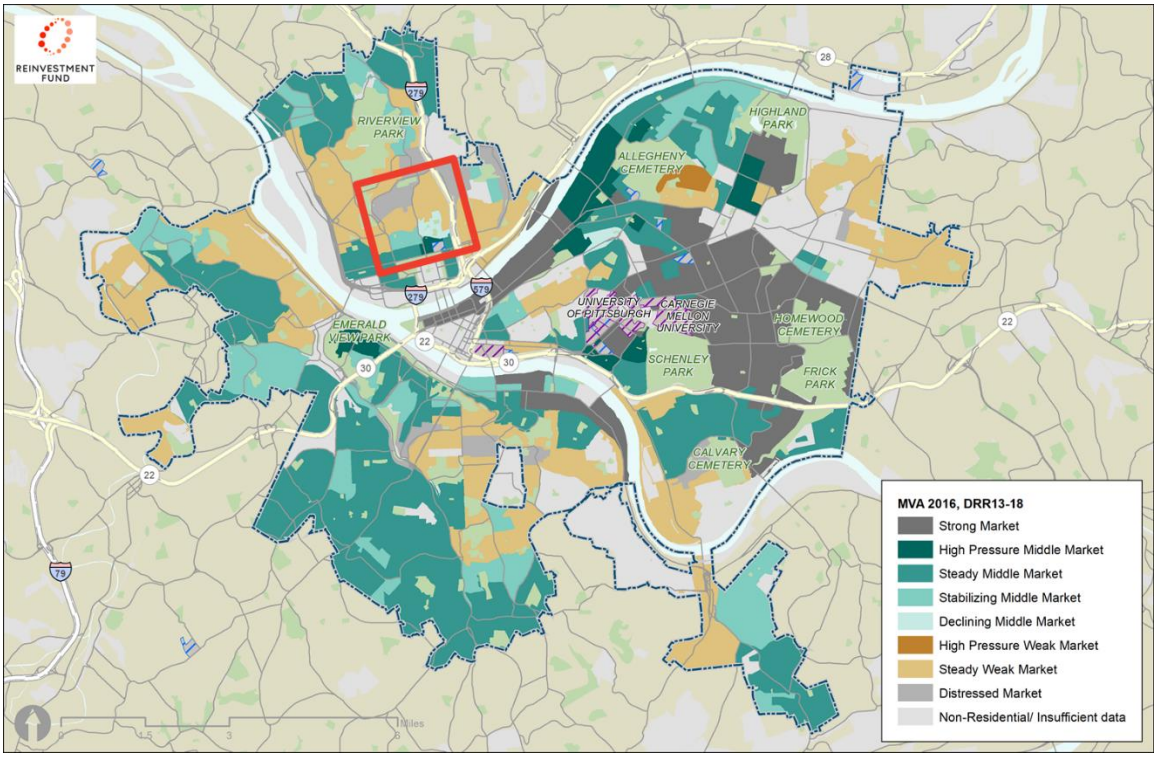


Figure 9: Pittsburgh MVA and Market Pressure

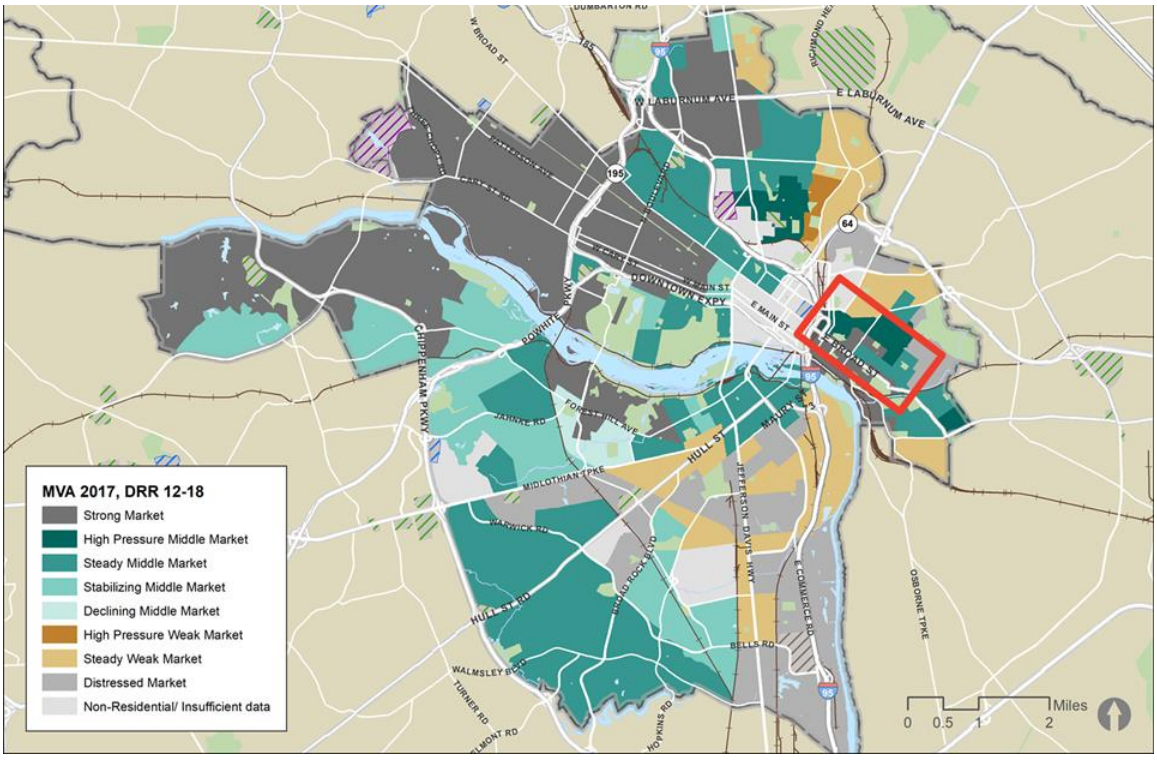


Figure 10: Richmond MVA and Market Pressure

Bibliography

Airgood-Obrycki, Whitney and Jennifer Molinsky. "Estimating the Gap in Affordable and Available Rental Units for Families." Joint Center for Housing Studies of Harvard University. April 02, 2019. Accessed April 25, 2019. https://www.jchs.harvard.edu//research-areas/working-papers/estimating-gap-affordable-and-available-rental-units-families.

An, Yeokwang, Raphael W. Bostic, Andrew Jakabovics, Anthony W. Orlando and Seva Rodnyansky. "Small and Medium Multifamily Housing Units: Affordability, distribution, and trends." Enterprise Community. November 3, 2015. Accessed April 25, 2019. https://www.enterprisecommunity.org/download?fid=5019&nid=3417.

Been, Vicki, Ingrid Gould Ellen and Katherine O'Regan. "Supply Skepticism: Housing Supply and Affordability," Housing Policy Debate, 29:1 (2018), 25-40.

Bhatia, Aliya and Miriam Keller. "Preserving Naturally-Occurring Housing Affordability in Metro Atlanta Neighborhoods: Findings and recommendations for Policymakers, Foundations, Developers, and Nonprofits." Enterprise Community. May, 2018. Accessed April 25, 2019. https://www.enterprisecommunity.org/download?fid=9645&nid=7096.

Brennan, Maya, Pam Blumenthal, Laurie Goodman, Ellen Seidman and Brady Meixell. "Housing as an Asset Class: Opportunities for Systems Change to Enhance Social Equity and Inclusion." Urban Institute. September, 2017. Accessed April 25, 2019. https://www.urban.org/sites/default/files/publication/93601/housing-as-an-asset-class_1.pdf.

Galster, George. "The Case for Intervention in Middle Neighborhoods." In *On the Edge: America's Middle Neighborhoods*, edited by Paul Brophy, 9-20. New York: The American Assembly, 2016.

Goldstein, Ira, William Schrecker and Jacob Rosch. "Demographics and Characteristics of Middle Neighborhoods in Select Legacy Cities." In *On the Edge: America's Middle Neighborhoods*, edited by Paul Brophy, 21-48. New York: The American Assembly, 2016.

Joint Center for Housing Studies. "The State of the Nation's Housing 2018." 2018. Accessed April 25, 2019. http://www.jchs.harvard.edu/sites/default/files/Harvard_JCHS_State_of_the_Nations_Housing_2018.pdf

Joint Center for Housing Studies. "America's Rental Housing 2017." 2017. Accessed April 25, 2019. https://www.jchs.harvard.edu/sites/default/files/harvard_jchs_americas_rental_housing_2017_0.pdf

Katz, Bruce and Jeremy Nowak. 2018. The New Localism: How Cities can Thrive in the Age of Populism. Washington, DC: The Brookings Institution.

Lupton, Shaw and Ethan Vaisman. "Naturally Occurring Affordable Housing". NAAHL & ULI Symposium, October 11, 2016. Accessed April 25, 2019. http://uli.org/wp-content/uploads/ULI-Documents/ULI_NAAHL_Presentation.pdf.

Mattson-Teig, Beth. "More Real Estate Funds Aim to Preserve Affordable Housing, Boost Economic Development," *National Real Estate Investor* (July 3, 2018): Accessed April 25, 2019.

https://www.nreionline.com/finance-investment/more-real-estate-funds-aim-preserve-affordable-housing-boost-economic-development

Nordby, Hans, Ethan Vaisman and Andrew Rybczynski. "Gimme Shelter: Defining market-rate affordable housing and its investment performance," *The Journal of Portfolio Management* 43, no. 6 (2017): 187-201. Accessed April 25, 2019. https://jpm.iijournals.com/content/43/6/187.

REIS, Inc. *SE Glossary*. (n.d.) Accessed April 25, 2019. https://se.reis.com/ReisSEGlossary.pdf

Reynolds, Kathryn, Leiha Edmonds and Erika Poethig. "Innovative Financing Approaches for Affordable Rental Housing in the Chicago Region: A case study of Community Investment Corporation." Urban Institute. February, 2019. Accessed April 25, 2019. https://www.urban.org/sites/default/files/publication/99828/innovative_financing_approaches_for_affordable_rental_housing_in_the_chicago_region_0.pdf

Rothenberg, Jerome, George C. Galster, Richard V. Butler, and John R. Pitkin. 1991. The Maze of Urban Housing Markets. Chicago: University of Chicago Press.

Schreiber, Matt. "Proactive Preservation of Unsubsidized Affordable Housing in Emerging Markets: Lessons from Atlanta, Cleveland, and Philadelphia." Joint Center for Housing Studies of Harvard University. May 02, 2018. Accessed April 25, 2019. https://www.jchs.harvard.edu//research-areas/working-papers/proactive-preservation-unsubsidized-affordable-housing-emerging

Urban Land Institute, Terwilliger Center for Housing, and Enterprise. "Bending the Cost Curve on Affordable Rental Development: Understanding the Drivers of Cost." 2013. Accessed April 25, 2019. http://1rpdxl3vt3c61pdenf9k5xom-wpengine.netdna-ssl.com/wp-content/uploads/sites/2/ULI-Documents/Bending-the-Cost-Curve-on-Affordable-Rental-Development.pdf.

Williams, Stockton. "Preserving Multifamily Workforce and Affordable Housing: New Approaches for Investing in a Vital National Asset." Urban Land Institute. 2015. Accessed April 25, 2019. https://uli.org/wp-content/uploads/ULI-Documents/Preserving-Multifamily-Workforce-and-Affordable-Housing.pdf

Data Sources

(1) MVA data for each city generally derive from local administrative data sources in each city (e.g., building/rehabilitation permits, home sales to non-owner occupants).

(2) American Housing Survey, 2017 Public Use Microdata File.

(3) American Community Survey 5-Year Samples (dates as noted).

(4) Bureau of Labor Statistics, Small Area Unemployment Rates.

(5) Longitudinal Employer-Household Dynamics Database (2015).

(6) REIS Metro Reports for selected metro areas (Q4, 2018).

List of Interviewees

Atlanta

John O'Callaghan, President and CEO, Atlanta Neighborhood Development Partnership, Inc. (ANDP)

Baltimore

Jack Bevier, Partner, The Dominion Group

Chicago

Wendell Harris, Vice President of Lending Operations, Chicago Community Loan Fund (CCLF)

Sara Brune, Manager of Innovation & Public Policy, Neighborhood Housing Services of Chicago

Indianapolis

Joe Hanson, Executive Vice President of Strategic Initiatives, Indianapolis Housing Neighborhood Partnership

Minnesota

Rachel Robinson, NOAH Impact Fund Manager, Greater Minnesota Housing Fund

New York

Brian Dowling, Chief Investment Officer, The Community Development Trust (CDT)

Philadelphia

Elizabeth M. Beckett, President, Real Estate Strategies, Inc. / RES Advisors

Mathew Grande, Principal—Impact, Shift Capital

Jesse Hunting, Director of Business Development & Operations, Shift Capital

Brian Murray, Principal / Founder, Shift Capital

Margaret B. Sowell, Founding Principal, Real Estate Strategies, Inc. / RES Advisors

Ken Weinstein, Founder of Jumpstart Germantown and President of Philly Office Retail

Robert Cox, Senior Director, Housing and Commercial Real Estate, Reinvestment Fund

Pittsburgh

Matthew Madia, Chief Strategy and Development Officer, Bridgeway Capital

Bob Mistick, CEO, Mistick Construction

Peter Rooke, Partner, Oakglade Realty Capital Partners, LP

Rob Stephany, Director, Community and Economic Development, The Heinz Endowments

Matthew Barron, Program Officer, Sustainability, The Heinz Endowments

Richmond

Matt Becker, Real Estate and Housing Coordinator, Chesterfield County Virginia

Daniel Cohen, Director of Community Enhancement, Chesterfield County Virginia

John Gregory, Founder, Lynx Ventures

Jane Henderson, CEO, Virginia Community Capital

Erik Johnston, Director, Virginia Department of Housing and Community Development

Pamela Kestner, Deputy Director of Housing, Virginia Department of Housing and Community Development

Laura Lafayette, Chief Executive Officer, Richmond Association of Realtors

Bernard Rogers, Vice President Real Estate Development, Better Housing Coalition

Carl Schlaudt, Revitalization Manager, Chesterfield County Virginia

Dale Wittie, Director of Rental Housing Programs, Virginia Housing Development Authority

National Community Stabilization Trust

Katherine Carter, Community Development Manager (NE Corridor and Mid-Atlantic US)

Chris Garland, Community Development Manager (Michigan and Ohio)

Racquel Reddie, Managing Director, Community Development

Dawn Stockmo, Community Development Director (Midwest, US)

Miami

Sara Haas, Director, Southeast Market Enterprise Community Partners, Inc.

Sabrina V. Velarde, Policy and Strategy Analyst, Miami Homes For All, Inc.