Housing Assistance and the Creation of Household Wealth

by

Thomas F. Worth II

B.A. with High Distinction, 2002
Latin Language & Literature, Ancient Greek Language & Literature, Classical Archaeology
The University of Michigan

M.Phil. with Distinction, 2005
European Literature, with Special Subjects in Medieval German, Medieval Latin, and Palaeography
St Edmund Hall, Oxford University

Submitted to the Program in Real Estate Development in Conjunction with the Center for Real Estate in Partial Fulfillment of the Requirements for the Degree of Master of Science in Real Estate Development

at the

Massachusetts Institute of Technology

September, 2019

Signature of Author____
Thomas F. Worth II
Center for Real Estate
July 26, 2019

Certified by____
Walter N. Torous
Senior Lecturer, Center for Real Estate and Sloan School of Management
Thesis Supervisor

Accepted by____
Professor Dennis Frenchman
Class of 1922 Professor of Urban Design and Planning,
Director, Center for Real Estate
School of Architecture and Planning

This Page Intentionally Left Blank

Housing Assistance and the Creation of Household Wealth

by

Thomas F. Worth II

Submitted to the Program in Real Estate Development in Conjunction with the Center for Real Estate on July 26, 2019 in Partial Fulfillment of the Requirements for the Degree of Master of Science in Real Estate Development

ABSTRACT

This thesis aims to develop the framework of a housing program designed to help current recipients of rental subsidies begin to build household wealth through homeownership. Its core beneficiaries are households in Boston and Cambridge earning between 60% and 80% of the area median income. It also proposes an extended program to help households earning between 80% and 135% AMI purchase a home, since they also face significant burdens from housing costs in the current market and are underserved by existing housing programs. The proposal does not aim to solve the overall housing crisis, nor to replace existing programs, but rather to act as a supplement to current programs. The first chapter examines the history of housing policy, and from that review draws six principles of effective housing programs which are used to guide the new proposal. The second chapter examines the needs of renters, home buyers, and property developers in order to identify basic criteria which a new program must meet. The third chapter evaluates individual potential elements of a new program with respect to the principles and criteria identified within the earlier chapters. Finally, the framework of the proposal for a new housing program is laid out.

Thesis Supervisor: Walter N. Torous
Title: Senior Lecturer, Center for Real Estate and Sloan School of Management

This Page Intentionally Left Blank

Introduction

Many households across the country find it extremely difficult to secure reliable housing without assistance. This is especially true in cities such as Boston and Cambridge, where a combination of factors including steadily rising incomes and geographical constraints on space have set housing costs soaring. A wide variety of programs and policies have arisen over time to try to address this need, from supply side solutions which attempt to create more units to demand side efforts to reduce effective rents. More recently, awareness has grown around the idea that solving poverty and housing insecurity requires more than simply providing a family with a home. In order to lift itself out of mere subsistence, a household needs the opportunity to build wealth. Home ownership has historically been a very effective way for families to begin establishing real generational wealth. This thesis will consider the elements of a program which attempts to help households that are currently receiving rental subsidies begin to build household wealth through homeownership. The fundamental aim is to create the framework for a program which lowers the barrier of entry into homeownership for subsidized renters in Boston and Cambridge, allowing them to begin to build equity without a significant change in their monthly expenses, and without reducing the funding available for other local housing programs.

Consideration of this program will fall into three parts. First, I shall examine current and historical programs and policies which have attempted to address housing needs, identifying wherever possible with empirical evidence which programs have been successful not just in providing people with housing, but also in reducing overall poverty. The aim here will be to identify the fundamental principles of a housing program which will be most successful at helping families begin to generate long-term wealth, as well as some of the societal obstacles to implementing such a program. In the second part, I shall examine the needs of renters, buyers, and housing developers participating in the program. How much money does a household need for a reasonable down payment? How much money can be set aside per household each month? How long will it take before a household would be able to afford a reasonable down payment? Can housing units be built in a cost-effective manner while still providing competitive returns for investors? How do we cover any funding gaps? Are there specific aspects of home ownership in Boston and Cambridge which impact this analysis? Having explored the history of housing policy, as well as the needs of renters, buyers, and developers, in the third chapter we will examine individual potential program elements, and evaluate them with respect to the principles of effective policy established in Chapter 1 and the needs identified in Chapter 2.

Once I have evaluated the individual potential elements, I will be ready to outline a program which can be successfully implemented in Boston and Cambridge to help families begin to build wealth through homeownership. By no means do I anticipate that the program described will solve the issue of housing insecurity in these cities, or the larger housing crisis. It is merely an attempt to take one step further than existing programs by beginning to acknowledge that it is not enough to consider current household expenses when designing affordable housing programs; it is just as important to set families up to face the financial challenges of their futures, and tackling these problems requires the ability to build wealth.

I shall also endeavor to keep in mind that the United States have perpetuated a deeply ingrained Lockean tradition over their entire history, that homeownership should be the goal of every household, and that the private market should be able to supply the population with everything it needs. I believe that this Lockean tradition is profoundly flawed, but an examination of its weaknesses and possible ameliorations is beyond the scope of this thesis. Let it suffice that, although I am advocating for the ability to generate household wealth through homeownership, I am simply presenting it as *a* pathway to wealth creation, not *the* pathway.

Chapter 1

Many different programs and policies have been implemented over the years in an attempt to make housing respond better to the needs of low- and middle-income households. Some of them have been successful in achieving their goals, but although they have all been designed with the best of intentions, a large number have also had unintended consequences. The first step in outlining the framework for a program which helps households receiving rental subsidies to begin building wealth through homeownership is to survey a range of housing initiatives and their measurable impact over time. Although my primary aim is to evaluate these programs from an economic perspective, it is impossible to consider them fully outside of their cultural context, as national sentiment often has a significant impact on choosing a particular pathway. The goal is to identify and include the most successful elements of these programs, while taking efforts wherever possible to avoid the negative consequences.

In the 1800s, advancements in agriculture, medicine, and the general understanding of the world gave rise to longer average life expectancies and significant decreases in the infant mortality rate, which led to a population boom. American society had been traditionally agrarian, but the farms of the Eastern countryside were unable to support so many people by themselves, and the able-bodied rural young who were accustomed to taking apprenticeships instead began either to head into the open West, or to look for work in the cities. To their fortune, the rise of the industrial city at that same time created significant demand for urban labor, and therefore an increased demand for space to house workers. Initially, all the efforts to meet this need arose from the private sector. Textile mill owners in Waltham and Lowell built what came to be known as the "backwoods utopias" – entire communities to house their (mostly female) workforce, built around the assumption that access to good housing would improve worker productivity, but also thinking it was their moral responsibility to shield the young women who worked for them from the sins of the city. In New York, however, after land values in Manhattan rose 750% between 1785 and 1815, building owners began dividing formerly single-family homes into tenement houses.[1] Especially on the Lower East Side, very poorly built structures began to arise to house the great

[1] A tenement house was formally defined as a residential building where three or more families cooked and slept on the premises – Bauman. *From Tenements to the Taylor Homes*. p. 6

influx of immigrants, many of which contained extremely small and windowless internal sleeping rooms, which had pronounced negative effects on health and wellbeing. By 1865, there were 500,000 people living in New York's tenements.[2] Social Darwinism, a dominant philosophy of the time, claimed that most of these poor residents ended up living where they did due to a combination of natural selection and bad decision making, and that little could be done to help them. Some of the inhabitants, though – especially the orphans and widows and others who ended up there by no fault of their own – became known as the "deserving poor," or those who were deserving of societal charity. The "undeserving poor," then, were deemed unworthy of social assistance. Philanthropists began to form model tenement associations with the aim of providing housing for the deserving poor with modern sanitary services, such as running water. They attempted to raise money with a motto of "philanthropy at 5%," encouraging potential investors to accept a limited dividend of 5% and be satisfied instead with the fact that they were helping to ameliorate the conditions in the slums which contributed to crime and outbreaks of contagious diseases. Although many model tenements were funded in this way, their numbers were never anywhere near high enough to begin to meet the demand for clean and quality housing for low-income households, and the associations were often required to cut some corners in construction in order to save money. Indeed, the very first model tenement built in New York in 1854 was condemned as unfit for human habitation by 1880. The private sector would never be able to solve this issue on its own without the potential for competitive profits.

Western Europe was experiencing similar challenges with its growing populations, but each nation implemented a slightly different strategy when trying to find solutions. International housing fairs and expositions helped create a fertile ground for sharing ideas and innovations around housing between different populations. The two countries which had the most impact on American housing philosophies were England and France. The first low-cost housing movement was begun in France by Emile Muller, a professor of engineering at the *École Centrale* in Paris, who initially designed housing communities for railroad workers and textile manufacturers. These communities were organized from the start to include a variety of services and amenities including gardens, water, gas, and sewer lines, and were interspersed with schools, markets, and banks to provide for all the needs of their residents within easy reach. In order to keep the units affordable, Muller devised a financial system whereby residents could apply their monthly rent to the eventual purchase of their homes, but he knew that would still not be enough to keep residents financially secure, so he requested funding from the state. In 1852, Napoleon III personally authorized the disbursement of 10 million francs to improve workers' housing, including 300,000 francs for just one of Muller's projects.[3] This movement is considered to be one of the earliest examples of the development of France's socialist tradition in addressing the needs of its poorer citizens.

Things took a decidedly different course in the United Kingdom. The Poor Law of England required parishes to take care of their aged and infirm population, and to provide work for all able-bodied men. As the population expanded, the numbers of elderly people and children who survived infancy began to rise beyond what the parishes could handle. When industrialization began to take the means of livelihood away from the countryside, most parishes found themselves unable to shoulder this burden. Most of the land in rural areas had been held for generations by

[2] Bauman. *From Tenements to the Taylor Homes*. p. 6
[3] Bauman. *From Tenements to the Taylor Homes.* p. 46

prominent families, so there was very little space for any speculative construction which might have been able to house workers except in the least desirable locations. In response to the increased demand for space to house low-income families, many land owners made a conscious choice to tear down shoddy cottages on their properties, displacing their poorer occupants, and to construct new housing that was just out of reach of the lowest classes, encouraging them to abandon the countryside for the newly growing cities.

> "[I]t was the poorest, most degraded, least able class of farm labourers which was left homeless in the greatest numbers. The skilled artisans of the countryside, the shepherds, the game-keepers, the blacksmiths, the horse-men, the dairy-men, wheel-wrights and thatchers, for instance, were still valued in the rural community and there were still houses for them. It is sometimes forgotten that the country has its labour aristocrats too. These were not unintelligent people, nor were they unaccustomed to comfortable housing. It was in fact the least well-housed who reached the towns, the least able to improve their surroundings and the most likely to accept the deteriorating of living standards, of health and comfort and privacy, in the decaying streets."[4]

The romantic notion of the picturesque British countryside, which contributed so much to the later Garden City movement, arose from the manufactured image of a countryside purposely cleared of its poor and their shoddy hovels, leaving only the middle-class cottages remaining. The United Kingdom, in effect, set up two different approaches to housing during the 19th Century. It would provide for skilled laborers, but leave the unskilled to fend for themselves, and encourage the poor to build a life elsewhere. This is, in fact, a period when many British citizens emigrated to America. The United States welcomed huddled masses at that time, but also began to import this distinction between two discrete classes of the poor, only one of which was "deserving" of assistance. In fact, the efforts to displace the poor from rural areas of the United Kingdom were so successful that the countryside faced a labor shortage during the subsequent generation, which only began to be addressed when the government stepped in to build housing. This governmental housing, along with the Poor Law tradition, provided the foundation for the rise of the council estates so common in the country today.

To most Americans, affordable housing still conjures up images of crime ridden brutalist brick towers on the urban edge, built and maintained to low standards, but the earliest governmental efforts to assure that people had access to safe and sufficient housing where the establishment of building codes and minimum living standards, such as light and proper ventilation. Emerging understandings of bacteriology and the communication of diseases began to underscore the hazards of overcrowding, and the publication in 1890 of *How the Other Half Lives* by Jacob Riis, a photojournalist who documented the conditions of the slums and tenements of New York City, helped to stir up a national call to action. This led to the establishment of the National Housing Association in 1910, which provided nationwide building standards. The impact was immediate and broadly positive for low-income households, but of course higher building standards also raised the average construction cost of units. These costs were passed on to tenants

[4] Gauldie. *Cruel Habitations*. p. 40

through higher rents. Even Jacob Riis, in 1907, lamented the subsequent cost of housing in Manhattan after the city implemented its own set of building codes.[5] As a result, although clearly the quality of housing was much improved, still tenants especially at the lower end of the income spectrum found themselves overcrowded into spaces in an effort to share the costs of rent, which did little to address the health concerns, or pushed well out into the edges of their cities, far away from opportunities for work. Low-income households can not simply absorb increased housing costs without experiencing additional negative consequences.

The First World War was the catalyst for the American government to begin taking direct involvement in providing housing. There was a labor shortage in a number of industries directly related to defense efforts, and it soon became clear that the underpinning of this labor shortage was a lack of sufficient housing available for workers near to the available jobs. Federal officials were also aware of the fact that the working-class families of the nation needed quality housing in order to raise healthy children who would become the next generation of soldiers, so housing became closely linked with the goals of national defense. Because the government was still philosophically wary of interfering with the private market, it did not want to become a landlord, so it encouraged workers to purchase these new homes. A federal official noted, however, that "Labor does not entirely concur in this view. The men find some industrial disadvantage in being tied to a house and, consequently, a job."[6] Workers were afraid that their jobs would disappear when defense manufacturing contracted after the war, and a home near those industries would have no value any longer. The government conceded and allowed workers to rent the homes until the end of the conflict. After the armistice, housing reformers advocated for transferring the ownership of these communities to the worker-tenants by allowing them to purchase shares in the community, but Congress was concerned about supporting any plan which might be deemed socialist, and instead opted to auction the properties off to the highest bidders. After spending $52 million in construction, the sale of the homes generated only $27 million in revenues, a loss which ensured that there would be vocal opposition to any future federal involvement in housing.

The first public housing project in the country was the Garden Homes District, built in Milwaukee in 1923. A national moratorium on new construction during the First World War contributed significantly to a housing shortage in many urban industrial centers, driving up home prices in the process. The mayor of Milwaukee and the city's housing commission tried to address the need for affordable housing through a new and interesting investment vehicle.

> "[O]ccupants would not own their homes initially; instead, they would purchase housing corporation common stock equal to the value of a house. The tenants would pay for their stock by making a 10% downpayment and subsequent monthly payments spread over twenty years. The payments were to cover interest, taxes, upkeep and other fixed costs. Tenants would also receive life insurance benefits and an annual five percent cumulative dividend on their equity. The initial cost of the project was to be financed through the sale of preferred stock carrying a 5% per annum cumulative dividend, which would be purchased by the city and county governments, and other interested investors. As the occupants of the houses paid on their common stock (only occupants of the houses could

[5] Husock. *America's Trillion Dollar Housing Mistake*. p. 18
[6] Bauman. *From Tenements to the Taylor Homes*. p. 67

> hold common stock), the preferred stock would be retired. It was expected that after about 20 years all of the preferred stock would be retired and the property would be wholly owned by the residents who at that time could elect to disband the housing corporation and convert the development to individual ownership."[7]

As an additional incentive to keep the properties in good repair, every twelfth month's payment would be returned to tenants, less any repair costs assumed by the cooperative. The plan was a bold one, following in the French tradition of Emile Muller. It had many advantages, but it also encountered several troubles. Because the city was financing the project, the building team was able to use some of the city's heavy equipment, which defrayed some costs. The size of the project and relative regularity of the units also allowed teams to benefit from an execution strategy similar to that of an assembly line. Milwaukee's building inspector served as the construction superintendent, and his son moved into the first completed unit. As a result, each home was constructed for approximately 25% less money than homes of similar size and quality in the area.

The first significant problem was that not enough private investment could be secured. Just as the model tenement association charities experienced with their limited dividends of 5%, charitable inclination was never going to be as strong of an investment draw as competitive returns, and there was no Napoleon to fill in the funding gaps. Only 105 units were constructed of the 162 which had been planned originally. With over 700 applicants for space, priority was given to households which could not otherwise be reasonably expected to be able to afford a home at the time. This contributed to the second major difficulty, which started with a troubled legal effort by Milwaukee to officially annex the land into its own territory. The court battle delayed the construction of streets, and when it eventually began, the city placed a special assessment upon the tenants for the cost of street and sewer service improvements. Very few of these residents, who had been chosen based upon their inability to afford housing anywhere else, could absorb this additional cost. Out of financial necessity, the cooperative was soon disbanded, and within ten years most of the original tenants had moved out of the development. It is imperative for lower-income residents to know the full cost of any program before their participation in it commences, and a project can not be successful if cost overruns must be passed onto these tenants.

The Great Depression placed a huge strain on many households' ability to secure stable housing. The governmental response took two main tracks. One was to encourage the construction of more units for low-income families, and the other was to help keep the overall housing market afloat in the midst of so many distressed loans. As part of the New Deal, the Public Works Administration initially offered low-interest loans for the construction of homes, but they experienced difficulty identifying qualified applicants and only funded seven projects within their first year. This led the PWA to begin implementing projects directly in 1934. They had successfully completed 52 projects across the country by 1937, when the Wagner-Steagall Housing Act created the United States Housing Authority. The USHA took many of the tenets established by the PWA, including an aim for cohesive architecture and plentiful green space throughout a development, and ratcheted up construction to build as many as six times more units than the PWA had been able to complete over the same amount of time. It was clear that the resources of the

[7] "National Register of Historic Places Registration Form: Garden Homes Historic District" p. 27

government, especially during times of financial stress, were much more effective than the private sector at supplying affordable housing units. However, the USHA was never able to be as flexible as a private developer, and the firm cap of $5,000 for the construction of each unit, far less than the amount the original proposers of the program had sought, led to significant compromises on quality within more expensive markets. There can never be a one-size-fits-all solution to creating affordable housing. It will always be necessary to have the flexibility to tailor a program to the needs and economic circumstances of each city where it is implemented.

It was during this same time that the U.S. government also created both the Home Owners' Loan Corporation and the Federal Housing Administration. Up until the Great Depression, home loans were generally interest-only, non-amortizing loans of up to 60% of an asset's value, with terms between three and six years, and ending with balloon payments of the entire principal. When the market crashed, banks were forced to call in their loans. With many homeowners having lost their jobs, and with no opportunities for refinancing available, the banks began foreclosing on large numbers of homes. So much distress in the market, however, caused a crash in asset values, so the banks were unable to recover the value of their loans through foreclosure, and many banks themselves began to fold under the pressure. The HOLC was created to purchase these troubled mortgages from banks, and to offer refinancing terms to homeowners. It issued bonds to banks covering not just the principal of the loan, but also any unpaid interest and any taxes accrued by the lender. This higher value then became the basis of refinancing loans made to homeowners, whose new loans amortized over a period of fifteen years at 5% interest (down from the typical 6% to 8% loans of the time). This significantly lowered the average monthly payment required by households. The FHA was created to insure the repayment of future mortgage secured loans, giving banks the confidence to begin lending again. It also controlled interest rates and allowed for buyers to secure loans for a greater percentage of the property's assessed value, which dramatically increased the size of the pool of potential home buyers.

Of course, any time that more capital is made available within a specific market, that availability will increase the price of the assets being traded. More households found themselves able to purchase homes, but they were also paying more for those homes in the long run. The real detrimental effect of these programs, however, was the introduction of "redlining." The HOLC created maps which drew a red line between geographical areas where it was considered low risk to offer financing to homeowners, and where it was "hazardous." Areas designated as hazardous were most often those settled by non-white families, and the policies contributed significantly to the racial segregation of the following decades. In fact, although the HOLC only operated for twenty years, the effects of redlining policies continue to echo into the modern geographies of cities. Two thirds of all areas designated as hazardous by the HOLC are still minority-dominated neighborhoods today,[8] and 74% of them still house primarily low- to moderate-income households.[9] When designing any program, and especially one which creates qualifying criteria, it is important to note how excluding people from receiving its benefits equally can have effects which last well beyond the lifetime of the program itself.

[8] Mitchell. "HOLC 'Redlining' Maps: The Persistent Structure of Segregation and Economic Inequality"
[9] Jan. "Redlining Was Banned 50 Years Ago. It's Still Hurting Minorities Today."

Housing policy around the Second World War was dominated by the National Defense Housing Act, more popularly known as the Lanham Act.[10] The sudden increase in employment within defense-related industries caused many households to move to new towns and cities in order to be near to their work. The FHA and the Division of Defense Housing Coordination initially tried to help defense workers purchase homes by reducing or even eliminating down payment requirements, and making it easier to obtain mortgage insurance, but this did nothing to increase the supply of available housing, particularly for renters. The Lanham Act addressed this need by authorizing the Federal Works Agency to construct housing for defense workers and their families, and by 1945 the agency had built over 700,000 units around the country.[11]

There was, however, an inherent tension in the philosophical objectives of Congress and John Carmody, the Administrator of the FWA who was effectively in charge of the defense housing program. This tension was reflective of the larger debate between progressive visions of modern living and a real estate industry, resurgent after the Great Depression, which was determined to get government out of housing completely. Congress, in the Lockean economic tradition, was wary of encroaching upon the free market, and stipulated that defense housing could only be built wherever the private sector could not adequately meet the needs of supply. This often led the FWA to construct projects in areas which were not located near the sources of jobs, and although 207 projects had been completed by 1942, significant concerns about industry having the labor necessary to meet defense production goals led President Roosevelt to relax the restrictions on project locations. Congress also required the FWA, vaguely, to dispose of all defense housing "in the public interest" at the end of the war, rather than entrenching itself as a landlord. In practice, this meant creating policies such as the G.I. Bill which encouraged the purchase of homes through the FHA, but it also led in part to a shift toward production of temporary residences constructed of *victory materials*[12] rather than permanent communities. Representative Lanham himself was also deeply disapproving of the low-income public housing program created by the Wagner-Steagall Act in 1937, and made it so that none of the units constructed by the FWA could be converted into low-income public housing without specific authorization from Congress. In the end, only 1.9% of the total units constructed received such authorization.

Carmody, on the other hand, believed that the government had a role in leading the way toward improved standards for home construction and ownership. He saw this as an opportunity to develop prototypes for post-war housing communities, and created a number of pilot projects in architecture, construction, and financing. Administrators of the program engaged prominent architects such as Walter Gropius and Frank Lloyd Wright to design attractive and functional low-cost prefabricated housing, and many of the building materials common today were developed as part of this endeavor, including plywood, plexiglass, and fiberglass. Carmody also put forth a plan to convert many of these communities into mutual ownership projects, similar to the unrealized goals of the Garden Homes District, and over forty of those developments continue to be mutually owned by their residents today.

[10] Named for Representative Fritz G. Lanham, a Texas Democrat, who introduced the bill in September, 1940
[11] Bauman. *From Tenements to the Taylor Homes*. p. 132
[12] Cheaper and lower quality building supplies, presumably used so that the higher quality materials could be preserved for defense purposes

If John Carmody had a blind spot, it was for the needs of minority households during a time when housing was typically segregated. In 1941, only 4,050 of the units constructed for defense housing were designated for black families. Carmody stepped down from his position at the FWA that same year for health reasons, and was replaced by John Blandford. Although he still refused to desegregate housing, Blandford recognized the economic disadvantage of excluding black workers from the defense efforts, and in his first year raised the number of units built for black families to 31,357. Eventually, 11.2% of all units constructed by the FWA under Blandford were designated for black households. This is an important example of how the very same program, when headed by different leaders, can produce drastically different results, and a reminder that the success or failure of a program may lie more in how it is executed than in how it is drafted.

The first significant piece of national housing legislation passed after the Second World War was the Taft-Ellender-Wagner Housing Act of 1949. Among other things, it expanded the FHA mortgage insurance program, and authorized federal spending for clearing slums and for urban renewal, as well as for research and development of new building materials and techniques. Its professed goal was to provide a decent home and a suitable living environment to every American family. As with earlier policy initiatives, its effects were generally felt differently by households which could afford to own property on their own and those requiring assistance. In fact, although one provision of the Housing Act called for constructing 135,000 new units of public housing per year for low-income households, Congress appropriated annual funds for as few as only 20,000. At the same time, the growing national highway system and the availability of mortgage secured lending were causing a boom in the more affluent suburbs.

The authorization to clear decaying slums from the cities was primarily meant to increase land values, which would lead to higher property tax revenues and increased private investment in downtown business districts. The legislation also mandated that at least 50% of the new construction in these newly cleared areas be residential. Urban renewal did produce a few cultural gems, such as Lincoln Center, but in practice developers took this opportunity to construct a range of offices, parking garages, and shopping centers which were thought to provide higher returns than housing, rather than increasing the housing supply. When housing was built, it was typically aimed at upper-income households. "Between 1949 and 1968, the program razed 425,000 units of housing but constructed only 125,000 units nationwide (the majority of which were luxury apartments)."[13] The Taft-Ellender-Wagner Housing Act had called for construction of 810,000 new public housing units, but Congress never authorized funding for more than a quarter of this sum. As a result, the clearing of the slums uprooted a large number of low-income families, but provided them with no other places to live. This was especially true after federal funding was made available to build new highways which reached into the central business districts of cities. Nearly every such highway project was specifically designed to run through the areas of town with the lowest property values, which also housed the poorest citizens, and it was only in 1965, when the new highway system was almost entirely complete, that the federal government finally began requiring cities to rehouse these displaced families before highway construction could commence.

[13] Bauman. *From Tenements to the Taylor Homes*. p. 153

In 1950, there was an attempt to address the needs of moderate-income households, who earned too much to be eligible for public housing but not enough to be able to afford to purchase a home, by securing Congressional funding for cooperative housing. It would have created the National Mortgage Corporation for Housing Cooperatives to provide low-interest loans with fifty year amortization terms for building cooperative housing, providing a significant supply of units at a cost much more affordable than the typical home. This plan was supported by organized labor, women's groups, veterans' organizations, and even President Truman, but the legislation was ultimately voted down in the Senate for being too "communistic, socialistic, and insidiously un-American."[14] In truth it was defeated by a successful campaign of builders, lenders, and real estate professionals who feared government intrusion into the private market, even though the market for affordable workforce housing was almost non-existent. The needs of this particular segment of the population continue to be overlooked in housing policy to this day.

As reluctant as Congress has ever been to provide sufficient housing subsidies for low-income households, the decades after the Second World War delivered some of the largest subsidies of all time to families who moved to the growing suburbs. Both the FHA and the recently created VA mortgage loan programs explicitly encouraged funding the purchase of homes which were newly constructed, and advised against underwriting loans for homes within the inner cities. In Washington D.C., for example, the FHA provided seven times as much aid for purchasing homes outside of the city than within its limits, even though there were many more single-family homes available within the city.[15] The FHA also considered mass production of houses to be more efficient and cost effective, so it supported gigantic builders who constructed a hundred homes or more at a time over smaller operations, which led to developments such as the Levittown communities. Naturally, the only tracts of land large enough to allow construction on that scale lay on the outskirts of cities. Federal highway subsidies made it easier for families to live further out from the central business districts of cities, and subsidies for sewer construction reduced the amount of land needed for each new home by eliminating the need for septic systems, which meant that more homes could be built within the same area of land. In 1951, legislation was passed which required homeowners to pay capital gains on the profits from selling their homes unless they used the proceeds to purchase homes of equal or greater value, which created a market for bigger and more expensive homes while also reducing the incentive for builders to construct smaller and more inexpensive housing. The biggest subsidies of all, however, were (and often still are) the federal tax deductions for mortgage loan interest[16] and for local property taxes. Together, these deductions kept billions of dollars out of the federal treasury each year, even in the 1950s, and left them in the pockets of suburban homeowners. Congress was indirectly subsidizing the rise of the suburbs through its tax policies. This effectively made it so that renters also paid a much higher tax rate than homeowners who were in the same nominal income bracket. It is clear how significant the impact of the FHA was on home ownership; at the time when it was created in 1934,

[14] Bauman. *From Tenements to the Taylor Homes*. p. 145

[15] Bauman. *From Tenements to the Taylor Homes*. p. 165

[16] It is commonly understood that the mortgage interest deduction began to have its greatest impact after the Second World War, but because of this many people assume that this tax deduction was introduced at this same time. In fact, the mortgage interest deduction was never formally introduced through legislation; all forms of interest (including mortgage interest) have always been deductible since the first U.S. tax code was introduced in 1894, though the amount of the interest eligible for deduction has changed in recent years.

approximately 45% of homes were owner-occupied, but after the Second World War that number rose to 65%, where is has remained ever since.[17] But the beneficiaries of these policies were initially almost all suburban, middle- and upper-income families, and predominately white. At the same time, the injection of so much capital into the housing market caused property values across the board to rise, making home ownership that much more out of reach for people from every other demographic.

Congress indirectly subsidized the construction of suburban multifamily buildings for middle-income families through its tax policy, as well. Ever since the establishment of the national income tax in 1913, property owners had been allowed to take a deduction for the depreciation of the improvements on their properties. In 1954, Congress began to allow "accelerated depreciation" on income-generating buildings, which would allow owners to receive much greater benefits during the first few years after a building was constructed. If the depreciated value for a given year were higher than the profit generated by the property, owners could apply that "loss" against any other incomes, which turned construction of new buildings into a significant tax shelter. Because the properties had to generate income to be eligible, and because new construction received greater benefits under this program than renovation, this led to a huge increase in the numbers of multifamily rental properties constructed within the suburbs. Before the legislation was passed, multifamily construction accounted annually for only 5% to 8% of new residential projects nationwide, but by 1957 apartment buildings had already jumped to 42% of new residential building permits issued.[18] By 1964, ten years after the policy was introduced, the annual tax savings to property owners totaled over $700 million, which was higher in just that single year than the budget for the Urban Renewal Program over the course of the entire decade.

The Eisenhower administration continued Truman's policies of clearing slums and urban renewal, but with one significant change in focus during the second term. In 1956, housing for the elderly first became eligible for federal subsidies. After Eisenhower's reelection, in what was described as an effort to steer the country away from a drift toward socialism, the administration stopped asking Congress to appropriate funds for construction of new public housing aimed toward families, and in its place requested ever more money for elderly housing. Throughout the 1950s, there was a gradual shift away from the higher standards of design and community pioneered by the earlier projects of the PWA, and in an effort to make the most of the dwindling funding available for public housing, builders began to cut corners. Rooms were smaller, floors were made of concrete, closets were built without doors, and landscaping all but disappeared. Voters and housing reformers began to take notice and hold their representatives accountable. With an increasing public backlash against low-income housing, politicians felt there was less risk in supporting housing for the elderly, especially in predominately white communities. "Neighborhoods which will not tolerate a ten-story tower packed with Negro mothers on [Aid to Families with Dependent Children] might tolerate a tower of sweet but impoverished old folks."[19] After the Housing Act of 1961, one half of all new public housing units were designated specifically for the elderly. These housing projects took up almost all available project land in

[17] Bauman. *From Tenements to the Taylor Homes*. p. 165
[18] Bauman. *From Tenements to the Taylor Homes*. p. 172
[19] Friedman. "Public Housing and the Poor." p. 454

white neighborhoods, which then meant that essentially every new project meant for low-income families was constructed in black neighborhoods, further segregating cities' populations.

Housing segregation became an issue during the 1960 presidential campaign, and John F. Kennedy promised to desegregate all federally funded housing by executive order. He did so, but not until November of 1962, and he did not make his order retroactive. It only applied to new housing, and even exempted projects which were planned before the order was signed but had not yet begun construction. Although the U.S. Supreme Court had ruled in 1948 that racial deed restrictions on property were a violation of the 14th Amendment,[20] it took twenty years until the Fair Housing Act of 1968 and its subsequent active enforcement by the Justice Department before any real headway was made in desegregating public housing. Still, tenants who wished to file complaints only had 180 days from the alleged incident of discrimination, and were also typically required to pay all court costs and attorneys' fees. Since the punitive damages for violating fair housing law were capped at only $1,000, there were many people who felt it was not worth their time to bring these matters to court as individuals, and so they were entirely reliant upon the actions of the Justice Department for enforcement. The Fair Housing Act also left exceptions for landlords who owned buildings with four units or fewer, and for home sales which did not involve real estate agents, which kept the private housing market somewhat insulated from the new policies.[21]

Ever interested in exploring ways to engage the private sector in providing affordable housing, Congress passed the Housing and Urban Development Acts of 1965 and 1968. The first act created a program of rental subsidies, where HUD would cover the difference between 25% of a tenant's net income and the market rate of a unit, so long as that unit was in a building owned by a nonprofit enterprise, limited dividend corporation, or building cooperative. It also created Section 23, which provided local housing authorities with funds for subsidizing the rent of low-income households which leased units from private landlords. This opened up the private housing market to the working poor, and encouraged the construction of additional units, since rental subsidies proved to be a stable source of income for owners. It was also a marked shift from a focus on supply-side to demand-side economics in federal housing policy. The later piece of legislation introduced Section 235 to subsidize the purchase of homes by low-income families, and Section 236 which was designed to provide below-market interest rates for loans to construct affordable rental housing. Unfortunately, both programs were beset by scandals. Buyers under Section 235 were often led to purchase homes in poor repair, and, since the upfront cash requirements were quite small, many of them simply abandoned their new homes at little personal loss when maintenance problems became overwhelming, saddling the program with toxic assets. Meanwhile, the depreciation laws effectively turned the Section 236 program into a means for wealthy property owners to avoid paying taxes on their remaining income.

In 1969, the Brooke Amendment attempted to have a similar influence on public housing as Section 23 had on private housing by limiting the rent that a housing authority could charge to

---

[20] *Shelley v. Kraemer* was brought forth with the support of the NAACP on behalf of J.D. Shelley, a black man who had purchased a home in St. Louis, MO, in 1945 without knowing at the time that the property contained a deed restriction preventing "people of the Negro or Mongolian Race" from occupying the premises. Louis Kraemer was a nearby resident who sought to enforce the restriction, and won the initial judgement of the Supreme Court of Missouri in his favor. *Shelley v. Kraemer* is considered to have established the precedent for the subsequent ruling in the 1954 decision of *Brown v. The Board of Education* which desegregated public schools.

[21] These exceptions remain in effect today.

25% of the tenant's net income. Although it was intended to make public housing more universally affordable, in effect this raised the rent for most tenants who earned income through active employment, encouraging them to move out of the public housing and into private housing through Section 23, and lowered the rent for those receiving unemployment benefits and other public assistance. This concentrated even greater levels of poverty within public housing communities, and contributed to the housing authorities' growing inability to keep up with the maintenance requirements needed to keep their units habitable. Other rent control measures such as those implemented in Boston, Cambridge, and many other cities in the early 1970s led to serious physical degradation in the private rental housing stock as well,[22] but tenants who lived in public housing were especially susceptible to falling into a "poverty trap" because of the Brooke Amendment, since it disincentivized taking a job unless it paid a wage much higher than most unskilled workers could expect to earn. Politicians were quick to demonize the welfare recipients stuck in this trap without acknowledging their own role in creating the system of broken incentives, updating the debate around the "deserving" and "undeserving" poor for a new generation.

At the end of the Johnson administration, the National Commission on Urban Problems stated that the U.S. would require 500,000 new units of low-income housing each year in order to keep up with the population's needs. Rejecting this call out of hand, and preferring to shift the provision of social welfare to the states, Richard Nixon introduced a moratorium on all federal housing construction. In its place, he increased the funding for rental subsidies, especially through Section 8.[23] Nixon hoped that this change in policy would spur the private sector into taking over the job of constructing and operating new housing developments. The number of new units constructed, however, never approached anywhere near the commission's targets.

In the late 1970s, federal policy began to focus on actively providing incentives for inner city development, instead of merely subsidizing suburban life. Congress approved tax breaks for the rehabilitation of buildings listed in the National Register of Historic Places in 1976, giving some older structures the same tax advantages as newly constructed properties had enjoyed since 1954. The Community Reinvestment Act of 1977 required banks and other private lenders, which has primarily been providing loans for suburban housing, to be actively involved in investments throughout all areas of a city. Jimmy Carter also ran on a platform of reorienting money "toward the more deprived areas, instead of to the suburbs, where most of the political influence lies."[24] Patricia Roberts Harris, Carter's HUD Secretary who herself hailed from a low-income African-American family, pioneered programs which aimed at revitalizing urban neighborhoods, such as providing tax incentives for businesses willing to relocate into distressed areas. Harris also recognized that successful revitalization efforts might push out the low-income households she was trying to serve through gentrification, and so she urged the federal government to provide funding for new low-income housing units in these neighborhoods. Unfortunately, it was still

[22] Rent control was eliminated in Boston and Cambridge by ballot initiative in 1994, though both city councils have begun considering new rent control initiatives in 2019, and New York recently enacted one at the state level. Willful ignorance of empirical data is clearly non-partisan.

[23] Nixon also supported legislation to introduce a guaranteed annual income for low-income households as a streamlined alternative to the piecemeal approach to the provision of welfare, which would have included the money otherwise spent on rental subsidies. Although the legislation was passed in the House of Representatives, it never reached a vote in the Senate.

[24] Bauman. *From Tenements to the Taylor Homes*. p. 247

significantly easier and less politically risky to provide housing for the elderly than for the poor, and so elderly housing still accounted for the large majority of new construction built using Section 8 funds. At the same time, though, Section 8 was expanded to establish a new program funding the moderate rehabilitation of 39,000 existing housing units, taking effort to keep the available stock of affordable units from shrinking through neglect. As with many programs, however, the program faltered when Congress failed to allocate enough funding to carry out sufficient renovations. The political will to keep directing so much funding primarily to the largest cities in the country also began to flag when resentment arose within the populations of smaller cities, who were feeling left behind to fend for themselves, giving the Reagan administration ample support for cutting program budgets.

Recognizing that most recipients of rental subsidies ended up concentrated into the same few neighborhoods in each city where affordable housing already existed, Congress created the Section 8 voucher program in 1983. Its biggest difference from the earlier Section 8 (certificate) program was that it allowed tenants to look for private housing anywhere within a metropolitan area, not just within the boundaries of the local housing authority. In 1998, both programs were merged into the Housing Choice Voucher program, which continues to be operated today under the colloquial name of "Section 8." In practice, though, it has done very little to help disperse low-income households more evenly across cities, and most families receiving housing benefits remain concentrated within the same neighborhoods. Chronic underfunding of the HCV program also means that families must frequently spend years on waiting lists before receiving rental assistance.

The Tax Reform Act of 1986 created the low-income housing tax credit (LIHTC) program. The federal government encouraged private investment in affordable housing by selling tax credits at rates less than their face value,[25] the proceeds of which could be used to construct new affordable housing units, or to renovate existing units. Most tenants are only eligible if they earn less than 60% of the area median income. This program remains in effect today, and has become the largest single subsidy for affordable housing, providing over $5 billion per year in assistance. The LIHTC program contributes to as many as 50% of all new multifamily residential developments. It has also significantly diminished the role of HUD in providing affordable housing, because the program is administered by state governments and, being a tax credit, is funded through the Treasury Department. The LIHTC program is responsible for creating or preserving approximately 50,000 affordable housing units each year,[26] but this is still far fewer than are needed to house all Americans adequately. LIHTC projects are also built disproportionately in areas with the lowest average incomes and the highest concentrations of racial minorities.[27] Because the tax credits do not provide sufficient funding to pay for a project by themselves, developers are often required to cobble together funding from a wide variety of sources in extremely complicated ways, which slows down the pace of development to about a third of the speed of market-rate projects. Interestingly, though, even when they are completed, LIHTC

[25] In Boston and Cambridge, it is possible to find many projects which are funded through LIHTC credits purchased at or very near to their face value. There have also been certain times and locations where LIHTC credits sold for more than their face value, most often when banks were looking to boost their Community Redevelopment Act scores. Indeed, the impact on CRA scores has led to banks becoming one of the biggest participants in the program, because the credits are worth more to them than to most other businesses or private investment sources.

[26] Garcia-Diaz. "Low-Income Housing Tax Credit"

[27] McClure. "Deconcentrating Poverty with Housing Programs."

projects sometimes fail to meet the needs of affordability in a given area. Because the allowable rental rates are based upon the area median income, rather than a narrower average city or neighborhood income, few residents in need may actually find these units affordable at all. In Boston, for example, 60% of the AMI for a family of four is currently \$68,000 while 60% of the average income for the city of Boston itself is only \$37,213.[28] There are also growing concerns that LIHTC projects will be unable to afford their long-term maintenance costs after the tax credits expire,[29] and many studies have concluded that market-based rental vouchers are a more cost effective means for housing the poor in most locations.[30] The LIHTC program has been tremendously effective at shifting the responsibility for building new affordable housing units away from government and into the private sector, however, and this philosophical alignment with the American Lockean tradition will likely make sure that the program continues well into the future, despite an ever increasing mound of empirical evidence against it.

Another program intended to shift the burden of supplying affordable housing away from the government and into the private sector is inclusionary housing, also known as inclusionary zoning. Various neighborhoods, and especially affluent suburbs, came to be seen as "exclusionary," making it extremely difficult within their borders for households of limited financial means or different ethnic backgrounds to find housing available to them. Inclusionary housing attempts to address this by mandating that a certain number of units or percentage of net residential space within newly constructed buildings be set aside for low-income families. There is no national inclusionary housing program, so various states and cities have implemented it in different ways. Massachusetts has one of the oldest and more robust inclusionary programs, beginning in 1969 with Chapter 40B, which allows the state to order the approval of a building permit if at least 25% of the units in a proposed building will be designated as affordable, if the number of affordable housing units within a city is less than 10% of the total stock of housing units, and if the city can not demonstrate that a building permit has been denied for "legitimate" reasons such as environmental problems on the proposed site. During its first 50 years, Chapter 40B led to the construction of 56,000 affordable housing units.[31]

Individual cities have been left to devise inclusionary housing programs in their own fashion. Cambridge introduced its inclusionary program in 1998, and since 2017 has required every new residential construction project with ten units or more to set aside at least 20% of the residential floor area for low-, moderate-, and middle-income households. Boston instituted an inclusionary program in 2000, and typically requires at least 13% of residential space to be designated as affordable. The greatest strength of the program is that it avoids concentrating the poor into specific areas or buildings, and the stigma attached to that type of segregation. This is why many organizations interested in affordable housing take issue with the fact that it is sometimes possible for developers to locate most or all of the affordable units on a second development site, typically in a much less prosperous part of town, or simply to contribute the funds necessary for construction of such affordable housing as a linkage payment. Off-site affordable housing is hardly inclusionary. The program also does not reduce the construction costs

[28] Boston Planning & Development Agency
[29] Schwartz. "After Year 15."
[30] Silverman. *Fair and Affordable Housing*. p. 6
[31] Silverman. *Fair and Affordable Housing*. p. 147

for new units, and the affordable rent restrictions impact the value of assets subject to them. In order for development to remain profitable, owners are forced to raise the rent or purchase price on the market-rate units to make up the difference. "Housing benefits enable recipients to rent certain properties that they otherwise could not afford, but at the same time they increase property prices, which affects the affordability of owner-occupied housing."[32] This effectively turns the inclusionary program into a tax on the building's market-rate residents, and a regressive one, because it places the highest burden on the market-rate residents of multifamily buildings, while asking the wealthiest residents in the city, who most often live in single family houses, not to contribute anything at all. It also contributes to higher market-rate rents across the city, which further inhibit the ability of low-income households to escape poverty. Inclusionary housing is a particularly attractive policy from a governmental budgetary perspective, because the government does not bear the costs directly, but the costs will always be borne by someone. Still, the fact that individual cities and states have the freedom to create their own inclusionary policies means that there is much greater flexibility to tailor the programs to the needs of their specific areas, and those differences between programs are fertile ground for comparing the real empirical advantages of one policy over another.

States have taken their own unique pathways to address the housing needs of their populations more and more in recent decades. It is well beyond the scope of this thesis to examine the full range of programs which have been implemented, but it is worth providing an innovative example. In 2005, Utah adopted a "Housing First" policy which aimed to give housing away to the chronically homeless, or those at risk of chronic homelessness, with no strings attached; people were eligible for housing regardless of things like drug use which may have barred them from receiving access to other programs. The theory behind the Housing First program was that it actually cost less to house the extremely poor than to provide the shelters, emergency care, and other services which aimed at treating the symptoms of poverty rather than the causes. It is also easier to keep people on the right track once their basic needs are met and when social service providers have regular access to them. Each resident had a case worker who could help identify the necessary supplemental services, and to keep sure that residents would stay on top of their own responsibilities, such as taking their medications. It was widely popularized that, by 2015, Utah had reduced its incidence of chronic homelessness by 91%. There are arguments to be made that this number is overinflated, and relies upon different conventions in how the homeless population is counted, but the program certainly had a significant impact. Unfortunately, homelessness has been growing in Utah steadily over the past two years (and across the nation), especially the numbers of people who are experiencing homelessness for the very first time, rather than chronically, and so would not have been targeted by this program. People involved in the Housing First program lament that there has been far less funding available to keep up with the need, in large part because the costs of both land and construction have risen dramatically since 2008. The real successes and limitations of the program will probably not be known without further study of its impacts over a longer period of time. Nevertheless, it is encouraging to see a bold program which rejects the division of the poor into the "deserving" and "undeserving."

---

[32] Braakmann. "Housing Subsidies and Property Prices."

In Massachusetts, a similar line of thinking has led hospitals to begin investing in affordable housing. The Boston Medical Center recognized that a disproportionate amount of its spending went toward providing medical services to a small segment of the population which did not have access to suitable housing. It made a $6.5 million investment in securing property to house those members of the community, with the expectation that the investment will not only pay for itself through the cost savings of providing services, but beyond the financial benefits it will also increase the quality of life for some of Boston's poorest citizens. Boston Children's Hospital and the Baystate Medical Center in Springfield have followed suit with similar investments in housing, and other health care providers are considering their own involvement.[33] Once again, it is too early to know what the long-term effects of such programs will be, but it is clear that this is a part of the trend on the local level to begin shifting spending away from programs which treat the symptoms of housing insecurity, and instead attempt to deal with its causes.

It may also be useful to take a look at some of what is happening in the United Kingdom with respect to affordable housing. Conservative governments over the past decade have introduced austerity measures and changes to the social welfare system which have started to produce enough data to make useful comparisons. For example, the mere announcement that subsidies would be reduced had an immediate negative impact on asset values, even before the reductions went into effect.[34] The government also decided to change how housing subsidies were distributed. Instead of giving the funds to the owner of the unit, the tenant would be given the funds directly, and then be expected to pay rent as normal. The theory behind this is that it would force low-income households to pay more attention to managing their money, as though people were only poor because they had never been forced to save, and it were the government's responsibility to teach them.

> "[S]hifting from landlord to tenant payment in social housing is not simply a change in the way HB [Housing Benefit] is paid. It found that it also had important financial and behavioural consequences for both landlords and tenants. In order to minimise the loss of rental income, social housing landlords made numerous compensating adjustments to their everyday practices in revenue collection, arrears recovery and housing management. Some even changed their organisational structure and considered shifting towards a more commercial and less 'social' orientation. For tenants, many of whom were already struggling financially . . . the introduction of DP [Direct Payments] acted as a trigger that pushed them (further) into debt.[35] And although some tenants felt that DP enabled them to be better money managers or more job-ready, the harsh reality is that only a small minority managed to pay all of their rent during the life of the demonstration project. In other words,

[33] Rios. "Why Boston Medical Center is Investing in Housing."

[34] Braakmann. "Housing Subsidies and Property Prices."

[35] Although some recipients of Direct Payments simply managed their money poorly, this was more the exception than the rule. Many of the recipients who ended up unable to afford their monthly rent found themselves in that situation because of unexpected emergencies which arose. For example, one man spent a portion of his benefit payment on a plane ticket to Ireland to visit his dying mother. He would have incurred the same amount of new debt in order to make this visit whether it came from the housing benefit for from another source, but his landlord was impacted by his decision in a way which would not have been possible when housing benefits were paid directly to owners.

> the shift to DP of HB was not simply a narrow or 'boring' technical matter. On the contrary, it was a highly controversial and even emotionally charged reform that had profound consequences for the financial well-being of many low-income social housing tenants."[36]

The government's well-intentioned paternalism looked like it would lead toward fewer total available affordable rental units, and increased poverty for tenants. Fortunately, the government has not yet instituted this demonstration program on a wider basis.

Recent studies of subsidized housing in England have also shown that the provision of rental subsidies is less effective than subsidized homeownership programs at shielding people from chronic homelessness.

> "[T]here are very distinct associations between particular housing pathways and poverty. Settled home-owner pathways are associated with above average levels of temporary poverty and low levels of chronic poverty, whereas settled social rented pathways are associated with above average levels of total poverty and in particular of chronic poverty. . . . [E]ven the deep subsidies implied by below market rents and the extensive take-up of Housing Benefit in the social rented sector are insufficient to prevent high levels of chronic poverty among people on settled social rented pathways. . . ."[37]

Subsidizing homeownership gives people the opportunity to begin to build household wealth, rather than merely subsist from month to month on rental benefits. Even small amounts of equity built up within a property grant the owners a significant cushion against unexpected financial emergencies. Taking that one step further, providing the exact same amount of subsidy to a renter versus an owner will have a greater positive impact on the owner, therefore a government housing program would likely achieve better results in combating poverty by helping people purchase homes, rather than subsidizing multifamily property owners.

I do not want to ignore the housing bubble and crash of 2007. It has a continued impact on home ownership, particularly as it concerns lending. It was not necessarily the result of housing policy, however, nor was the governmental response to it a housing program as much as a program to keep lenders solvent. The lessons hopefully learned from it include the dangers of certain types of mortgage secured loans and flaws in the rating systems of mortgage backed securities. However, the housing crash is not a focus of this thesis.

There have of course been hundreds of other policies and programs introduced over the past two centuries, as well as significant events within the housing market. There are countless academic and unresearched opinion pieces which cover them, for those who are interested, and doubtless any conclusions drawn within this thesis could be refined by conducting an even deeper examination of a wider range of programs. Nevertheless, I believe that the programs discussed above provide a solid foundation for assembling a set of basic principles upon which to build the framework of a new housing program which aims to help the recipients of rental subsidies to begin building household wealth through homeownership. I identify six such basic principles, and I will

---

[36] Hickman. "The Impact of Direct Payment of Housing Benefit."

[37] Stephens. "Housing and Poverty."

keep returning to these principles as I consider elements of a housing program throughout the following chapters.

I. A successful and stable housing program must produce competitive investment returns.

The expectation of competitive returns produces more investment dollars than charitable inclinations, and although the federal government certainly has more available resources than private investors, elected representatives have a number of pressures upon them which run counter to the needs of successful housing development, including spending as little as possible on unpopular programs (such as anything which might help the "undeserving" poor). Spending money wisely is certainly important, but the federal government has proven many times over that it is not willing to allocate sufficient funding to housing programs to maintain high building standards. When corners are cut in construction and maintenance, the useful life of a building is shortened dramatically, with enormous consequences on the revenues which can be generated before the building is torn down. Private investors, on the other hand, are incentivized not only to save money where necessary, but also to *spend* money where appropriate to keep a building desirable to potential residents within a competitive market. The government has a role to play, though, in regulating the market so that buildings are safe, and providing incentives for serving demographics within the market which may not offer the highest profit potential. Left to its own, private development will generally aim to serve middle- and upper-income households, not just limiting the number of units available for less affluent families, but often pushing those same families out of urban neighborhoods. Practically every new residential building in Boston and Cambridge is branded as "luxury," and even though that word means about the same thing for quality standards as the word "gourmet" on the side of a food truck, it is at least an indication of the target market. Building and health codes by their nature also make construction more expensive. Government subsidies or other incentives can help maintain competitive potential returns for investors in housing for all types of households. That said, anything which significantly increases the development timeline will both add unnecessary cost and cause fewer developers to assume the hassle of building for low- and moderate-income households. Any government subsidies should be accessible through as quick and simple a process as possible, and fill any funding gaps completely so that developers do not need to waste time and resources on cobbling together multiple different funding sources.

II. Limiting risk lowers the overall cost of any program.

It is fundamental to the financial industry that investments which offer less risk have a lower opportunity cost of capital. Lenders will give better terms to borrowers when there is less risk of default. From the perspective of individual households, empirical data show that home ownership exposes a family to less risk than renting. Of course, low-income households are especially vulnerable to unanticipated changes in their expenses, so they should have access to advisors who can help them understand the full costs of a home before entering into a purchase agreement, including a physical assessment of likely maintenance needs and mobility consulting.[38] It is also less expensive in most situations to address the causes of a need, rather than its symptoms, so theoretically it should be less expensive to address housing needs than to provide social and medical services to the homeless or to those who experience housing insecurity. Housing subsidies should not be given to families as direct payments. Diversity[39] also limits risk. Housing built in a town primarily employed in a single industry, for example, is a much riskier investment because the value of assets is directly tied to the wellbeing of that single industry. Programs which exclude access from specific segments of the population may have lingering negative impacts on those populations well after the program has been terminated, and those which subsidize one type of construction, either directly or indirectly, will diminish the funding available for other initiatives. New construction can not be favored over rehabilitation, and households displaced by a project must be re-housed before that project can move forward.

III. Making it easier to buy a home also makes homes more expensive.

The entry of many new people into the housing market would increase demand, causing the existing supply to trade at higher prices. The availability of mortgage secured loans also enables households to afford more expensive homes. The same is true of direct and indirect housing subsidies provided by the government. Making it easier to purchase housing, however, does not by itself mean that more housing will be available for purchase without policies and programs which encourage new construction and renovation.

IV. Local government has the most important role to play, though it is unlikely to be able to meet the need on its own.

The government, generally, is more able to provide significant amounts of funding for affordable housing programs than the private sector can ever supply. This is especially true during times of financial distress. Local solutions, however, tailored to the specific circumstances of a city or region, are more effective than one-size-fits-all federal policies. Income limits for eligibility must also be relevant to the neighborhood where a home is built, not the wider statistical area. There are, of course, significant risks associated with relying upon a government program. It is always easier to pass legislation creating a program or policy which is not paid for with tax dollars. Rent control, for example, has no immediate cost to any city or state which implements it.[40] In reality, unfunded programs are always paid for by someone else. In the instance of rent control,

[38] Low-income households can find it especially challenging to explore housing options over a wider geographical region. Homes which may be further away from their current neighborhoods may also be of higher quality, be nearer to work opportunities and services, and may pose a lower risk of ownership in general. "Mobility consulting" can help these households explore options which they otherwise would not have considered, in order to find housing which suits their needs more optimally.

[39] By "diversity," I mean something much broader than it generally connotes in American politics, where it is almost exclusively limited to ethnic backgrounds.

[40] Property values, though, are very sensitive to rent control, especially over the longer term, and therefore so are property tax revenues.

this cost is absorbed by market-rate tenants or lost through depreciated asset value, and inclusionary zoning functions as a regressive tax on middle-income households. A successful government program can not shift its costs onto third parties. Therein lies another risk, however, as government programs have historically been woefully underfunded. The most difficult aspect of creating a framework for a housing program may be wrestling with these problems, because government funding is almost certainly necessary for any program to be feasible, but it always comes with inherent uncertainty.

V. Any program will reflect the values of the person who is running it.

The very same program, when headed by different people with different objectives, may produce drastically different results. It may even matter less how a program is drafted than how it is executed. When it is struggling, it may be best to replace the leadership first before replacing the program itself.

VI. There must be an acceptable level of failure.

No program will be perfect. It will not reach everyone who needs it. Some of the people it does reach will take advantage of it. Some people will always be worried that providing any assistance at all creates a moral hazard for its recipients. Some politicians will always find it more popular to spend exorbitant amounts of money on drug testing to keep a small few potential recipients away from receiving benefits, rather than using that same amount of money to provide benefits to more people. There has to be an acceptable level of imperfection in how a program operates, insulated as well as possible from political fashions. But individuals also need to be able to fail without being subject to outsized consequences. A family needs to be able to miss a payment under certain circumstances without being evicted or foreclosed upon, and no one should be unreasonably excluded from access to benefits. Fundamentally, all people are “deserving” of a home.

Chapter 2

The primary aim of any housing program is to make it easier for a target population to find adequate and stable accommodation. The focus of this thesis will now turn toward identifying that target population, and the needs which the program must address in order for it to be effective for those households. I shall also consider the needs of the developers who would be providing the housing units necessary for the success of the program, and the impact of existing programs in Boston and Cambridge meant to address the needs of both residents and developers. My aim is to propose the framework of a new program which would complement and possibly improve upon existing programs, rather than competing with or replacing them. The goal is not to find a solution to the housing needs of all people within the two cities, but rather to target the proposed program's benefits at populations which may be underserved in the current landscape of social assistance.

To limit the scope of the discussion, I shall make several assumptions. These assumptions are subjective in nature, and a reasonable person with different goals from my own could make a compelling argument to undertake a valid examination of this subject matter under a different set of assumptions. First, my examination will focus on helping households which are recipients of rental subsidies to become home owners. The goal of the proposed program is not necessarily to increase rates of homeownership, but rather to increase the opportunities for households to begin to generate long-term wealth. Homeownership and the building of equity within real estate are merely one possible means to that end. Second, I will consider the impact of programs and policies on households as though all households were of the same size. Obviously households come in many different shapes and sizes. Most discussions on housing needs, however, focus on families of four people. The U.S. government is supposed to provide federal protections against discrimination on the basis of family status, and I personally believe that focusing on families of four indirectly discriminates against single and childless households, and does not sufficiently require families with children to internalize the resource needs of children as a negative externality. Instead, I will consider households more generally as entities with a single source of income, which regularizes them to an extent from the perspective of housing policy, and leave social assistance for the needs of families with children to programs which specifically focus on those families. As further support for making this assumption, I will point out that just under half of all households in Cambridge consist of “persons living alone.”[41] Prioritizing larger household sizes also disproportionately overvalues the need to support ownership of single-family residences over condominium or cooperative units, both of which are far more suited to our dense urban environment. My third assumption is that I will not make a distinction between condominium units and single-family homes as I consider the financial needs of homeownership. I recognize that this will tend to produce results which overvalue condominium units and undervalue single family homes, leading to recommendations for subsidizing ownership within condominia at a higher percentage of the actual asset value, but I also believe (subjectively) that, in cities experiencing a severe lack of housing supply, housing programs should discourage single-family homes in favor of denser options. All values are also given in real dollars as of July, 2019, and it is assumed that these numbers would adjust with inflation over the course of time.

The populations of both Boston and Cambridge are growing very quickly. The mayor’s office projects that Boston itself will need 42,000 new housing units within the city by the year 2030 in order to meet its housing needs, with over 20% of them designated as affordable.[42] As part of its plan, Boston also wants to preserve 97% of its existing affordable units, including 4000 privately owned units at risk of losing their affordable designation, to renovate or redevelop 4500 units,[43] and to purchase 1000 market-rate units which the city will then designate as affordable. City government estimates that “Of all non-student[44] households in Boston, 22 percent are severely cost burdened households, paying more than 50 percent of their income on housing costs,”[45] but the mayor’s office only measures these numbers from the population of low-income residents. There are increasingly high numbers of middle-income households earning between 80% and 125% of AMI which would also qualify as significantly burdened by their housing costs. Since the bulk of housing policy focuses either directly on low-income households, or indirectly on more affluent families,[46] workforce housing is an often overlooked segment of the population, and one

[41] *Cambridge Housing Profile.* p. 6

[42] “Housing a Changing City: Boston 2030, 2018 Update.” pp. 3-5. In 2014, the mayor’s office predicted that the city would need 53,000 new housing units across all income levels by 2030. In 2018, that number was raised to 69,000 units, of which 27,000 had already been completed and 15,820 would be designated as affordable.

[43] The Boston Housing Authority expects that this goal will not be achieved until after 2030. See “Housing a Changing City.” p. 14.

[44] Students are typically considered “temporarily poor,” and therefore should not need any assistance. This is clearly divorced from the reality of student life for many in Boston and Cambridge. Food and housing insecurity are both extremely common among the student population. In fact, I have personally worked with clients who were directors of graduate studies in departments at Harvard, who decided to invest in housing specifically to create affordable spaces for their own graduate students, because none of their students had enough money left after paying rent to eat well, and it was having severely negative impacts on the quality of their work. Excluding students from access to support is akin to treating them as the “undeserving poor.” This irrational delegitimization of real student needs is also contributing to the rising student loan crisis, which is turning many “temporarily” poor students into permanently poor members of the workforce. It appears to be based upon the assumption that having a degree will increase the amount of income which a person will earn over a lifetime. While this is often true, it is also true that the jobs held by people with degrees tend to concentrate in specific areas, which leads to an overall increased cost of living within those areas as the average household income rises, negating many of the financial benefits of university study. It is also true that many careers which require a degree, such as school teacher, pay workers far less than the average college graduate. I recommend that there is ample room for real empirical investigation into the notion of the “temporary poverty” of students. I conclude that it would be incorrect to exclude students from eligibility for housing assistance based solely upon the fact that they are students.

[45] “Housing a Changing City.” p. 8

[46] See Chapter 1.

which is most exposed to the regressive taxation of housing policies which benefit the top and the bottom.

Cambridge is also facing a severe shortage of housing units. As of 2016, Cambridge had only 52,882 residential units in total throughout the city, while at the same time 135,400 people were employed within its limits.[47] Such an imbalance in the supply and demand for living space naturally puts huge upward pressure on property values and rental prices. Cambridge has also met with less success than Boston in its efforts to reach its goal of new housing units built by 2030, particularly with respect to building new condominium units. Part of this difficulty hails from the city's requirement that all new construction over ten units must set aside at least 20% of the living space for affordable units, which has made it incredibly challenging economically to build any new multifamily structure with fewer than 40 units. At the same time, until very recently, the city has had very restrictive height limits on development throughout the city, making it even more difficult to develop new housing targeted at anything but the highest end of the market in a way that produces competitive returns for investors. This has driven a whole industry of converting former small multifamily rental properties into condominia, thereby placing even greater pressure on the rental market. In a city where residents are twice as likely to be renters as the national population overall, Cambridge now has a higher average monthly rent than Boston, and the entire metropolitan area currently ranks as the fourth most expensive in the nation.[48]

The monthly rent on a market-rate apartment in Boston is approximately $2,685 for a one-bedroom unit and $3,425 for two bedrooms.[49] For Cambridge, this rises slightly to $2,710 and $3,429 respectively.[50] For these rents to be considered "affordable," such that tenants would spend no more than 30% of their net income on housing costs, a household would have to earn an annual pre-tax income of at least $153,521 for a one-bedroom apartment, and $199,947 for a two-bedroom unit.[51] The Department of Housing and Urban Development lists $113,300 as the median household income for the Boston metropolitan area.[52] The average market-rate one-bedroom apartment in Boston, therefore, is only "affordable" to someone earning above 135% AMI, and a two-bedroom apartment in Cambridge requires an income of 176% AMI. Rental subsidy programs typically only serve households earning less than 80% AMI, which means that the great bulk of renters earning between 80% and 135% AMI find themselves burdened by housing costs, with nowhere to turn for assistance. These burdensome costs make it very difficult for households to put money aside for their own future wellbeing, such as down payments on permanent homes. Indeed, "In Suffolk County, middle-income households have only 74 percent of the income needed to purchase a mid-priced house and only 66 percent of the income needed to purchase a mid-priced condo."[53]

---

[47] *Cambridge Housing Profile*. pp. 8-9

[48] Lisinski. "Rental Price Burden in Mass. Surpasses New York and D.C., Report Finds."

[49] https://www.rentjungle.com/average-rent-in-boston-rent-trends/

[50] https://www.rentjungle.com/average-rent-in-cambridge-rent-trends/

[51] https://neuvoo.com/tax-calculator/

[52] https://www.huduser.gov/portal/datasets/il/il2019/2019summary.odn

[53] Corcoran, Rose et al. *The Greater Boston Housing Report Card 2019*. p. 24

The median home value in Cambridge, as of June 2019, is $799,400 or $810 per square foot.[54] The median home value in Boston is $596,900 or $725 per square foot.[55] Boston, of course, has a wider range of socio-economic change from one neighborhood to the next than Cambridge, so homes in Beacon Hill and the Back Bay will obviously be much higher than this, while homes in Mattapan will cost significantly less. A 5% down payment would run approximately $30,00 to $40,000. Current mortgage loan rates are quite low, from a historical perspective, but if we take a slightly more conservative 6% interest rate, with 5% down, monthly payments would run between approximately $3,400 and $4,550. Without even considering insurance, property taxes, condo association fees, or maintenance costs, for these rates to be "affordable" a household would have to earn at least 175% AMI. A monthly payment of $4,550 would require a pre-tax income of $277,507 before being considered affordable. With these numbers in mind, in order for most renters to be able to afford to own a home, their monthly housing costs would rise between $700 and $1,100. Clearly this is well beyond the means of most residents of Boston and Cambridge.

Residents of both cities have access to various federal, state, and local programs which currently provide subsidies for renters. The three biggest are the Housing Choice Voucher Program ("Section 8"), the Massachusetts Rental Voucher Program, and the Alternative Housing Voucher Program. The HCVP benefits 22,000 Massachusetts households, at least 75% of which must earn less than 30% AMI. The MRVP benefits over 5000 families earning less than 80% AMI which would otherwise be living in motels or shelters. The AHVP specifically serves low-income handicapped people under the age of 60 with incomes below 80% AMI. Tenants at the upper range of eligibility for these programs can afford to pay approximately $1,200 per month for housing. The vouchers pay the difference between the full cost of rent for a unit and the amount that a tenant can afford. A tenant paying subsidized rent in an average market-rate unit would therefore receive a rental subsidy of approximately $1,500 per month, but there are often restrictions on the rent which can be charged for a unit designated as affordable. In 2019, those limits are $1,812 for a one-bedroom unit and $2,040 for two bedrooms, meaning that most rental vouchers provide a subsidy closer to a range between $600 and $900. Calculated as a perpetuity at an opportunity cost of 6%, this means that housing vouchers have a total value between approximately $116,000 and $175,000 (or more for lower-income tenants).[56]

Both cities offer programs for prospective home buyers, as well, such as a program designating specific units as affordable for first-time home buyers earning between 50% and 100% AMI which caps the resale price of units. Cambridge also has a program called HomeBridge which helps residents earning between 60% and 100% AMI to purchase a home at the market rate, so long as the buyer agrees to place an affordable deed restriction on the home. The buyer must contribute any of her liquid assets above $40,000 to the purchase, but the HomeBridge grant will cover up to 40% of the cost of a one-bedroom unit or 45% of a two-bedroom. At the current average cost of market-rate units, this translates to a value between $320,000 and $360,000. Cambridge offers a further program providing down payment assistance of up to 6% of the total

[54] https://www.zillow.com/cambridge-ma/home-values/

[55] https://www.zillow.com/boston-ma/home-values/

[56] Value = (monthly subsidy × 12) / ((1 + 0.06 / 12)^{12} – 1). For lower income levels, consider a tenant earning 30% AMI who lives in a unit with a total rent set at $1,812. The tenant would be required to pay approximately $493, and would receive a subsidy of $1,319 which has a total value of $256,623 as a perpetuity.

purchase price of a market-rate home for a first-time home buyer as a loan, and forgives 20% of the principal each year so long as the buyer continues to live in the home and has no other residence. This would translate to almost $48,000 on the purchase of an average home in Cambridge, although the maximum eligible income is set at 80% AMI, which means that most homes in Cambridge would still be unaffordable even with down payment assistance. There are also annual limits to how much the cities and state are able to provide to any program, and the need for assistance always exceeds the available funds. Still, the values of the subsidies show that there is a firm commitment by local governments to provide housing assistance wherever they are able.

Not all housing subsidies produce equal results, however. As seen in the first chapter, studies of housing assistance in the United Kingdom have shown that providing subsidies for homeownership is much more effective at keeping families out of poverty and reducing rates of housing insecurity than rental subsidies. At the same time, the current housing assistance programs in Boston and Cambridge which subsidize homeownership appear to require a much higher total benefit value than those which provide rental assistance. Eliminating the rental assistance programs in favor of homeownership programs, with no other changes, would significantly reduce the number of households who could receive needed assistance. Any proposal for a new program aimed at helping subsidized renters to become homeowners would need to address its serious funding needs in a way that does not create more poverty elsewhere by reducing the number of families reached by existing programs.

Perhaps the biggest current problem with rental assistance programs, however, is the length of the waitlists to receive benefits. A household can easily spend ten years or more on the waitlist before receiving housing assistance. Brockton, a city south of Boston, was only able to find housing for 154 of the 4,800 people on their waitlist for public housing in 2018, with priority given to elderly households, and only 100 people received "Section 8" vouchers out of 19,000 applications.[57] Boston considers one-person households to be completely ineligible for the waitlists unless they are elderly or disabled.[58] Cambridge closed its waitlist from taking on any new names between June of 2008 and October of 2016, and in the first two weeks after it reopened the city received almost 6,000 applications for rental vouchers.[59] Families which are merely at risk of poverty when they join the waitlists are often subject to chronic poverty by the time that they are actually offered assistance, significantly hindering their chance ever to begin to generate household wealth during their lifetimes. The current supply of affordable housing is entirely incapable of filling a need in people's lives before they fall into crisis. Any new program which encourages homeownership will need access to a completely different stock of housing units than those currently designated as affordable in order not to cause further stress and extend this crisis. The only way to create that stock is to build it. A successful proposal will need to incentivize the construction of new housing units.

Following off of the first principle identified in Chapter 1, those incentives will need to allow developers and investors to construct housing with the expectation of competitive financial returns. The cost of developing new housing is extremely high. Construction costs alone have

[57] Berke, Ben. "Housing Waitlists Soar as Boston Fed Reports Massive Shortage of Affordable Units."
[58] This is a clear violation of federal protections against discrimination based on family status.
[59] Saltzman. "Thousands Flood Cambridge Affordable Housing Waitlist."

outpaced inflation by over 40% in Massachusetts over the past twenty years.[60] It has become practically impossible to build affordable housing for less than $400,000 per unit (including land acquisition),[61] and market-rate units can cost much more than that to construct. Let us take $400,000 as the floor; the least expensive housing that could be mass-produced to meet the enormous demand. The quickest any project can move from conception through to completion is about two years (though most take longer, especially when zoning variances are required, as is almost always the case in Boston and Cambridge for larger multifamily buildings). The lowest competitive financial return most investors appear willing to accept from real estate at the moment is approximately 7%. At a 7% return each year over two years, that means the cheapest affordable unit would need to sell for about $458,000. Even without considering taxes, fees, and insurance, with 5% down and a 6% loan, a family purchasing this unit would have a monthly payment of about $2,600 which is only affordable to households earning over 130% AMI. Compared with the median price of a home in Cambridge of $799,400 it is easy to see why most developers have focused on the top end of the market. So-called "luxury" units, although the term has no bearing on the actual quality of construction, tend to cost closer to $550,000 to build, but selling them at the median home price would give an internal rate of return of 20%. A "luxury" project could run over budget by 20% and over schedule by an entire year, and still give at least a 7% IRR. It is a safer, more competitive investment than affordable or workforce housing.

In order to make it attractive to invest in more modest housing, programs at all levels of government have been created to provide subsidies for development, such as HOME funds and community development block grants. Most affordable projects rely upon cobbling together portions of funding from as many as ten or more different sources, but the biggest single source of subsidies of this sort is LIHTC funding. Some of the disadvantages of LIHTC funding are discussed in the first chapter of this thesis. The complicated application and approval process to receive funding, as well as the perpetual lack of funds to meet the needs of projects, have led to extremely protracted development timelines for affordable housing, further diminishing the average yearly investment return through unnecessary delay. Funding caps on projects and individual units also incentivize the construction of buildings with as few as 20 units on sites which could easily bear much higher density. LIHTC will never be able to address the needs of the current housing crisis without significant overhaul. Theoretically, however, to construct a single unit which can be sold at a price which is affordable at 100% AMI in Cambridge while still providing a competitive return as compared to so-called "luxury" developments, a developer would need a subsidy of at least $135,000 per unit for just a 10% IRR, rising to $180,000 for a 15% return. To make these units affordable to households earning less than 100% AMI would require an even greater subsidy. Let us consider a 10% return to be our benchmark for private investment in this program, however, to keep it competitive with market-rate development.

---

[60] Ford, Teri. *The Relationship Between the Massachusetts Building Code and Construction Cost Escalation*.

[61] Gilbert Winn, CEO of WinnCompanies, an affordable housing developer in Boston, was recently quoted as saying that the minimum cost per new unit has risen as high as $500,000. (Spearance, Cameron. "Boston Is Running Out of Options to Tackle Sky-High Housing Costs.") Obviously that number would make my cost comparison even more extreme. I have opted throughout this thesis to use more conservative numbers in my calculations, but I also wanted to make it clear that, in the real world, the disparities I describe can be even greater than they seem here.

Some elements of the proposed program will impact the design and construction of buildings. If the aim is to create a sustainable program, it must also incentivize the use of sustainable materials and systems. I might, for instance, advocate for the avoidance of concrete, since "the cement industry produces 5% of global man-made CO_2 emissions."[62] Steel is a slightly better alternative, contributing approximately 76% of the CO_2 emissions of concrete to construct the same gross square footage.[63] Steel can also be recycled many times over. In fact, products constructed of American steel currently consist of approximately 93% recycled steel scrap.[64] In the current political environment, however, the price of steel is highly uncertain. Better than either, perhaps, is the promise of new structural understandings of wood. Cross-laminated timber, in addition to being a carbon sink, has been shown to release less particulate matter into the air than steel.[65] Whole timber construction is also gaining attention. "[W]hole timbers have a lower effective embodied carbon than any other structural material. When combined into efficient structural configurations and joined using specially-engineered connections, whole timber has the potential to replace entire steel and concrete structural systems in large-scale buildings."[66] There are three major impediments to the wide-scale implementation of cross-laminated and whole timber construction, however. The first and most obvious is the cost, which runs between 16% and 29% higher than concrete construction for buildings of a similar size. The second impediment is local building codes, which have not been updated to reflect new structural applications of wood and typically limit the height of buildings with wooden fames to four or five stories. The third obstacle preventing wide-scale adoption of wooden frames for larger buildings is the availability of wood itself. Sustainable forestry is a relatively new industry, and although it can generally keep up with current demand, it may take several generations of sustainable timber farming development before wood could realistically replace either steel or concrete as a primary material in high-rise construction. On the scale of one or two cities, however, wood may be a realistic option, though it would require a change to building codes and additional subsidization to implement.

There are countless ways in which construction could be made more sustainable. Photovoltaic energy and hot water systems, geothermal heating and cooling, combinations of insulating products, and incentives for using recyclable materials are all important, to name just a few. However, it is beyond the scope of this thesis to examine all of the options in detail. There is also value to leaving some room for experimentation to the builders themselves, rather than prescribing some pathways and proscribing others. Let it suffice to say that pursuing sustainable options is very important to the future of housing development, but it will make construction more expensive. The extent of the impact on costs, however, is debatable. "A 2007 public opinion survey conducted by the World Business Council for Sustainable Development found that respondents believed, on average, that green features added 17% to the cost of a building, whereas a study of 146 green buildings found an actual average marginal cost of less than 2%."[67] Sustainable features also generally lower the overall operating costs of a building, recovering many

---

[62] World Business Council for Sustainable Development. *The Cement Sustainability Initiative*. p. 20
[63] Johnson, Timothy. *Comparison of Environmental Impacts of Steel and Concrete as Building Materials*. p. 113
[64] American Institute of Steel Construction. https://www.aisc.org/why-steel/sustainability/
[65] Ahmed, Shafayet and Arocho, Ingrid. "Emission of Particulate Matters During Construction."
[66] Bukauskas, Aurimas. *New Structural Systems in Small-Diameter Round Timber*. p. 5
[67] Knox, Nora. "Green Building Costs and Savings."

of the initial costs over time. However, even if owning a unit in a sustainable development is less expensive over the long term, it still costs more to build and therefore to purchase. Keeping in line with Principles I and IV of successful housing programs from Chapter 1, if local government imposes regulations and ordinances requiring more expensive construction, then local government will also have to provide subsidies to cover the added cost.

It is important for the financial success of projects that they not spend money unnecessarily, but it is clear from the history of housing policy that saving money at all costs rarely produces positive results. All closets will have doors. All floors will have finished surfaces. All hallways will be well lit. The quality of life for residents is improved by having more than the minimum amount of fenestration. Beyond elements of basic decency such as those, the aesthetics of a building also have a significant impact on the long-term value of the asset. Housing programs with buildings designed by Frank Lloyd Wright proved themselves much more successful than those which were value-engineered into brutalist oblivion. Matters of taste are highly subjective, but it might be in the interest of the city to create a board of review which generates a flexible set of aesthetic guidelines for new multifamily construction, similar in function but less rigid than historical preservation associations. No one needs another soulless Seaport District, monolithic concrete assault upon the eyes, or unarticulated box with asymmetrical windows failing to camouflage its lack of inspiration. Aesthetic details, though, do have their cost. In order to implement any aesthetic standards, we will have to increase the average anticipated cost per unit, and therefore the amount of private investment and government subsidy required. An aim to construct sustainable and aesthetically valuable buildings will raise the price of units for buyers who are already burdened by housing costs. For the program to be successful, most of those costs will need to be absorbed by the local government. Our theoretical average unit will now need a subsidy closer to the $160,000 expected to be generated through property tax revenues, and the anticipated price of $458,000 is more realistically going to come in closer to $500,000.

The requirements to receive an affordable housing development subsidy also diminish the potential value of the completed asset. This is especially true for buildings with units that are subject to rental caps. Because of their limited ability to generate revenue, they often trade at cap rates around 150 basis points higher than market-rate buildings. This makes them unattractive to many institutional investors, and more likely that they will be owned by non-profit organizations which can make up some of the difference through their property tax exemptions. This means that constructing affordable housing in the current regulatory environment starves the city of the revenue it might otherwise be able to reinvest into creating even more housing. In some cases, funding policies also favor projects which are designated 100% affordable over mixed-income projects, which both isolates the low-income populations from the rest of the city and places downward pressure on the density of these developments.[68]

---

[68] I was part of a team which presented a development proposal to a representative from the Cambridge Housing Authority for a mixed-income project at 139 Bishop Allen Drive and the adjacent lot, which relied on a certain expectation of subsidies in order to be economically viable. This site was taken by the city, cleared of existing dilapidated structures, and designated for the development of affordable or senior housing. The representative made it clear that the city would only provide subsidies for a 100% affordable project on this site. We pointed out to her that, at 100% affordable, we could only build about 100 units on the site, yet with a mix of incomes we could build 229 units, of which at least 150 would be affordable. She was unmoved.

Both Boston and Cambridge require a certain percentage of new projects to be designated for inclusionary units. In Boston, this is effectively 15%, while in Cambridge it is 20% of the net habitable square footage. The goal of inclusionary housing is commendable, and the results have shown that it has been a relatively effective way of helping the poor find housing in neighborhoods which have historically been difficult for them to enter. Still, as discussed in the previous chapter, inclusionary housing requirements end up functioning as a regressive tax on market-rate tenants and buyers. This is the trap of governmental policies which seem so appealing to representatives because they require no direct budgetary allocation. Another result is that it makes it extremely difficult to develop smaller buildings profitably, and large buildings must be built that much more cheaply.[69] The cost of entry into the market is too high for smaller speculative builders who might specialize in smaller multifamily properties, and the increased revenues required from the market-rate units in the projects which do get built place that much more of a burden on moderate- and middle-income families. The cities tout their inclusionary housing programs as a great success, but at best they have met with mixed results, and they are a significant part of the engine which is driving the current housing crisis.

The cities are exploring other ways to try to address the housing needs of its current and future residents. The Boston 2030 plan from the mayor's office is particularly concerned about the potential for the highly skilled workers who helped to build the recent boom in technology and life science beginning to look elsewhere to further their professional careers, because the city has become so expensive. Lower-income households do not typically have the ability to move around the country as easily as middle-income households, so there is an expectation that average incomes may actually fall as housing prices continue to rise if highly skilled workers begin to be driven away. In the same way that Chapter 40B has helped create over 50,000 new affordable units in the face of unnecessary obstacles presented by various cities around Massachusetts, a new state policy might be considered which helps developers to clear local regulatory hurdles when proposing to construct workforce housing in its fastest growing cities.

Among other things, the Boston 2030 plan calls for "redirect[ing] development pressures away from core neighborhoods and towards opportunities for growth,"[70] and "Reduc[ing] the number of undergraduates living off campus and participating in Boston's rental housing market by approximately 50 percent."[71] The first of these goals is sound; land acquisition is certainly less expensive in secondary and tertiary neighborhoods, even if construction costs will remain unchanged. There is legitimate concern, though, that requiring the universities to provide housing for thousands of additional students will push their management companies into acquiring even more land in order to construct these new buildings, which will further reduce and increase competition for the available space left over for private development. If that happens, Boston's attempt at reducing the demand for private housing will instead raise housing prices by increasing the cost of development. It seems unlikely that a university would tear down an existing building which is still serving the needs of its campus in order to replace it with a student residence at a

---

[69] One does not need to look any further than Proto in Kendall Square or Market Central at the intersection of Massachusetts Avenue and Main Street to see how much quality has been compromised in recently constructed large-scale buildings. There is a social cost to having an environment of ugly buildings constructed without sufficient attention to detail, as well as a long-term negative implication for the value of an asset.

[70] "Housing a Changing City: Boston 2030, 2018 Update." p. 5

[71] "Housing a Changing City: Boston 2030, 2018 Update." p. 20

much higher floor area ratio (FAR) without first exploring other alternatives, such as acquiring more land. Once again, cities should be wary of implementing policies which they themselves do not pay for. Boston might consider simply valuing its students as an integral part of its communities and recognize that they add to the vibrant life of all neighborhoods throughout the city, and explore ways to make housing more affordable for everyone, not just certain classes of citizens.

It may also be time to replace many of the older buildings in Boston and Cambridge. Historical preservation has its place, and I am not advocating easing up development regulations in Beacon Hill or the Back Bay. Still, the Boston Foundation describes the current state of housing in this city this way:

> "Greater Boston's housing stock is older than that of many similar sized metro regions. Over 50 percent of the region's housing stock was built before 1960, with nearly 25 percent predating 1920. No other comparable metro area has more than 10 percent of its housing stock predating 1920. In some Massachusetts communities, homes still in use date back to the 18th and even the 17th century. While Boston is one of the nation's oldest cities, other metros that experienced large growth prior to the 20th century, such as Philadelphia and San Francisco, have housing stocks that are less heavily reliant on pre–WWII housing. A quarter of Metro Boston's housing stock was built after 1980, compared with a third for both Philadelphia and San Francisco, and more than half for Seattle and Washington, D.C. This is another indication that supply is likely lagging behind demand: Boston's economy has kept pace with these cities, while its production of housing stock has not. With an older housing stock comes attractive features such as dense neighborhoods, unique architecture, and history. However, a lack of new housing stock can also indicate a market that is not producing the housing needed for the region."[72]

Boston and Cambridge might be better served by providing incentives for replacing older structures with newer, more environmentally efficient, and higher density buildings which better serve the needs of their contemporary populations, rather than those ages past. At the very least, they might consider streamlining the approvals process for new projects. Both cities are eager to provide some funding for the renovation and rehabilitation of older buildings, especially if those renovation projects provide more affordable housing units, but at some point it simply makes more long-term sense to ease density restrictions and allow some buildings with no real historical significance to be demolished without seeking public comment first.

A discussion of the needs of renters, buyers, and developers could go on forever, and there are ample areas for improvement and refinement in the above discussions. Nevertheless, we have determined a basic set of the needs of each party which can be useful for beginning to assemble the framework of a new housing program proposal, and evaluating its elements. In chapter three, I shall examine various potential elements of a new housing program with some specific criteria in mind, as well as the principles of effective policy identified in the first chapter. The criteria for the program are as follows:

[72] Corcoran, Rose et al. *The Greater Boston Housing Report Card 2019*. p. 28

I. It will provide a pathway toward affordable homeownership for households earning at least 60% AMI.

In order for this to be true, any proposed program will have to provide approximately $1,000 per household per month above their current rental subsidies. It will also require a subsidy for the construction of new housing on the order of at least $160,000 per unit.

II. It will be accessible to households earning up to 135% AMI.

The city may only measure the burdens of housing costs for the populations with the lowest incomes, but many households are facing overwhelming financial burdens in order to pay market-rate rents as well. If Boston and Cambridge want to keep their skilled workers from moving to different job markets, they will need to address affordability in workforce housing as well as low-income housing. It is also important, especially in these two cities, to consider the needs of the large student population. Although the program will not be aimed at benefitting students directly, it should consider any impacts it has on the costs of student housing.

III. It will not significantly change the cost burden to the city.

In order for any program to be effective over the long run, it must continue to be financially viable. Governments are notorious for underfunding their housing programs, so I am loath to hang the efficacy of the program on the capricious will of elected representatives. I will also explore ways in which the city may receive a financial return on some of the subsidies which it provides. In order to make up any funding gaps, the program will need to be open to private investment, and to provide investors with attractive returns. Part of the aim to produce competitive returns is the need to shorten the development timeline. There are many ways to do this, but some of them may include the institution of an equivalent to Chapter 40B for workforce housing development, the elimination of some elements of the approvals process for projects which meet certain criteria such as replacing outdated housing with higher density modern structures, and stepping away from inclusionary housing requirements.

Chapter 3

A housing program typically consists of several different elements. Having explored the history of housing policy, as well as the needs of renters, buyers, and developers, let us now turn our attention to individual potential program elements, and evaluate them with respect to the principles of effective policy established in Chapter 1 and the needs identified in Chapter 2. Before diving into that evaluation, however, let us review the goals of this thesis. I aim to create the framework of a housing program which can help recipients of rental subsidies begin to generate household wealth through subsidized homeownership. That is the primary target beneficiary from the program I will propose. However, it is also clear that segregating the population by income can be detrimental to the wellbeing of the beneficiaries of subsidies, and expose them to a greater likelihood of experiencing chronic poverty. It is also clear that the average housing unit in Boston and Cambridge is currently unaffordable for anyone earning less than 135% AMI, and excluding any population from access to a program often has an unintended negative impact on that demographic. Therefore, in an effort to protect a wider swath of the population from experiencing housing insecurity, my aim is to make certain elements of the proposed program accessible to people earning between 80% and 135% AMI, a population usually overlooked in housing policy but which finds itself under significant cost burdens, even if the core constituency is those currently in subsidized housing earning between 60% and 80% AMI. It is also not my aim to provide a solution to the housing crisis overall. Instead, I am looking to propose a program which supplements existing housing programs, rather than replacing them.

Potential program elements fall into four categories. Some of them address the funding of projects, or the design and construction of buildings. Others attempt to help households with the purchasing of units, or impact the ownership of assets. I shall look at these each in turn. The first category I shall examine is the funding of projects. Typical funding sources include private investors, bank loans, local government programs, and federal government programs. Because federal programs such as LIHTC funding require units be designated as affordable for people earning as low as 30% AMI, and that is not my target demographic, I will assume that I will not have access to federal funding, and so I will not discuss federal programs in any detail.[73] Our first principle identified in Chapter 1 states that "a successful and stable housing program must produce competitive investment returns." For private investors, it is not sufficient for the anticipated return simply to be higher than that of other sectors. It must also be competitive when compared to investment in other areas of the housing market. In Boston and Cambridge, the potential for the greatest returns currently lies in so-called "luxury" housing. Some altruistic investors will always be ready to put their money into affordable and workforce housing simply for the benefit of mankind, but altruism by itself creates a very small pool of potential funding. In Chapter 2, we established a benchmark unlevered[74] return of 10% for private investment in the proposed housing program. In order to reach that level of return, developers will need subsidies of at least $160,000 per new unit constructed. Since I am not considering federal funding sources, and because it is my aim to eliminate the unnecessary delays and expenses which result from developers having to cobble together funding from multiple different sources, this means that all of the subsidies must come from local government.

City governments have a number of ways to raise funds for projects, or otherwise contribute to them financially. The most obvious is through property taxes. Most cities charge a millage rate on the assessed value of a home for every dollar of value above a certain limit. In Cambridge, for example, the residential tax rate is $6.29 for every $1,000 of assessed value over $338,983.[75] The exemption limit helps make the property tax somewhat progressive. In practice, this policy can also contribute to pushing low-income households out of areas where gentrification rapidly increases the property values within a neighborhood, because properties which historically had very low tax bills can suddenly be faced with very high assessments.[76] I think this is imperfect, but not necessarily fatally flawed. Instead of getting rid of the exemption, I would consider adding an exception for housing density. Charge a higher tax rate for single family homes and progressively lower rates for increasingly dense multifamily developments. In order to begin to address the housing crisis, Boston and Cambridge will need to construct thousands of new housing units, and it is logical to consider replacing many of the existing homes in low-density neighborhoods with structures which can house more households on the same land. This would ensure that the wealthiest residents who insist on single family housing will pay a fair share for taking up land that could otherwise house five, ten, or even fifty households. It will also incentivize owners of low-density property in prominent areas of the city, such as all of the one- and two-story commercial structures along Massachusetts Avenue between the Central Square, Harvard, and Porter Square red line stations, to redevelop the properties to better serve the needs of present-day

[73] My primary focus on the population earning between 60% and 80% AMI, and secondary focus on those earning between 80% and 135% AMI, naturally raises the question of whether projects created under my proposed program will be exclusionary of households earning less than 60% AMI, and whether that might contribute to the segregation of low-income households. I shall attempt to address issues of inclusion later in the chapter.

[74] Any new construction would almost certainly be levered. The unlevered return is simply a more effective means of comparing the potential returns between different projects.

[75] https://www.cambridgema.gov/Departments/Finance/propertytaxinformation

[76] It is common for cities in Massachusetts to have limits on the amount which property taxes can increase from one year to the next. In Boston, for instance, that limit is 2.5%. However, the limit is not applied on a property-by-property basis. Instead, it is a limit on the increase in tax revenues which can be drawn citywide, which means that individual properties can still be subject to significant swings in tax bills much higher than 2.5% from one year to the next.

Cambridge. However, the policy would need to be implemented with some caution, lest it simply incentivize an overabundance of studio apartments, single room occupancy developments, or co-living spaces. There would likely need to be regulations on minimum unit sizes for multifamily properties receiving tax exemptions for density. Cities may be able to raise some funds for housing development directly through their property tax policies, but it is more likely that adjusting the tax policy can be a way to incentivize new development.

It is currently common for cities to raise funds specifically for constructing new housing through linkage fees or other mitigation payments charged to new development projects. In Cambridge, all non-residential developments over 30,000 gross square feet must contribute $15.95 per square foot to the Affordable Housing Trust.[77] All of the current revenues are earmarked for development which is affordable at an average of 60% AMI or below. Since the target population of my proposed program is people who earn incomes above this limit, it would not be realistic to seek funding from linkage fees without either reducing the amount available for deeply affordable housing or charging a higher fee to non-residential and so-called "luxury" developments. I am wary of disincentivizing housing construction of any type, especially when simply adding to the overall housing stock will help push down the cost of ownership, no matter what type of housing it is, but I think it is worth considering to charge new office buildings a higher linkage fee as a reflection of the additional workers which the city will need to house in order to support those businesses. Alternatively, the Commonwealth could raise the taxes on corporations and distribute those funds to local housing authorities, but that adds a dangerous extra layer of political caprice to the process, and I believe it would prove a more reliable source of funding if the cities collected it directly by means of linkage fees and property taxes.

The city can also raise money by issuing municipal bonds. Boston issues between $150 million and $300 million in municipal bonds each year, with a current coupon rate of 2.96%. These are general obligation bonds, not dependent upon specific revenue streams for repayment. The policy of the mayor's office is to keep Boston's debt service obligations below 7% of the city's operating budget. With debt service currently accounting for 5.8% of the budget, there is ample room to raise funds for housing construction by issuing new bonds.[78] There is, of course, always some risk in issuing bonds for speculative projects, but it is clear that demand for housing in the city will be strong for many years, and both Boston and Cambridge enjoy a AAA rating, higher than that of the United States. Cambridge also issues minibonds in denominations of $1,000 with a 2% coupon rate, but it does not issue enough of them to consider their revenues to be a viable source of funding for large development projects.

For cities to take on debt obligations, they would want to see a viable economic return. If we imagine that the city is contributing a subsidy of $160,000 per newly constructed unit, and that the value of each unit upon completion is $500,000 then under Boston's current tax system[79] each unit in a condominium would result in only $2,551 in taxes each year. Calculated as a perpetuity with a rate of 2.96%, this generates a present value of $86,172. If the entire building were instead taxed as a cooperative, where the exemption applies to the entire building rather than to each

[77] Cambridge Zoning Ordinance, Section 11.202.1
[78] Boston Municipal Research Bureau. "Boston Shows Market Strength."
[79] Boston levies property taxes at a millage rate of $10.54 on residences, with an exception on the first $258,000 of assessed value if the unit is occupied by the owner.

individual unit, in a building with 50 units each owner would owe $5,216 annually, which has a present value just over $176,000 as a perpetuity. Assuming that residents in the program I propose can afford the higher tax burden, new construction of multifamily properties subsidized by funds raised through municipal bonds should be taxed as cooperatives so that the city receives a sufficient financial return on its investment. This would also satisfy Criterion III identified in Chapter 2, that the program not significantly change the cost burden to the city. I shall investigate whether this is affordable to residents later, when I discuss ownership of property within this program.

It may also be useful to consider means of funding which do not involve the city at all. A recent MSRED thesis discussed the possibility of creating REITs dedicated to providing affordable housing.[80] The argument is that the structure of a REIT would allow it to finance projects in a much more simplified way than the current method, which requires developers to assemble funding from a large number of different sources. Skipping over that process would save significant amounts of time and money. Still, the author of the thesis herself notes that one of the most successful REITs undertaking this sort of development has only produced annual cash-on-cash returns between 7% and 9%, which is lower than our benchmark of 10%. But fundamentally, I am interested in outlining the framework of a new government housing program. Principle IV of a successful housing program calls for involvement of the local government. It can benefit from a partnership with private companies, but I am not looking to remove government involvement completely in favor of private undertakings, such as placing the responsibility for new development within the hands of a REIT. It is an important reminder, however, that my proposal is only one of many possible pathways for addressing the current housing crisis, and that many different players will likely have their own roles in solving it.

In Chapter 2, we discussed how some elements of the proposed program would impact the design and construction of buildings. In brief, sustainable building materials and techniques will be vital to the long-term sustainability of the housing program itself, but local building codes will need to become more flexible and responsive to allow developers to take advantage of technological advancements. We have also seen how a property tax policy which incentivizes building at a higher density would likely need regulations on minimum unit and room sizes. Still, in order to begin to address the housing crisis, cities will need to incentivize development at higher densities, and I might also advocate for new legislation at the state level creating a program similar to Chapter 40B which allows the state to issue building permits for higher-density workforce housing development projects.

Purchasing a home is not affordable to the large majority of residents of Boston and Cambridge. Providing housing at a lower cost is only one part of the solution. Prospective home buyers also need assistance with gathering the resources necessary for a down payment and finding a home which suits the specific needs of their household. Since the target beneficiary of our program is a household earning between 60% and 80% AMI which currently receives rental assistance, let us start with their needs. We have already determined that, to support the transition from renting to homeownership, each household will need approximately $1,000 more in subsidies per month than subsidized renters currently receive. The question now is how that subsidy is put to use, and how the city raises the necessary funds. Let us first imagine that our prospective buyer

[80] Chan, Estelle. *Why Affordable Housing Developers Should Go Public: REITs as an Alternative Source of Capital for Housing Development.*

lives in a unit currently designated as affordable and receives a rental subsidy, but intends to move into a unit newly constructed under the terms of our proposed program. If our theoretical unit costs $500,000 then a 5% down payment would amount to $25,000. Accounting for closing costs and other expenses, it is not unreasonable to think that a more conservative estimate might be closer to $30,000. Cambridge already offers down payment assistance to citizens earning under 80% AMI, with an anticipated benefit on an average home of approximately $48,000 if the buyer agrees to a deed restriction designating the unit as affordable for any future sale. It is not my goal to create units which are specifically designated as affordable under the existing housing system, so I do not intend to engage with this program directly; I merely use the benchmark of $48,000 to show that the need for $30,000 per household for down payment assistance is not unreasonable. If $1,000 in additional housing subsidy is provided to a household which is currently renting, and set aside for a future purchase, it would take two and a half years for that family to be able to afford a down payment. The $1,000 per month would persist after the purchase, but now be applied to debt service on the home, covering the gap between the monthly rent and the loan payment.[81]

In order to offer an extra $1,000 per month to households receiving housing benefits, the local housing authorities need revenues to cover those costs. At its simplest, the city's contribution to the purchase of a home can be considered an equity stake in that home.[82] When the unit is later sold, the city will recover a part of the proceeds proportionally equivalent to its financial contribution to the purchase of the home. Of course, this would tie up significant amounts of capital in an illiquid state, so the city would need to generate new financial support for home buyers until a point when there was some equilibrium in the numbers of units purchased and sold as part of this program. The most obvious solution is to raise the necessary capital through the same municipal bonds offered to raise money for construction subsidies. If we assume an average tenure of 10 years per owner,[83] plus 2.5 years to build up a down payment, the present value of the required housing assistance at the 2.96% coupon rate is approximately $128,000. This is 80% as high as the anticipated construction subsidy per unit, which means that if building rates are constant, 55% of all funds raised by issuing municipal bonds will have to be earmarked for the construction of new units, and 45% for housing subsidies, until the thirteenth year of the program. If the program proves to be successful and it is expanded in scale, it will need to raise funds for a

[81] The current rent cap for an apartment designated affordable to a household which earns 80% AMI is $1,812 for a one-bedroom unit and $2,040 for two bedrooms. The monthly loan payment on 95% of $500,000 at 6% interest is $2,848.

[82] If the city is building an equity stake in all of the units purchased as part of this program, it is also effectively a signatory on the mortgage secured loans. As such, it might be reasonable to think that borrowers would be able to get a preferable interest rate which would lower the monthly cost of ownership. A cut in the interest rate from 6% to 3% would reduce the monthly payment on the loan by $845. Following that path a little further along, maybe the city could simply offer loans directly at a rate of 3% to beneficiaries within this housing program. Of course, at this point, the city will have become a bank. In my estimation, they city already acts very much like a bank, but I recognize that there is strong cultural resistance to cities taking on such an active financial role within their limits. It may be worth reexamining this role as part of a larger examination into solving the housing crisis as a whole, but for the moment I will concede that transforming Boston into a bank is beyond the scope of this thesis, so I will not pursue this line of thought any further.

[83] Studies on the average length of time people own a home before moving in Boston and Cambridge provide a range between 8 and 13.3 years. A range this broad suggest significant room for a study employing more rigorous analytical methodology.

longer period of time before it begins to pay for itself. We could refine our calculations further by accounting for the increase in property values over time (which would shorten the period before the program is self-sustaining) and other factors, but the important determination here is that we should conservatively aim to guarantee funding for at least 15 years in order to implement this program effectively.

It would actually be beneficial to the long-term goals of the program to have an average tenure which extends well beyond ten years. With a loan that amortizes over 30 years, an owner is only just beginning to establish real equity in a home after the first ten years, and the real aim of this program is to help families generate household wealth through homeownership. I am resistant against placing too many restrictions on ownership of the units, however. Some households will simply need the flexibility to move away when their circumstances change, such as to pursue a promising job opportunity or to take care of an ailing parent in another town. I believe that any resident who has lived in Boston or Cambridge long enough to save up a down payment through the housing assistance program is someone who has shown that he is likely to stay in the area for the foreseeable future, and that should be enough of an indication that most beneficiaries of housing assistance in this program will stay involved long enough to reach the goal of establishing real household wealth. There will be some households who do not live in their units for very long at all before selling them, but Principle VI of an effective housing program is that there has to be an acceptable level of failure or imperfection in the program. What is "acceptable" may be subjective, but personally I think giving people the freedom to move when it suits them is an acceptable imperfection. The program would obviously need to keep statistics on tenure to make sure it has the necessary funding available for residents, and if too many began to move away before the ten year mark, adjustments could be made.

Alternatively, the city could consider a rent-to-own structure of tenancy, wherein a household can build up equity in a unit over time without the burden of an initial down payment. Many rent-to-own housing programs do charge an option fee for the right to purchase the home at a later date, and this fee can easily run as high as a typical down payment, but if the prospective housing program decided to make a rent-to-own option available, it would be done specifically to eliminate the need for a down payment, so I reject the possibility of including an option fee. To make the arrangement possible, the monthly rent would have to equal the debt service on a loan for 100% of the property value amortized over 30 years. At 6% interest on a unit worth $500,000 the monthly rent would need to be $2,998. The advantage of this arrangement is that residents would be able to move into their units much sooner, and the units could effectively be rent controlled.[84] The disadvantage, of course, is the slightly higher monthly payment. Some entity would also need to purchase the newly constructed multifamily building from the developer, because no developer could be expected to hold onto the asset for thirty years or longer. The city's housing authority is not a reasonable owner, because the cost is prohibitively high and would reduce the ability of the program to reach other households. Pension funds, insurance companies, or other institutional owners may be interested, but buildings which come with restrictions on eligible tenancy typically trade at higher cap rates, which might disincentivize too many developers from participation in the program. A viable alternative may be to structure the building

[84] Fully stabilizing the rents would require that tenants also be responsible for their own maintenance costs. I will discuss the maintenance costs associated with home ownership later in the chapter.

as a cooperative. We are, after all, already planning to assess its property taxes as a cooperative. With a mutual ownership structure, financing could be secured at better rates than the typical borrower could receive, allowing it to be traded at a more competitive cap rate. However, the city would probably have to maintain a majority ownership stake in the building in order to assure that the units would remain available for the target beneficiary. The legal and financial structure of this arrangement is much more complicated than that of simply selling the units to individual participants in the housing program. According to Principle III of effective housing programs, the complicated structure would cause the asset to lose value. Given the option, a rent-to-own structure seems less viable over the long term of the program than the more traditional down payment and loan.

There are additional costs of owning a unit in a multifamily property, including utility bills, property taxes, maintenance costs, and insurance. Utilities may not seem like an additional expense when compared to renting, but households which receive rental subsidies in Boston and Cambridge have their rents adjusted so that heat, water, and electricity costs are included within the calculation of affordability. Up to this point, I have calculated affordability without including these costs. The average monthly household cost of water, heat, electricity, a mobile phone, and internet access is approximately \$266.[85] Property taxes levied as a cooperative on a home with an assessed value of \$500,000 would result in monthly expenses of approximately \$262 in Cambridge and \$435 in Boston.[86] Typical maintenance costs run at 1% of the total property value each year, or \$417 per month, and insurance starts at \$110. All together, homeowners can expect to pay an additional \$1,000 to \$1,200 in housing costs per month beyond their loan payment. This is an entirely unaffordable extra expense for households earning between 60% and 80% AMI. It is also unreasonable to ask the city to absorb this extra cost by providing another \$1,000 in addition to the \$1,000 I am already envisioning beyond the current level of housing benefits. Providing \$2,000 per month over the course of 32.5 years (2.5 for setting aside a down payment and 30 for paying off a loan) at an opportunity cost of 2.96% has a present value just shy of \$500,000. At that value, the city may just as well purchase the units outright and give them away to residents. Constructing environmentally sustainable units, however, will help to bring that cost down for residents. The exact amount of savings in utility costs as a result of sustainable building practices can depend upon a variety of factors beyond the scope of this thesis, but it is not unreasonable to assume that residents could save \$100 per month or more over typical households in Massachusetts, especially during the winter. Affordability calculations also typically assume that households will own their own vehicles, and therefore incur costs to pay for a car, fuel, and insurance. The average cost of owning a less expensive older car can still run as high as \$493 per month.[87] If the program prioritizes building in locations near subway stations and popular bus routes, residents' monthly transit costs could be reduced to roughly the amount of a T pass, which is currently \$90. Residents should be able to absorb the \$400 difference and still find their housing costs affordable by the usual metrics. Both cities are also actively looking for ways to reduce the numbers of privately owned vehicles on their streets. This leaves us with a remaining monthly burden of \$500 per

[85] Average prices drawn from https://www.numbeo.com/cost-of-living/in/Boston
[86] If a unit in Boston is taxed as a condominium rather than a cooperative, the monthly cost of property taxes drops to \$213.
[87] Mercadante, Kevin. "How Much Does It Really Cost to Own Your Car?"

household. Although I am resistant against asking the city to subsidize this cost directly, I think it is reasonable to consider expanding the public housing maintenance program to play a role in the maintenance of buildings constructed as part of this program. Residents could place a work order for maintenance within their units in the same way as those who currently live in public housing, and then cover half of the costs of the repairs themselves. The city's existing maintenance capabilities would need to be expanded slightly, but it would still be much more cost effective than covering the cost of private repairs. The residents should still pay for a portion of the maintenance costs as an incentive to keep their units in a suitable state. Splitting the maintenance costs this way also acknowledges the fact that the city has an ownership stake within the units. The city would be responsible for maintenance within common areas. The extra monthly burden on a household is now much closer to $250. With no other changes, this would imply that the total housing costs for a household earning 80% AMI would be 34.5% of its net income, and 35.9% for a household earning 60% AMI. Administrators of the program could review the household income of beneficiaries on a regular basis to ensure that no household faced a burden of cost higher than 38% of its net income, and the specific terms of its tenancy could be adjusted where appropriate. I encourage other interested parties to continue finding ways to try to reduce the burden upon households, but I believe that this is an acceptable level of imperfection in the program, following on Principle VI of effective housing programs identified in Chapter 1. I think it is reasonable to expect that a family can pay slightly more than it would in an affordable rental unit for the opportunity to build household wealth through homeownership.

Continuing with the principle of acceptable levels of imperfection, in the interest of housing security, I think that households should be allowed to miss a few monthly payments without significant consequences. Every household has unanticipated emergency expenses. The studies from the United Kingdom discussed in Chapter 1 showed that emergency expenses contributed to the incidence of households facing housing insecurity and falling into poverty because of it, and most Americans have very little savings to cover such emergencies.[88] If a household misses a loan payment, the city should make the complete payment and be credited the full portion of equity for that month. If a household misses three payments within three years, the city should provide financial counseling which can help create a personalized plan for getting the household back on top of its responsibilities before any more serious actions are considered. I would not actively advertise this policy to beneficiaries of the program, which might encourage them to skip a payment now and then for reasons other than need, but everyone faces occasional times of struggle.

The framework of a program, as it applies to the target beneficiaries of households earning between 60% and 80% AMI, is now coming into view. What remains is to consider ways to make aspects of the program accessible to those earning between 80% and 135% AMI, who also face significant housing cost burdens in Boston and Cambridge. It is a goal of the program that participants be able to generate household wealth through home ownership, and as we have discussed, that typically requires families to stay in a home for a long time. It seems realistic to require that participants in this extended version of the housing program be people who currently

[88] The most widely cited figures come from an annual GOBankingRates survey, which is hardly academically rigorous, but nevertheless receives outsized media attention. The most recent survey claims that 58% of Americans have less than $1,000 in savings.

live within Boston or Cambridge and have worked there for at least a year, implying that they will continue to do so. I would not place any other restriction on eligibility, though the availability of vacant units may restrict participation. Administrators of the program will know how many units are needed to fit the needs of current participants because core beneficiaries will be receiving down payment assistance for the first two and a half years before they purchase a unit. A quick survey of the amount of development undertaken to provide units for the program will let administrators know if there are any extras. These extra units should be made available to households earning less than 135% AMI. This would provide continued incentive for developers to create ever more housing, contributing in at least a small way to the alleviation of the current housing crisis. It seems reasonable to try to cap the housing burden of any household which participates in this program, even in a limited way, at 38%. If the typical monthly loan payment on a $500,000 unit is $2,848 and households can expect to pay another $250 above this every month in other direct housing expenses as part of this program, most households would need some sort of assistance unless their incomes were above 120% AMI. Households earning between 120% and 135% AMI, therefore, will be eligible to purchase a unit at the set price averaging $500,000 but receive no additional financial assistance. The city would have no equity stake in these units. Below that, there would be a gradation of benefits. Households earning between 110% and 120% AMI would need approximately $250 in subsidies to find their units affordable. Households earning between 100% and 110% would need $500 in monthly benefits. Households earning between 80% and 100% would be eligible for monthly subsidies of approximately $750, as well as optional down payment assistance. If the household opts for down payment assistance, it must also wait the two and a half years necessary to build up a total of $30,000. If the household opts not to receive down payment assistance, it may purchase an available unit immediately. The city would have a proportional equity stake in all units purchased with its assistance. The availability of a “public option” for housing will also have larger implications for market-rate units, which should be studied, but that is beyond the scope of this thesis.

Finally, there is the question of what to do with households whose income rises from one bracket to the next. No household which has been admitted to the core program will later be deemed ineligible for benefits because its income has risen above 80% AMI. Since the program is anticipated to provide assistance for as long as 32.5 years, it is likely that many households will experience significant changes in income over that time, and I very much hope that many of them will see their incomes rise. Making those households ineligible would create a poverty trap, disincentivizing them from increasing their incomes. Participants in the expanded program earning between 80% and 120% AMI may have their benefit gradually stepped down as their incomes rise. For example, a beneficiary receiving a subsidy $500 per month whose income rises above 110% AMI should not have her benefit immediately reduced to $250. Instead, give her a grace period of six months with no change, then reduce the benefit by $50 per month after every six months for the next two and a half years. This would have approximately the same effect as the typical market practice of raising the rent on an apartment every year, which is an expense that most households can absorb with minor problems. Participants earning over 120% AMI when they enter the program would see no impact to their participation as their incomes rise, because they are receiving no direct subsidies. Arguments can certainly be made for what exactly might be the fairest way to extend benefits to those whose incomes improve, and my proposal may err on the side of being overly generous, but given the option I would prefer to show generosity before imposing austerity.

We now have all of the elements we need to draft the framework of a proposal for a new housing program. Implementing it would begin to address some of the needs of the current housing crisis, but solving that crisis will require a tectonic shift in how we address housing needs in this country. The private market will never solve the issue so long as it is most profitable to develop homes for the wealthiest buyers. The federal government has never once in its history sufficiently funded any housing program which it created. Local policies and regulations have not been flexible enough to allow for innovation in construction techniques, and have stifled the development of new housing in deference to existing property owners. Stagnant wage growth and rising income inequality are opening up such a gulf between those at the top and those at the bottom that "median" income reflects a diminishing minority of households. Solving the housing crisis is going to take bold new actions, and partnerships between all of the players. Boston and Cambridge have led the way many times before, in revolution, in equality, and in reaching beyond the sky. Let us take up the torch once again in providing a decent home and a suitable living environment for every citizen.

Program Proposal

Boston and Cambridge are facing a growing crisis in housing. There is too little available stock near centers of employment, the pace of construction has not kept up with population growth, and the burdens of household expenses have risen well beyond the level which most families can afford. No single program will provide a solution for every household's needs, but it is important for the continued strength of both cities that they begin considering a new approach to addressing housing affordability. I advocate for an approach which not only provides people with a home, but also with a means for generating household wealth. In Chapter 1 of this thesis, we examined the history of housing policy and programs in an effort to identify the principles of the most successful among them. In Chapter 2, we determined the needs of renters, buyers, and developers, and assembled a list of criteria which any new housing program should meet in order to serve all of their needs. In Chapter 3, we examined individual potential elements of a new housing program with respect to the principles and criteria identified within the earlier chapters. We are now able to assemble the framework of a new program which can be implemented within Boston and Cambridge in order to help residents begin to build household wealth through home ownership.

Core Program

I. The core program is intended to help households earning between 60% and 80% AMI which currently receive subsidized rental benefits to purchase a house, and begin to generate wealth through home ownership. Any household within those income limits which currently resides in a subsidized rental unit in either Boston or Cambridge is eligible for the core program. There are no other demographic preferences.
   a. No household which has been admitted to the program will later be deemed ineligible for benefits because its income has risen above 80% AMI. Since the program is anticipated to provide assistance for as long as 32.5 years, it is likely that many households will experience significant changes in income over that time. Making those households ineligible would create a poverty trap.

II. The city will provide an additional $1,000 in benefits per month to participating households above the level of rental subsidy which they already receive.
   a. Households will not have access to this money for any purpose other than placing a down payment on a home.
   b. Homes purchased with this down payment assistance do not have to be built as part of this program. Beneficiaries may also purchase market-rate homes.

III. Upon purchase of a home, the previous rental subsidy and the additional $1,000 benefit will be applied directly toward the debt service on a mortgage secured loan.
   a. The financial contributions of the program participant and of the city will be applied *pari passu* to the principal and the interest of the loan.
   b. If the debt has been fully amortized, benefit payments will cease.

IV. The city will review the income and housing expenses of beneficiaries on a regular basis to be sure that no household is required to contribute more than 38% of its net income to housing. If the city finds that a household faces a burden higher than 38%, it will adjust the level of benefits provided to reduce this burden.

V. The city will retain an equity stake in the home proportional to the amount of money it has provided for its purchase. Upon sale of the home, this proportional value will be returned to the city.

VI. Households will be allowed to miss monthly loan payments up to three times in three years with no adverse consequences.
   a. The city will cover the full loan payment for any month where the household misses its payment, and will be credited with the full equity stake for that month.
   b. Households which miss more than three payments within three years will be provided with financial counseling and a personalized plan for getting them back on top of their responsibilities.
   c. Removal from the program will be considered only in the most egregious of circumstances.

VII. The city will expand its public housing maintenance services slightly to provide maintenance within the buildings constructed as part of this program.
   a. Residents will pay half of the cost of all maintenance performed within their units.
   b. The city will be fully responsible for maintenance within common areas.

VIII. The city will provide a subsidy in the amount of $160,000 per unit to developers who construct housing specifically for purchase as part of this program.
   a. The necessary funds will be raised through an annual offering of municipal bonds.
   b. The city will commit to funding the program fully for at least 15 years.

IX. Developers will not sell units on the open market, but for a set price to participants in the program.
   a. The average price of units will be set at $500,000. Larger units will cost more, and smaller units will cost less.

X. There will be no requirement that any unit be designated as inclusionary or affordable to any household not participating in this housing program.

XI. The city will provide incentives for developers to build at a higher density, near transit hubs, and using sustainable materials and technologies.

   a. The city will have to modify building codes and zoning laws to allow for higher density construction, and for the use of new materials and technologies.
   b. The city will have to implement regulations on minimum unit sizes and room sizes.

XII. The city will create an advisory board to establish aesthetic guidelines for multifamily construction.

   a. The board will have the right to deny building permits for developments deemed aesthetically deficient.

XIII. The city will levy property taxes on units in this program as though the buildings where they are located were structured as cooperatives, although the buildings will in fact operate as condominia.

   a. The city will raise the property tax rate for single family homes in a progressive manner that increases with the value of the home.
   b. The city will introduce a property tax exemption for residential units within buildings above a certain density to be determined by the city.

Extended Program

XIV. Any household earning between 80% and 135% AMI which has lived and worked within the city for at least one year is eligible to purchase an available unit in a building developed as part of the core program.

   a. The price of the unit will be no different than for beneficiaries of the core program.
   b. A unit will be considered “available” if the number of total vacant units in developments built as part of the program exceeds the number of households within the core program which will have set aside their full down payment amounts within the next three months.

XV. Households earning between 80% and 100% AMI are eligible for down payment assistance under the same terms as the core program.

XVI. Upon purchase of a unit, households earning between 80% and 100% AMI are eligible for a monthly subsidy in the amount of $750 applied directly to their mortgage secured loan payments.

   a. Households are not required to participate in the down payment assistance program in order to be eligible for the homeownership subsidy.

XVII. Households earning between 100% and 110% AMI are eligible for a monthly subsidy in the amount of $500 applied directly to their mortgage secured loan payments.

XVIII. Households earning between 110% and 120% AMI are eligible for a monthly subsidy in the amount of $250 applied directly to their mortgage secured loan payments.

XIX. Any household whose income rises to a higher bracket will have its monthly subsidy reduced by $50 after six months. Every six months thereafter, the amount of the subsidy will be reduced by $50 until it matches the benefit level of its new income bracket.

XX. The city will retain an equity stake in the home proportional to the amount of money it has provided for its purchase. Upon sale of the home, this proportional value will be returned to the city.

Bibliography

Ahmed, Shafayet and Arocho, Ingrid. "Emission of Particulate Matters During Construction: A Comparative Study on a Cross Laminated Timber (CLT) and a Steel Building Project." *Journal of Building Engineering*. March, 2016

Bauman, John F.; Biles, Roger; Szylvian, Kristin M. (Eds.) *From Tenements to the Taylor Homes: In Search of an Urban Housing Policy in Twentieth Century America.* Pennsylvania State University Press. 2000

Berke, "Housing Waitlists Soar as Boston Fed Reports Massive Shortage of Affordable Units." *The Enterprise*. April 6, 2019.

Black, D. *Low-Income Housing Tax Credits: Affordable Housing Investment Opportunities for Banks.* Office of the Comptroller of the Currency, Washington D.C. 2014

Boston Municipal Research Bureau. "Boston Shows Market Strength." May 22, 2018 https://www.bmrb.org/boston-shows-market-strength/

Braakmann, Nils and McDonald, Stephen: "Housing subsidies and property prices: evidence from England." *Regional Science and Urban Economics*. January, 2017

Bukauskas, Aurimas. *New Structural Systems in Small-Diameter Round Timber*. Massachusetts Institute of Technology, S.B. thesis, Department of Architecture. 2015 DSpace, https://dspace.mit.edu/handle/1721.1/99241

Cambridge Housing Profile. City of Cambridge, Massachusetts. Community Development Department. 2016

Chan, Albert P.C. et al. "Bridging the Gap Between Sustainable Housing and Affordable Housing: The Required Critical Success Criteria." *Building and Environment*, Vol. 151. 2019

Chan, Chian Ying Estelle. *Why Affordable Housing Developers Should Go Public: REITs as an Alternative Source of Capital for Housing Development*. Massachusetts Institute of Technology, MSRED thesis. 2016 DSpace, https://dspace.mit.edu/handle/1721.1/107862

Committee for a Responsible Federal Budget. *The Tax Break-Down: The Low-Income Housing Tax Credit*. 2013. http://crfb.org/blogs/tax-break-down-lowincome-housing-tax-credit

Corcoran, Rose et al. (Eds.). *The Greater Boston Housing Report Card 2019*. The Boston Foundation. 2019

Ford, Teri. *The Relationship Between the Massachusetts Building Code and Construction Cost Escalation*. Massachusetts Institute of Technology, MSRED thesis. 2018 DSpace, https://dspace.mit.edu/handle/1721.1/120654

Friedman, Lawrence. "Public Housing and the Poor." *Housing Urban America*. Chicago. 1973

Garcia-Diaz, Daniel. "Low-Income Housing Tax Credit: Improved Data and Oversight Would Strengthen Cost Assessment and Fraud Risk Management." The Government Accountability Office. October 13, 2018

Gauldie, Enid. *Cruel Habitations: A History of Working-Class Housing 1780-1918*. George Allen & Unwin Ltd. London. 1974

Hembre, Eric. "An Examination of the First-Time Homebuyer Tax Credit." *Regional Science and Urban Economics*. November, 2018

Hickman, Paul et al. "The Impact of Direct Payment of Housing Benefit: Evidence from Great Britain." *Housing Studies*, Vol. 32, Issue 8. November, 2017

"Housing a Changing City: Boston 2030, 2018 Update." City of Boston, Office of the Mayor. September, 2018. https://docs.google.com/document/d/1WRWTkvId7_hAKiKz-_F8-J_HCq5mCrWKxBUeFOVgwaM/edit

Husock, Howard. *America's Trillion-Dollar Housing Mistake: The Failure of American Housing Policy*. Ivan R. Dee. 2003 (Please note: this is not an academic work; it is an unresearched collection of opinions. Its presence in this bibliography should not be construed to lend it the same credibility as other works on this list. It is, however, a useful catalog of contemporary right-wing sentiment regarding housing policy, written by an author who resides in Boston.)

Jakubovich, Paul and Vollmert, Les. "National Register of Historic Places Registration Form: Garden Homes Historic District." National Park Service. December 6, 1989

Jan, Tracy. "Redlining was banned 50 years ago. It's still hurting minorities today." *The Washington Post*. March 28, 2018

Johnson, Timothy Werner. *Comparison of Environmental Impacts of Steel and Concrete as Building Materials Using the Life Cycle Assessment Method*. Massachusetts Institute of Technology, SM thesis in Civil & Environmental Engineering. 2006 DSpace, https://dspace.mit.edu/handle/1721.1/34608

Kalugina, Anastasia. "Affordable Housing Policies: An Overview." *Cornell Real Estate Review*, Vol. 14. 2016

Knox, Nora. "Green Building Costs and Savings." U.S. Green Building Council. March 25, 2015. https://www.usgbc.org/articles/green-building-costs-and-savings

Korinth, Kevin C. "On Utah's 91 Percent Decrease in Chronic Homelessness." *AEI Paper & Studies*. March, 2016

Lisinski, Chris. "Rental Price Burden in Mass. Surpasses New York and D.C., Report Finds." WBUR. June 19, 2019

Lowrey, A. (2013, December 9). "With Rental Demand Soaring, Poor Are Feeling Squeezed." *The New York Times*, December 9, 2013

McClure, Kirk. "Deconcentrating Poverty with Housing Programs." *Journal of the American Housing Association*, Vol. 74, Issue 1. 2008

Meehan, Eugene J. *Public Housing Policy: Convention Versus Reality*. The Center for Urban Policy Research, Rutgers University. 1975

Mercadante, Kevin. "How Much Does It Really Cost to Own Your Car? You'll Be Amazed." Money Under 30. April 16, 2019. https://www.moneyunder30.com/true-cost-of-owning-a-car

Mitchell, Bruce. "HOLC 'Redlining' Maps: The Persistent Structure of Segregation and Economic Inequality." National Community Reinvestment Coalition. 2017

Novogradac, Michael et al. "Tax Reform and Its Consequences for Affordable Rental Housing." *Journal of Affordable Housing and Community Development Law*, Vol. 27, Issue 1. 2018

Pyati, A. "Impact Investing Platforms Create New Equity Streams for Affordable Housing." *Urban Land*, June 3, 2016

Rios, Simón. "Why Boston Medical Center is Investing in Housing." WBUR. June 17, 2018. https://www.wbur.org/commonhealth/2018/06/27/boston-medical-center-affordable-housing

Saltzman, Amy. "Thousands Flood Cambridge Affordable Housing Waitlist." *Wicked Local* October 26, 2016. https://cambridge.wickedlocal.com/news/20161026/thousands-flood-cambridge-affordable-housing-waitlist

Schwartz, Alex and Melendez, Edwin. "After Year 15: Challenges to the Preservation of Housing Financed with Low-Income Housing Tax Credits." *Housing Policy Debate*, Vol. 19, Issue 2. 2008

Silverman, Robert Mark and Patterson, Kelly L. (Eds.) "Fair and Affordable Housing in the U.S." *Studies in Critical Social Sciences*, Vol. 33. 2011

Sinai, T. "The Rental Affordability Crisis." *Public Policy Initiative*, *2*. 2014

Spearance, Cameron. "Boston Is Running Out of Options to Tackle Sky-High Housing Costs." Bisnow Boston. November 15, 2018. https://www.bisnow.com/boston/news/multifamily/boston-is-running-out-of-available-options-to-tackle-sky-high-housing-costs-95038

Stegman, Michael A. *State and Local Affordable Housing Programs: A Rich Tapestry*. Urban Land Institute. 1999

Stephens, Mark and Leishman, Chris: "Housing and Poverty: A Longitudinal Analysis," *Housing Studies*, Vol. 32, Issue 8. November, 2017

Weiss, Brandon M. "Locating Affordable Housing: The Legal System's Misallocation of Subsidized Housing Incentives." *Hastings Law Journal*, Vol. 70, Issue 1. 2018

Williams, S. *Preserving Multifamily Workforce and Affordable Housing: New Approaches for Investing in a Vital National Asset*. Urban Land Institute, Washington, D.C. 2015