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Promoting Integration in Boston through Income-Restricted Housing Opportunities

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Disclaimer

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Honor Statement

On my honor as a student, I have neither given nor received aid on this assignment.

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Acronyms

AFHM- Affirmative Fair Housing Marketing

AMI- Area Median Income

BHA- Boston Housing Authority

BPDA- Boston Housing and Development Agency

DND- Department of Neighborhood Development

FHA- Fair Housing Act

HCV- Housing Choice Voucher

HUD- Department of Housing and Urban Development

LEP- Limited English Proficiency

MAP- Mobility Assistance Program

R/ECAP- Racially/Ethnically Concentrated Area of Poverty

Glossary

Affirmatively Further: the language used in the Fair Housing Act to describe the requirement of cities to actively pursue and encourage integration

Affirmative Marketing: required advertising of income-restricted housing unit to populations determined least likely to apply

Fair Housing Lottery: the method in which AFHM staff randomize an income-restricted housing development's applicant pool to ensure equitable distribution of income-restricted housing units

Least Likely to Apply: demographic group, most often racial, who are determined to be least likely to apply to an individual income-restricted housing development based on their representation in the development's ward in relation to their representation in the city as a whole or geographic isolation

Marketing Agent: the person responsible for carrying out the affirmative marketing and tenant selection process for developments, most often these people are employed by a property management firm and are separate from the developer's owner

Metrolist: Boston's clearinghouse for income-restricted and affordable housing opportunities. Every development that completes an Affirmative Fair Housing Marketing plan is listed on MetroList. It is emailed out to constituents weekly.

Racially/Ethnically Concentrated Areas of Poverty: a census tract with a non-white population of 50% or higher and has a poverty rate at or above 40% or three times the poverty rate of the average census tract in the metropolitan area, whichever is lower (US Census Bureau, 2017).

Tenant Selection Process: conducting a fair housing lottery and compliance steps for a given income-restricted housing development

Executive Summary

Boston is one of the most segregated cities in the United States in all senses of the word (Logan & Stults, 2011). Despite lawsuits and the Fair Housing Act, the city has not seen a significant decrease in racial residential segregation since the 1980's. This persistent segregation has considerable consequences on minority individuals' life outcomes, such as lower college graduation rates and lower potential earnings (Boustan, 2013).

The Affirmative Fair Housing Marketing (AFHM) program exists within Boston's Department of Neighborhood Development and the Boston Fair Housing Commission to facilitate equitable marketing of income-restricted housing units, as well as ensure equitable distribution of units through the tenant selection process. This program holds a unique position in the income-restricted housing landscape in that it works most closely with private marketing agents and developers, who then work directly with applicants to income-restricted housing opportunities. The AFHM program does not directly award housing opportunities, rather that is the responsibility of the housing development's marketing agent.

In this report, I present and evaluate four policy alternatives with the goal of increasing diversity of income-restricted housing. These policy alternatives are:

1. **Continue with Current Policy**
2. **Develop a Mobility Peer Counseling Program**
3. **Expand Advertisement Requirements**
4. **Include a Preference for Applicants Living in R/ECAPs**

I evaluate each policy alternative on its cost, effectiveness, cost effectiveness, equity, and feasibility. In measuring feasibility, I considered both administrative and political feasibility. After evaluating each of the policy alternatives, I recommend including a preference for applicants living in R/ECAPs. This policy alternative is the most feasible for the AFHM program to implement, while being cost effective. Ultimately including a preference is the most direct way the AFHM program can facilitate neighborhood integration.

Problem Definition

Boston is among the most segregated cities in the United States. It ranks as the 11th most White-Black segregated of the 384 total metropolitan areas in the US, based on 2010 Census data (Logan & Stults, 2011).[1] Boston is ranked 4th and 5th in White-Hispanic and White-Asian segregation, respectively, of the 384 total metropolitan areas in the US (Logan & Stults, 2011). This is despite efforts made by the City of Boston to affirmatively further fair housing policies, largely through establishing the Fair Housing Commission and Office of Fair Housing and Equity. The Affirmative Fair Housing Marketing (AFHM) program is Boston's current policy for affirmatively furthering fair housing choice and promoting integration. This program is correlated with a slight decline in segregation, but as of 2010 Boston remains hypersegregated (Henderson, 2015).

The scores of segregation shown in Table 1, below, represent where Boston scores on the dissimilarity index, which measures how evenly two racial groups are spread over a geographic area, and how those scores are ranked in comparison to other US cities. A full description of the dissimilarity index can be found in Appendix I.

Table 1. Dissimilarity Index Scores Over Time

Segregation Type	1980 Segregation	2010 Segregation	Ranking in the US
White-Black	79.8	67.8	11th
White-Hispanic	61.8	62.0	4th
White-Asian	58.7	47.4	5th

(Logan & Stults, 2011)

[1] The 2010 US Decennial Census is the most reliable source for demographic data used to calculate segregation indexes. Updated segregation scores and rankings will not be available until after the 2020 Decennial Census.

Evaluative Criteria

The following criteria will serve as evaluative measures used to assess the strengths and weaknesses of each policy alternative.

Cost

Cost is measured by the monetary cost borne by the City of Boston in order to achieve the projected outcome of each policy alternative. These costs include any time or resources the City has to use in developing new policy, training employees on new policy, reviewing additional compliance materials, or organizing new programs. Costs borne by development companies and marketing agents will not be considered in this analysis. The specific assumptions and uncertainties regarding cost estimates can be found in the cost effectiveness analysis, in Appendix IV.

Effectiveness

Effectiveness refers to the percent increase in diversity of housing lottery applicant pools that occurs as a result of each policy alternative. The data needed to measure racial demographics of housing lottery applicant pools is not available for this analysis. Therefore, neighborhood status serves as a proxy for race in this analysis. Diversity of housing lottery applicant pools is measured by the amount of applicants currently living in a segregated neighborhood in this analysis. Assuming that increasing the diversity of housing lottery applicant pools increases the likelihood that income-restricted housing units have diverse residents, the diversity of housing lottery applicant pools is an appropriate instrument by which to measure the effectiveness in neighborhood integration.

Cost Effectiveness

Cost effectiveness measures each alternative's effectiveness in relation to its cost. I calculated cost effectiveness by dividing the cost of each alternative, by its effectiveness estimate, or percent increase in diversity of housing lottery pools. The specific assumptions, uncertainties, and calculations of the cost effectiveness analysis can be found in Appendix IV.

Equity

Current policy states affirmative marketing efforts must be intended to reach both the general public and those least likely to apply to any given income-restricted housing development (City of Boston Office of Fair Housing and Equity, n.d.). In addition to this standard, it is important the proposed policy interventions impact residents equitably, as the mission of the AFHM program is to promote fair and equitable housing for the residents of Boston. Equity measures both the geographic scope of the policy alternative, or the how far the benefits of the policy alternative reach throughout the city, and the volume of potential applicants living in a segregated neighborhood that can benefit from the alternative. A person benefits from an alternative if they become more likely to apply to a fair housing lottery after implementation of the alternative.

Feasibility

When evaluating an alternative's feasibility, I will consider both administrative and political feasibility. Political feasibility assesses the AFHM program's ability to develop an alternative's formal policy and implementation procedure. The AFHM program must work with policy officials at the Department of Neighborhood Development (DND) and the Boston Planning and Development Agency (BPDA). The policy these officials develop do not need to be approved by a legislative body, such as City Council. They are simply required to be in accordance with the US Department of Housing and Urban Development (HUD) requirements and the current consent decree in place.

AFHM staff members review dozens of income-restricted housing developments in a year, and each development requires numerous hours of attention. Administrative feasibility measures the AFHM program's capacity to implement a policy alternative successfully, or in a way that reaches the policy's projected outcomes. The AFHM program's capacity is determined by the available time and staff resources.

Policy Alternatives

There are a number of policies the City of Boston could implement in an attempt to promote neighborhood integration, specifically through increasing diversity of income-restricted housing. The policy alternatives presented below intend to encourage integration within the City of Boston through the AFHM Program. Each alternative focuses on encouraging those living in segregated neighborhoods to apply to income-restricted housing opportunities over the next three years. Residence in a segregated neighborhood serves as an appropriate proxy for racial diversity because the vast majority of people living in segregated neighborhoods are people of color. There is a possibility that applicants living in segregated are white households trying to leave the area, but it is more likely that that these applicants are people of color looking to move out of segregation. While using residence in a segregated neighborhood as a proxy for racial diversity does not provide a perfect estimate of diversity, it is the best measurement available.

The AFHM program can only implement one of the following policy alternatives due to its limited administrative capacity. There is currently one full-time staff member working on the AFHM program, the Affirmative Marketing Specialist. There is a small number of DND staff members, approximately four, working on AFHM tasks part-time. This small team is responsible for reviewing compliance documents of dozens of income-restricted housing developments, as well as working with marketing agents to ensure income-restricted housing opportunities are marketed correctly. The following policy alternatives cannot be adopted or implemented simultaneously, given the AFHM program's limited bandwidth.

Alternative 1: Continue with Current Policy

DND and the Boston Housing Authority (BHA) worked together to complete the second draft of Boston's fair housing assessment, required by HUD, in 2017 in an effort to remain committed to fair housing despite HUD's current stance. HUD is not reviewing assessments of fair housing for the time being; more information on HUD's recent position on fair housing can be found in Appendix III.

DND and the BHA's findings in the Boston Fair Housing Assessment reflect Boston's dissimilarity index scores, reporting that the city has the highest degree of White-Black segregation of the three types of segregation measured (DND & BHA, 2017). In addition to facing the highest degree of segregation, Black residents are also most concentrated around areas of poverty in comparison to other racial minorities. DND and the BHA report that Black residents are most concentrated in the South-Central area of Boston, including Roxbury and Dorchester (DND & BHA, 2017). The report makes no mention of Mattapan, with Black residents making up 75% of the population, or Hyde Park, which has a higher percentage of Black residents than Dorchester according to the BPDA's demographic data (2018). This

demographic data shows that 78% of Boston's Black residents are living in only 17% of the city's neighborhoods (2018).

DND and the BHA report Hispanic residents are fairly integrated with White residents, with the exception of racially or ethnically concentrated areas of poverty (R/ECAPs). Segregation of both Hispanic and Asian residents is highest in the Limited English Proficiency populations speaking Spanish and Chinese (DND & BHA, 2017). The Chinese-speaking population is concentrated in Chinatown and the Spanish-speaking population is concentrated in East Boston. Chinatown is home to the largest concentration of Chinese-speaking residents, but the neighborhood's White population has been increasing in recent decades. The average household income in Chinatown has increased with the increased White population, although the average household income has not increased for Chinatown's shrinking Asian population (DND & BHA, 2017). Overall, 51% of Boston's Hispanic population lives in just 13% of the city's neighborhoods and 53% of Boston's Asian residents live in the same proportion of the city.

For the purpose of this analysis, the neighborhoods identified in the Boston Fair Housing Assessment as having concentrated minority populations will be considered segregated neighborhoods. These neighborhoods include: Chinatown, Dorchester, East Boston, and Roxbury. I have also included Mattapan and Hyde Park to the list of segregated neighborhoods, given their racial makeup. The neighborhoods considered to be segregated are shown in Figure 1, right, in red. A list of the neighborhoods considered to be segregated and neighborhood racial demographics can be found in Appendix V and VI.

Figure 1.

Neighborhoods Identified as Segregated

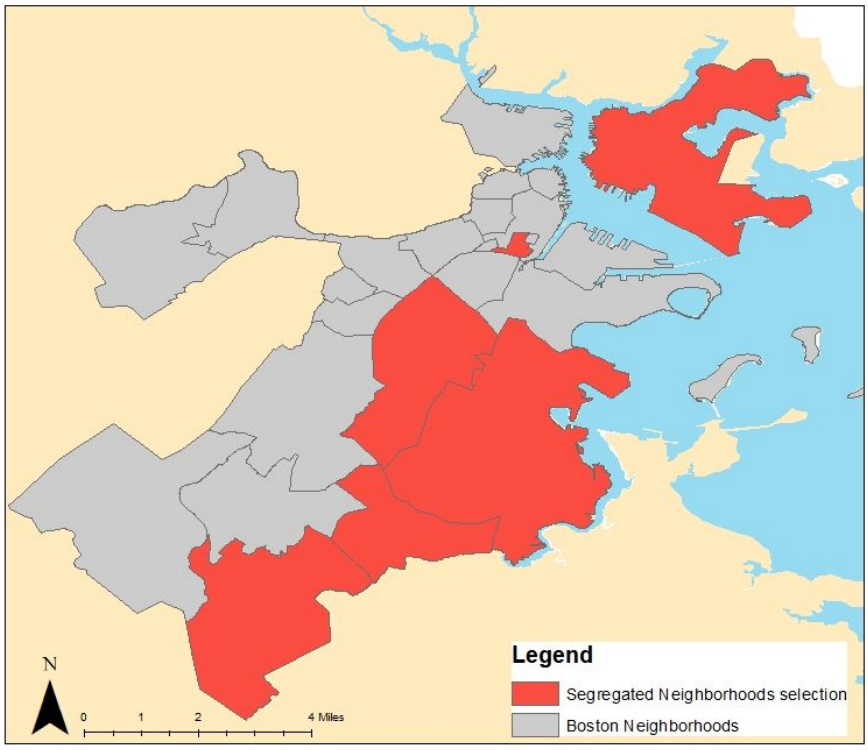


Figure 2, below, is a map created by the Weldon-Cooper Center showing the racial makeup of Boston using 2010 Census data. Each Boston resident is represented with a colored dot, based on race, to create the visual (Cable, 2013). This map of Boston visually represents the racial residential segregation that dissimilarity index indicates, and the City has recognized.

Figure 2. Racial Dot Map

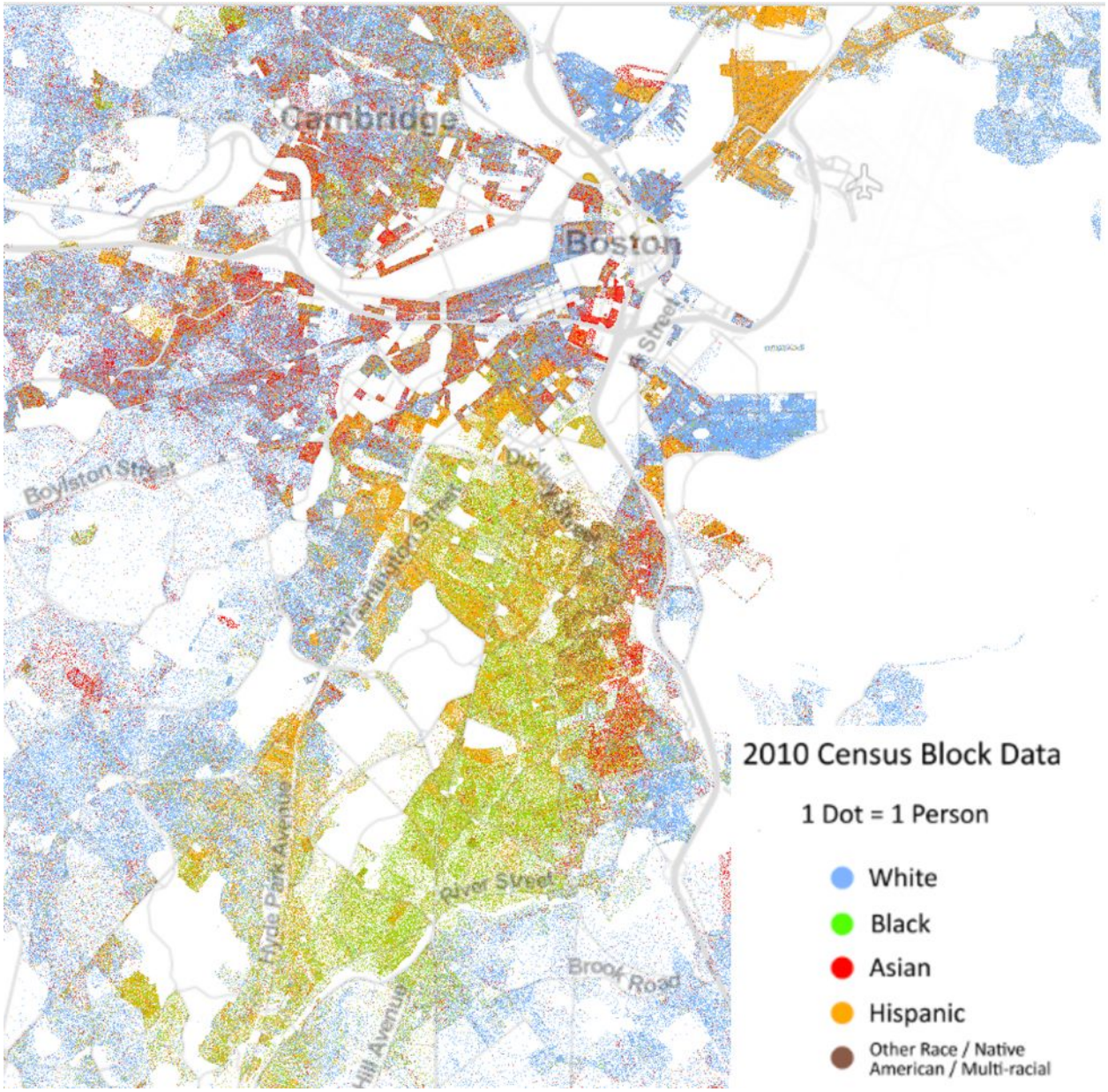
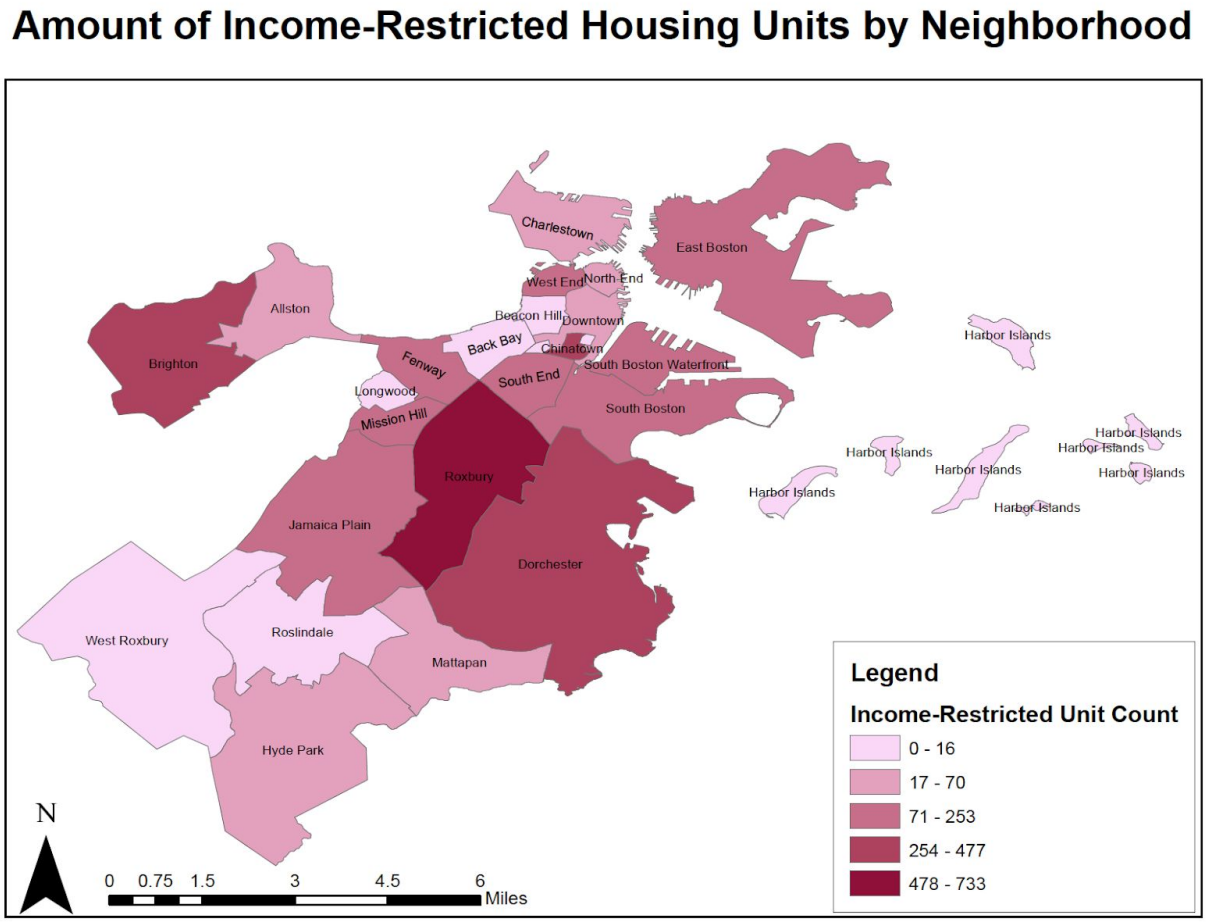


Figure 3, below, shows the number of income-restricted housing units that have been, or are being, developed in each neighborhood since 2013.[2] The highest number of income-restricted housing units are available within segregated neighborhoods, with the most units located in Roxbury. Brighton is also an area of high development, which could provide those living in segregated communities the opportunity to integrate.

Figure 3. Location of Income-Restricted Housing Developments



Assuming that low diversity in income-restricted housing lottery applicant pools reflects barriers to integration for those living in segregated neighborhoods, the diversity of housing lottery applicant pools can be also used as an indicator for accessibility to income-restricted housing opportunities.

Based on the housing lottery applicant pools from 2015, 37% of applicants to income-restricted developments were living in segregated neighborhoods. The diversity of housing lottery applicant pools is slightly higher for developments not located in segregated neighborhoods, at 38%. Developments located within

[2] The estimates of income-restricted units developed in each neighborhood are based on data collected by Affirmative Fair Housing staff, as of February 2019.

segregated neighborhoods had less diverse lottery applicant pools, with 27% of applicants living in segregated neighborhoods.[3] This decreased diversity of lottery applicant pools for developments located within segregated neighborhoods could be evidence of the residents' desire to move out of segregation. Overall, applicants living in segregated neighborhoods are underrepresented in income-restricted housing lotteries in relation to their representation in the city population (41%). These estimates were calculated using housing lottery applicant pool data gathered prior to when the City of Boston launched an online application for income restricted housing opportunities in 2017. This means diversity calculations above are based on significantly smaller housing lottery applicant pools than the size of current applicant pools. Housing lottery applicant pool diversity may have changed in response to launching the online application, but the magnitude of that change is unknown.

In order to comply with the Fair Housing Act, HUD regulations, and the current consent decree that applies to fair housing, the City of Boston is required to continue their current affirmative fair housing marketing efforts. This means that the current policy serves as a baseline onto which the next three policy alternatives presented could be added. Continuing with the current policy, without taking any other action, would provide income-restricted housing opportunities to those who have been adversely affected by historic segregation in Boston, but would not increase current level of accessibility to these opportunities. Groups determined least likely to apply would continue to be targeted in newspaper advertisements in an attempt to expand accessibility to housing developments. Continuing with current policy means segregation will to improve at the very slow, and insignificant, pace that it has been improving since 1980 (Logan & Stults, 2011).

Cost

The total cost of simply continuing the current policy over the next three years is approximately **$395,000**. This cost estimate is based on the hours spent by the AFHM staff, which are spent in meetings about developments, working with marketing agents, and reviewing making plans and compliance documents. This cost estimate serves as the baseline onto which the following policy alternatives will be added, since the AFHM program is required to continue with this policy at a minimum. A detailed description of the assumptions and calculations made in order to get this estimate can be found in Appendix IV, part C.

Effectiveness

Based on the 2015 housing lottery applicant pool data, the current policy has produced moderate diversity, with 1,471 of the 3,985 housing lottery applicants, or 37%, living in segregated neighborhoods. Continuing with the current policy will **not likely lead to an increase** in this estimated diversity of housing lottery applicant pools. Although the effectiveness of the AFHM program's current policy serves as the baseline used to measure the effectiveness of the other proposed policy alternatives.

[3] Housing lottery applicant data analysis results can be found in Appendix VII.

Cost Effectiveness
Given the total cost of the AFHM program over the course of 3 years and its projected effectiveness, the cost effectiveness for continuing the current policy is **$74 per additional applicant living in a segregated neighborhood**.

Equity
The Fair Housing Commission and Affirmative Marketing Staff work hard to keep the AFHM process equitable, but the current system is only **moderately equitable**. Applications are available online, so it is accessible across the city. The current policy is lacking in providing direct benefits to applicants living in segregated neighborhoods it benefits. Since the most development is happening in Roxbury and Dorchester, there is less advertising going to those living in those segregated neighborhoods.

Feasibility
Continuing with the current policy has a **high political feasibility** because the AFHM program would not have to develop new policy, only maintain the support it has from the Office of Fair Housing and Equity and the DND. In December, the AFHM program officially moved from the Office of Fair Housing and Equity to be housed within DND in order to receive necessary staffing resources. This recent change means it is reasonable to believe that this support will continue, especially because of Boston's high need for affordable housing.

The addition of part-time staff support to the one Affirmative Marketing Specialist has made the **administrative feasibility** of continuing the current policy **high**. The AFHM program has enough staff to keep up with compliance review without creating a backlog of income-restricted housing developments.

Alternative 2: Mobility Peer Counseling Program

According to research by David Sanchez et al. (2015), the key to battling racial residential segregation is to promote residential mobility and making affordable housing in high-opportunity neighborhoods[4] more accessible. This policy alternative aims to encourage residential mobility as the method for increasing integration through a mobility peer counseling program. Mobility peer counselors would serve as a community resource within segregated neighborhoods committed to promoting residential mobility and income-restricted housing units.

A number of studies have shown that mobility counseling has helped low-income households move to high opportunity neighborhoods, by opening homeseekers' perception of housing choices and thrive in unfamiliar places (Myhre & Watson, n.d.). Low-income households living in segregated neighborhoods often face an information gap, in that they have limited knowledge of housing opportunities in high-opportunity neighborhoods (Open Communities Alliance, n.d.). In addition to the limited knowledge of housing opportunities, low-income households are often forced to make housing choices in response to time sensitive factors. This does not afford these homeseekers the necessary time to learn of income-restricted housing opportunities in new neighborhoods (Scott, 2013). Mobility counselors are able to connect homeseekers to local resources in unfamiliar places, making them feel less vulnerable and more open to moving (Myhre & Watson, n.d.).

Moving to Opportunity was a 10-year research demonstration that HUD conducted in five US cities, including Boston, to test the effects of free housing choice and mobility counseling on life outcomes (Adam et al., n.d.). This program empirically shows that free housing choice and mobility counseling is effective in encouraging low-income households to move to high opportunity neighborhoods. It also shows that children of low-income households who grow up in higher-income areas have better life outcomes, such as higher potential income, better health, and higher educational attainment (Scott, 2013).

Many minority homeseekers make their housing selections based on limited information or perceived exclusivity (Seicshnaydre, 2015), despite attempts made by fair housing laws and policies to mitigate this information gap. This information gap minority homeseekers face may be a data infrastructure issue. In order for fair housing choice programs to allow for true housing choice, there must be access to full information and the ability to use it to determine programmatic level solutions (Harkness, n.d.). At this time there is only one comprehensive listing of income-restricted housing opportunities in Boston, Metrolist. Mobility peer counseling is a way to increasing access to information on income-restricted housing opportunities and would allow for the information gap minority home seekers face to shrink.

[4] High-opportunity neighborhood can refer to neighborhoods with low poverty rates, and high education rates, and a predominantly White population (Turner, Nichols, Comey, Franks, & Price, 2012).

In addition to Moving to Opportunity, mobility counseling has been proven an effective method in improving access to high-opportunity neighborhoods in both Dallas and Connecticut. The Inclusive Communities Project, run the Mobility Assistance Program (MAP), made housing choice voucher (HCV) holders in Dallas aware of high-quality rental housing in lower poverty areas, while also increasing access to these housing options (Inclusive Communities Project, Inc., 2013). MAP was successful in helping all HCV holders, especially African American HCV holders, move to low distress and high opportunity neighborhoods (Inclusive Communities Project, Inc., 2013). The Open Communities Alliance works throughout Connecticut to provide mobility counseling services to those receiving Department of Housing vouchers, in order to provide low-income families with access to full information about housing opportunities in a variety of neighborhoods (Inclusive Communities Project, Inc., 2013).

This policy alternative relies on the assumption that residents who have successfully applied for income-restricted housing lotteries and have occupied an income-restricted housing unit are qualified mobility counselors. I am also assuming that mobility counseling will be just as successful for low and middle-income people without housing vouchers, as it has been with low-income people with housing vouchers.

Cost

The cost of implementing a mobility counseling program over the next 3 years is approximately **$96,000**, in addition to the baseline cost of the current policy. This cost estimate includes the costs of hours spent in implementation, as well as the costs of materials necessary to run the mobility peer counseling program. The mobility peer counselors will require supplies such as computers, pens, and paper. The AFHM program will also incur costs to market the new mobility peer counseling services. A detailed description of the costs considered in this estimate is found in section D the cost effectiveness analysis, located in Appendix IV.

Effectiveness

A mobility counseling program run by the Chicago Housing Authority resulted in a 43% increase in moves from a segregated community among Housing Choice Voucher (HCV) holders (Cunningham, Popkin, Godfrey, & Bednarz, 2002[5]). Although there are differences between Chicago's mobility counseling program and the mobility peer counseling program this alternative proposes, Chicago's program serves as a reasonable prediction for the outcome of this alternative. Boston's overall level of segregation is comparable to Chicago, even though the two cities are dissimilar in size. Assuming that a mobility peer counseling program without an attached HCV will be just as effective as one with an attached HCV, the projected effectiveness of this alternative is a **43% increase in diversity of housing lottery applicant pools**.

[5] Mobility counseling programs were popular in between the 1990's and early 2000's, around the time of HUD's moving to opportunity. Therefore, most available data comes from evaluations conducted during this timeframe.

Cost Effectiveness
The cost effectiveness of a mobility counseling program would be **$42 per applicant living in a segregated neighborhood**. The peer volunteer model of this proposed mobility counseling program makes it very cost effective, although the high cost effectiveness comes at the price of professional mobility counselors.

While this cost effectiveness estimate is made upon informed assumptions, there is uncertainty. A mobility counseling program conducted in Richmond, VA resulted in only a 16% increase in moves to non-segregated neighborhoods (Berdahl-Baldwin, 2015). Similar to the mobility counseling program in Chicago, this program included HCVs. If this alternative's effectiveness were to reflect that of Richmond's mobility counseling program, it would result in a cost effectiveness of $112 per applicant living in a segregated neighborhood. It is most likely the actual effectiveness and cost effectiveness will fall between these two estimates.

Equity
A mobility counseling program is **highly equitable** because it will bring information on income restricted housing to those living in segregated neighborhoods. The program will provide services directly to applicants, in their own neighborhood. Locating mobility counseling spaces strategically throughout the city will increase equity, and make services more accessible for applicants currently living in segregation. The mobility peer counselors should be diverse, and reflect the minority groups that are not well represented in the lottery applicant pools.

Feasibility
The **political feasibility** of a mobility counseling program is **low** because of the additional cost and perceived additional work of implementation. The Affirmative Marketing Specialist would have to work with DND, the Office of Fair Housing and Equity, and the public libraries in order to fully develop and implement a mobility peer counseling program. DND and the Office of Fair Housing and Equity would have to agree to funding the program as well as to its design. While the mobility peer counseling program aligns with the mission of both agencies, it may be difficult for them to support a program as involved as a mobility peer counseling program.

A mobility peer counseling program has a **low administrative feasibility** because there is of the AFHM program's low staffing resources. The Affirmative Marketing Specialist would have to both develop the specifics of the program and oversee the program, all in addition the routine AFHM tasks. Chicago's mobility counseling program has 5 full time employees overseeing it, which is not currently feasible for the AFHM program. The current staffing of the AFHM program is not able to develop and oversee a mobility peer counseling program of the size necessary to be effective, especially in addition to reviewing affirmative fair housing marketing plans and compliance steps.

Alternative 3: Expanding Advertisement Requirements

In order to increase diversity in the housing lottery applicant pools, it is important to advertise income-restricted housing opportunities strategically (Potter, 2019). The current advertising requirements only include print newspaper advertisements and listing on Metrolist. This alternative would expand advertising requirements for income-restricted housing opportunities in order to target potential applicants more strategically. Specifically, the new requirements would include social media and public transit advertisements. Increasing the required forms of advertisement will help to inform potential applicant of income-restricted housing opportunities, therefore increasing the amount of people applying. These new advertisements would be placed in Boston's neighborhoods with high populations of those least likely to apply in an attempt to affirmatively further fair housing and increase the diversity of the housing lottery applicant pools.

According to the application request forms of recent AFHM developments, very few applicants discover income-restricted housing opportunities through the newspaper advertisements. The majority of applicants find out about income-restricted housing opportunities through Metrolist, which supports the call for internet advertisements. The American Community Survey 2017 5-year estimate claims 67% of low-income households surveyed hold internet subscriptions (US Census Bureau, 2017). This figure, paired with the popularity of Metrolist, is evidence that internet advertising would reach the highest number of potential applicants.

Newspaper subscriptions have been decreasing since the early 2000s, including online subscriptions (Pew Research Center, 2018). Circulation nationwide decreased by approximately 10% between 2016 and 2017, and online subscriptions decreased by 9% during that time (Pew Research Center, 2018). Social media membership has not seen this same decrease, with membership at approximately 67% of adults (Pew Research Center, 2018). Requiring internet and social media advertising would increase the number of potential applicants who see income-restricted housing opportunities, assuming there is a higher number of qualifying households with social media and internet than with newspaper subscriptions.

According to MBTA's 2015-2017 System Wide Passenger Survey, 58% of subway riders are eligible to apply for some kind of income-restricted housing opportunity. Twenty-six percent of respondents who listed their income were considered "low-income" (MBTA, 2018), or fall below 60% of the area median income (AMI), meaning they are eligible for a wide variety of income-restricted housing opportunities. Additionally, 42% of bus riders are "low-income" and 68% of riders are eligible for some kind of income-restricted housing opportunity (MBTA, 2018). The subway and bus ridership data shows that the majority of people at transit stops are eligible for some level of income-restricted housing, assuming that everyone riding public transit spends some amount of time at the transit stops. Given potential applicants' high usage of social media and public transit, social

media and transit stop advertisements for income-restricted housing opportunities would have a greater impact in increasing the number of diverse applicants than the current newspaper advertisements.

Cost
Expanding advertisement requirements will cost approximately **$55,000** over the course of three years, in addition to continuing the current policy. The costs of this alternative are most associated with increased time spent on compliance review and additional time spent working with marketing agents throughout the AFHM process. A detailed description of the assumptions and costs considered in this estimate can be found in section E of the cost effectiveness analysis, located in Appendix IV.

Effectiveness
Hartford Public Schools, in Hartford, CT, started using social media, newspaper, radio, and tv advertisements for their lottery school choice system in 2007. The diversity in Hartford's schools increased by approximately 40% between 2007 and 2016 (Quick, 2016). This means increased advertising led to a 4.44% annual increase in diversity, assuming that the increase occurred evenly over those 9 years. Hartford Public Schools employed a lottery system similar to Boston's AFHM lotteries in an attempt to integrate their hypersegregated schools, just as Boston uses the AFHM lotteries to increase neighborhood integration throughout the city. Given the similar circumstances of the Hartford Public Schools and AFHM lotteries, the **4.44% annual increase in diversity** found in Hartford is a reliable estimate for the expected outcome of expanding AFHM advertising requirements. This projection relies heavily on the assumption that advertising for school choice opportunities are just as effective as advertising for income-restricted housing opportunities.

Cost Effectiveness
When considering the total cost of implementing this policy alternative over the next 3 years and the projected effectiveness, expanding advertising requirements has a cost effectiveness of **$237 for each additional applicant living in a segregated neighborhood**.

The cost effectiveness of this alternative is sensitive to how effectively advertisements target potential housing lottery applicants. Social media advertisements can be easily targeted to particular groups. This means they may be able to increase the diversity of housing lottery applicant pools by more than 4.44%, making this alternative more cost effective. It is much more difficult to target transit stop advertisements. Although, if these advertisements are targeted successfully they could increase lottery applicant pool diversity more sigificantly than 4.44%.

Equity
This policy alternative is **moderately equitable**, because it has a large geographic scope but does not target applicants living in segregation in its implementation. Social media and public transit advertisements would reach a very wide range of people across the city. Since both social media and public transit are used by so many people the advertisements would get a lot of exposure, although there may not be direct benefits to Boston residents living in segregated neighborhoods. It is possible to target these advertisements to geographic areas, but impossible to directly target them to specific income or racial groups.

Feasibility
Expanding advertising requirements has **moderate political feasibility.** Expanding advertisements inherently increases the cost of advertising each income-restricted housing development. Private developers bear this increase in cost, which means production of income restricted housing units will become more expensive. Production of these housing units are mandated by the City, so developers cannot make up for these costs by producing lower quantities. Boston's desperate need for affordable housing means City policy officials may be skeptical of a policy that increases the cost of producing affordable housing, therefore making them skeptical of expanding advertising requirements.

This alternative has **high administrative feasibility** because it makes a small addition to an already administratively feasible system. The AFHM employees would be able to easily include the new advertising mediums into their current compliance review process. There would only be a slight increase in the time it takes to review advertising, therefore not straining the AFHM system.

Alternative 4: Add a Preference for Applicants Currently Living in R/ECAPs

Boston's Fair Housing Assessment, mentioned under Alternative 1: Continuing with Current Policy, focuses on R/ECAPs as well as general segregation trends. HUD defines an R/ECAP as a census tract with a non-white population of 50% or higher and a poverty rate at or above 40% or three times the poverty rate of the average census tract in the metropolitan area, whichever is lower (Department of Housing and Urban Development, 2018). There are currently eight distinct R/ECAPs, located in seven different neighborhoods throughout Boston. The quantity of R/ECAPS have doubled since 1990, but total area deemed an R/ECAP has decreased (DND & BHA, 2017).

There are currently a limited number of preferences available in income-restricted housing lotteries. They include preferences for Boston residents, disabled household member for accessible units, and first-time home buyer in income-restricted sales opportunities. This policy alternative adds a preference to the housing lotteries for applicants currently living in an R/ECAP. The new preference would behave in the same way that the existing preferences work. Applicants living in a R/ECAP would be randomized in the same lottery all other applicants, then separated out. The applicants living in R/ECAPs would then be the first screened for eligibility and offered a housing opportunity.

Adding a preference for applicants currently living in an R/ECAP serves as a race-neutral preference while still encouraging integration. Including race-neutral preferences in lotteries is a practice commonly used by charter schools in order to increase the diversity of their student bodies. Most often the lottery preference is based on socio-economic status, such as children qualifying for free or reduced lunch. Chicago Public Schools has employed a preference for low socioeconomic status in their 10 selective high schools, which has been successful in increasing the diversity of their student bodies. Chicago's selective high schools are 20% more racially diverse than the total number of students enrolled in Chicago Public Schools (Quick, 2016).

There are also weighted lotteries in which a specified number of opportunities are set aside for a specific applicant group. This has been done in charter schools throughout the country. One example being the Community Roots Charter School in Brooklyn, NY. The Community Roots Charter School reserves 40% of kindergarten seats for low-income students who have qualifying characteristics, including things like currently living in public housing (Potter, 2019). This form of lottery selection relates most to the units set aside for homeless households in AFHM lotteries. The challenge in applying this model to applicants living in R/ECAPs is determining which units will be set aside. Often one-bedroom or studio units are set aside for homeless households, but there would need to be a variety of unit types set aside for households living in R/ECAPs. This is because there is a larger variety of household size in those living in R/ECAPs than in homeless households. All things considered, a set-aside model is not the best way to weight income-restricted housing lotteries.

A geographic preference, rather than the socioeconomic preference used in charter schools, is more applicable for Boston's housing lotteries because housing lotteries are restricted to households with a qualifying income. It is infeasible to include a geographic preference for all applicants living in a segregated neighborhood because that would mean creating a preference for 40% of Boston residents (BPDA, 2018). A preference for applicants living in R/ECAPs would mean a much smaller number of applicants would receive the preference. Only 11% of Boston residents are currently living in R/ECAPs, and they are the share of Boston's population currently bearing the heaviest burden of segregation.

Cost

Including a preference for applicants living in R/ECAPs costs approximately **$58,000** over the course of three years, in addition to continuing current AFHM policy. The majority of the cost of this alternative lies within developing the specifics of the policy, because it is a significant conceptual change to the current policy. The rest of the cost estimate includes hours spent working with marketing agents to successfully implement the preference, hours spent training staff on the new preference, and the increase in hours spent on compliance review. A detailed description of the assumptions and costs considered in this estimate is found in section F of the cost effectiveness analysis, located in Appendix IV.

Effectiveness

Including a preference for applicants living in a R/ECAP would likely have similar impacts as other race-neutral lottery preferences, such as those employed in Chicago's selective high schools. Assuming the AFHM housing lottery applicant pools will react to a preference for applicants living in R/ECAPs in the same way as the school lotteries reacted to a race-neutral preference in Chicago, this alternative will result in a **20% increase in lottery applicant pool diversity**.

Cost Effectiveness

This alternative has a high cost effectiveness, with a cost of **$54 per each additional applicant currently living in a segregated neighborhood**.

The effectiveness of this alternative relies on residents of R/ECAPs being aware of this lottery preference, and their desire to move. This policy alternative also assumes that residents of R/ECAPs are informed on the current income-restricted housing opportunities. R/ECAP residents will be more likely to apply to income-restricted housing opportunities if they know that there is a preference in their favor. The effectiveness, and therefore the cost effectiveness would be lower than predicted if the R/ECAP residents are unaware of the preference or current income-restricted developments.

Equity

This policy alternative is **moderately equitable** because it makes income-restricted housing opportunities more accessible to Boston residents most affected by segregation, but it does not have as broad of benefits as other alternatives. While

including a lottery preference for applicants living in R/ECAPs provides direct benefits to the residents of Boston's eight R/ECAPs, residents of non-segregated neighborhoods do not get direct benefits.

Feasibility
This alternative has a potential for initial hesitation from policy officials, therefore the **political feasibility is moderate**. The initial hesitation will increase the time it takes to develop the details of a preference for applicants living in R/ECAPs. In the end I expect to be successful in developing this policy, so long as the DND and BPDA policy officials understand that this is a race-neutral method to increase diversity in income-restricted housing. The City of Boston has acknowledged that there is segregation throughout the city, and their responsibility to promote integration by affirmatively furthering housing opportunities. A preference for applicants living in R/ECAPs is more politically feasible than a preference for all applicants living in segregated neighborhoods.

While this alternative is a significant conceptual addition to the current policy, including a preference for applicants living in R/ECAPs has **high administrative feasibility** because in practice it is a simple addition to an existing lottery system. Boston's fair housing lotteries already include preferences, so including a preference for applicants living in R/ECAPs does not introduce a large logistical challenge. The marketing agents would be responsible for ensuring the applicants qualify for the preference proof of addresses. The AFHM employees would only be responsible for including this new preference in their existing compliance steps.

Outcomes Matrix

Table 2 describes how each policy alternative ranks against each evaluative criterion. The cost, effectiveness, and cost effectiveness for all of the policy alternatives apart from continuing with current policy are evaluated as marginal costs that the AFHM program would incur in addition to the baseline established by the cost, effectiveness, and cost effectiveness of the current policy.

Table 2.

		Continue with Current Policy	**Mobility Peer Counseling**	**Expand Advertisement Requirements**	**Lottery Preference for R/ECAP Residents**
Total Cost		$386,000	$96,000	$55,000	**$58,000**
Effectiveness		0% annual increase	43% annual increase	4.44% annual increase	**20% annual increase**
Cost Effectiveness*		$72	$42	$237	**$54**
Equity		Moderate	High	Moderate	**Moderate**
Feasibility	Political	High	Low	Moderate	**Moderate**
	Administrative	High	Low	High	**High**

*Cost effectiveness estimates the cost per additional unit of lottery pool diversity, or applicant living in a segregated neighborhood.

Recommendation

After considering the current constraints facing the AFHM program and evaluating each of the alternatives, I recommend **including a lottery preference for applicants living in R/ECAPs** (Alternative 4). In order for a policy alternative to achieve its projected effectiveness the AFHM program has to have the administrative capacity to implement the new policy fully. AFHM's administrative capacity is the largest constraint the program faces in terms of implementing a new policy, therefore administrative feasibility was the highest priority evaluative criterion in making this recommendation.

While administrative feasibility was the evaluative criterion of highest priority, effectiveness and cost effectiveness were the deciding criteria. Including a lottery preference for applicants living R/ECAPs scores exactly the same as expanding advertisements in feasibility and equity, but the two alternatives differ drastically in effectiveness and cost effectiveness. Ultimately, the effectiveness of expanding advertisement requirements is too low to justify recommending that alternative, especially because there was a comparable alternative with higher effectiveness.

Including a lottery preference for applicants living in R/ECAPs is a relatively cost effective way to improve AFHM's impact on racial residential segregation, and the best choice for action in the short term. Each of the proposed policy alternatives are effective in increasing the diversity of housing lottery applicant pools, but including a lottery preference for applicants living in R/ECAPs is the only alternative that has the potential to directly impact the diversity of income-restricted housing unit occupants. This alternative is unique in that it impacts applicants' standing in the lottery and tenant selection process. Influencing applicants' standing in the lottery pool is the most the AFHM program can do to influence the diversity of income-restricted housing unit occupants, therefore a lottery preference for applicants living in R/ECAPs is the most direct way the AFHM program can facilitate neighborhood integration.

If AFHM received more support in the future, a mobility peer counseling program would be the preferred policy alternative. The low feasibility of this alternative is what prevented me from recommending it for the short-term, since the mobility peer counseling program is the most equitable and cost effective alternative. A mobility peer counseling program would encourage integration while addressing the biases Boston residents have regarding certain neighborhoods. This is the only alternative that addresses the stigma and bias Boston residents have against neighborhoods through working directly with potential applicants living in segregated neighborhoods. The support of a mobility peer counseling program may

also lead to more sustainable neighborhood integration. Developing a mobility peer counseling program would require more full-time staff working on AFHM tasks, as well as a stronger relationship between the AFHM staff and occupants of income-restricted housing occupants.

Implementation

The first step in implementing a preference for applicants living in R/ECAPs is developing an official policy detailing exactly how the preference would be used. This policy would have to lay out exactly who would qualify for this preference, how to confirm their qualification, and which developments would include the preference. The Affirmative Marketing Specialist would work with the BPDA and DND policy officials to develop the City's official policy on this new preference.

After the details of the policy are established, both AFHM part-time staff and marketing agents have to be trained on implementing the preference. AFHM part-time staff should be trained in one or two meetings, like those in which they were originally trained on AFHM policies and compliance procedures. The most administratively feasible way to train marketing agents is using time they already spend interacting with the AFHM program. The Affirmative Marketing Specialist should integrate training on the preference for applicants living in R/ECAPs into the pre-marketing meetings required for each development. These meetings are meant to solidify the marketing, application, and lottery plans for each income-restricted housing development, making it a natural place for training marketing agents on the details of the new preference.

The final aspect of implementation is spreading awareness of the preference for applicants living in R/ECAPs. The simplest method for spreading awareness of this policy is to include an announcement in the weekly Metrolist email. Since Metrolist is the most common way applicants discover income-restricted housing opportunities, this announcement should reach a high share of potential applicants. The AFHM staff could then collect data on how each applicant heard about the preference to further refine the most effective method for spreading awareness of the new preference.

There is potential for unintended consequences with any policy intervention, including this one. A preference for applicants living in R/ECAPs could result in those applicants filling all the income-restricted units for developments, especially developments with a small amount of income-restricted units. Throughout the implementation process housing lottery rankings and income-restricted housing unit occupancy reports should be monitored.

Appendix I: The Dissimilarity Index

Racial residential segregation remains significant in many American cities today, although there has been a decrease in the severity of segregation (Logan, 2013). Segregation within communities is measured what is called a "dissimilarity index." More specifically the dissimilarity index measures how evenly two racial groups are spread across census tracts within a metropolitan region, with evenness defined by the racial makeup of the city as a whole. This 100-point index measures how racially dissimilar the community members are, with 100 being the most dissimilar and 0 being the most similar. The dissimilarity index rating represents the percentage of one group who would have to move in order for the Census tract to be considered even. A community with a score above 60 is considered to be significantly segregated (John R. Logan & Brian J. Stults, 2011). In 1980 Boston's dissimilarity index rating was 79.8, but in 2010 it was 67.8 (Logan & Stults, 2011). Although segregation has been steadily declining, Boston in still considered hypersegregated (Misra, 2015).

While most anti-discrimination legislation came about during the Civil Rights Movement, not all segregation in American cities is Black-White segregation. Logan and Stults (2011) analyze the segregation of the Black, Hispanic, and Asian populations in the 50 cities with the highest respective populations based on the 2010 Census data. While overall segregation is decreasing for the Black community, it is increasing for the Hispanic population (Logan & Stults, 2011). In comparison to other metropolitan areas, Boston is more White-Hispanic and White-Asian segregated than they are White-Black segregated. This is reflected in Boston's higher overall ranking in White-Hispanic and White-Asian segregation.

Throughout the United States, White-Hispanic and White-Asian segregation has not significantly decreased, and in some places increased, since 1980. Increased immigration of Hispanic and Asian population has contributed to the persistent segregation, although this is a larger concern for cities with higher immigration rates than Boston (Logan & Stults, 2011).

The dissimilarity index, as opposed to the isolation and exposure indexes, is best used for analysis in the context of this problem because it measures racial makeup in relation to the overall demographics of the city. This comparison with city demographics is important because that is how the AFHM program defines those least likely to apply to specific housing lotteries. The major weakness of the dissimilarity index is that it can only measure segregation between two racial groups, which makes it very difficult to evaluate segregation from a holistic perspective.

Appendix II: Supporting Research

The following research explores how living in a segregated neighborhood can negatively impact life outcomes of individuals, as well factors preventing further integration.

Zip Code Matters

Economic and educational opportunities can be limited by the neighborhood in which you live (Adam et al., n.d.). This is especially true for minority groups. Neighborhoods can be categorized as racially and/or economically exclusive. In 2015, 23.8% of all census tracts were found to be racially exclusive[6] and 16.9% were considered economically exclusive[7] (Seicshnaydre, 2015). Almost all of the census tracts found to be economically exclusive were also racially exclusive. Boustan (2013) showed that Black people living in segregated neighborhoods were less likely to graduate from college, have lower average earnings, and are more likely to become single parents. There are many possible causes for these outcomes. Geographic isolation of Black communities from economic opportunities is a leading theory. As a result of geographic isolation, Black employees face higher commuting costs and may not know about job openings (Boustan, 2013). In addition to lower average earnings and college graduation rates, a Harvard study found that rent is increasing 50% faster in urban poor neighborhoods than their rich counterparts (Joint Center for Housing Studies of Harvard University, 2017). Increased permeability of racial boundaries have reduced the sense of urgency in addressing racial residential segregation (Taylor, 2019). Without policy intervention these negative effects of the neighborhood in which one resides will continue.

Barriers to Further Integration

Americans have shown, through survey research, that they wish for more integration in their neighborhoods than they currently have (Seicshnaydre, 2015). Despite the desire for integration, racial groups are still living in "separate and unequal" conditions (Logan, 2013).

A major reason why Black and Hispanic households have made little progress in moving to neighborhoods with similar quality resources as those found in White and Asian neighborhoods is affordability (Logan, 2013). The similar quality resources these minority homeseekers look for do not exist in all neighborhoods, and are often expensive. In addition to housing costs, home seekers must consider cost of child care and other life necessities before moving to a new neighborhood (Bostic & McFarlane, 2013). These costs can serve as barriers in fair housing choice. Cultural aspects can also influence housing options of minority groups. On average, Hispanic households are larger than other American families. This means they require higher bedroom housing units, which limits their housing choice (Bostic & McFarlane, 2013). This is especially true for families seeking income-restricted

[6] Neighborhoods with a white population at or above 90% are considered racially exclusive (Seicshnaydre, 2015).

[7] Neighborhoods with a high-income population at or above 90% are considered economically exclusive (Seicshnaydre, 2015).

housing opportunities. Government policies, including AFHM, that aggressively promote integration are necessary in significantly decreasing Boston's racial residential segregation because simply allowing free housing choice will not lead to integration (Fayyad, 2018).

Cincinnati is an example of a city that has successfully combated segregation through community initiatives. The city made enough progress between 2000 and 2010 to make it off of the hypersegregated list (Henderson, 2015). Douglas Massey once said that "segregation is less about policy and more about economic opportunity and the degree of local racial prejudice" (Henderson, 2015). The passion for integration residents collectively put forth is what made Cincinnati so successful in combating segregation.

Current research has a significant gap in regards to White-Hispanic and White-Asian racial residential segregation. Logan & Stults' landmark study (2011) gave us the level of segregation those populations face, but there is no discussion of causes or implications. The literature focuses on White-Black segregation, and its effects. This may be a result of the long history of racism toward the black community, or because the Asian and Hispanic populations began to grow rapidly in the recent decades. Although the literature found the effects of segregation by studying White-Black segregation, the negative effects of living in a segregated community are generalizable across racial groups (Sanchez et al., 2015).

Appendix III: HUD's Stance of Fair Housing

The Fair Housing Act (FHA) charges cities to actively promote residential integration, in addition to prohibiting housing discrimination against protected classes. Affirmative Fair Housing Marketing is an important way to promote residential integration used in cities all over the United States. There have been amendments and updates to the FHA in the 50 years since it was passed, including a Obama-era rule requiring all communities receiving funding from the Department of Housing and Urban Development (HUD) to complete plan to desegregate at the risk of losing their federal housing dollars (Jan, 2018). The 2015 federal rule requires local governments, or similar entities, receiving federal housing dollars to consult with members of the community to assess fair housing, publicly report the details of segregation and concentrated poverty, and provide a 5-year plan of action to pursue integration (Wiltz, 2018).

HUD Secretary, Ben Carson, has been working to roll back the legally mandated responsibility of both HUD and local governments to fight racial discrimination and pursue integration in communities (Taylor, 2019). Carson has advised HUD employees to suspend current fair housing investigations and direct grantees of federal housing dollars not to submit their Assessment of Fair Housing (Taylor, 2019). The lack of HUD's oversight will make it harder for the City of Boston to get community members and private sector housing developers and marketing agents involved in promoting racial residential integration throughout the city (Wiltz, 2019).

Appendix IV: Cost Analysis

A. Measure of Effectiveness

Each of the four policy alternatives I considered have a shared goal of increasing the diversity of income-restricted housing occupants. The instrument through which this will be measured is the diversity of fair housing lottery applicant pools. The policy alternatives' shared outcome makes this analysis a good candidate for a cost-effectiveness analysis.

Neighborhood will serve as a proxy to measure racial diversity of lottery applicant pools because racial demographic data of lottery applicant pools was not available for this analysis. For the purposes of this analysis, diversity will refer to the number of applicants currently living in a segregated neighborhood. Each alternative's effectiveness estimates are based on the projected increase in housing lottery applicants living in segregated neighborhoods.

Each policy alternative has a baseline of continuing with the current AFHM policy. The work AFHM staff is currently doing is required by law, therefore the cost and effectiveness estimates represent the marginal cost of implementing the policy alternative.

This analysis uses 2015 data to evaluate the current diversity of housing lottery applicant pools, which is built on the assumption that 2015 data is representative of today's applicants. There is uncertainty as to whether this assumption is correct because the City of Boston launched an online application in 2017. After the online application launched the number of applicants per income-restricted housing opportunity significantly increased, but it is unknown as to whether the demographic makeup of the housing lottery applicant pool has changed or not.

B. Cost Assumptions

The cost of each alternative includes the number of hours AFHM staff spends on the alternative's implementation. There are three levels of AFHM staff. The affirmative marketing specialist is the lead in the AFHM program, and the only employee working full time on the AFHM program. There is a small group of DND employees who work on AFHM tasks part-time, as well as a DND deputy director working on AFHM tasks part-time. I determined the hourly wage of these employees using the publicly available 2017 salaries of City of Boston staff (Globe Staff, 2018), assuming a 50-week year and 35-hour week. The part-time AFHM support staff are not permanent, so I assumed a standard hourly wage of $34.29 for both the Affirmative Marketing Specialist and part-time staff.

The estimated number of hours spent on each aspect of the policy alternatives is based on my experience working with the AFHM staff. Hour estimates include time spent in meetings, preparing documents, interacting with marketing agents, and reviewing marketing plans and compliance documents. I have estimated the marginal costs of each policy alternative, given the AFHM program must continue to serve the public and fulfill their mandate.

To account for the costs associated with the AFHM's facility, I added an annual fixed cost for each employee. The annual fixed facility cost for the full time Affirmative Marketing Specialist is $2000. Since AFHM's additional staff supports the program part-time, they each have a $500 annual fixed facility cost. These estimates are conservative, but the total cost effectiveness is not significantly impacted by increasing these costs.

All costs and changes in diversity were calculated using a 7% discount rate. A 7% discount rate is the best choice for this analysis because the AFHM program's work is inherently dependent on the private real estate market. The cost, effective and cost effectiveness estimates were not sensitive to changing the discount rate.

C. Continue with Current Policy

This alternative does not require any increase in hours currently spent by AFHM staff. The very slow decrease in segregation scores between 1980 and 2010, do not support an assumption that allowing present trends to continue would lead to an increase in diversity of the housing lottery applicant pool. The cost effectiveness of continuing with current policy for the next 3 years serves as a baseline estimate onto which the cost of each policy alternative can be added.

The Affirmative Marketing Specialist spends an estimated 750 hours per year working directly with marketing agents, 100 hours per year in AFHM staff meetings, and 750 hours per year reviewing individual developments' compliance documents. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost, the total cost of the Affirmative Marketing Specialist's contributions to the current AFHM policy is $206,093.11 over the course of 3 years.

The DND Deputy Director spends an estimated 100 hours per year in AFHM staff meetings, with an hourly wage of $67.43. Including the annual fixed facility fee, the total cost of the Deputy Director's contributions to the current AFHM policy is $26,250.92 over the course of 3 years.

In estimating the total cost of the AFHM part-time staff, I am assuming that the hours spent by each of the 4 part-time staff members are equal and estimate the collective hours spent. The AFHM part-time staff spent a total 100 hours per year in AFHM staff meetings, and 750 hours per year reviewing individual developments' compliance documents. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost for all 4 part-time staff members, the total cost of the the AFHM part-time staff's contributions to the current AFHM policy is $162,595.88 over the course of 3 years.

The estimated total cost for continuing with current AFHM policy is $394,939.91, which is the sum of the costs of individuals' contributions. The lottery applicant pool diversity is 1,471 applicants living in a segregated neighborhood of the 3,985 total, according to 2015 housing lottery applicant pool data. Over the course of three years, there would be a projected diversity of 5,331.37 applicants living in a segregated neighborhood. The cost effectiveness of continuing current AFHM

policy is an estimated $74.08 per additional applicant living in a segregated neighborhood. The cost effectiveness estimate is found by dividing the total cost of continuing the current AFHM policy by the projected diversity.

D. Mobility Counseling

The costs of developing and administering a mobility counseling program are more robust than the other policy alternatives. In addition to hours of work, this alternative requires materials such as computers and promotional materials to gain public interest in the program. These materials cost an estimated $800 annually, costing $2,899 over the course of 3 years. I am assuming counseling locations will be held within public libraries, therefore will not be a cost to consider.

The Affirmative Marketing Specialist would have to spend approximately 50 hours developing the mobility counseling curriculum. They would also spend 25 hours per year recruiting volunteer mobility peer counselors and 250 hours per year overseeing counselors and the operations of the program generally in addition to the hours spent continuing current AFHM policy. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost, the total marginal cost of the Affirmative Marketing Specialist's contributions to implement a mobility peer counseling program is $43,139.53 over the course of 3 years.

The DND Deputy Director spends an estimated 10 hours developing the mobility counseling curriculum, with an hourly wage of $67.43. Including the annual fixed facility fee, the total marginal cost of the Deputy Director's contributions to the mobility peer counseling program is $2,486.46 over the course of 3 years.

In estimating the total cost of the AFHM part-time staff, I am assuming that the hours spent by each of the 4 part-time staff members are equal and estimate the collective hours spent. The part-time staff members would have to spend approximately 50 hours developing the mobility counseling curriculum. The AFHM part-time staff would spend a total 25 hours per year recruiting volunteer mobility peer counselors and 250 hours per year overseeing counselors in addition to the hours spent continuing current AFHM policy. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost for all 4 part-time staff members, the total marginal cost of the the AFHM part-time staff's contributions to the mobility peer counseling program is $43,139.53 over the course of 3 years.

The total cost for a mobility peer counseling program is an estimated $95,936.02, which is the sum of the costs of individuals' contributions. The mobility peer counseling program is projected to increase lottery applicant pool diversity by 43%. The projected increase in lottery applicant pool diversity is 632.53 applicants living in a segregated neighborhood per year. Over the course of three years, there would be a projected diversity of 2,292.49 applicants living in a segregated neighborhood. The cost effectiveness of a mobility peer counseling program is an estimated $41.85 per additional applicant living in a segregated neighborhood. The cost effectiveness

estimate is found by dividing the total cost of the mobility peer counseling program by the projected increase in diversity.

E. Expand Advertising Requirements

The Affirmative Marketing Specialist would have to spend approximately 20 hours determining the additional advertising requirements, and 2 hours training AFHM staff on the new requirements. They would also spend 50 hours per year working directly with marketing agents and 100 hours per year reviewing individual developments' compliance documents in addition to the hours spent on continuing current AFHM policy. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost, the total cost of the Affirmative Marketing Specialist's contributions to expanding advertising requirements is $25,980.00 over the course of 3 years.

The DND Deputy Director would have to spend approximately 20 hours determining the additional advertising requirements, with an hourly wage of $67.43. Including the annual fixed facility fee, the total cost of the Deputy Director's contributions to expanding advertising requirements is $3,114.25 over the course of 3 years.

In estimating the total cost of the AFHM part-time staff, I am assuming that the hours spent by each of the 4 part-time staff members are equal and estimate the collective hours spent. The AFHM part-time staff would have to spend 2 hours in training on the new advertising requirements. They would have to spend a total 50 hours per year working directly with marketing agents, and 100 hours per year reviewing individual developments' compliance documents in addition to the hours spent on continuing current AFHM policy. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost for all 4 part-time staff members, the total cost of the the AFHM part-time staff's contributions to expanding advertisement requirements is $25,467.98 over the course of 3 years.

The total cost for expanding advertisement requirements is an estimated $54,562.41, which is the sum of the costs of individuals' contributions. Expanding advertising requirements is projected to increase lottery applicant pool diversity by 4.44%. The projected increase in lottery applicant pool diversity is 65.31 applicants living in a segregated neighborhood per year. Over the course of three years, there would be a projected diversity of 230.64 applicants living in a segregated neighborhood. The cost effectiveness of expanding advertisement requirements is an estimated $236.57 per additional applicant living in a segregated neighborhood. The cost effectiveness estimate is found by dividing the total cost of expanding advertisement requirements by the projected increase in diversity.

F. Add a Preference for Applicants Currently Living in R/ECAPs

The Affirmative Marketing Specialist would have to spend approximately 35 hours developing the preference details, and 6 hours training AFHM staff and marketing agents on the new preference. They would also spend 100 hours per year working

directly with marketing agents and 50 hours per year reviewing individual developments' compliance documents in addition to the hours spent on continuing current AFHM policy. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost, the total cost of the Affirmative Marketing Specialist's contributions to including a lottery preference for applicants living in R/ECAPs is $27,296.19 over the course of 3 years.

The DND Deputy Director would have to spend approximately 35 hours developing the preference details and 3 hours training AFHM part-time staff on the new preference, with an hourly wage of $67.43. Including the annual fixed facility fee, the total cost of the Deputy Director's contributions to include a lottery preference for applicants living in R/ECAPs is $4,374.50 over the course of 3 years.

In estimating the total cost of the AFHM part-time staff, I am assuming the hours spent by each of the 4 part-time staff members are equal and estimate the collective hours spent. The AFHM part-time staff would have to spend 3 hours in training on the new preference. They would have to spend a total 100 hours per year working directly with marketing agents, and 50 hours per year reviewing individual developments' compliance documents in addition to the hours spent on continuing current AFHM policy. After determining the monetary cost of each hourly estimate and adding them to the annual fixed facility cost for all 4 part-time staff members, the total cost of the the AFHM part-time staff's contributions to including a lottery preference for applicants living in R/ECAPs is $25,993.17 over the course of 3 years.

The total cost for include a lottery preference for applicants living in R/ECAPs is an estimated $57,663.86, which is the sum of the costs of individuals' contributions. Including a lottery preference for applicants living in R/ECAPs is projected to increase lottery applicant pool diversity by 20%. The projected increase in lottery applicant pool diversity is 294.2 applicants living in a segregated neighborhood per year. Over the course of three years, there would be a projected diversity of 1066.27 applicants living in a segregated neighborhood. The cost effectiveness of including a lottery preference for applicants living in R/ECAPs is an estimated $54.08 per additional applicant living in a segregated neighborhood. The cost effectiveness estimate is found by dividing the total cost of including a lottery preference for applicants living in R/ECAPs by the projected increase in diversity.

G. Weaknesses in the Analysis

There are two major weaknesses in this analysis. The first is the lack of current racial demographic data of the housing lottery applicant pools. Without this data, I have to base my analysis on very large assumptions and very small sample sizes. I also do not have multiple years to compare in order to get a better idea of whether letting trends continue would have an impact on the diversity of housing lottery applicant pools.

The second major weakness of this analysis is a lack of recent research available on the topic of income-restricted housing, especially the lottery process. This has forced me to make the best analogies in order to project my outcomes. I chose to focus on charter schools because there has been a lot of research done in recent years, and many operate on a lottery system similar to that of AFHM. As of now I presented the best analogies I have, but will continue to work to find some more closely related to AFHM lottery applicant pool diversity.

All calculations can be found in a spreadsheet at this link:

https://preview.tinyurl.com/CherryCosting

Appendix V: Segregated Neighborhoods

Neighborhoods Considered Segregated

- Chinatown
- Dorchester
- East Boston
- Hyde Park
- Mattapan
- Roxbury

Appendix VI: Racial Demographic Data of Boston Neighborhoods

	White	Black/African American	Hispanic	Asian	Other
Allston	57.4	4.82	12.54	20.21	5.02
Back Bay	78.79	3.98	5.67	9.41	2.15
Beacon Hill	86.8	1.97	4.14	5.35	1.73
Brighton	69.78	4.47	8.81	13.4	3.55
Charlestown	75.78	4.65	9.68	8.18	1.72
Dorchester	22.16	43.01	16.99	9.31	8.52
Downtown	57.91	4.41	4.75	30.85	2.08
East Boston	37.16	3.17	52.88	3.49	3.31
Fenway	64.89	4.89	8.12	18.82	3.28
Harbor Islands	30.84	38.13	25.05	1.68	4.3
Hyde Park	28.25	46.76	20.13	1.66	3.21
Jamaica Plain	53.63	12.55	25.72	4.76	3.34
Longwood	69.55	7.76	9.4	9.9	3.39
Mattapan	6.37	76.35	12.1	1.72	3.46
Mission Hill	47.36	15.88	19.06	14.95	2.74
North End	91.64	0.62	3.58	2.9	1.27
Roslindale	50.68	20.39	23.35	2.56	3.03
Roxbury	10.19	52.31	28.86	2.1	6.54
Seaport	85.57	1.56	5.03	6.01	1.83
South Boston	54.11	13.4	13.57	16.08	2.83
West End	63.62	11.34	8.87	13.76	2.42
West Roxbury	73.25	9.72	8.45	6.49	2.09

Appendix VII: Housing Lottery Applicant Pool Data

Developments in Segregated Neighborhoods	Percentage of Applicants living in segregated neighborhoods	Number of Applicants living in segregated neighborhoods	Total Applicants
Radian	26%	60	227
Lofts@lowermills	28%	7	25
22 Liberty	15%	51	342
Total	38%	1404	3733

Developments not in Segregated Neighborhoods	Percentage of Applicants living in segregated neighborhoods	Number of Applicants living in segregated neighborhoods	Total Applicants
Waterside Place	39%	63	163
Watermark	47%	125	265
Viridian	28%	63	223
Van Ness	30%	77	258
Troy Boston	29%	35	121
The Armory	12%	29	244
Pier 4	20%	34	167
Parkside	57%	223	394
Olmsted Place	48%	213	446
Metromark	57%	328	572
Hyde Square Commons	37%	13	35
Continuum	31%	85	276
AVA Theater District	17%	2	12
26 W Broadway	30%	55	186

18 Roberts	28%	8	29
22 Liberty	15%	51	342
Total	38%	1404	3733

	Percentage of Applicants living in segregated neighborhoods	Number of Applicants living in segregated neighborhoods	Total Applicants
Total	37%	1471	3985

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