Deliverable 1

For Deliverable 1, we decided to tackle two of the questions provided in the project description, the first being, “What is distribution of affordable housing inventory in D9 based on AMI% and # of units (e.g. 1 bedroom etc.)”, and the second, “How many units do off-campus college students occupy in the district?”. Starting with the former, we looked at AMI, which is defined as the Area Median Income in a given area. This tells us how much it costs to purchase or rent a property depending on how one’s income relates to the area a person currently lives, or is looking to live in. With this definition in mind, after cleaning and parsing the specific AMI values, we were able to utilize the Boston Affordable Housing Stock Data provided by the Boston Planning and Development Agency, to plot the amount of housing units currently available based on their respective AMI brackets(**Figure 1.1**). As seen below in **Figure 1.1**, we can see that most of the available housing units in Boston for this particular dataset fall within the 70% or above AMI range, which given how expensive a city like Boston is, makes sense. This makes it more challenging for lower income families to be able to find affordable housing in the Boston area. One limitation of this dataset is the sample size only containing 117 current listings meaning it is difficult to draw any significant conclusions from this dataset alone. Furthermore, for the specific district that this project focuses on, District 9(Allston and Brighton), there were only 20 data points available. As a result, we will most likely have to collect and analyze more property AMI related data to draw any concrete conclusions as to whether our initial insights based on this dataset are supported.

The second question we attempted to answer is “How many units do off-campus college students occupy in the district?”. One of the primary reasons for tackling this question is related

to the previous question in that, because Allston and Brighton have such a large student population, it is limiting housing opportunities for families in these “cheaper” areas. In an already expensive city like Boston, families are unable to look at more affordable property options due their limited availability. Additionally, the competition for housing in Allston and Brighton leads to soaring prices in the areas. So not only do families moving to lower AMI areas such as Brighton and Allston have very limited options, but even when they do have options, the prices are driven up to a point that exceeds their budgets. With this in mind, we were able to look at 2019-2020 and 2021-2022 regarding how many students at all Boston area colleges lived on campus versus off campus. The results appear to indicate that the majority of schools have more than half their students living off campus, especially Boston University, Northeastern University, and the University of Massachusetts Boston(**Figure 2.1)**. With BU being so close to the area of District 9, and a decent chunk of students living off campus, it reinforces the idea that it is limiting property opportunities and driving up prices for families who want to move in the area. However, an important thing to note is that a sizable portion of the off campus housing is made up of graduate students(**Figure 2.2)**, and with graduate students not having as many options for housing as undergraduates, it makes sense that they might opt for possible, cheaper off campus housing. With the primary focus of this project on District 9, one limitation of this dataset is that although we know how many students at a particular university live off campus, we do not know where they moved to. As a result, we cannot determine how many properties in Allston, Brighton, and the rest of District 9 are occupied by students, making it difficult to find the answer to the project question.

With a preliminary insight into these questions, we are able to gain an initial understanding about how we will tackle them in further analysis. As aforementioned, one of the

possible limitations is whether we can find the relevant data pertaining to the questions we are focusing on, however, we hope to find external data sources that will help connect the analysis we have already done to potential answers to the questions at hand.

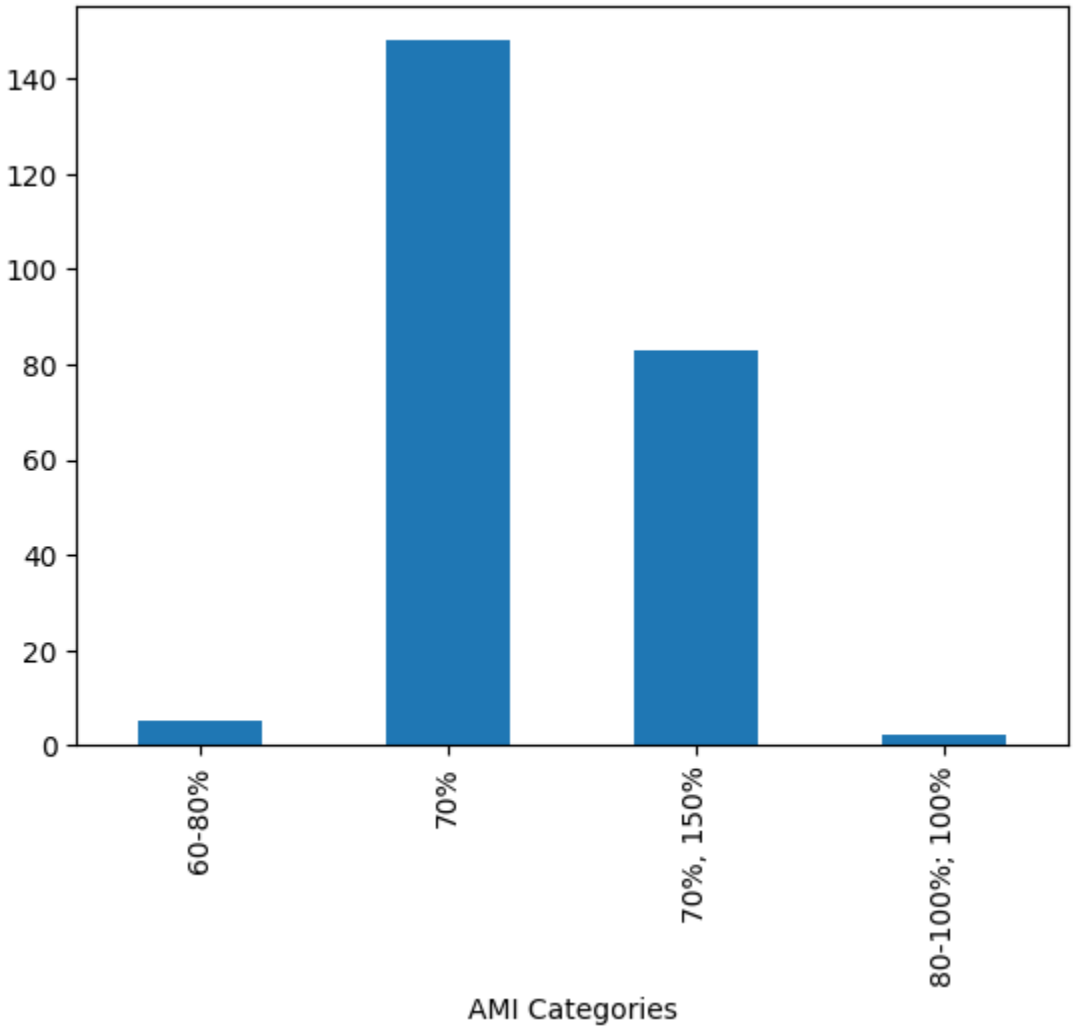
Note:Project will be pivoting to another question/direction based on client's request at first client meeting.

Note: All figures referenced are below.

1. What is distribution of affordable housing inventory in D9 based on AMI% and # of units?

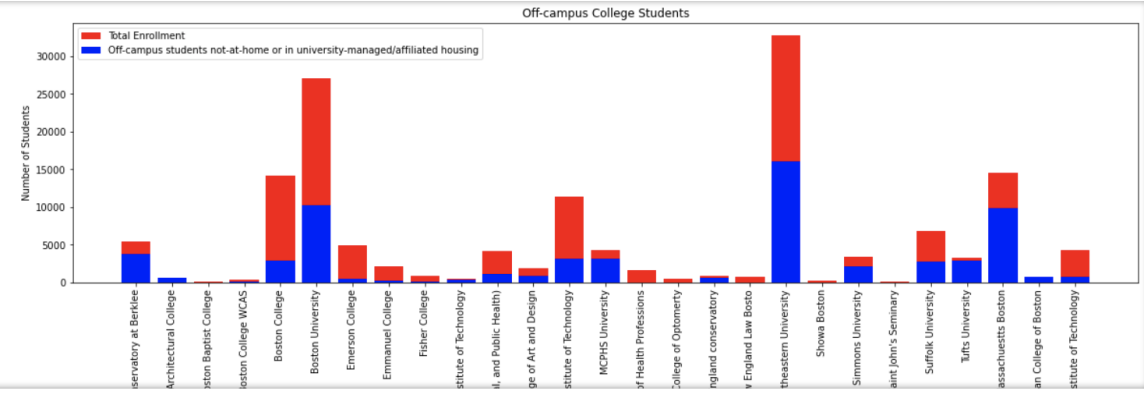
   We looked at the Boston affordable housing stock data. After analyzing all the units in the D9 district area we observed the distribution displayed before. Majority of the listings were targeting 70% AMI category. We see there are no units for below the 60% AMI category. One of the limitations of the chosen data set is that there were not many listings provided, which makes it hard to make solid conclusions. It might be important to analyze additional data.

   Figure 1.1



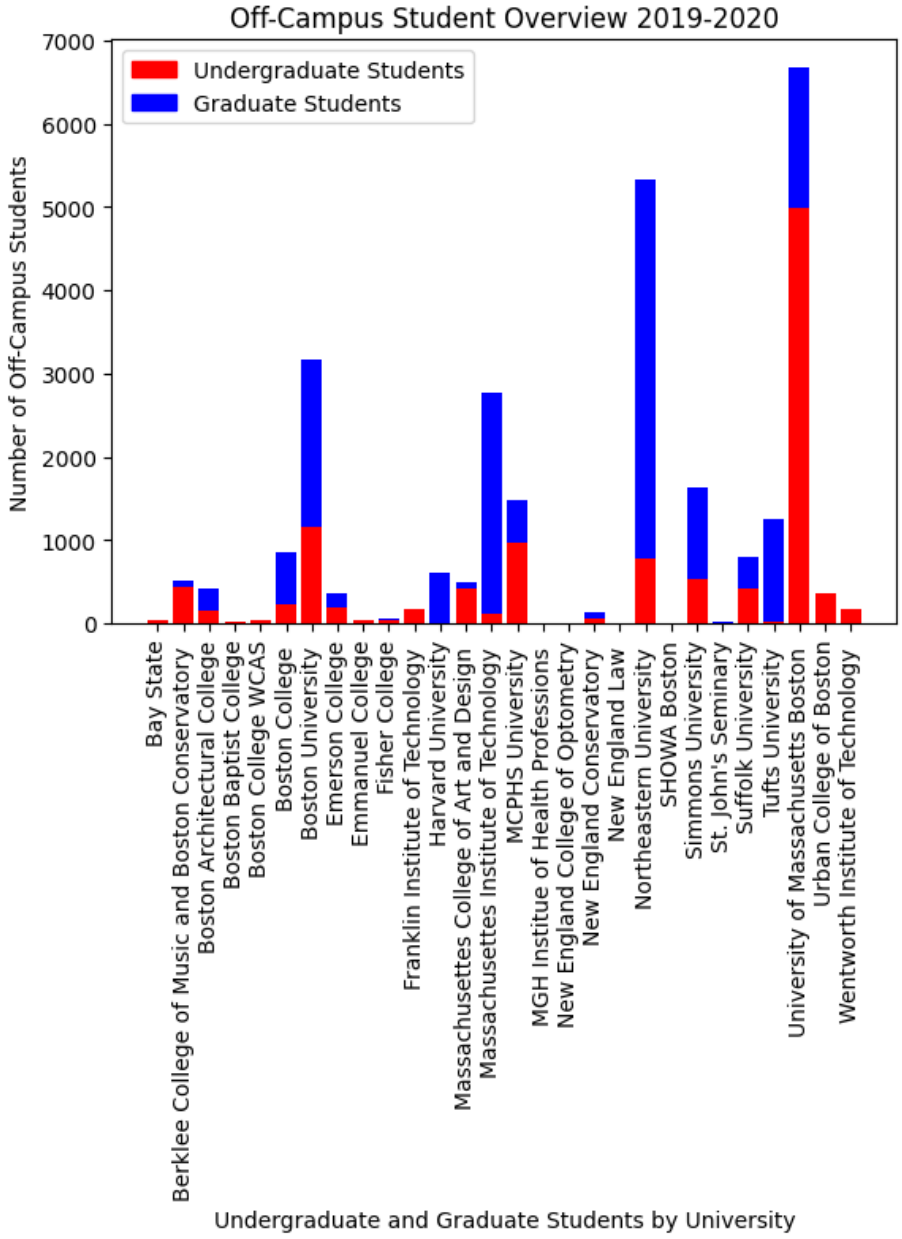
2. How many units do off-campus college students occupy in the district?

Figure 2.1



- We graphed the number of students enrolled in a college stacked with the number of off-campus students who are not home or university owned off campus accommodation.
- The trend of the bar graph shows that more than half of the total students live off campus for most of the universities/colleges.
- With universities having a larger number of students, this ratio becomes more 50-50.
- There are also some universities with 0 off campus students which either means that the university has compulsory on campus policy or the data is not very accurate.
- The colleges with no off campus students are usually the ones with a very small number of students.

Figure 2.2



We graphed off-campus undergraduate and graduate student enrollment from 28 different universities in Massachusetts. We discovered that a significant portion of universities had either 0 students living off-campus, or a negligible off-campus student population.MIT, Boston University, Northeastern University, and UMass Boston had the four highest total off-campus populations in order. Some limitations included not being able to find zip codes in District 9, so it is difficult to determine how many of these students are within this district. Additionally, some off-campus students may live far away from their universities, and we may not be able to determine which zipcode they reside in. Future steps include searching more for the zip codes, and recreating these graphs based on District 9 membership.