Affordable Housing In Ann Arbor: Challenges and Prospects for Progress

Prepared for the Washtenaw County Office of Community and Economic Development

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Executive Summary

Despite efforts by the City of Ann Arbor and Washtenaw County, affordable rental housing – i.e., housing available for less than 30% of a household’s income – in Ann Arbor remains unavailable for many low-wage workers and families. Demand for units renting for less than $500/month far outstrips supply; on a per-bed basis, current renters demanded 10,850 more beds renting for less than $250 per month in 2017 than the market could supply.

Local leaders and residents have expressed concern that increased student enrollment at the University of Michigan exacerbates Ann Arbor’s already high housing costs and existing inequities. Between 1990 and 2012, enrollment at degree granting institutions nationwide increased 48%, but the number of students living in dormitories only grew 31%. In recent years, The University of Michigan’s undergraduate on-campus housing rate has contracted from 37% in 2011-2012 to 31% in 2018-2019 as the University upped enrollment without new dormitory construction. While private luxury apartments targeted to students have come online in recent years, these high-end units have been insufficient to absorb all new student housing demand, leading to a larger shortage of lower price per bedroom units in the housing market.

By and large, students living off-campus pay less in rent than non-students on a per-bed basis. This may be attributable to a willingness to rent larger properties (with more bedrooms) than, say, families seeking a single-family home, or even single workers seeking two- or three-bedroom units. In catering to students with low-price, large-format housing, landlords neglect the needs of non-students in terms of both price and quality of housing. Although the construction of additional dormitory-style housing at the University of Michigan would free up a limited number of units higher in the rent distribution (mostly in the $1,000 to $1,250 per bed range), those units would likely be luxury housing catering to wealthy student renters, not the affordable one- or two-bedroom units demanded by the non-students priced out of Ann Arbor’s housing market. The longer-term impacts of such construction are less certain. While it is possible that a large housing surplus at the higher end of the market would gradually filter into lower submarkets, or that developers would shift focus to middle-market housing, it is equally possible that developers specializing in student-oriented housing would simply pursue projects in other markets.

In the short- and mid-term, institutional partnerships to construct non-student housing may be more effective in addressing Ann Arbor’s affordable housing needs than new dormitories. The University of Michigan, its Health System, and St. Joseph’s Mercy Hospital have significant roles to play in addressing housing affordability inequities in Ann Arbor and Washtenaw County. The 2015 Housing Affordability and Economic Equity Analysis cautioned that growth in rents and home prices in the Ann Arbor market will deepen existing economic and racial disparities and threaten quality of life and municipal fiscal stability countywide. More narrowly, housing pressures inhibit the ability of the University and the regional health system to attract and retain staff and faculty, particularly on the lower end of the pay scale, who must bear the costs of housing or long-distance commutes. Ideally, this partnership would be motivated by an acceptance that all parties have a shared responsibility to identify and resolve the drivers of the

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local housing crisis, including student housing pressure. Given the University’s reticence to
acknowledge their broader role in the housing market, however, Washtenaw County and the City
of Ann Arbor may need to appeal to the self-interested motivations of local institutions to
develop targeted public-private partnerships to build workforce and supportive housing. Such a
partnership could yield incremental short- and mid-term progress towards the city’s housing
goals while strengthening the collaborative relationships needed for longer-term solutions.

Ultimately, however, sustained affordable housing development will require fresh sources of
revenue. Although neighboring states and localities therein have successfully levied transient
occupancy taxes on hotel visits and short-term home or room rentals and devoted the proceeds to
affordable housing development, Michigan’s constitution, statutes, and associated case law
tightly limit and cap local option revenue streams. Michigan’s county-level accommodations tax,
for instance, restricts use of hotel tax revenue to tourism promotion. Creating large-scale, durable
mechanisms to fund affordable housing will require changes to statute, the Michigan constitution,
or both. Although politically infeasible in the current climate, we have outlined the legislative
changes necessary to raise new revenue for affordable housing should the opportunity arise.

Introduction and Background

On the basis of income alone, Ann Arbor is a well-off city that has only seen its position improve
in recent years. Median income has risen 31.5% since 2007 in real terms, reaching an estimated
$70,499 in 2017. Over the same period, estimated population has grown by just 4.56%, and the
population excluding university students is estimated to have increased only 1% (with margins of
error that suggest the true change may well have been 0%, or even in negative territory), hinting
at even sharper growth in per-capita income.

Yet this growth masks continued financial hardship among an important segment of Ann Arbor’s
population: renters. In 2017, estimated median gross rent ($1,214) equated to 29.4% of median
monthly household income among renters ($4,133, or $49,598 per year). Although this ratio
marks an improvement over 2007’s 37.6%, it is still within the margin of error of 30%, the
conventionally defined upper bound on what is deemed “affordable.” This measure also fails to
distinguish between student renters (whose low reported incomes often conceal parental support)
and non-student renters, and as such may underrepresent the true burden of housing costs, as will
be discussed below.

Washtenaw County and the City of Ann Arbor are aware of the fact that living in Ann Arbor is
unaffordable for many lower-income households (a category that includes both families and
individual workers), and have worked to define and address issues of housing affordability. A
county-wide analysis of Housing Affordability and Economic Equity, commissioned by the

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2 U.S. Census Bureau. “Table S1903: Median Household Income in the Past 12 Months,” American Community
Washtenaw County Office of Community and Economic Development (OCED) and delivered in 2015, explored in depth the distribution of housing at various price points between the Ann Arbor and Ypsilanti areas. This analysis found that increasing rents in Ann Arbor, coupled with a weak housing market in Ypsilanti, are working to the detriment of both cities – in Ann Arbor, by forcing lower-wage workers to make long commutes, and in Ypsilanti, by concentrating poverty, limiting opportunity for communities of color, and curtailing efforts to increase quality of life, develop the local economy, and increase property values to fund improvements. In order to reverse this trend of polarization, Ann Arbor adopted the report’s recommendation to add 140 non-student rental units to the market each year that are affordable for households earning 60% or less of area median income.5

Low- and middle-income households in Ann Arbor and Ypsilanti are not alone in facing the burdens of increased housing costs. Across Michigan and the United States, cities are confronted by a growing housing affordability crisis fueled by the ongoing legacy of racial segregation, federal disinvestment in public and affordable housing programs, increased use of homes and urban land as speculative investment vehicles, new demand for livable urban environments by high-earning households, and supply-side stagnation, among other factors. In college towns like Ann Arbor, seasonal student populations and tax base constraints stemming from institutional land ownership further complicate affordable housing provision. While the specifics of the local context are unique, Ann Arbor and the University of Michigan share more similarities with their peers than differences. Based on this observation, we can draw inspiration and strategies from other states, cities, and institutions engaged in tackling the housing crisis at the local level.

This report was commissioned by the Washtenaw County OCED to analyze recent trends in Ann Arbor’s housing market and their connection to changes in the University of Michigan’s enrollment and housing provision, as well as to explore both short- and long-term solutions that would enable the City of Ann Arbor to meet its target of affordable housing creation. We address these questions in three parts: first, with a quantitative analysis of Ann Arbor’s housing market; second, with an in-depth exploration of efforts by anchor institutions (specifically universities and hospitals) nationwide to address a lack of housing affordability in their home markets; and third, with an examination of potential avenues for revenue generation that have been used elsewhere to fund affordable housing, and of the legislative changes necessary for their implementation in Michigan.

This study was completed by a team of two Master of Public Policy candidates and one fourth-year Bachelor of Arts in Public Policy candidate at the University of Michigan’s Gerald R. Ford School of Public Policy, under the Ford School’s Applied Policy Seminar (APS) program. APS pairs student teams with outside clients in the public and nonprofit sectors, allowing students to gain hands-on experience conducting research and analysis within a real-world consulting framework and enabling clients to benefit from the resources and expertise that the University of Michigan has to offer. The conclusions and recommendations expressed in this report do not represent the position of the Washtenaw County Office of Community and Economic Development, the Ford School, or the University of Michigan; they are merely reflective of the student team’s opinions and analysis.

5 CZB. 2015. Housing Affordability and Economic Equity - Analysis; Washtenaw County, Michigan. CZB: Alexandria, VA.
Section I: City of Ann Arbor Housing Market Analysis

Introduction, Background and General Trends

In order to determine how changes in enrollment at the University of Michigan have affected Ann Arbor’s housing market, our team drew both on public data from the U.S. Census Bureau and on data, public and internal, from the University of Michigan. A detailed discussion of sources and their uses occurs in Appendix II.

Since the 1998-1999 academic year, total enrollment (graduate and undergraduate) at the University of Michigan has increased by 1.1% per year on average, rising from 37,197 students to 46,716. This rate has changed little over time – the average rate of increase from 2007-2008 (when 41,042 students were enrolled) to 2017-2018 was 1.3%. Although, in our discussions with UM’s Office of Enrollment Management, we were told that the university as a whole had no coordinated plan to increase enrollment, we expect that this trend will prevail in the near future if no action is taken to alter its trajectory.

![University of Michigan – Enrollment and Housing Provision](image)

Although our data on university-provided housing covers only the period from the 2005-2006 academic year onward, it is clear that the number of beds provided by the university has not kept pace with enrollment growth (see Fig. 1). UM housed 37% of its undergraduates in academic years 2000-2001 through 2011-2012; that figure has since fallen to 31% in the 2018-2019 academic year.

This increase in enrollment has accounted for most, if not all, of Ann Arbor’s population growth in recent years (see Fig. 2). As discussed above, growth in the city’s non-student population since 2007 is within the margin of error of zero. Over the same period, UM enrollment has risen by 5,674 students; Ann Arbor’s population has increased by an estimated 5,293 people (though, owing to a large margin of error on the 2007 estimate, the true amount of population change is somewhat uncertain). With on-campus housing supply unchanged, this increase in student population has translated directly into an increase in student renters in the private market (see Attachment I: “Student and Population Trends, 2007-2017”).

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7 Ibid.
Against this background, the construction of new university-owned housing has frequently been discussed among city- and county-level policymakers as a potential countermeasure to the pressure on housing supply attributable to rising enrollments. Based on our discussions with current and former University of Michigan officials, university administration does not appear to believe that providing such housing is in line with the university’s mission or obligations to the community of Ann Arbor. This analysis does not attempt to address broader questions of the university’s responsibilities on housing; it merely explores how a large and growing student population has affected housing affordability in various segments of the housing market (“sub-markets”), as well as how constructing new dormitories would or would not moderate students’ market impacts.

**Measuring Supply and Demand: A Rent- and Income-Based Framework**

To determine how housing need in Ann Arbor is distributed across the income spectrum, we first needed a framework with which to compare supply and demand of units at various price points. Following the example of Kirk McClure and others, we used household income as a proxy for demand, assuming that, in a perfectly balanced market, households would demand units renting for no more than 30% of their monthly income. To determine supply, we simply examined the number of units being rented at a particular price.

Both of these measures were constructed using American Community Survey (ACS) 1-Year Estimates and data from ACS 1-Year Public Use Microdata Sample (PUMS) files for the years 2012-2017, both covering the entire City of Ann Arbor. Please see Appendix II for a more detailed discussion of these data and their limitations. Household Income in the Past 12 Months was used to determine demand, while Gross Rent was used to measure demand.

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Unit-Level Analysis

Our next step was to carve the rental market into submarkets, each of which was associated with a) a range of monthly rents $250 wide (e.g., from $500 to $750/month) and b) a range of household incomes whose upper bound of affordability (30% of monthly income) matched that rent (e.g., $20,000 to $30,000/year, in the case of the $500-$750 rent range). We refer to these submarkets throughout this analysis by their associated rent range (e.g., the $500-$750/month submarket). These submarkets are described in Table 1. Note that these submarkets are constructed conservatively, such that households would be paying rents at the top of their affordable range.

To determine at what price points – i.e., in what submarkets – additional housing is needed in Ann Arbor, we compared the number of units supplied in each submarket and the number of households demanding accommodation at the associated rents. Because vacancy in Ann Arbor is fairly low (roughly 4-7% of units were vacant each year during our study window\(^\text{12}\)), we assumed that the number of units supplied in each submarket was equal to the number of households renting in each rent-income bucket for the purposes of our unit-level analysis. Demand was represented by the number of households whose incomes fell into the range associated with each submarket.

The gap between supply and demand in each submarket was calculated by subtracting the number of units supplied (based on rent) from the number of units demanded (based on income). A positive gap suggests that supply of units in a submarket is insufficient to meet demand; a negative gap suggests that more units are being supplied in a particular rent range than would be demanded if all households were paying no more than 30% of their income in rent.

After using person-level data to compute the number of person records associated with each household, as well as the percentage of those person records representing enrolled undergraduate or graduate students (referred to below as simply “students”), we replicated our unit-level needs analysis on three groups in the years 2012-2017: 1) All Ann Arbor households, 2) households containing no students, and 3) households comprising some or all students. The results of this analysis are discussed below.

Bed-Level Analysis

We also constructed submarkets based not on monthly rent per unit of housing, but on monthly rent per bed (e.g., $250 to $500/bed/month). This figure was arrived at by dividing a housing unit’s gross rent by the number of bedrooms it contains (“bedrooms per structure” in the ACS). Household income was divided by the number of bedrooms in the structure a household was occupying at the time of the survey to arrive at household income per bed, which used to determine the range of households that would demand beds in these submarkets (e.g., $10,000 to $20,000/bed/year, to match the $250-$500/bed/month range; see Table 1 for details).

We assumed that each bedroom would meet the needs of one person (i.e., would house one bed) – an assumption that we believe holds in general for the student population, but which likely overstates demand among non-students. This assumption enables us to compare the quantity of private-market housing to the quantity of university-owned, dormitory-style housing, in which students pay for a bed in a room or suite. Making this comparison, furthermore, allows us to model how need in the private market (consisting of price-based submarkets) would react were the quantity of dormitory housing to change.

The mechanics of comparing supply and demand in these submarkets are largely similar to those used to arrive at a housing gap in unit-based submarkets, with some caveats. In our beds analysis, demand in a given submarket was determined by the number of people associated with households whose income per bed matched that associated with the submarket. We assumed that the number of beds supplied was equal to the number of people living in housing units with a rent per bed falling into the range associated with each submarket.

As with our unit-level analysis, we replicated our analysis of bed-level need on three groups for the years 2012-2017: 1) All renters in Ann Arbor; 2) Student renters (i.e., those enrolled in a graduate or undergraduate program); and 3) Non-student renters.

One drawback of this beds-based analysis, however, is that it obscures the role that various types of housing (by number of bedrooms) play in various submarkets. Although we make use of summary statistics below to intuit differences in the types of rental housing occupied by students and non-students, the relatively small size of PUMS (discussed in Appendix II) prohibit a more detailed discussion of demand in each submarket by housing product type.

### Analyzing Housing Need

#### I-A: Unit-level Analysis

PUMS data were first used to assess housing need on the unit level. We examined submarkets associated with annual household incomes of up to $100,000 and $2,500 (see Table 1) in monthly gross rent, comparing supply and demand in each submarket up to that point.

<table>
<thead>
<tr>
<th>Gross Rent (Monthly)</th>
<th>Household Income (Annual)</th>
<th>Gross Rent per Bed (Monthly)</th>
<th>Household Income per Bed (Annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $250</td>
<td>&lt;$10K</td>
<td>&lt; $250</td>
<td>&lt;$10K</td>
</tr>
<tr>
<td>$250--$500</td>
<td>$10K--$20K</td>
<td>$250--$500</td>
<td>$10K--$20K</td>
</tr>
<tr>
<td>$500--$750</td>
<td>$20K--$30K</td>
<td>$500--$750</td>
<td>$20K--$30K</td>
</tr>
<tr>
<td>$750--$1,000</td>
<td>$30K--$40K</td>
<td>$750--$1,000</td>
<td>$30K--$40K</td>
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<tr>
<td>$1,000--$1,250</td>
<td>$40K--$50K</td>
<td>$1,000--$1,250</td>
<td>$40K--$50K</td>
</tr>
<tr>
<td>$1,250--$1,500</td>
<td>$50K--$60K</td>
<td>$1,250--$1,500</td>
<td>$50K--$60K</td>
</tr>
<tr>
<td>$1,500--$1,750</td>
<td>$60K--$70K</td>
<td>$1,500--$1,750</td>
<td>$60K--$70K</td>
</tr>
<tr>
<td>$1,750--$2,000</td>
<td>$70K--$80K</td>
<td>$1,750--$2,000</td>
<td>$70K--$80K</td>
</tr>
<tr>
<td>$2,000--$2,250</td>
<td>$80K--$90K</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>$2,250--$2,500</td>
<td>$90K--$100K</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Figure 3 shows the average housing gap (units demanded minus units supplied) for three groups – all renter households; households containing no students; and households containing at least one student – for the years 2012-2014 and the years 2015-2017. Year-by-year results for these groups are shown in Appendix I.

<table>
<thead>
<tr>
<th>Rent Income</th>
<th>All Renter Households</th>
<th>Non-Student Households</th>
<th>Households Containing Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,250–$2,500 $90K–$100K</td>
<td>-39 -279</td>
<td>175 -351</td>
<td>-214 72</td>
</tr>
<tr>
<td>$2,000–$2,250 $80K–$90K</td>
<td>392 805</td>
<td>-65 259</td>
<td>456 546</td>
</tr>
<tr>
<td>$1,750–$2,000 $70K–$80K</td>
<td>374 207</td>
<td>112 106</td>
<td>262 101</td>
</tr>
<tr>
<td>$1,500–$1,750 $60K–$70K</td>
<td>-1433 -247</td>
<td>-338 -121</td>
<td>-1095 -126</td>
</tr>
<tr>
<td>$1,250–$1,500 $50K–$60K</td>
<td>-1401 -2527</td>
<td>-802 -720</td>
<td>-599 -1807</td>
</tr>
<tr>
<td>$1,000–$1,250 $40K–$50K</td>
<td>-3467 -2747</td>
<td>-2182 -1149</td>
<td>-1284 -1598</td>
</tr>
<tr>
<td>$750–$1,000 $30K–$40K</td>
<td>-3775 -2167</td>
<td>-1807 -950</td>
<td>-1968 -1216</td>
</tr>
<tr>
<td>$500–$750 $20K–$30K</td>
<td>453 126</td>
<td>495 -310</td>
<td>-42 436</td>
</tr>
<tr>
<td>$250–$500 $10K–$20K</td>
<td>2036 2001</td>
<td>1190 1657</td>
<td>846 343</td>
</tr>
<tr>
<td>&lt; $250 &lt;$10K</td>
<td>4712 3843</td>
<td>2127 1414</td>
<td>2585 2429</td>
</tr>
</tbody>
</table>

Figure 3: Unmet Housing Need in Units; All Renter Households. Three-Year Means. American Community Survey 1-Year PUMS, 2012 to 2017

Across all groups, we see a steep deficit of beds in the bottom-most submarket, representing household income of less than $10,000. Comparing the gap among non-student households and student households, particularly in the 2015-2017 period, suggests that student renters account for the majority of the housing gap in that submarket – an intuitive conclusion, given that students (who often rely on family income for rent and other expenses) are more likely than non-students to report earning close to $0 in income.\(^{13}\)

Non-student households, however, account for the vast majority of the gap in the next-highest submarket. This suggests that student households whose incomes are associated with the $250-$500/month rent range are better able to locate them than are non-student households with similar incomes. This has become increasingly true over time: The gap in this submarket for non-student households widened between 2012-2014 and 2015-2017, while that for student households narrowed. In conjunction with our beds-level analysis below, this may suggest that, over a relatively short period of time, the market has intensified its focus on supplying units that appeal to students, to the detriment of non-students.

I-B: Beds-level Analysis

After analyzing need on the basis of housing units, we shifted the focus of our analysis to the bed. Figure 4 shows the average gap between beds demanded and beds supplied among all renters, non-student renters, and student renters in the years 2012-2014 and 2015-2017.

We again find a dramatic deficit of beds in the lowest rental bracket across both time periods. Unlike in our unit-level analysis, it is now among students that the housing gap in this market is

\(^{13}\) U.S. Census Bureau. *American Community Survey Public Use Microdata Sample, 2012 to 2017.*
most severe. However, the gap among students in the bottom market appears to be on the
decline, while that among non-students is widening. What is more, students already occupy a
majority of beds in this submarket (see Fig. 4).

| Housing Supply Gap (Beds Demanded minus Beds Supplied, assuming 1 person/bedroom) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| $1,750--$2,000                  | $70K--$80K      | 447             | 1151            | 447             | 942             | 0              | 209             |
| $1,500--$1,750                  | $60K--$70K      | 1131            | 1057            | 953             | 1193            | 178            | -136            |
| $1,250--$1,500                  | $50K--$60K      | 1036            | 317             | 768             | 1268            | 268            | -950            |
| $1,000--$1,250                  | $40K--$50K      | 789             | 1300            | 759             | 448             | 30             | 852             |
| $750--$1,000                    | $30K--$40K      | -534            | -5189           | 1437            | -2486           | -1971          | -2703           |
| $500--$750                      | $20K--$30K      | -12369          | -6442           | -4701           | -3370           | -7668          | -3072           |
| $250--$500                      | $10K--$20K      | -3506           | -5975           | -2607           | -2613           | -899           | -3362           |
| < $250                          | <$10K           | 12245           | 11616           | 2253            | 2959            | 9991           | 8657            |

Figure 4: Unmet Housing Need in Beds; All Renters. Three-Year Means. American Community Survey 1-Year PUMS, 2012 to 2017.

The deficit of beds in the bottom submarket is offset by a surplus of beds in the following three
submarkets. This does not necessarily suggest that the needs of renters in these submarkets are
more than met, only that the number of beds supplied exceeds demand in the relevant price
range. It is likely the case that renters occupying “excess” beds in this submarket are in fact
renting above their means, given the steep deficit of beds in the lowest bracket.

Although students accounted for 48% of Ann Arbor’s renter population from 2012 to 2017, they
occupied 59% of beds in the sub-$250/bed submarket during the same period. In the $250-$500/bed and $500-$750/bed submarkets, students accounted for around 48% of renters
throughout the study period. They were underrepresented in the $750-$1000 submarket,
accounting for 44% of renters.

This distribution appears to have shifted somewhat between the first three and last
three years of our analysis. Students’
average share of the population in both the
top submarket ($0-$250/bed) and midrange submarkets ($500-$750/bed and $750-$1000/bed) declined between the
2012-2014 window and the 2015-2017, by
4.4 percentage points, 8.6 points and 3.3
points, respectively.

In the $250-$500/bed submarket, however,
students’ share of the population increased
17.3 percentage points over the same
window. In the 2015-2017 window, students’ numbers peaked in the $250-$500 per bed bracket,
while non-students’ numbers peaked in the $500-$750 per bed bracket; see Fig. 5. In 2012-2014
window, both groups were most numerous in the $500-$750 bracket.

Figure 5: Mean Student- and Non-Student Population by Rent-per-Bed Bracket, 2015-2017. ACS 1-Year PUMS.
Students’ preferences for larger-format housing (i.e., housing units with a larger number of bedrooms) may give them an edge in finding properties in this submarket from the outset. Across all rent-per-bed brackets, the average student lives in a larger unit than the mean non-student (Table 2). Because, all else equal, units with a higher number of bedrooms should produce lower per-bed rents, renters who tolerate or prefer large-format housing have a built-in advantage when seeking lower-cost accommodation.

Table 2: Mean Bedrooms per Unit for all renters and subgroups. ACS PUMS, 2012-2017.

<table>
<thead>
<tr>
<th>Rent-per-Bed Bracket</th>
<th>Mean Bedrooms per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Renters</td>
<td>Non-Students</td>
</tr>
<tr>
<td>Cash rent/Bed &lt; $250</td>
<td>4.49</td>
</tr>
<tr>
<td>$250 ≤ Cash Rent/Bed &lt; $500</td>
<td>3.54</td>
</tr>
<tr>
<td>$500 ≤ Cash Rent/Bed &lt; $750</td>
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</tr>
<tr>
<td>$750 ≤ Cash Rent/Bed &lt; $1000</td>
<td>1.78</td>
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<tr>
<td>$1000 ≤ Cash Rent/Bed &lt; $1250</td>
<td>1.07</td>
</tr>
<tr>
<td>$1250 ≤ Cash Rent/Bed &lt; $1500</td>
<td>1.30</td>
</tr>
<tr>
<td>$1500 ≤ Cash Rent/Bed &lt; $1750</td>
<td>1</td>
</tr>
<tr>
<td>$1750 ≤ Cash Rent/Bed &lt; $2000</td>
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</tbody>
</table>

Taken together, the deepening surplus of student beds in the $250-$500/bed submarket (see Fig. 4) and the increase in students’ share of this submarket suggests that the market is increasingly supplying beds in the $250-$500/bed range that appeal to students more strongly than non-students. One possibility is that consistent demand for large, multi-bedroom houses over time has led property owners to supply new such units and/or to keep existing units on the market, potentially past their useful lifetimes.

Lower-income, non-student households – such as young families and low-wage workers – thus encounter a shortage of suitable housing at affordable prices, more than a mere shortage of affordable beds. Although a family of three with an income of $40,000 (well below Ann Arbor’s median household income, estimated at $70,499 in 2017\textsuperscript{14}) may be able to find two beds for $500/month each – the upper limit of affordability for their income – they would have a far more difficult time finding a suitably located two-bedroom home for $1,000/month. The same is true of a single worker earning the same amount and seeking a one-bedroom unit, for example.

Also worth noting is the dramatic increase in students’ share of the $1,250-$1,500/bed rental submarket, from 43.8% in 2012-2014 to 57.1% in 2015-2017. Over the same window, the housing gap for students in this market turned from a slight deficit to moderate oversupply. Although it is impossible within the context of the current analysis, which uses de-identified data, to trace the source of this shift, it may be related to the construction of high-rise, upscale rental buildings in Ann Arbor’s downtown that have been marketed to students. Buildings constructed within the jurisdiction of Ann Arbor’s Downtown Development Authority between 2015 and 2017 added 1,126 bedrooms to the market, according to DDA data.\textsuperscript{15}

New Dormitory Beds

The construction of new dormitories by the University of Michigan has frequently been proposed as an answer to Ann Arbor’s housing affordability challenges. In order to model the effect of


new dormitory beds on the city’s housing market, we sought to determine a) how many beds UM could plausibly add to its existing stock, and b) how much those beds would cost, and therefore which private rental submarkets would see demand decline as a result of dormitory construction.

To answer the first question, we compared the percentage of undergraduate students housed in college-owned, college-operated, or college-affiliated housing at all members of the Big Ten collegiate athletic conference, finding that the mean (and median) institution houses 35.8% of its undergraduates (see “Enrollment and Housing Trends” in the attached data file for related data and calculations). The University of Michigan lags this value, housing only 31% of its undergraduate population on-campus in the 2018-2019 academic year (and similar numbers historically). In order to reach the mean percentage, UM would need to add 1,457 beds; we have adopted this figure as a plausible target for new dormitory construction.

In the 2018-2019 academic year, the median monthly rent-equivalent in UM’s undergraduate dormitories was $1,214; the minimum and maximum rates were $883 and $1,300, respectively (see Appendix I, Table A-1, for details on this calculation, and Appendix II for a discussion of the source of this data). Based on this distribution, we estimated that 50% of new beds added would fall in the $1,000-$1,250 per bed submarket, and that the remaining beds would be divided evenly between the $750-$1,000 and $1,250-$1,500 submarkets. The predicted result of adding these beds to 2017’s housing market is shown in Fig. 6.

It is clear that adding new beds would have some impact on the market. Students drawn out of the $750-$1,000 per bed submarket are likely to vacate smaller properties than would those students renting in the lower brackets, freeing up housing stock that might appeal to middle-income families (and in the process reduce pressure on rents in the market for similar units). However, students from the $1,000-$1,250 per bed bracket would largely be vacating one-bedroom units renting at prices that are unaffordable to lower-wage workers. Those drawn out of the $1,250-$1,500 per bed bracket, meanwhile, would in essence be trading one luxury unit (likely a one- or two-bedroom) for another.

A more effective solution would add housing units suitable for lower-income non-student renters to the market directly, in the $0-$250 per unit and $250-$500 per unit brackets where unmet need among non-students is largest. Though a more rigorous analysis of need by housing type should be conducted to inform future development, the present state of the non-student rental market suggests that these new units should be in the one- to three-bedroom range, which hold appeal for both families and low-income individuals.

The deep oversupply of beds in the $250-$500 per bed rent bracket indicates that part of this need could be met through the conversion of larger-format housing into multiple smaller units
(provided that the affordability of these beds could be preserved post-conversion). However, given the depth of need at the bottom end of the income and rent spectrums, the market alone is unlikely to supply enough quality units to resolve Ann Arbor’s housing challenges.

**Avenues for Further Study**

In light of the above findings, deeper exploration of the supply and demand of housing units by size, particularly in the lowest rent-per-bed submarkets, would help clarify precisely what type of housing would be of most use to lower-income, non-student renters. Due to the limitations of PUMS data for statistical inference (discussed in Appendix II), it may be valuable to seek access to ACS Restricted-Use Microdata (as well as restricted-use data from the Rental Housing Finance Survey), which represents a sample that is roughly 1/3 larger than the PUMS. These data are available to qualified researchers through the Michigan Research Data Center.

The methods used to calculate total supply by submarket would support such an analysis; sample scripts included in the attached data file (“Housing Analysis Data”) may be of use here. Arriving at a demand figure would be somewhat more challenging, and would likely require an independent survey of renters (and prospective renters) in Ann Arbor and the surrounding area regarding their housing preferences. (A survey of University of Michigan staff might prove a useful starting point.) Such a survey would serve the broader purpose of determining what segments of the population find themselves priced out of the city’s housing market, and under what conditions they would feel able to live in the city.

A spatial analysis of housing supply and demand akin to that conducted as part of the 2015 Housing Affordability and Economic Equity analysis would also be of use. Although UM’s annual UMAY survey of students suggests that nearly 90% of undergraduates live within two miles of campus,\(^{16}\) nearly all of the City of Ann Arbor falls within that radius, obscuring patterns in how students are distributed within the city that may help identify areas where affordability concerns are particularly severe. MRDC’s restricted-use microdata may also be of use for this analysis, as it enables tabulations at the census block level.

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\(^{16}\) University of Michigan Office of Budget and Planning. *UMAY 2011; 2017; 2018*. Obtained Feb. 28, 2019, through personal correspondence. (See “UMAY Housing Data” in attached data file.)
Section II: Engaging Anchor Institutions to Increase Housing Affordability

Anchor Institution Motivations for Affordable Housing Solutions
The University of Michigan and area hospitals are anchor institutions—established, place-based nonprofit enterprises—whose considerable economic power and mission-orientation can be harnessed for community benefit. Nationwide, anchor institutions have been increasingly embracing their relationships to the towns and cities in which they are based by committing a portion of their combined $1 trillion in annual spending towards community development.\textsuperscript{17} The Department of Housing and Urban Development formed the Office of University Partnerships in 1994 to harness the financial power of post-secondary educational institutions for the public good. Although the underlying drivers differ, institutions of higher learning and hospitals have taken on shared responsibilities in providing quality affordable housing in local markets.

University Motivations
Universities with engaged missions, and/or an understanding of the practical and existential need for affordable housing should be prime to work towards solutions for affordable housing. Over the past two decades, institutions of higher education have been reshaped by external criticism and internal activism. Their mission statements have changed accordingly, now including language such as “engagement,” “partnership,” and “reciprocity.”\textsuperscript{18} Changing student preferences demand a livable, amenity-rich campus/community context. Land use, however, remains a source of contention in town-gown relations,\textsuperscript{19} particularly as schools continue to expand their enrollment and physical footprint. Counterintuitively, conflict is thawing in high growth areas as universities struggle to house their expanded workforces.\textsuperscript{20}

Health System Motivations
Health systems, following best practices in public health, are emphasizing and directing institutional resources to the upstream, social-determinants of health, including housing. Evidence points to the impact of housing quality, safety, affordability and neighborhood housing on health outcomes.\textsuperscript{21} Since 1969, the IRS has required that non-profit hospitals provide an unspecified amount of community benefits, encompassing charity care and programs to improve community health, among other expenditures, in exchange for their tax-exempt status. Beginning in 2008, the IRS added a section to the Schedule H community benefits form allowing hospitals to count justifiable community building expenditures, such as environmental improvements and

\textsuperscript{17} Democracy Collaborative. Undated. \textit{Anchor Institutions: Engaging with eds, meds, and other anchor institutions to help them help communities}. Retrieved April 12, 2019 from https://democracycollaborative.org/democracycollaborative/anchorinstitutions/Anchor%20Institutions
\textsuperscript{18} Perry, David C. 2008. Changing the research paradigm: From applied to engaged. Paper presented at University as Civic Partner Conference, February 14–16, 2008, Phoenix, AZ.
housing, towards their community benefit requirements, although IRS guidelines remain vague. The Affordable Care Act (ACA) ushered in complementary changes, requiring that nonprofit hospitals conduct a triennial health needs assessment, which can bolster justification for community building projects. As uncompensated care has dropped under the ACA, health systems have additional incentive to turn to non-healthcare expenditures, like community building. Coupled with the pivot to root-causes of poor health like lack of quality, affordable housing, these legislative changes chart a course for increased health system involvement in local housing.

Shared Motivations
High cost housing markets threaten the ability of institutions of higher education and health systems to maintain stable, high performing workforces across the income spectrum. Lower income workers, such as janitorial staff and service employees at universities and nurses aides at hospitals, are particularly strained by lack of affordable housing. Housing pressures extend up the pay scale, with evidence that even high-powered senior faculty may turn down offers if housing costs are too high. For employees and students alike, accelerating housing costs amplify the stresses of financial precarity, with resulting reductions in productivity and achievement.

Anchor Institutions Tackling Affordability
University Housing Initiatives
Universities have deployed a variety of housing policies to increase affordability for their staff, faculty, and the larger community. Based on a scan of housing programs at twenty universities of various sizes across the United States, university-led participation in local housing markets with positive implications for affordability falls within three general categories:

1. Direct or indirect investment in housing development: may take the form of university-led construction; gap financing; investment in Community Development Corporations or Community Development Financial Institutions; or multi-year ground leases
2. Loan and down payment support for faculty and staff: low interest or forgivable loans or grants; may be faculty-only or limited to tenure-track positions; may be geographically specific to disinvested neighborhoods and/or areas near campus
3. Local housing research and engaged learning partnerships: includes dedicated research centers; student research practicums; housing design and building studios

Certain institutions have multiple programs falling under one or more of the above categories. Appendix III provides a brief synopsis of the university housing policies and programs identified over the course of research.

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24 Ibid.
Of the three strategies, direct or indirect investment in housing development holds the most promise for meeting Washtenaw County and Ann Arbor’s broad-based affordability goals in the mid-term. Faculty and staff loan and down payment supports, while helpful to the University of Michigan workforce, do not directly grow the supply. Furthermore, their best use case is to incentivize investment in markets with high levels of vacancy or stalled recovery, which is inapplicable to local conditions. Housing research and engaged partnerships may be a helpful first-step when dealing with a reticent university partner but will not move the needle on available units alone.

Recent projects spurred by universities in tight urban housing markets exemplify actions that the University of Michigan might take.

**Case: Santa Clara University, San Jose, CA**
In response to the Bay Area housing crisis and resulting challenges with staff and faculty attraction and retention, Santa Clara University has proposed a new mixed-use development that includes workforce housing. Dubbed the Technology Innovation Center & Educator Faculty/Staff Housing, the proposal calls for as many as 295 apartments to house staff and faculty. In an effort to foster student entrepreneurship, the building will also include a 20,000 square foot tech incubator. Santa Clara University is funding and directly leading the project, which is in the planning stages.

**Case: Howard University, Washington, DC**
Located in the Shaw, a high-demand neighborhood north of the National Mall, Howard University has entered into partnerships with developers to repurpose its vacant and underutilized properties. While much of this housing will be market rate, the District Zoning Commission, as a condition of approving Howard’s updated campus master plan, mandated that the University set aside 50-100 affordable units at 30-60% area median income (AMI). Trellis House, a mixed use development built on a formerly vacant parcel owned by Howard and ground leased to the developer, opened in 2018. Driven by DC’s inclusionary zoning ordinance, 36 of the 319 units are affordable. A combined total of 86 affordable and market rate units are set aside for Howard staff and faculty. By ground leasing, Howard minimizes institutional risk while growing supply.

**Health System Housing Initiatives**
Health systems wield planning expertise, considerable financial resources, and community and political power that can each in turn be leveraged to advance affordable housing. The Center for Community Investment describes three ways that health systems can bring their expertise and resources to bear:

1. **Identifying community priorities**: leveraging the expertise of the public health community in planning and community engagement
2. **Enlarging the investment pipeline**: unlocking the health system’s development experience, real estate assets, and financial capabilities

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3. **Improving the enabling environment:** engaging existing staff and administrative infrastructure to produce policy analysis and coordinate government relations at the local, state, and federal levels

Based on the local context, the University of Michigan Health System and St. Joseph’s would make the greatest impact through enlarging the housing investment pipeline. The City of Ann Arbor and Washtenaw County have already performed extensive analysis and community engagement around affordable housing. Additional planning may only lead to exhaustion. Similarly, municipal staff and officials are highly engaged at the local level, as demonstrated by ongoing planning and legislative activity. Advocacy at the state level may be premature as the recently elected Whitmer administration has not included housing in its first-term agenda. Therefore, political leaders are unlikely to reset the statewide agenda in the short-term. Survey results from the Michigan Public Policy Survey suggest that an agenda-shifting groundswell from local leaders is unlikely, with only 35-42% of local leaders supporting new statewide mechanisms for affordable housing. independently of legislative changes, the local health system can make meaningful investments, particularly in the form of supportive housing, that both grow the supply and free up other forms of gap financing (e.g. Low Income Housing Tax Credits, the local Affordable Housing Trust Fund, etc.).

Two cases illustrate targeted investments that health systems have made to alleviate the impact of high housing costs on the health of vulnerable populations.

**Case: University of Vermont Medical Center – “Housing is Healthcare”**
During the process of creating its 2013 ACA-mandated health needs assessment, UVMC identified that lack of affordable housing was leading to increased use of emergency room services by individuals experiencing homelessness, leading UVMC to make incremental investments in permanent supportive housing. UVMC initially conducted a small pilot that paid rents for chronically underhoused ER “frequent fliers,” demonstrating $6,300 in annual savings per person. Over the next several years, UVMC partnered with the Champlain Housing Trust to convert three former motels into 86 units of transitional and permanent housing. Beyond paying a portion of the development costs, UVMC also contributed ongoing financial support for case management and supportive services to keep residents housed.

**Case: Portland, OR – “Housing is Health”**
In Portland, a coalition of hospitals and medical care providers including Adventist Health Portland, CareOregon, Kaiser Permanente Northwest, Legacy Health, Oregon Health & Science University, and Providence Health & Services of Oregon donated $21.5 million for supportive and workforce housing for people experiencing housing instability. The funds will go to develop 176 units of supportive housing, 155 units of workforce housing, and 51 units

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of family housing. Partnership between multiple institutions, all with shared interests in improving health through housing, unlocks investment at scale.

**Recommendations: Short- and mid-term solutions**

**Issue Framing: University of Michigan**

Housing advocates should engage the University’s self-interest in attracting and retaining staff and faculty across the income spectrum. The University’s current mission and administrative policies lag engagement-centered institutions. As such, appealing to the University’s not-yet-defined responsibility to the community may be a non-starter. Faculty and staff, however, may opt out of careers in Ann Arbor due to housing costs, diminishing the University’s efficacy in “creating, communicating, preserving, and applying knowledge, art, and academic values.” To build a persuasive case, local officials should quantify the contemporary and projected impacts of housing affordability on the University workforce by connecting with and surveying employee organizations and unions.

Over the long term, housing advocates should concentrate on appealing to the Board of Regents—either directly or through political allies—to incorporate community engagement language into the University of Michigan’s mission statement. Once the administration is bound to a shared responsibility for community issues, they will be more likely to embrace their role in the housing market and their responsibility to provide equitable, affordable housing.

**Issue Framing: Health System**

Local housing officials should continue to emphasize the role that housing plays in shaping health outcomes for vulnerable populations as they engage the medical community. Area hospitals already participate in the Frequent Users System Engagement (FUSE) initiative and have jointly produced the 2016 UM + St. Joseph’s Health Needs Assessment, which link stable housing to improvements in physical and mental health for individuals experiencing homelessness or suffering from substance use disorders. The pathway between housing affordability and broader community health is less defined in health system plans and analyses and, therefore, less immediately actionable by the medical community.

**Pilot Institutional Investment through Strategic Public Private Partnerships**

The City of Ann Arbor and Washtenaw County should explore opportunities for joint development projects with the University of Michigan and the area health system. As the Howard, Santa Clara University, UVMC, and Portland cases demonstrate, there are multiple avenues for partnerships with anchor institutions that create affordable units at lower cost and in shorter timeframes than dorm or medical facility construction. To seed these discussions, officials should review local affordable housing projects stalled due to lack of gap financing or suitable land and flag projects that would provide workforce or supportive housing, responding to institutional motivations. Although such partnerships are unlikely to significantly impact the overall Ann Arbor housing market, they would constitute a starting point towards building the trust and appetite for shared solutions necessary for long-run change.

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Section III: Possibilities for Revenue Collection

Michigan’s Barriers to Affordable Housing Funding
The State of Michigan has several laws, state constitutional restrictions, and cases of legal precedent that make funding affordable housing projects at the local level difficult. Municipalities in Michigan have struggled for several years to address housing issues because of budgetary problems. Ideally, localities can find funding mechanisms that do not involve new taxes, however in the recent era of tight municipal budgets, cuts to revenue sharing, decreased property values, and increasing obligations in other areas of government, many solutions will require a State legislative act to allow cities and counties to create new taxes to ensure sustainable funding for localized affordable housing projects. Much of the funding that local governments receive comes from property taxes, fees and fines, and revenue sharing from the State Government. This system is very unpopular among municipal leaders – with 64% of local officials agreeing in 2016 that the current system for local government funding is broken. Several existing laws make avenues to funding difficult and include the following:

The Headlee Amendment
Michigan voters approved Sections 25 through 33 of Article IX of the Michigan Constitution in 1978. These sections, referred to colloquially as the Headlee Amendment, require municipalities to gain voter approval for local tax increases or new taxes. This amendment also limited the amount that property tax millages can generate for municipalities by capping assessment increases on private property. These restrictions can only be removed by constitutional amendment, and that simple legislative changes will not address the underlying funding problems created by Headlee.

Bolt v. The City of Lansing
This case before the Michigan Supreme Court curtailed the ability of local governments to levy fees as a revenue generation method. In the specific case, the City of Lansing was sued by a resident arguing that a newly imposed “storm water utility fee” was in fact a tax that was levied without voter approval – a violation of the Headlee amendment. The Michigan Supreme Court ruled that fees imposed by municipalities must “serve a regulatory purpose” rather than a revenue-generating purpose, must be voluntary or avoidable in some way, and must be proportionate to the cost of the service provided. This makes charging user fees as a revenue-raising method illegal, further limiting the ability of municipalities to raise revenue.

Revenue Generation through Accommodation Taxes
Michigan PA 263 of 1974

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34 Ibid.
36 Ibid.
PA 263 is the State law that establishes and manages lodging and hotel taxes in Michigan. This law allows counties to impose a 6.0% excise tax on accommodations – which includes all facilities for transient guests – including hotels, motels, hostels, homeshares, and temporary lodging – for the specified purpose of funding tourism and convention bureaus. These taxes are collected at the county level then transferred to the county or city tourism board for “the financing of the acquisition, construction, improvement, enlargement, repair, or maintenance of convention and entertainment facilities”37 or “the promotion and encouragement of tourist and convention business in the county.”

County Retention of Lodging/Hotel Taxes
One potential option for revenue changes lies in the modification of the existing Michigan county-level excise tax on temporary lodging facilities. State law currently mandates that revenues from this tax be used for the promotion of tourism and business related to conventions in the municipality.38 In Washtenaw County, all funds from the accommodations tax that are not used for compliance are passed on to the Washtenaw County Convention and Visitors Bureau.39 In other states, cities have passed supplemental taxes on lodging and hotels to fund a variety of different government projects – an avenue that is not compatible with the Headlee Amendment. Washtenaw County is a significant destination for transient guests, with over $6.6 million collected in accommodations tax revenue in 2017.40

The following examples have been used in other states to fund affordable housing through taxes and fees on accommodations. In addition to the outline of the laws, we also examine the legal challenges that would make these taxes difficult in Michigan.

Columbus, OH Lodging Tax
The City of Columbus41 currently levies a 10.0% tax on short term rentals and hotel stays. The division of the hotel tax by use is outlined below:42

<table>
<thead>
<tr>
<th>Tax Rate</th>
<th>% Share of Hotel Tax</th>
<th>Purpose Designated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.39%</td>
<td>46.86</td>
<td>The Columbus Convention and Visitors Bureau</td>
</tr>
<tr>
<td>1.68%</td>
<td>32.94</td>
<td>Cultural Services / Community Enrichment</td>
</tr>
<tr>
<td>0.60%</td>
<td>11.77</td>
<td>Emergency Human Services Fund</td>
</tr>
<tr>
<td>0.43%</td>
<td>8.43</td>
<td>Affordable Housing Trust Fund</td>
</tr>
<tr>
<td>5.10%</td>
<td>-</td>
<td>Total City Rate</td>
</tr>
<tr>
<td>4.9%</td>
<td>-</td>
<td>Franklin County Convention Facilities Authority</td>
</tr>
<tr>
<td>10%</td>
<td>100</td>
<td>Total Tax Rate inside the City of Columbus</td>
</tr>
</tbody>
</table>

38 Ibid.
41 City of Columbus, Ohio, Office of the City Auditor – Income Tax Division. Undated. *City of Columbus and Franklin County Facilities Authority: Lodging Excise Tax.* Retrieved April 17, 2019 from https://www.columbus.gov/IncomeTaxDivision/HotelMotelExciseTax/
42 Ibid.
Most relevant is the .43% tax that is dedicated to the Affordable Housing Trust Fund. In 2018, the 10% tax generated $47.8 million in revenue for the City and County. This resulted in over $4 million being added to the Affordable Housing Trust Fund. The ability to redirect portions of the 6.0% accommodations tax to affordable housing is one potential avenue towards housing funding. However, this would require the repeal of Section 7 of PA 263, eliminating the specific use requirements of these tax funds. This will allow counties to designate these funds in any way they choose — including for affordable housing.

Portland, ME Affordable Housing Hotel Fee
The City of Portland, ME recently passed an ordinance mandating that hotel developers build one unit of affordable rental housing for every 28 hotel units they build. If they fail to build the housing, they must pay a one-time fee of $3,806 per hotel unit to the City’s affordable housing fund. This is aimed at ensuring hotel construction workers have affordable housing near job sites. This requirement or fee model could be implemented to ensure that new construction contains affordable housing. However, it is likely that the fee would run into legal issues with the Bolt v. Lansing case.

Amending Enabling Legislation
The above hotel and motel taxes were possible because state laws in Michigan, Ohio, and Maine allow municipalities and counties to levy taxes on purchases and transient lodging. Michigan’s enabling legislation and unique constitutional controls, however, are extremely limiting. One solution to give Michigan’s local units of government more flexibility would be the repeal or modification of Section 7 of PA 263 of 1974. This section was last modified in 1989 to allow the use of revenues for convention center construction or debt payments in cities with over 180,000 in population. Adding a clause to Section 7 to allow for affordable housing construction would allow Washtenaw County to modify its use of the Accommodations tax revenue.

Such a measure already exists in the State of Washington, allowing cities and counties to utilize revenues from accommodations taxes to finance loans or grants to nonprofit organizations or public housing authorities. This law was passed with the intention of providing affordable workforce housing close to transit stations. Washington’s law emphasizes bonds as the primary vehicle for funding projects, which are financed by accommodations tax revenue. In King County, WA — the county in which Seattle resides, 37.5% of revenue from the tax is committed to affordable housing — projected to bring in an estimated $559 Million for affordable housing between 2021 and 2045.

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44 Washington Legislature. RCW 67.28.150
In Ohio\textsuperscript{46}, House Bill 518 of 2002 authorizes county commissions to levy additional taxes for construction of stadium and convention facilities, but only requires that half of the tax revenue from the taxes go to convention and visitor bureaus, allowing the remainder to be deposited into the county general fund.

By passing legislative amendments like those in Washington and Ohio, Michigan would allow counties greater control over their accommodation tax proceedings and open the door for greater access to affordable housing revenues.

**Potential Barriers**
Legislative changes to redirect Michigan’s existing accommodations taxes may prove politically difficult, even on the local level, where they will likely face opposition from tourism industry groups. One can argue, however, that affordable housing availability is necessary to sustain the tourism industry’s workforce. The passage of amendments loosening spending restrictions would ease staffing shortages in high cost housing markets and enable a more productive hospitality workforce.

Funding affordable housing in Michigan at the state level will continue to be a challenge moving forward. Both modifying current taxing structures and the creation of new taxes will likely pose significant political challenges. Finding a sponsor for a tax increase in a Republican-controlled State Legislature, then passing said bill will not be politically possible for the foreseeable future due to ongoing budget battles around road and school funding. It is and will continue to be much more likely that localized ad-valorem property tax millages will drive increased local affordable housing investment.

Appendix I: Supplementary Tables and Figures to Housing Needs Analysis

Table A-I: Distribution of Regent-Approved Undergraduate Dormitory Costs, 2009-2010 to 2018-2019. Supplementary material to University of Michigan Regents’ Meeting Agendas.

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Rent-Equivalent</th>
<th>Min (Room and Board)</th>
<th>Max (Room and Board)</th>
<th>Min (Room)</th>
<th>Max (Room)</th>
<th>Median (Room and Board)</th>
<th>Median (Room)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-2019</td>
<td>$1,404</td>
<td>$1,133</td>
<td>$1,550</td>
<td>$883</td>
<td>$1,300</td>
<td>$1,464</td>
<td>$1,214</td>
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<td>2017-2018</td>
<td>$1,088</td>
<td>$1,100</td>
<td>$1,504</td>
<td>$850</td>
<td>$1,254</td>
<td>$1,421</td>
<td>$1,171</td>
</tr>
<tr>
<td>2016-2017</td>
<td>$1,039</td>
<td>$1,068</td>
<td>$1,598</td>
<td>$818</td>
<td>$1,348</td>
<td>$1,353</td>
<td>$1,103</td>
</tr>
<tr>
<td>2015-2016</td>
<td>$1,012</td>
<td>$1,037</td>
<td>$1,552</td>
<td>$787</td>
<td>$1,302</td>
<td>$1,314</td>
<td>$1,064</td>
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<tr>
<td>2014-2015</td>
<td>$1,021</td>
<td>$1,007</td>
<td>$1,506</td>
<td>$757</td>
<td>$1,256</td>
<td>$1,276</td>
<td>$1,026</td>
</tr>
<tr>
<td>2013-2014</td>
<td>$1,001</td>
<td>$982</td>
<td>$1,470</td>
<td>$732</td>
<td>$1,220</td>
<td>$1,245</td>
<td>$995</td>
</tr>
<tr>
<td>2012-2013</td>
<td>$1,007</td>
<td>$958</td>
<td>$1,434</td>
<td>$708</td>
<td>$1,184</td>
<td>$1,214</td>
<td>$964</td>
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<td>2011-2012</td>
<td>$1,079</td>
<td>$930</td>
<td>$1,392</td>
<td>$680</td>
<td>$1,142</td>
<td>$1,256</td>
<td>$1,006</td>
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<td>2010-2011</td>
<td>$1,048</td>
<td>$903</td>
<td>$1,352</td>
<td>$653</td>
<td>$1,102</td>
<td>$1,144</td>
<td>$894</td>
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<tr>
<td>2009-2010</td>
<td>$1,017</td>
<td>$877</td>
<td>$1,312</td>
<td>$627</td>
<td>$1,062</td>
<td>$1,111</td>
<td>$861</td>
</tr>
</tbody>
</table>

Housing Supply Gap (Units Demanded minus Units Supplied)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
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<td>$2,250 -- $2,500</td>
<td>$90K--$100K</td>
<td>-95</td>
<td>165</td>
<td>-188</td>
<td>-11</td>
<td>480</td>
<td>-1307</td>
</tr>
<tr>
<td>$2,000 -- $2,250</td>
<td>$80K--$90K</td>
<td>22</td>
<td>691</td>
<td>462</td>
<td>918</td>
<td>734</td>
<td>764</td>
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<tr>
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Non-Student Households

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Households Containing Students

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Figure A-I: Detailed unit-level needs analysis for all renter households, non-student households, and households containing students. American Community Survey 1-Year Public-Use Microdata, 2012 to 2017. See “Submarket Analysis” in data file for standard errors and other related information.
## Housing Supply Gap (Beds Demanded minus Beds Supplied, assuming 1 person/bedroom)

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### Non-Students

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<th>2014</th>
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### Students

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<th>2014</th>
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Figure A-2: Detailed bed-level needs analysis for all renters, non-student renters, and student renters. American Community Survey 1-Year Public-Use Microdata, 2012 to 2017. See “Submarket Analysis” in data file for standard errors and other related information.
Appendix II: Data Sources and Rationale for Use in Housing Analysis

American Community Survey

In our initial attempt to determine which submarkets of Ann Arbor’s overall rental market are the locus of housing unaffordability in the city, we drew on 1-year estimates of 1) household incomes and 2) gross rents in the City of Ann Arbor generated by the American Community Survey (ACS). We tabulated the number of households whose incomes fell into $10,000 buckets, ranging from $0-$10,000 to $40,000-$50,000. We then determined a range of gross rents that would have members of each of these buckets paying 30% of their monthly income in rent – $0-$250/month at the low end, and $1,000-$1,250/month at the high end.

However, the limitations of existing ACS tables soon became clear. Because our ultimate purpose was to determine students’ role in the housing market, we required data that would allow us to differentiate the rents paid by students and those paid by non-students. Pre-tabulated ACS data do not make this distinction; nor do they differentiate household income by educational enrollment.

To meet these needs, we turned instead to ACS 1-Year Public Use Microdata Sample (PUMS) files for the years 2007 to 2017. These files contain the anonymized ACS responses of a 1% sample of the populations of various Public Use Microdata Areas (PUMAs), of which the City of Ann Arbor is one, and thus permit the creation of custom tabulations that are representative of a particular area. Samples of both households and persons are available, and may be joined to cross-tabulate household- and person-level traits.

The cost of this specificity, however, is statistical certainty. Because PUMS data is drawn from only 1% of the population, estimates made about the general population based on a subset of that data reflecting individuals with various, overlapping characteristics (e.g., student renters in housing units that rent for less than $250/bedroom/month) are bounded by margins of error that may exceed the size of the point estimate itself. The more finely the dataset is divided (if we were to further divide that student population by the number of bedrooms in their homes, for example), the larger these margins of error grow. As such, we have chosen to restrict our analysis to supply and demand for units and beds by price point, rather than by price point and structure type.

Due to the large margins of error on population estimates produced from PUMS in the years 2007 to 2011, we have focused our PUMS analysis on the years 2012 through 2017. Throughout most of our analysis, we present average figures for the periods 2012-2014 and 2015-2017 to reduce measurement error. Year-by-year data is presented in Appendix I, but should be used

carefully, with reference to standard errors presented in the spreadsheet “Submarket Analysis,” which is included in the attached data file.

**University of Michigan Data**

We have supplemented our analysis of ACS data with data provided, in various forms, by the University of Michigan.

I. Common Data Set filings; 1998-1999 to 2008-2019

Each year, as a participant in the Common Data Set initiative, the University of Michigan reports a variety of information on the size and composition of the student body, with a particular focus on its undergraduate population. We drew on CDS data to measure the University’s level of enrollment (graduate, undergraduate, and total) since the 1998-1999 academic year.48

The University also reports in CDS the percentage of undergraduates housed on campus each year. We used these figures to confirm ACS estimates of the number of students in group quarters, as well as to benchmark the level at which UM provides student housing against the performance of its peers in the Big Ten collegiate athletic conference.

II. University Housing, Office of the Vice President of Student Life, University of Michigan; Internal Data on On-Campus Housing Capacity; 2005-2006 to 2017-2018

In the course of our discussions with UM’s Office of Enrollment Management, we obtained internal data from University Housing on the number of on-campus beds available to students each academic year, dating back to the 2005-2006 academic year.

III. University of Michigan Board of Regents: Regents’ Meeting Minutes; 2009 to 2018

In order to determine how the cost to students of on-campus housing has changed over time and estimate the likely cost of future housing, we examined historic undergraduate housing rates approved by the UM Board of Regents each summer.49 Rates charged to undergraduates for academic year housing (room and board) were divided by nine to arrive at a monthly cost; an additional $250 per month in estimated food expenditure was subtracted to obtain a monthly rent equivalent (i.e., room, no board). These calculations are shown in Appendix I, Table A-1.

Housing for graduate students (i.e., units in the Munger Graduate Residences and Northwood developments) was excluded from these calculations. Graduate students have occupied 20-22% of on-campus housing units from the 2015-2016 academic year onward, following the opening of the Munger Graduate Residences; prior to this, graduate students accounted for roughly 10% of on-campus residents. However, undergraduate enrollment is increasingly more quickly than

graduate enrollment; average year-over-year enrollment increases among undergraduates over our study window are also roughly 2.4 times that among graduate students, owing to a larger base population.

In addition, undergraduate housing has dominated many of the conversations on housing that we have had with university representatives and community stakeholders throughout this study. Though anecdotal, this fact (combined with outsize growth in the undergraduate population) suggests that the university can more plausibly be expected to build additional undergraduate housing in the near term than graduate housing, though neither scenario appears particularly likely. We therefore considered only undergraduate housing rates when pricing rooms in hypothetical new developments.
Appendix III: Nationwide University Affordable Housing Programs and Policies

I: Direct or indirect investment in housing development

University of Pennsylvania, Philadelphia, PA
- West Philadelphia Initiatives (1990s-2000s urban renewal project)
  - Bought vacant/blighted homes, rehabbed, and turned over to a community development corporation
  - Enhanced loan and loan forgiveness program (still exists) for staff and faculty
    - 1,200 participants, $10M since 1998
  - Worked with developer to construct $55M, 282-unit building
  - Neighborhood Housing Preservation and Development Fund: Raised $50M in capital to preserve “moderate cost housing.” University’s $5M stake used as a leverage fund: Fund now owns/operates 448 units for community and students
- Link: [http://www.evp.upenn.edu/strategic-initiatives/housing-and-homeownership.html](http://www.evp.upenn.edu/strategic-initiatives/housing-and-homeownership.html)

Harvard University, Cambridge, MA
- 20/20/2000 affordable housing initiative
  - Over the past decade, Harvard University has helped to build and renovate 4,350 units of affordable housing in Boston and Cambridge by investing $20 million in low-interest loans through the Harvard 20/20/2000 initiative. Through it, Harvard has helped to fund about 17 percent of the affordable housing units built or renovated in Cambridge and Boston since 2000.
  - The Harvard 20/20/2000 initiative is a capital fund of $20 million, over 20 years, provided at a 2 percent interest rate. Launched in 2000, it has supported 120 local housing projects to date.

Howard University, Washington, DC
- Howard University is seeking to offload more than a half-dozen university properties that officials deem would be better served by mixed-use redevelopment.
- Ground leases on university owned vacant parcels consolidated into a land bank for mixed-use development, see, Trellis House (https://www.trellishousedc.com)
  - Case Study: [https://www.huduser.gov/portal/casestudies/study-121318.html](https://www.huduser.gov/portal/casestudies/study-121318.html)
  - “To avoid the risks of development projects, the university explored partnerships with outside developers while retaining ownership of the land. In one such partnership, for-profit developers RISE and Gateway Investment Partners transformed 1.3 acres of university-owned land into a mixed-use development. Opened in October 2018, Trellis House offers
319 apartments and 11,517 square feet of retail space in a 6-story building”

- “The studio, one-, and two-bedroom rental units at Trellis House include 36 affordable units; 27 units were created through the District of Columbia’s inclusionary zoning program and are available to low-income households, and 9 units are reserved for Howard University faculty, staff, and graduate students. Among these affordable units, 6 are reserved for households earning up to 60 percent of the area median income (AMI), and 30 are reserved for those earning up to 80 percent of AMI. Fifty of the market-rate units are set aside for those affiliated with Howard University, and 233 units are open to the public.”
- “The $97 million development was financed entirely through private loans and used no public subsidies. The developers signed a 50-year ground lease with Howard University that can be extended for two 25-year terms. When the lease expires, Howard will take possession of the building and other improvements.”
- Developer -RISE A Real Estate Company - https://risere.com/project/trellis-house/, bought by CIM Group

- Redevelopment of outmoded dormitories into residential properties available to the community, all market rate
  - The university has recently signed ground leases for two nonprofit community development corporations, Urban Investment Partners and the Neighborhood Development Corporation, to convert two unoccupied dormitories, Carver Hall and Lucy Diggs Slowe Hall, into residential properties.
  - Planning Commission demanded, as condition of approving changes to campus plan, that Howard create 50-100 affordable units at 30-60% AMI (private university, property can only be removed from the campus plan by zoning commission order).
  - Link: GOVERNMENT OF THE DISTRICT OF COLUMBIA Zoning ... - DC.gov https://app.dcoz.dc.gov/Zdocs/getExhibit.aspx?case_id=11-15F...42...1...1
  - Link: https://www2.howard.edu/external-affairs/departments/community-association/community-planning-and-development

Stanford University, Palo Alto, CA

- Evergreen Loan Fund
  - $21M+ in loan financing, to be administered by a CDFI, to invest in very-low and low-income apartments
  - Immediate $14.3M payment to County to construct very-low income apartments
    - All tied in to planned university expansion, with new facilities include dorms, through 2035
University of Illinois Chicago, Chicago, IL
- UIC Neighborhoods Initiative, Affordable Housing Fund
  - In collaboration with The Resurrection Project, Near West Side Community Development Corporation and the City of Chicago, the Affordable Housing Fund provided resources for rehabbing one-to-four unit homes in the Pilsen and Near West Side communities, with matching funds from the City of Chicago. It helped to facilitate structural improvements, lead paint abatement, and energy improvements in one-to-four unit residential buildings owned by Pilsen and Near West residents. (funding source: HUD, City of Chicago)
  - Link: https://greatcities.uic.edu/uic-neighborhoods-initiative/

Santa Clara University, San Jose, CA
- Mixed use development
  - Santa Clara University Technology Innovation & Educator Faculty/Staff Housing - university led project; the proposal calls for as many as 295 apartments to house staff and faculty at Santa Clara University. The project also includes a ground-floor tech incubator totaling 20,000 square feet.

II: Loan and down payment support for faculty and staff

Duke University, Durham, NC
- Self-Help Program
  - Affordable Housing, home-ownership program for employees, 10 homes constructed in partnership with city (using HUD), Habitat for Humanity, Durham Community Land Trustees, uses land trust model; $10,000 forgivable loan for downpayment (after 5 years), partnership

Ohio State University, Columbus, OH
- Campus Partners
  - Appears to be a non-profit with OSU, City of Columbus, and other non-profit and community partners, board is largely OSU; portfolio of revitalization projects
  - Forgivable loan program for OSU staff and faculty, up to $15,000 within University District
  - Link: https://www.campuspartners.org/what-we-do
- Partners Achieving Community Transformation (PACT)
  - Appears to be a non-profit with OSU, City of Columbus, and other non-profit and community partners, board is largely OSU; portfolio of community development initiatives (community planning, education, services, home repair)
  - Forgivable loan program for OSU staff and faculty, up to $15,000 within University District
Yale University, New Haven, CT
- Homebuyer Program
  - Established 1994, 1,000 participants; provides employees with a $5,000 first-year bonus and an annual $2,500 grant for up to 10 years as long as they continue to own the home and remain employed by Yale.
  - Link: https://onhsa.yale.edu/strong-neighborhoods-0

Stanford University, Palo Alto, CA
- Homebuyer Program
  - Loan assistance is Faculty and Executive Level staff only; stipend for new homebuyers only available to recently hired/promoted tenure-track faculty
  - Link: https://fsh.stanford.edu/homebuyers/index.shtml

II: Local housing research and engaged learning partnerships

University of Pennsylvania, Philadelphia, PA
- Netter Center
  - Founded after experiences with the West Philadelphia initiative; research on anchor institutions and creator of the Anchor Institutions toolkit
  - Link: https://www.nettercenter.upenn.edu/sites/default/files/Anchor_Toolkit6_09.pdf

University of Colorado - Boulder, Boulder, CO
- Boulder Affordable Housing Research Initiative
  - The goal of the BAHRI research team is to conduct compelling and informative research on affordable housing needs, accessibility, and availability.
  - University represented on 2015 Housing Boulder Working Group: https://bouldercolorado.gov/housing-boulder/housing-boulder-working-groups
  - Link: https://www.colorado.edu/bahri/

Portland State University, Portland, OR
- Small Backyard Homes Initiative
  - Research into ADUs to broaden use and assist property owners in designing and permitting ADUs; associated student design projects
  - Link: https://www.pdx.edu/sustainability/small-backyard-homes-initiative

Yale University, New Haven, CT
- Jim Vlock First-year Building Project - School of Architecture
  - Required course for architecture students, design and build affordable housing, have been working with a non-profit focused on homelessness in New Haven
  - Link: https://www.architecture.yale.edu/academics/building-project

Pennsylvania State University, State College, PA
• GreenBuild
  • Partnership between College of Architecture and Engineering and State College Community Land Trust; duplex design/build
  • Link: https://news.psu.edu/story/535493/2018/09/10/research/penn-state-students-help-create-affordable-sustainable-housing

Arizona State University, Phoenix, AZ
• Stardust Center
  • Phase 1—Develop affordable housing; Phase 2—Empower students to help build affordable, sustainable communities
  • Link: https://sustainability.asu.edu/stardust/about/

Auburn University, Auburn, AL
• Rural Studio
  • “Rural Studio is an off-campus design-build program part of the School of Architecture, Planning and Landscape Architecture at Auburn University. We have been in Hale County since 1993”
  • Link: http://www.ruralstudio.org
Attachments

- Data File: Housing Needs and Trends Analysis (including PUMS data, spreadsheets, and STATA scripts for further analysis)
- Infographic: Recent Trends in Ann Arbor Population, University of Michigan Enrollment and Housing Provision
- Infographic: Student and Non-Student Renter Characteristics and Need at a Glance
- One-sheet: Affordable Housing Partnerships - Universities
- One-sheet: Affordable Housing Partnerships – Medical Systems
- One-sheet: Potential Funding Mechanisms