The Unhoused Population of Missoula

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MBA694 Telling Stories with Data

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Executive Summary

Entries into and exits from the MCES are both increasing year over year, but exits are increasing at a faster rate. The pandemic may have caused damage to a houseless situation that was improving in Missoula. The Missoula houseless population is accumulating at a positive but declining rate. A large portion of the houseless population consists of white, male adults (45%-48%) and there are very few houseless minors and people who identify as a non-traditional gender type. Houselessness is on the rise for young adults but declining for those of old age. The coming of spring brings a large difference in entries and exits with more entries than exits. The chronicity of this houseless population is growing long term. The data suggests that individuals are spending less time without a home as time goes on. There is only one client who has remained homeless throughout the data set.

Introduction

The Community Development Division of Missoula's Community Planning, Development, and Innovation (CPDI) department joined the Homeless Management Information System (HMIS) data collection effort and have created a system for tracking and describing the houseless in Missoula, MT. The operation of the Missoula Coordinated Entry System (MCES) has produced a database that provides the basis for the analysis in this report. Numerous metrics and classifications have been included in the data and consist of demographic information such as date of birth, race, age, gender identity, type of household, and military involvement. Other elements in the data set include a measure of vulnerability (MAP score), client identification number, a measure of chronicity (to be discussed later in the report), and dates of entry into and exit from the MCES. This is not an exhaustive list of the data that has been collected on the affected clients that have been involved with the system. The data spans from June of 2017 to today, and the system continues to operate and collect data on the Missoula houseless population.

Changes in Number and Composition During COVID

Figure 1 shows the number of entries into and exits from the Missoula Coordinated Entry System which seeks to track the number and status of houseless individuals. At a glance, the data looks erratic and difficult to decipher, but there are some important things to take away from this visualization. Firstly, the number of exits jumps off the chart in May of 2019. There were 354 recorded exits from MCES during this month, and the y-axis of this chart was deliberately scaled down so to retain the visibility of the differences in entries and exits from month to month. Another important element of the chart to assess is the linear regression component. According to the entry regression, there are increasing numbers of entries to the system as time goes on, which is not ideal. The regression line of the exit series, however, suggests that exits are increasing at a faster rate over time, which suggests that houselessness growth rate may be decreasing year over year.

Given this visualization of the data, it is difficult to assert that COVID had a large impact on houselessness. Shortly after the pandemic began, one can see a relatively sharp increase in entries and a sustained six-month gap between the number of entries and exits, which would imply an increase in houselessness during this period. A more dramatic gap can be seen

during 2018, but this data set was new at the time so a comparison may not be of much use. This chart can be used in tandem with a list of related events or catalysts to develop theories about what causes these fluctuations in the houseless population. If one can successfully do so, they can also develop actionable theories and more effectively allocate resources and lobbying efforts where they will do the most work for the benefit of the houseless.

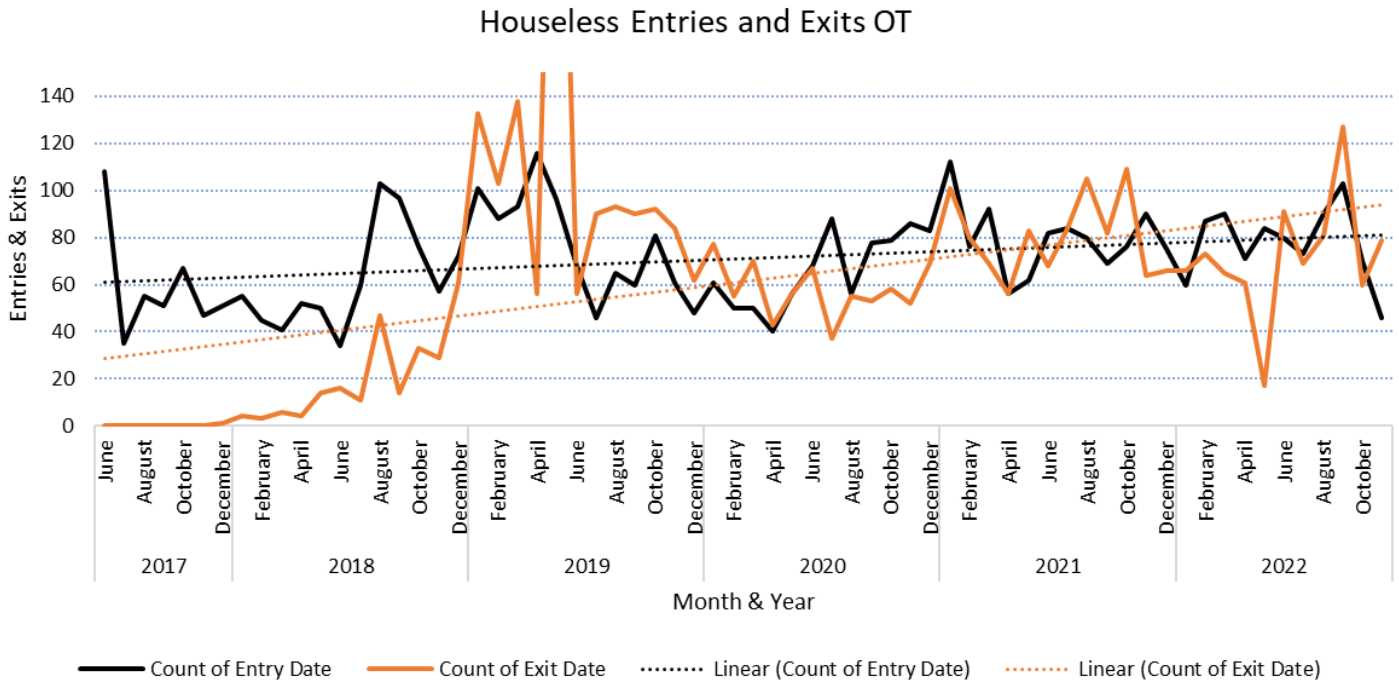

Figure 1. A line chart showing the numbers of entries and exits to the system per month for the entire data set. Corresponding regression lines are included.

Figure 2 visualizes the same data from above in a slightly different way. This is a plotted difference between entries and exits for each month within the span of the data set and shows whether the houseless population increased or decreased in that month according to the MCES. Values that register above the zero line of the y-axis indicate that there were more entries to the MCES than exits, implying an increase in houselessness for that month. Values below zero then indicate a decrease in houselessness. The most important take away from this chart is that the linear regression of this curve has a negative slope, which corroborates the suspicion from the previous chart that the rate in growth of houselessness has slightly decreased over the time that this data has been accumulating. There may possibly be an issue with the anomalous spike in exits in May 2019 skewing the regression lines.

Again, one can see the rate of houselessness on the rise in 2020 while COVID was most rampant in the U.S., but the growth in houselessness appears to have been slowing since June of that year. It is important to understand that for houselessness to actually decrease over time, this curve must spend more time below the zero line than above it. If the curve stays mostly above the zero line, more individuals are entering the system than leaving it and the houseless population is growing. To reiterate, it may be useful to examine the relevant environmental elements and surrounding events that occurred around the peaks and troughs of this chart so to develop theories of cause and effect that can lead to actionable insights.

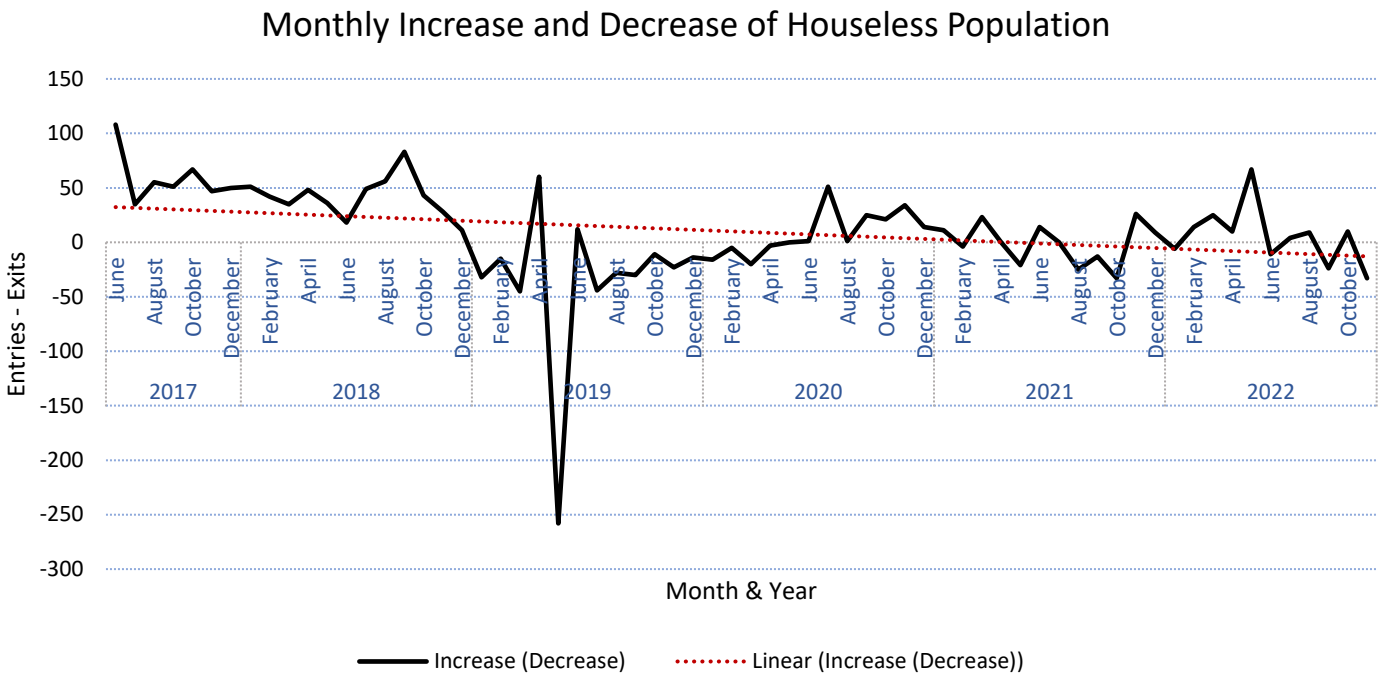

Figure 2. A line chart showing the difference between entries and exits to the MCES along with a linear regression line.

Figure 3 uses the difference between entries and exits for each month to estimate the evolution of the houseless population size of Missoula month over month. This results in a running count of how many houseless individuals there are at any given time. The number of houseless accumulated to over 900 clients about a year and a half from the advent of the MCES where the curve peaks. The low of around 440 houseless clients occurred shortly after the pandemic began and has been increasing since. The rate of growth does seem to have slowed a small bit since 2020 as previously hypothesized.

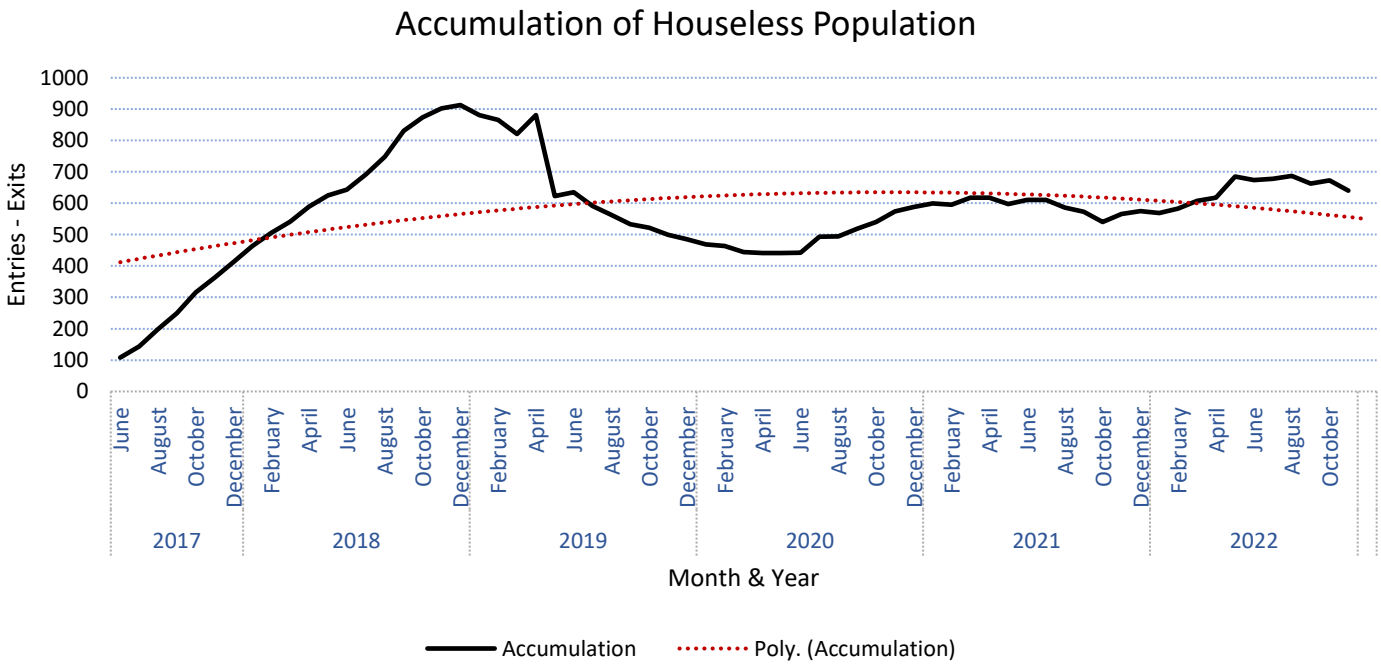

Figure 3. A line chart showing the accumulation and abatement of the houseless population within the MCES.

Figures 4 and 5 consider only the houseless population of Missoula for each point in time. It is consistently the case that this population is between 45% and 48% white male adults since the beginning of 2019. Currently, there are over 300 white male adults with a houseless status in Missoula. The "Other" category consists of individuals who identify as transexual or non-binary and have only represented between 1% and 2.5% of the population since 2019 while women make up between 33% and 36% over the same time span.

It may be tempting to conclude that the relative portions that are white and male are increasing rapidly, but these two charts only show counts over time. The corresponding portions have remained steadier in the data since 2019 than figures 4 and 5 would imply, as can be seen in figures 6 and 7. Figure 7 shows that the female portion of the houseless population is slightly shrinking while the male portion is slightly growing, though both segments are growing nominally. This is because the male houseless population is growing at a faster rate than the female population. During 2018, much of this data was not being collected which is why it is not included in the latter two figures 6 & 7, as the data from this year skews the visualizations. The year 2017 was not included in any of these charts due to incomplete data.

The number of American Indian, Alaskan Native, or Indigenous people in the population has grown since 2018 but has remained under 20% of the total population. Those of African, Asian, or Pacific heritage all have been and remain relatively small components of the Missoula homeless at under 10% cumulatively.

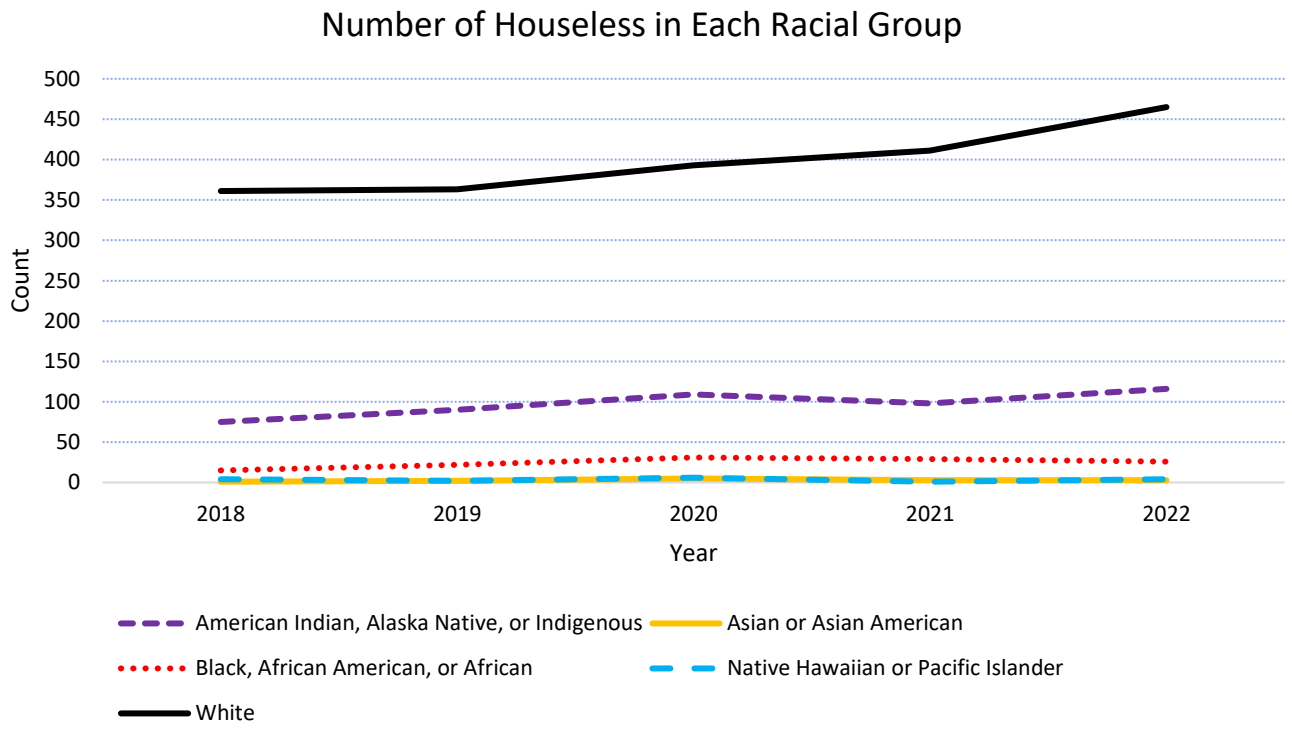

Figure 4. A chart showing the number from each ethnic group with houseless status at each time-period.

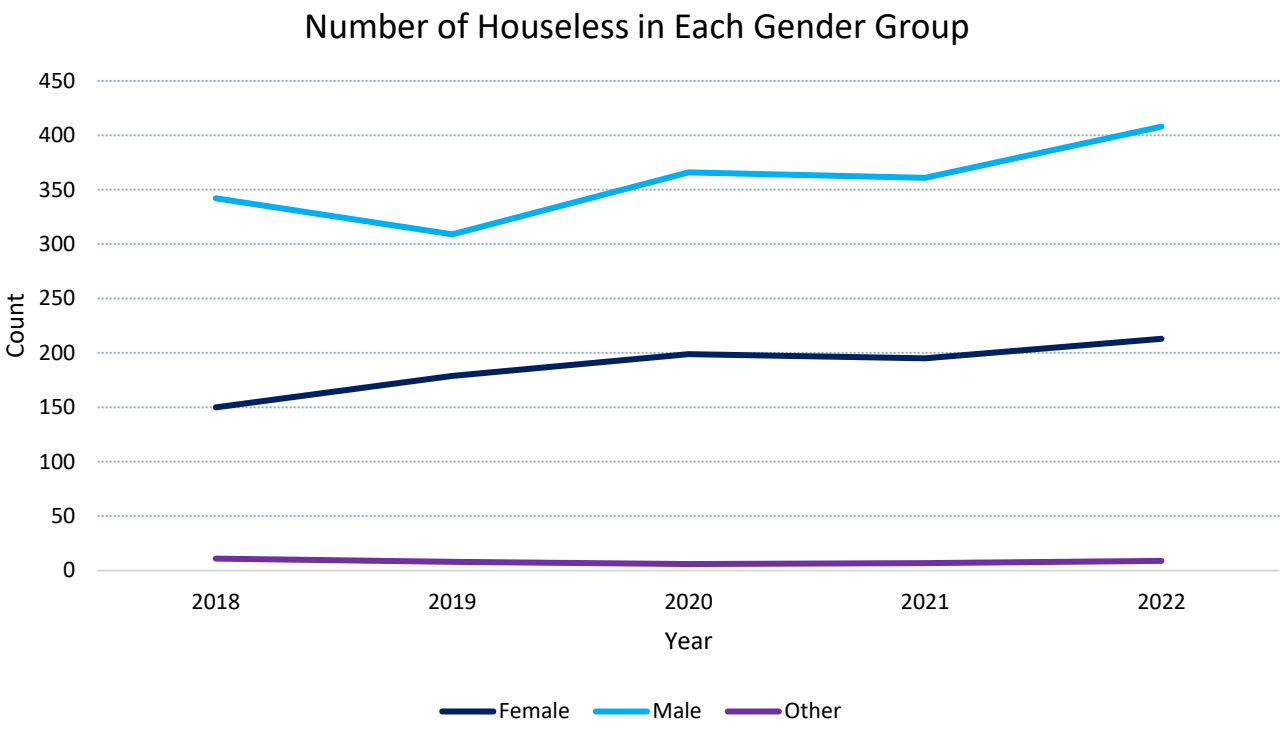

Figure 5. A line chart showing the number from each gender group with houseless status at each time-period.

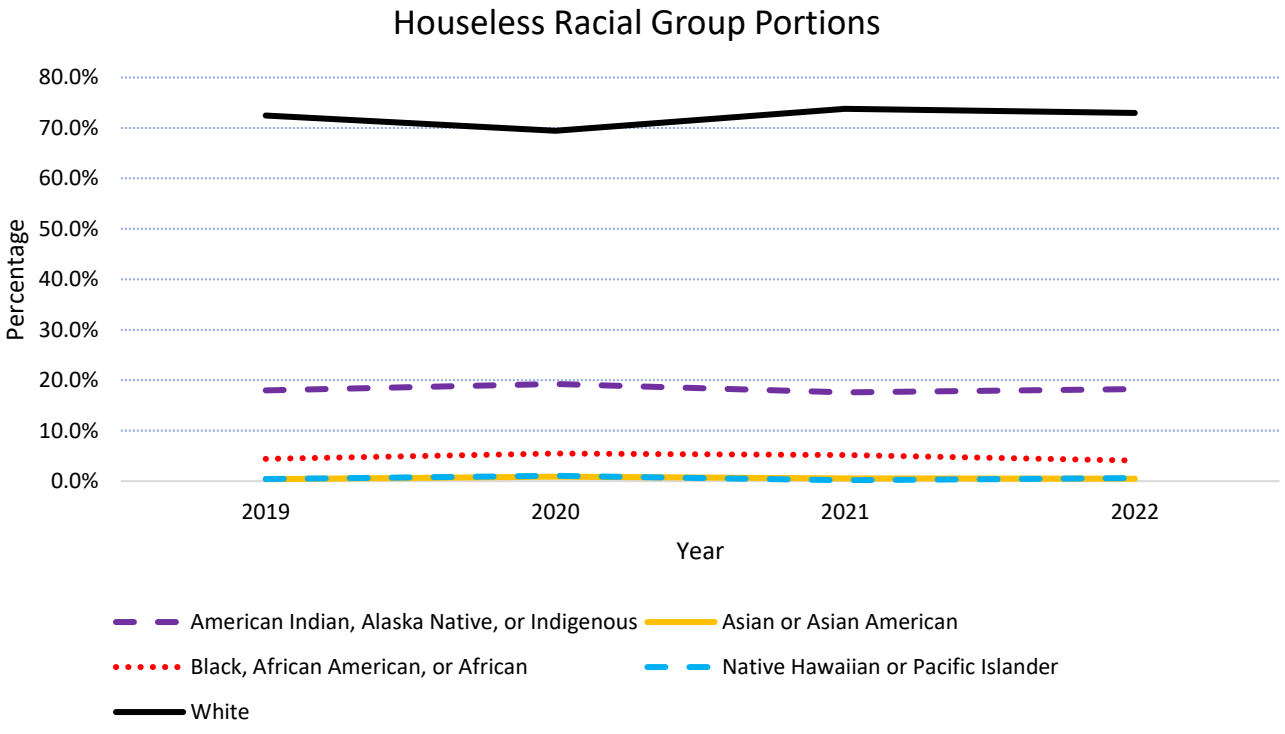

Figure 6. Percentages year over year of each racial group in the houseless population.

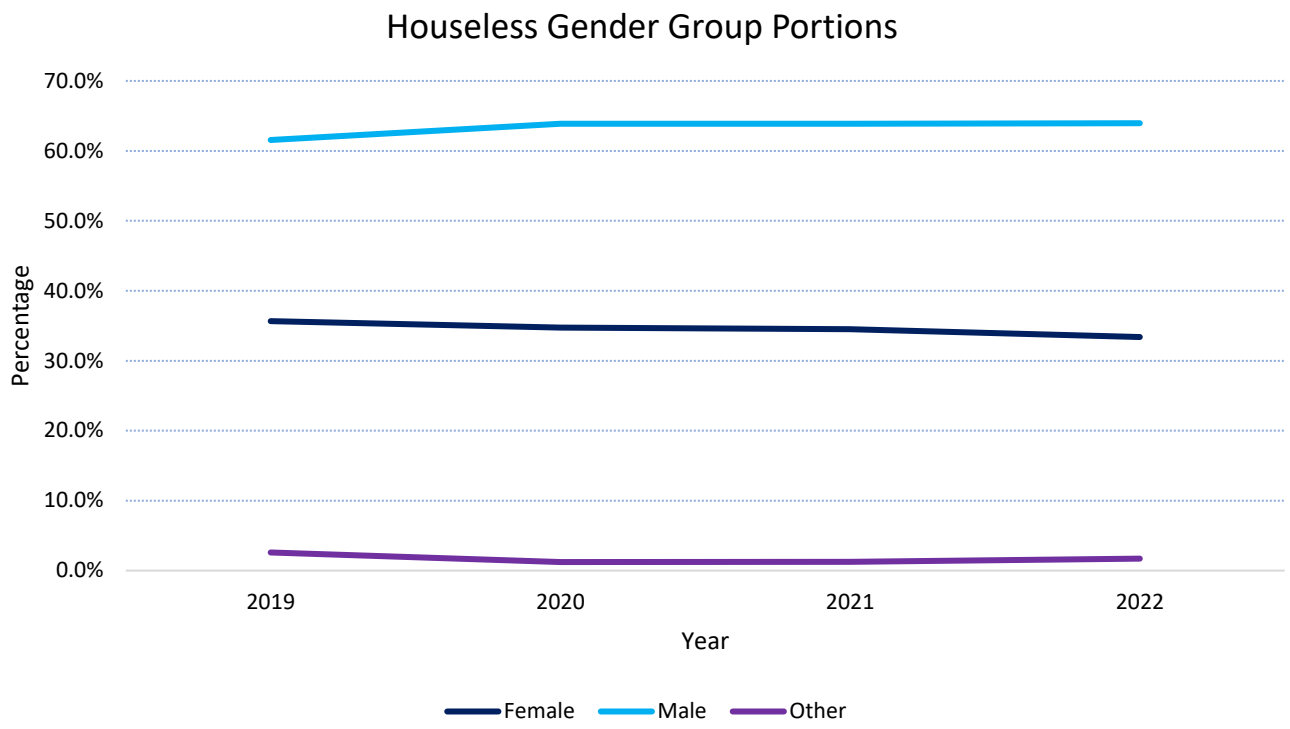

Figure 7. Percentages year over year of each gender group in the houseless population.

Age Breakdown of the Unhoused

In Figure 8 below, one can see the current age breakdown of the houseless population. The age groups are defined as follows: minors are younger than 18 years old, young adults are 18-29 years old, adults are 30-39, mature adults are 40-49, the middle aged are 50-59, the elderly are 60-69, and those of old age are 70 or older. Thankfully, minors and those of old age represent very small portions of the houseless population while the mid-range age groups compete for the highest portion of the houseless. Currently, adults aged 30-19 years old represent the highest portion of the houseless population.

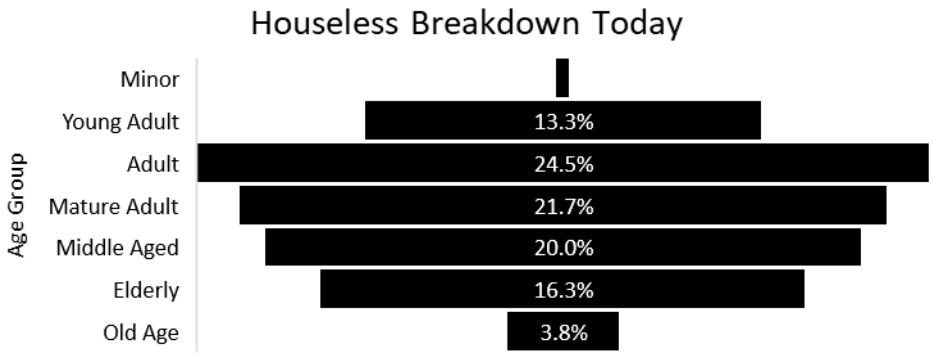

Figure 8. The distribution of the houseless population into age groups today.

Figure 9 provides a view of how the population broke down into age groups four years ago from the time that this analysis was done, December 1st, 2022. There has been a shift in age distribution to the younger adult groups while the minor and old age constituency has abated relative to the other groups.

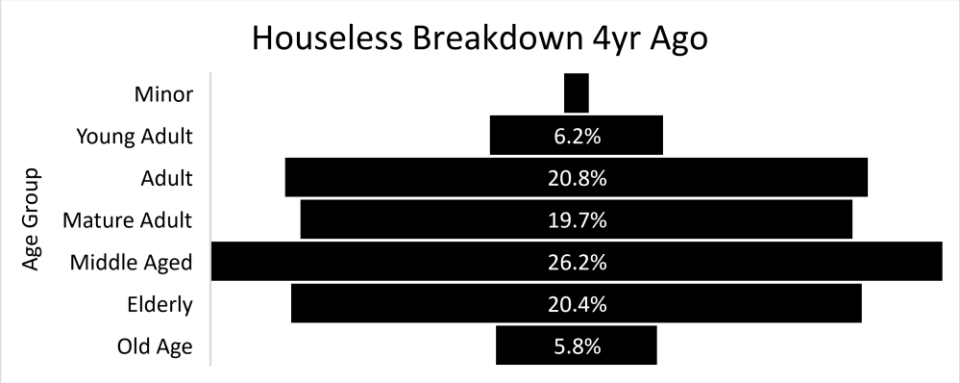

Figure 9. The distribution of the houseless population into age groups four years ago.

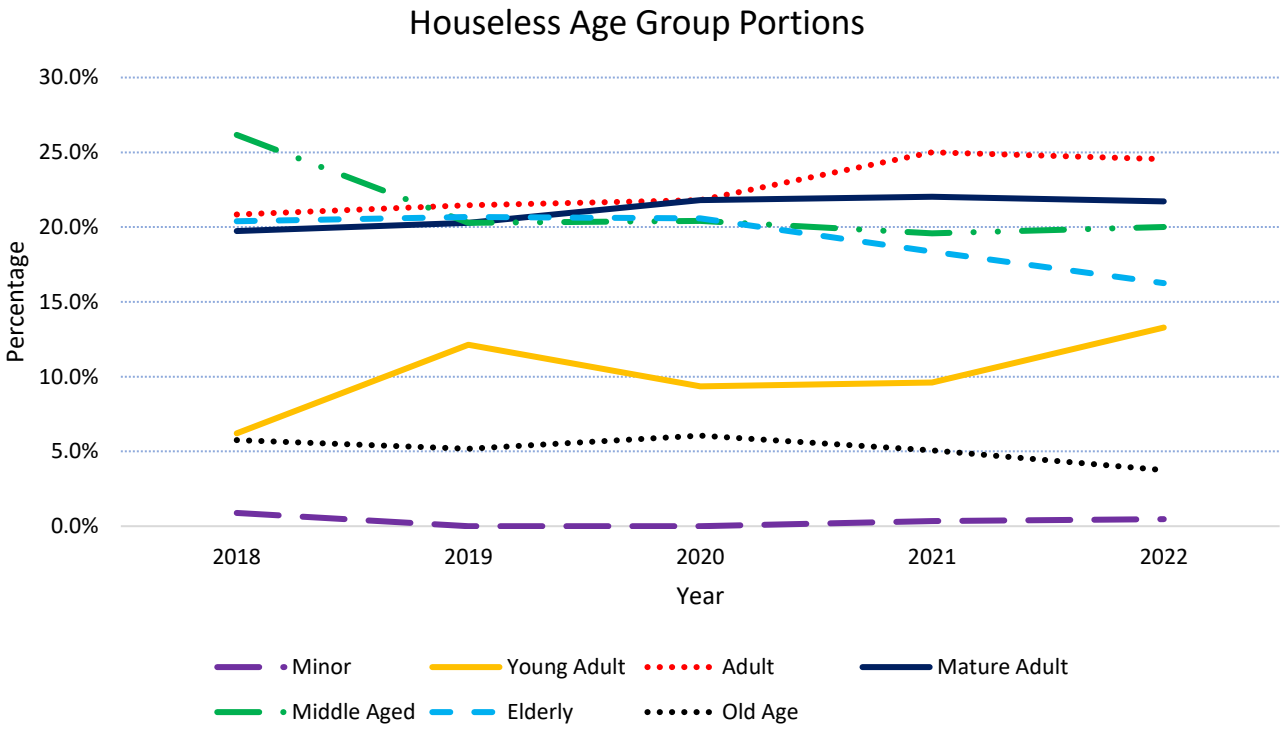

Figure 10. The distribution of age groups with houseless status year over year.

Seasonal Trends

The following charts show the averages of entries and exits during each month for each complete year of data. One data point (December) was extrapolated for the year 2022. According to Figure 11, individuals exit the MCES much less during the summer. This could be due to warmer months being more hospitable to the homeless and so fewer of the

homeless are motivated to acquire housing during this time. Entries into the system seem to top in the fall sometime in September. Overall, there are less entries and exits to the system in the spring and summer months.

Figure 12 shows the difference between the monthly averages, with positive numbers representing more individuals entering the system than leaving it. The spring gap in figure 11 becomes much more obvious when we look at the differences. The key takeaway from these charts is that from the month of March to the month of June for any given year, more people enter the system than leave it. This is important for MCES managers to understand so they can prepare for seasonal inflows and outflows by preparing more accommodation or facilitating client transfers to housed situations.

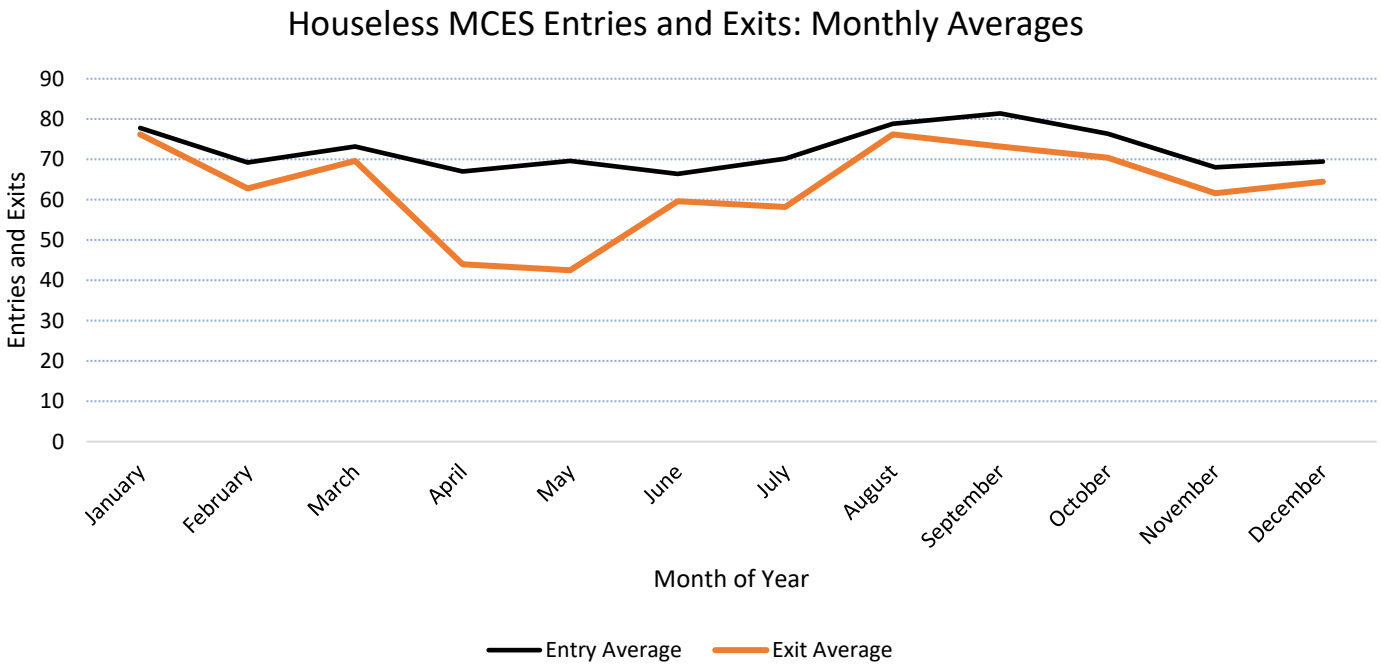

Figure 11. The Average number of entries and exits for each month from 2018 to 2022.

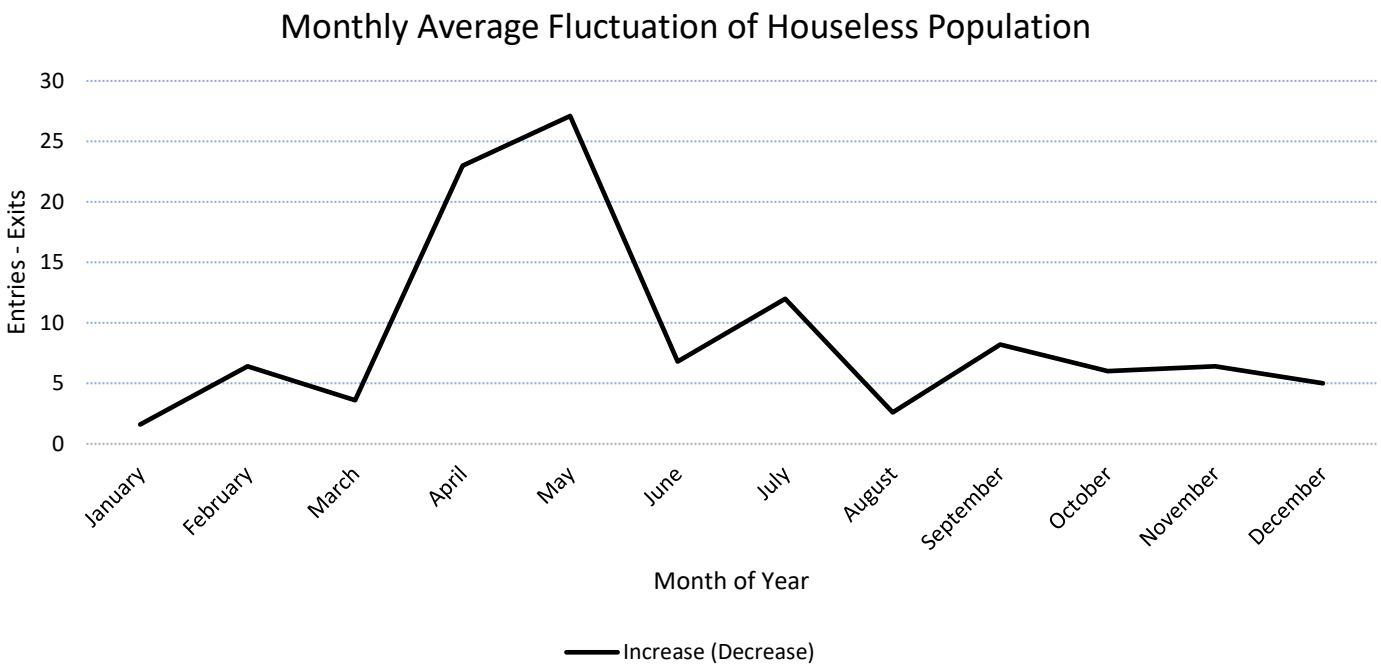

Figure 12. The difference between average number of entries and exits for each month from 2018 to 2022.

Changes in Houseless Durations and the Lone Wolf

Figure 13 shows the average number of weeks that individuals have remained houseless given their entry date into the system. One can see from the beginning of the time series that many individuals entering the system during this first stretch of about a year have spent much more time houseless than those entering the system any time after that. In late 2018 through 2019, the average number of weeks of the houseless stayed between 23 and 50. Since then, this number has dropped to range between 20 and 40 average weeks houseless for entrants. The regression line certainly does have a negative slope which implies that people are spending less and less time in the system.

Due to the nature of time, it should be considered that those who have recently entered MCES have not had time to establish how long they will ultimately remain in the system. It will only be possible to know how much time the current houseless will have remained so in the future. The last few months of this data set was extrapolated using weighted averages on prior months. Only one individual has remained houseless across the entire data set. His client ID is 381, he is a white 59 year old male, and he represents 1/4682 (0.02%) of the dataset.

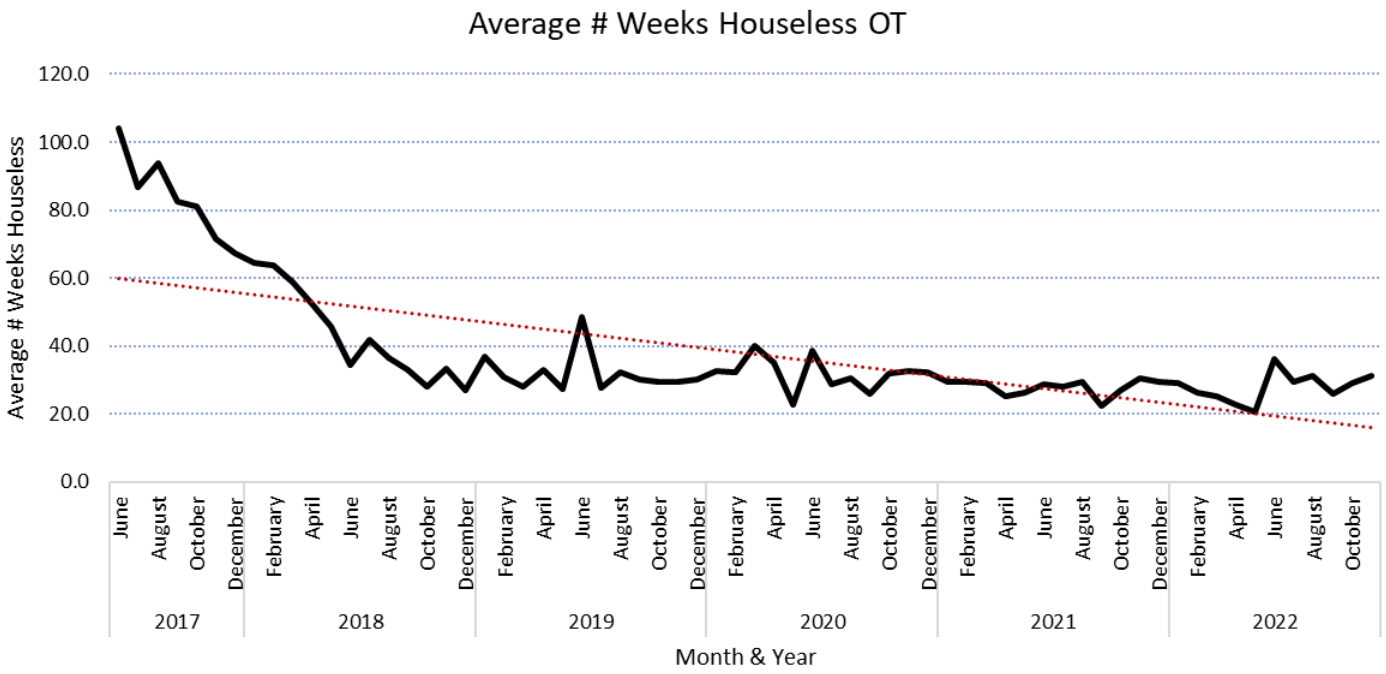

Figure 13. A chart showing how average duration of individual houselessness has changed over the data set.

A Look at the Fraction of Chronicity

Figure 14 is the result of an analysis on houseless chronicity among the population. An individual is defined as houseless with chronic status if they have a disabling condition and has been unhoused for an entire year or has been unhoused four or more times in the last three years. The upward sloping regression line suggests that as this population evolves, more and more identify themselves as chronically houseless. The numbers are now flirting with pre-pandemic highs around 30%, and a drop below this number would mark a significant improvement. The highest point on this chart occurred in July of 2021 where the fraction of chronicity of entrants was at 69%. High fractions of chronicity indicates that there are perhaps characteristics of the local housing market, legislation, and public attitudes that systematically penalize and entrap individuals who become caught in a negative feedback loop. Efforts at providing those with chronicity with special assistance in maintaining a permanent address and keeping some sort of work may be necessary to help suppress these numbers.

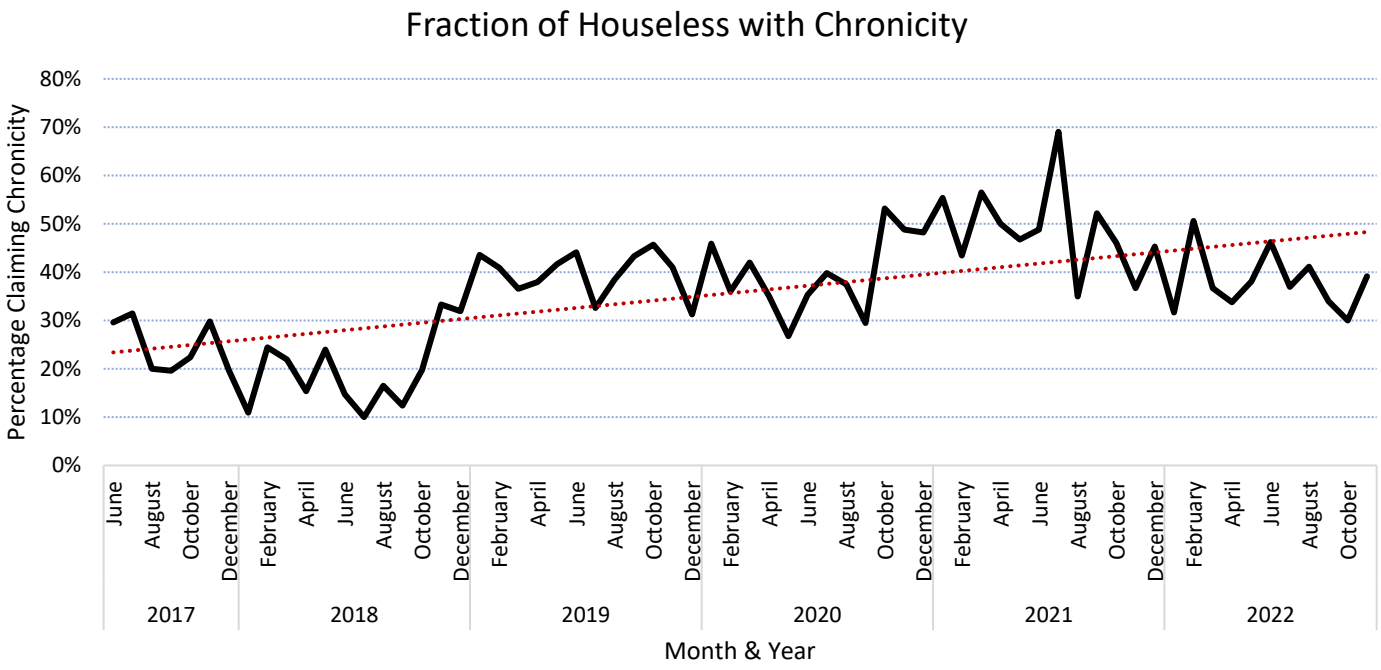

Figure 14. A line chart with linear regression line showing how the fraction of those with houseless status who also have chronic status has changed over the span of the data set.

Conclusion

A reiteration of the main findings of this analysis and their implications concludes this report. Entries into and exits from the MCES are both increasing year over year, but exits are increasing at a faster rate. The pandemic may have caused damage to a houseless situation that was improving in Missoula. The Missoula houseless population is accumulating at a positive but declining rate. A large portion of the houseless population consists of white, male adults (45%-48%) and there are very few houseless minors and people who identify as a non-traditional gender type. Houselessness is on the rise for young adults but declining for those of old age. The coming of spring brings a large difference in entries and exits with more entries than exits. The chronicity of this houseless population is growing long term. The data suggests that individuals are spending less time without a home as time goes on. There is only one client who has remained homeless throughout the data set. There are several implications of these findings to consider. Identify environmental elements and events related to large movements in the Missoula houseless populations. Allocate resources and lobbying efforts to mitigate the impact of those factors on houselessness. Address the reasons why white adult males might make up such a large portion of the houseless population. Consider ways to alleviate the extra burden felt by the chronically houseless population.