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Krista Evans

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Tackling Homelessness with Tiny Houses: An Inventory of Tiny House Villages in the United States

Krista Evans

Missouri State University

Across the United States, tiny house villages are increasingly appearing as a method of addressing homelessness. There has been no formal or sustained effort to document tiny house villages for the homeless, however. This research involves the development of a database on the location and characteristics of tiny house villages for the homeless in the United States. The database not only includes locational information but involves an inventory of several physical and social characteristics at each site. Furthermore, an open-access browser-based Web-mapping app has been developed that will allow users to not only visualize the geographic location and data associated with these villages but input data on new tiny house villages for the homeless as they are opened. The database has resulted in a wealth of information, including the average size and cost of tiny houses in villages for the homeless, as well as the percentages of villages that offer amenities such as transportation access and mental health services. This article provides an overview of the data in the national tiny house inventory and potential venues of research that could aid community planners and advocates of tiny house villages for the homelessness in best integrating these developments. **Key Words: homelessness, tiny house data, tiny house villages.**

美国各地越来越多地采用小屋村的方式来安置无家可归者,然而,对于这些无家可归者居住的小屋村,却鲜有正式或持续的记录。本研究中所介绍的数据库开发涉及了美国无家可归者的小屋村在位置和特征方面的数据。这个数据库不仅包含位置信息,还列举了每个地点的多种物理和社会特征。此外还开发了一种基于浏览器的开放式网络地图映射应用程序,该应用程序不仅可以向用户通过可视化方式展示这些村庄相关的地理位置和数据,还可以在新的小屋村向无家可归者开放时输入通规和。心理健康服务等提供配套设施打场无家可归者提供小屋村中住房的平均面积和成本,以及通便利和心理健康服务等提供配套设施和小屋村的百分比。本文概述了全国小屋的数据以及可供研究的潜在场所,这些资料可以帮助社区规划者和无家可归者小屋村的倡导者,让他们能以最佳的方式对这方面的开发工作进行整合。 关键词:无家可归者,小屋数据,小屋村。

A través de los Estados Unidos están apareciendo con creciente frecuencia las aldeas de casas diminutas como método para abocar el problema de la carencia de techo. Sin embargo, no ha existido un esfuerzo formal o sostenido para documentar el fenómeno de las aldeas de casas diminutas para quienes carecen de vivienda. Esta investigación incluye el desarrollo de una base de datos sobre la localización y características de esas aldeas de casas diminutas para los sin techo en los Estados Unidos. La base de datos no solo incluye información locacional sino que implica un inventario de varias características físicas y sociales para cada sitio. Aún más, se ha desarrollado una *app* de acceso abierto para búsquedas en mapas basada en la Web que ayudará a los usuarios a no solo visualizar la localización geográfica y los datos asociados con estas aldeas sino a ingresar datos sobre nuevas aldeas de este tipo, a medida que sean abiertas. La base de datos ha resultado en una riqueza de información, incluyendo el tamaño promedio y costo de las casas minúsculas en ese tipo de aldeas, lo mismo que los porcentajes de aldeas que ofrecen comodidades como el acceso al transporte y los servicios de salud mental. Este artículo ofrece una visión general de los datos en el inventario nacional de casas minúsculas y los campos potenciales de investigación que podrían ayudar a los planificadores de la comunidad y a los defensores de las aldeas de vivienda minúsculas, carencia de techo, datos sobre casas diminutas.

Tiny houses have been growing in popularity in the United States (Dion 2015; Ford and Gomez-Lanier 2017; Evans 2018a; Harris 2018). There is no formal definition of tiny, but most advocates would assert they are roughly in the 400 ft² range, although much larger units have been included in the definition (Evans 2018b; Shearer and Burton 2019). Tiny houses on wheels are often synonymously associated with the term tiny houses, yet tiny houses can also be foundation built. Tiny house living is being pursued for multiple reasons, among them to reduce environmental impacts, to address housing affordability concerns, and for lifestyle simplification (Kilman 2016; Ford and Gomez-Lanier 2017; Harris 2018). Significant, there appears to be

an increasing trend toward addressing the problem of homelessness with tiny house villages (Finley 2003; Heben 2014; Herring 2014; Segel 2015; Fowler 2017; Keable 2017).

It is estimated that on any given night in the United States there are approximately 553,742 individuals who are homeless, of whom about 39,500 are veterans (National Alliance to End Homelessness 2017, 2018). Recent efforts to raise awareness and funds specifically for homeless veterans have resulted in a 56 percent decrease in the homeless veteran population, but the struggles that this population continues to experience in terms of homelessness is cause for concern (National Alliance to End Homelessness 2017). Homelessness is a multifaceted problem in the

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United States, with numerous causes and potential strategies for addressing it. Some of the factors leading to a large homeless population in the United States are poverty, lack of affordable housing, lack of adequate social services for the those with mental health problems, and substance abuse issues (Mitchell 2011; Byrne et al. 2013; Daly 2013; Wright 2017). Over the last several decades, homelessness has frequently been addressed with temporary measures such as soup kitchens, emergency shelters, and transitional housing (National Alliance to End Homelessness 2018). Yet there is growing recognition that these efforts are not adequate and that perhaps a more permanent solution is needed (Tsemberis and Eisenberg 2000; Daly 2013; Segel 2015; National Alliance to End Homelessness 2018). Tiny house villages could be seen as an increasingly attractive method of addressing homelessness in that they have the potential to offer a more permanent solution to homelessness than the band-aid approaches of soup kitchens and overnight shelters. Furthermore, as opposed to other types of housing, small homes might be seen as a cost-effective way of addressing homelessness (Segel 2015; Turner 2016; Fowler 2017).

This research involves the development of a national database on tiny house villages for the homeless. Although there have been a few nonacademic efforts from tiny house village advocates to list or track these endeavors, such as the Web page for the Village Collaborative, the database is incomplete, it is unclear when it was last updated, and the information available is limited. There is no federal housing agency that specifically tracks tiny house villages as a remedy to homelessness. The database created in this study contains information that might be of interest to current or future tiny house village advocates including, but not limited to, location, number, size, and cost of tiny houses, in addition to the availability of unit and social amenities, such as plumbing, heating, and physical and mental health services. An open-access Web-mapping app has also been created to allow for continued data submission by users as new tiny house villages for the homeless are established.

This article begins by providing a very brief overview of the causes of homelessness and how the issue has been addressed. It next discusses how the national database on tiny house villages for the homeless was developed, as well as study limitations. It then proceeds by reporting findings along with a discussion and possible future research. It is hoped that this database will serve as a starting point for researchers, community planners, housing specialists, and advocates for a solution to homelessness in developing a better understanding of how tiny house villages are being used to address homelessness across the country and to begin empirically evaluating how various factors might lead to more or less successful outcomes.

Addressing Homelessness in the United States: Trending toward Tiny Houses?

Although there has always been an element of homelessness in the United States (Caton 1990; Wright 2017), the problem was especially pronounced during the economic turmoil of the Great Depression and became prominent once again in the 1980s. This was due to a confluence of issues including growing economic inequality, lack of affordable housing, deinstitutionalization, and displacement of the poor, which resulted from factors such as gentrification and urban renewal (Anderson 1964; Kasinitz 1984; Lamb 1984; Mitchell 2011; LeGates and Hartman 2013; Dear and Wolch 2014; Wright 2017). Not only is homelessness a result of a myriad of factors, but it also takes a variety of forms (National Alliance to End Homelessness 2018). The living situation of the homeless might involve rotational stays in emergency shelters; living in places not intended for human habitation such as vehicles; precarious arrangements in homeless encampments; "couch surfing" at the homes of friends, family, and strangers; or living on the streets.

Due to the wide array of leading factors and manifestations of homelessness, there are numerous strategies for addressing the problem. For instance, some might view it as primarily an indication of social and economic inequality. It could therefore be argued that the development of policies and programs that foster affordable homeownership and rental options for those with low incomes is a strategy for combating homelessness (Tighe and Mueller 2013; Schwartz 2014; Desmond 2016). Many other efforts focus on the homeless population already on the streets, however. Over the last several decades, many of the strategies used to aid the homeless have involved temporary and short-term fixes. For instance, both private and public funds have been used to tackle homelessness with soup kitchens, emergency shelters, and transitional housing (Wright 2017; National Alliance to End Homelessness 2018). Certainly, these helping-hand-up approaches have helped many homeless people to get on their feet. The large number of visibly homeless makes it clear, however, that these strategies are insufficient.

In recent years, homelessness has increasingly been addressed through permanent supportive housing models (Tsemberis and Eisenberg 2000; Segel 2015; National Alliance to End Homelessness 2018). In this model, individuals are provided with both long-term affordable housing and social services, such as case support or mental health provisions, to create stable living conditions (National Alliance to End Homelessness 2017). Many permanent supportive housing models also embrace the "housing first" approach where individuals are housed without prerequirements for mandates such as substance abuse treatment (National Alliance to End Homelessness



Figure 1 One of many recent tiny house villages for the homeless, Veterans Community Project, located in Kansas City, Missouri, recently opened to serve homeless veterans. Photo by author.

2018). Proponents assert that stable housing is needed for homeless people to address issues such as job placement or addiction issues (Desmond 2016; Padgett, Henwood, and Tsemberis 2016; Keable 2017). These supportive housing models are especially beneficial to the "chronically homeless" (Brown et al. 2016). The chronically homeless comprise 24 percent of the total population of homeless individuals and are defined as individuals having a disabling condition who have been on the streets a year or more or have had at least four episodes of homelessness in the last three years (Brown et al. 2016; National Alliance to End Homelessness 2018).

Tiny house villages for the homeless are increasingly springing up across the country as an innovative means of addressing homelessness (Figure 1). It is unclear what is precisely driving this movement, although it might be surmised that it is a result of the current trendiness of tiny houses in popular media paired with the recognition that they potentially offer an affordable housing solution (Finley 2003; Heben 2014; Mingoya 2015; Fowler 2017; Coleman 2018; Evans 2018b, 2019). It is also unclear exactly how tiny house villages are being used to address homelessness. Are the villages following recent trends in the homelessness literature and incorporating permanent supportive housing principles or not? Are social services available to residents? Are tiny houses being used to house the chronically homeless or other types of homeless individuals? Questions such as these are important to answer to ultimately understand whether the increased interest in tiny house villages offers a viable solution to homelessness.

Database Design

This research involves the development of a national database on tiny house villages for the homeless in the United States. The purpose of this database is to develop an exploratory understanding of where and how the rapidly emerging phenomenon of tiny house villages for the homeless is being executed. Furthermore, the database serves as a foundation for future research that examines various measures of success and outcomes related to these developments. The database is part of a larger mixed-methods study that examines various facets of tiny house villages for the homeless, including barriers to integration and resident perceptions of such villages.

The database was compiled from January through July 2019 by four undergraduate planning students at Missouri State University and involved an Internet search on a state-by-state basis of tiny house villages for the homeless. Although there are numerous strategies for housing the homeless, including integrative approaches that aim to mix the formerly homeless with other types of residents, such as in cohousing, this research specifically focuses on tiny house villages for the homeless. Furthermore, because there is no formal definition or commonly accepted standard for what constitutes a tiny house (Evans 2018a), any organization that defines itself as a tiny house village for the homeless

Table 1 The physical and social service categories addressed in the database

Physical categories included in database

Open, not yet open, abandoned effort, or unknown status Number of units

Size of units

Cost per unit

Tiny houses on wheels, foundation-built, or both

Zoning classification (if known)

Homes stick-built, prefabricated, or both

Outside building materials

Unit heating, air conditioning, both, or none

Unit electricity (Y/N)

Unit plumbing (subcategories for toilet, shower, and sink; Y/N)

Unit or communal kitchen

Units furnished (Y/N)

Communal facilities available (Y/N; subcategories for gathering/meeting space, kitchen, and showers)

Laundry availability (Y/N)

Gated or ungated access

Social service categories included in database

Village contact information (contact person, phone, e-mail, Web site) Basic medical services available (Y/N; not necessarily on-site) Mental health services available (Y/N; not necessarily on-site)

Computer/Internet access (Y/N)

Transportation access (Y/N; subcategory for type(s))

Permanent, transitional housing, or both

Singles, couples, or both

Specifically for veterans (Y/N)

Specifically for chronically disabled (Y/N)

Faith-based effort (Y/N)

Criminal background prohibitive factor (Y/N)

was included in the database. This allows for an exploratory and encompassing examination of this recent approach toward addressing homelessness. Students found information on independent Web pages, online newspaper articles, and social media sites, such as Facebook. In many instances, a snowball search method was used where a Web site for a tiny house village would refer to other tiny house villages for the homeless. Student researchers entered available online data into the tiny house database and also reached out to each tiny house village via e-mail or phone for information not included online.

The completeness of the database in terms of its representation of all tiny house villages for the homeless could be questioned in that it is possible that there might be tiny house villages for the homeless that have no Internet presence or were not found. Because the purpose of these villages is to help the homeless, however, and they often rely on donors, most involved significant media and Internet coverage and promotion. Furthermore, at no point in the study did researchers learn of a tiny house village for the homeless that had no Internet presence. At a minimum, many were found via village Facebook pages. Because of these factors, it can be concluded that the database is representative of the population of tiny house villages for the homeless.

The database was designed to gather information primarily in the following categories: geographic location, physical characteristics, and social services. The geographic location category is important for understanding "where" questions related to this phenomenon, such as these: Where are these villages most prevalent and why might that be? The physical and social services categories are important for answering "what" questions including these: What types of tiny houses are being used in tiny house villages? What (if any) social services are available to residents? The physical and social service categories included in the database were loosely informed by prior research on tiny houses and a literature review

of the causes and potential solutions to homelessness (Evans 2018a, 2018b, 2019; see Table 1).

It is recognized that the categories involve significant overlap (e.g., the availability of a communal gathering space could be seen as both a physical and social service amenity). Furthermore, the categories included in the database are not exhaustive of all of the factors affecting tiny house villages for the homeless and their residents and is a limitation of the research. Factors that were not included in the database but might be of interest to tiny house village advocates include the following: Does the community use a "housing first" approach? Is the community for homeless residents only, or is it a blended community (some residents not homeless)? How are community decisions made? Are job or career services offered? The database does contain a category, however, for contact information associated with each village. This allows for simplified outreach to tiny house villages for the homeless as further research is warranted.

To address validity threats associated with crosssectional, or point-in-time research, an open-access Web-mapping app was designed to allow for continued data collection. Because tiny house villages for the homeless are emerging rapidly and are a potentially evolving phenomenon, it is important to continue gathering data on these villages to best understand them. The app is freely accessible and allows users to add the location and several predetermined physical and social characteristics of new tiny house villages for the homeless. Web site visitors can click on an individual tiny house village site to access data on that specific village or examine the database in its entirety. Visitors can also download the entire database in comma-separated value (.csv) or Microsoft Excel format to perform informational analysis. The Web app and resulting database will be maintained and updated by Missouri State University on a biannual basis. It is hoped that the interactive Web-based tool along with the database

on current tiny house villages for the homeless will be helpful to nonprofits, housing advocates, policymakers, and academics looking to understand and combat homelessness through tiny house villages. The app created with ESRI software can be accessed via bit.ly/tinyhouseshomeless.

Research Limitations

A limitation of the research is that the database involves inconsistency and imprecision, and it is not fully complete due to the exploratory, qualitative, and open-ended way in which data were gathered from Web pages and outreach. For example, the size of some units was described in terms of square footage, such as 400 square feet, and others in length, such as eight by twelve feet. Furthermore, some data were reported with precision, such as 312 ft², and others with approximation, for example, units of about 300 ft². A further limitation of the research is that not all of the entries are complete. The information for the database was obtained from online sources and from attempted outreach to specific tiny house villages. In numerous instances, the information provided on the Internet source was minimal and contact efforts were unsuccessful. This was especially the case with tiny house village efforts that have been abandoned due to factors such as lack of community support, financial and land-use barriers, or unknown reasons. These limitations affect the results of the descriptive statistics in that all reported findings are approximate. This database lacks the precision and completeness that might be warranted in future research that aims to isolate and measure very specific factors related to tiny house villages for the homeless. In such instances, further work including, but not limited to, additional outreach and archival analysis might be needed.

Findings: Tiny Houses for the Homeless, Numbers, and Location Data

The research yielded data on 115 tiny house villages for the homeless in the United States as of July 2019 that are either currently operational, that are slated to open in the future, where efforts have been abandoned, or where the status of the village is unknown (Figure 2 and Table 2). This provides a rich source of data for future research on understanding the tiny house village phenomenon as a whole, what is working for these developments, and what is not. When viewed geographically, it is clear that there have been more efforts to address homelessness with tiny house villages on the West Coast than in the rest of the country. Some states, such as Wyoming and Rhode Island, have not yet witnessed efforts to integrate tiny house villages for the

homeless. Whether this is a result of prohibitive building or zoning codes, a reliance on other methods to address homelessness, or cultural factors remains unclear. In the case of the latter, previous research has found that efforts to integrate tiny houses into communities can be driven by different sociocultural paradigms (Evans 2018b, 2019). For example, counter-culture-type communities might embrace them as a way to encourage more creative and flexible living, whereas more conservative communities might incorporate tiny houses to capitalize on financial investment opportunities. Exploring the factors that have resulted in the uneven geographic distribution of tiny house villages for the homeless the United States provides a venue for future research.

The database has also resulted in a rudimentary understanding of what current tiny house villages for the homeless are composed of (Table 3). For instance, the data reveal that the average size of tiny houses is 205 ft², although we also see extremes of 50 ft² (Los Angeles, California) and 738 ft² (Spokane, Washington). The average number of units in a tiny house village for the homeless is thirty-five, although we find two units representing a small village in Yakima, Washington, and 153 in a large village in Honolulu, Hawaii. An important consideration for any effort to house the homeless is cost. The database indicates that the average cost of a tiny house unit for the homeless is \$21,160, although the extremes of \$1,200 (Los Angeles, California) \$190,632 (Sonoma and County, California) have been noted.

This information is critical to developing an understanding of optimal unit and village size and cost-effectiveness. There is currently no commonly accepted definition of what constitutes tiny, but the wide array of tiny house sizes indicated in the database might lead to the exploration of questions pertaining to this recent phenomenon. Are some tiny houses for the homeless too small for healthy human habitation? Are some units too large to be considered tiny or cost-effective? The number of units in a village leads to further questions. Beginning with Wilson's (1987) book, The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy, much research has been conducted on the ill effects of concentrated poverty. Recognizing that there are several tiny house villages for the homeless with more than one hundred units might lead to inquiry and analysis into possible impacts of concentrated poverty in these communities. The great disparity in unit cost(s) can be attributed to a myriad of factors such as unit size, amenity availability, building materials, and land cost. The database categories establish a foundation for conducting economic studies that explore the cost-effectiveness of various tiny house villages for the homeless.

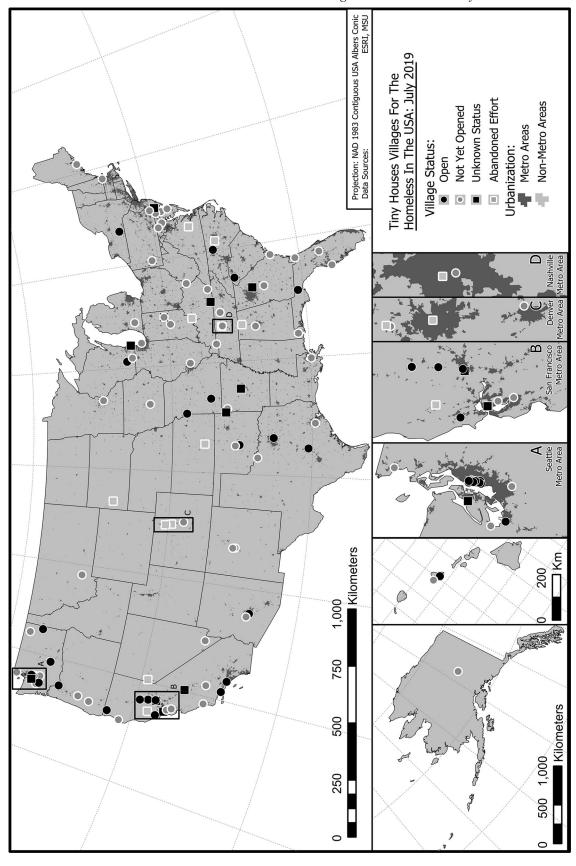


Figure 2 The geographic location of all of the tiny house villages for the homeless in the United States.

Table 2 The number of tiny house villages for the homeless located in the United States as of July 2019

Total number of tiny houses located	Currently open	Effort underway	Effort abandoned	Unknown status
115	34	57	12	12

Table 3 Descriptive statistics for the number, size, and average cost of tiny houses in tiny house villages for the homeless that are currently open as of July 2019

Factor	Average (<i>M</i>)	Minimum	Maximum
Number of tiny houses in village	35	2	153
Size of each tiny house unit	205 ft ²	50 ft ²	738 ft ²
Average cost per tiny house	\$21,160	\$1,200	\$190,632

Note: Tiny house villages that are slated to open in the future, abandoned efforts, and those of unknown status are not included.

Table 4 The physical amenities of tiny house villages for the homeless that are currently open as of July 2019

Factor	Count	N	As percentage of tiny house villages ^a
THOWs	3	31	10
Foundation-built (no wheels)	27	31	87
Both THOWs and foundation-built units	1	31	3
Stick-built tiny houses	26	30	87
Prefabricated tiny houses	4	30	13
Having both stick-built and prefabricated houses	0	30	_
Units with both heating and air conditioning	24	33	73
Units with heating but no air conditioning	3	33	9
Units with neither heating nor air conditioning	6	33	18
Units with electricity	30	33	91
Units with no electricity	3	33	9
Units with plumbing (Y)	13	32	41
Of plumbed, toilet in unit	13	13	100
Of plumbed, shower in unit	12	13	92
Of plumbed, sink in unit	13	13	100
Units with no plumbing (N)	19	32	59
Village with communal kitchen	19	31	61
Facility for communal gathering	27	28	96
Units unfurnished	3	30	10
Laundry available	25	29	86
Gated access to village	21	29	72
Ungated access to village	8	29	28

Note: ^aTiny house villages that are slated to open in the future, abandoned efforts, and those of unknown status are not included in either the count or equation (n) used to determine overall percentage. Percentages rounded up to nearest whole percent. THOWs = tiny houses on wheels.

Findings: Tiny Houses for the Homeless and Physical Amenities

The database offers a starting point for understanding the physical layout of tiny house villages for the homeless in the United States. A summary table has been created of the count and percentage of tiny house villages for the homeless having certain features, such as those built on wheels, and amenites such as plumbing and electricity (Table 4). The summary table data represents tiny house villages for the homeless that are currently operational. To best reflect the current form of tiny house villages for the homeless, the database does not include villages that are slated to open in the future, abandoned efforts, or those of unknown status.

Two columns that are included in the database but not in the summary table are zoning classification and

outside building materials. This is because the results of these columns are not best analyzed with descriptive statistics but instead require a more qualitative examination because neither category resulted in uniform responses that can be easily summarized in tabular form. For example, in the zoning category, responses varied widely from "R4 zoning with special use permit," to "legally recognized encampment," to "seeking different zoning possibilities." In several instances, respondents were unsure how the land was currently regulated, whether tiny houses or a "village" were allowed, or what strategies they might pursue to get a village lawfully permitted. This likely reflects previous findings that land-use regulations serve as a significant barrier to tiny houses (Turner 2016; Evans 2018b). Similarly, the building materials category revealed different drivers behind tiny house villages for the homeless. For instance, some reported building

materials that indicate a focus on sustainability and environmentalism, such as bamboo flooring, recycled plastic, and solar panels. For other villages, affordability is clearly the primary driver, where responses include plywood, donated materials, and materials from demolition sites. The wide array of responses surrounding the zoning and building materials categories suggests a lack of consensus on the best way to regulate, design, and integrate tiny house villages for the homeless and represent a venue for valuable future research.

The physical amenity data serve as a starting point for understanding the built environment in tiny house villages for the homeless and for asking questions pertaining to social justice concerns. For example, the database reveals that several tiny house villages do not offer amenities that many consider essential, such as heating, electricity, and plumbing. For example, 18 percent of the currently operational tiny house villages have no heating or air conditioning, and 59 percent have no plumbing. Even if such homes prove more cost-effective than other types of housing models to address homelessness, the question remains: Is this an acceptable means of housing the poor? The database also finds that the majority of tiny house villages for the homeless are gated (72 percent). One might wonder whether this trend in gated access is to ameliorate the concerns of village residents, the surrounding community, or both. Might gated access to these villages increase exclusion and residential segregation, as suggested by scholars who study affluent gated communities (Blakely and Snyder 1997; Low 2001)? The physical amenity data allow tiny house village advocates to catalog the current built environment in tiny house villages and develop lines of inquiry along lines of effectiveness and social equity.

Findings: Tiny House Villages for the Homeless and Social Amenities

The database also provides a starting point to understand how social amenities are being integrated in tiny house villages for the homeless, as well as potentially unmet needs. A summary table provides the counts and percentages of social service amenities available at tiny house villages for the homeless that are currently in operation (Table 5). Those villages slated for operation in the future, abandoned efforts, and those of unknown status are not included. For the categories that document basic medical and mental health service provision, the services do not necessarily have to be available on site to be included as an affirmative response in the database. For example, several tiny house villages arrange for scheduled transportation to facilities that provide these services. With 34 percent of currently operational tiny house villages for the homeless offering access to basic medical services and 58 percent to mental health services it could be surmised that there is growing adherence to the "housing first" principle of providing the homeless with more than shelter but with integral services that are crucial to recovery from the streets (Brown et al. 2016; Padgett, Henwood, and Tsemberis 2016; Coleman 2018).

Yet another area ripe for investigation is how transportation is being addressed at tiny house villages for the homeless (Table 6). The summary count table indicates that 93 percent of tiny house villages involve some type of transportation access or opportunity. The fact that so many villages indicated that some type of transportation was available reveals a recognition that it is important for residents to have access to services, jobs, and community. Research that combines transportation amenities (or lack thereof) with the locational data of tiny house villages for the homeless might aid in a better understanding of social equity issues related to the homeless and community access, as well as resident outcomes.

Research that examines various levels of success in relationship to various social services is needed. In the case of housing the homeless, success might generally be viewed in two broad spectrums: outcomes for village residents and outcomes for

 Table 5
 The social amenities of tiny house villages for the homeless that are open as of July 2019

Factor	Count	N	As percentage of tiny house villages ^a
Basic medical services available	10	29	34
Mental health services available	18	31	58
Computer and Internet access	28	29	97
Transportation access	28	30	93
Permanent housing model	8	32	25
Temporary housing model	23	32	72
Both permanent and temporary housing	1	32	3
Singles housing (solely)	5	29	17
Couples housing (solely)	0	29	_
Both singles and couples housing	24	29	83
Specifically for veterans	3	30	10
Specifically for the chronically disabled	22	30	73
Faith-based effort	5	31	16
Criminal background prohibitive	19	29	66

Note: a Tiny house villages that are slated to open in the future, abandoned efforts, and those of unknown status are not included in either the count or equation (n) used to determine overall percentage. Percentages are rounded up to the nearest whole percent.

Table 6 The transportation modes available at tiny house villages for the homeless that are open as of July 2019.

Transportation mode(s)	Count	N	As percentage of tiny house villages ^a
Transportation access (Y/N) If Y, type(s)	29	30	93
Public bus system	9	30	30
Private shuttle	2	30	7
Light rail	1	30	3
Bike	1	30	3
Other	3	30	10
Unknown transportation type(s)	14	30	47

Note: Respondents can choose more than one transportation mode.

communities. Although there have been a few studies that focus on resident outcomes and "success" at tiny house villages for the homeless (Mingoya 2015; Coleman 2018; University of Denver: Barton Institute for Philanthropy and Social Enterprise 2018), further research is warranted. Studies that specifically isolate and examine relationships (e.g., using statistical analysis) between factors such as mental health provision and resident outcomes are warranted. There is also a need to investigate how various facets of tiny house villages for the homeless affect community perceptions of village success, including NIMBYism. Understanding perceptions of tiny house villages is important, because it is hypothesized that if such developments are perceived as failing residents or as detriments to communities, they will face backlash and operational barriers. Research that specifically isolates measures of resident success, community success, or both is needed to best understand how these developments can best achieve favorable outcomes.

Conclusion

Through the creation of a national tiny house village database and open-access mapping app, this research has resulted in a greater awareness of where and how tiny house villages are currently being used to address homelessness in the United States. Furthermore, the Web-mapping app will allow for new locational and attribute data to be added as future tiny house villages for the homeless are created. This will allow for a continued understanding of this rapidly evolving method of addressing homelessness. Advocates of tiny house villages for the homeless, researchers, and community planners could use the openly available data compiled in this research to assess the current form of tiny house villages for the homeless, develop an understanding of what might be working and what is not, and contact these communities for further inquiry.

The research is broad in scope and exploratory, yet has resulted in several findings. There are greater efforts to develop tiny house villages for the

homeless on the West Coast than elsewhere in the United States, although why this is the case remains to be examined. The research has resulted in an understanding of the average (mean) number of tiny houses in villages, unit size, and cost. Through the collection of data on the physical attributes of tiny house villages for the homeless, the research finds that several characteristics, including physically gated access, are quite common among villages (72 percent). Other physical elements, such as the use of tiny house units on wheels in villages, are more uncommon (10 percent). Similarly, the database shows that there are social attributes that are fairly common among tiny house villages for the homeless; for instance, those whose purpose is to serve the "chronically disabled" (66 percent). The provision of basic medical services to village residents is less common (34 percent). The study has resulted in a wealth of data pertaining to the location and several physical and social characteristics of tiny house villages for the homeless.

Furthermore, this foundational study lays the framework for further research in several venues of inquiry. Over time, the interactive Web-mapping app will allow for a better understanding of where (and whether) these communities are gaining prominence as a method of addressing homelessness. The data from the several physical and social amenity categories serve as a starting point for research that explores the relationship between specific tiny house village variables and measures of either resident or community success; for example, understanding the relationship between social service amenity offerings and resident outcomes. The study also serves as a platform for examining potential social justice concerns that might arise from using this model to address homelessness. For instance, although affordability is a primary driver behind tiny house villages for the homeless (Heben 2014; Fowler 2017), at what point (if) do individual units become so small or utilitarian that they are no longer fit for human habitation? Should amenities such as plumbing and heating be compulsory in these developments? Finally, the gathering of contact information for all of the tiny house villages for the homeless in the

^aTiny house villages that are slated to open in the future, abandoned efforts, and those of unknown status are not included in either the count or equation (n) used to determine overall percentage. Percentages are rounded up to the nearest whole percent.

United States allows for simplified outreach to investigate topics not addressed in this preliminary research.

As homelessness continues to be a large and visible problem in the United States, efforts are needed to develop a permanent solution. The causes of the problem are multifaceted, as are efforts toward a solution. Interest in tiny houses and tiny house villages as an affordable housing option continues to grow in the United States (Heben 2014; Dion 2015; Evans 2018b; Harris 2018). Perhaps pairing increasing recognition of the plight of the homelessness with popular interest in tiny house villages offers a remedy to this prevalent issue. This research aims to inventory tiny house villages used for the homeless as well as to explore several physical and social attributes associated with them. It is hoped that the data will serve as a starting point for better understanding and integrating these developments into communities.

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KRISTA EVANS is an Assistant Professor of Human Geography and Planning at Missouri State University, Springfield, MO 65897. E-mail: KristaEvans@missouristate.edu Her research interests include the tiny house movement, rural community planning, and historic preservation.