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Journal of Geography and Regional Planning

Table of Contents: Volume 11 Number 3 March 2018

ARTICLE

Integrating tiny and small homes into the urban landscape: History, land use barriers and potential solutions

Krista Evans

34

Review

Integrating tiny and small homes into the urban landscape: History, land use barriers and potential solutions

Krista Evans

Department of Geography, Geology and Planning, Missouri State University, USA.

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There is growing interest in living in tiny and small houses in the United States of America (USA). However, in many urban communities, it is illegal to build such homes due to the current land use regulations. This article presents an overview of the land use policy barriers to tiny and small house integration, in addition to potential solutions. The article also examines how interest in tiny and small house living has evolved, and why it will likely continue to do so.

Key words: Tiny house movement, urban infill, American dream, housing, land use.

INTRODUCTION

Across the United States of America (USA), there is an increased interest in tiny and small home living. In locations as diverse as Portland, Oregon; Spur, Texas; and Rockledge, Florida, tiny house advocates are challenging existing land use regulations in order to integrate tiny homes into the surrounding community. Though, there is no formal definition as to the specific size a "tiny" home must be, many proponents regard anything smaller than 400 square feet to be tiny (Tiny House Talk, 2015). However, small homes, generally averaging 1,000 square feet or less, are also frequently included in the tiny house movement (Tiny House Giant Journey, 2015). Tiny houses on wheels, (THOWs) offer opportunities for both downsized and mobile living, and are associated with the tiny house movement itself. However, all these dwellings face hurdles to urban integration because of current land use policies that discourage building and living in small homes. As a

result, the construction of tiny homes, or even traditional cottages, is illegal in many urban places throughout the United States. As the average size of the American home has continued to increase from 1,535 square feet in 1973 to an average of 2,480 square feet in 2011 (Schwartz, 2014), the tiny house counter-culture movement makes a powerful statement.

There are several driving forces behind the growing tiny house movement. Among them are increased environmental concerns, a growing dissatisfaction with excessive materialism, a greater cultural awareness of the American cycle of debt, and a desire to use small structures as a practical means of housing the poor and homeless (Gauer, 2004; Heben 2014; Anson 2014). However, housing affordability is likely the greatest driver behind the growing interest in tiny houses. The literature reveals that affordable housing opportunities are lacking for many Americans (Sanders and Mosena, 1982; Wright,

E-mail: KristaEvans@MissouriState.edu.

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1983; Calfee and Weissman, 2012; Ross, 2014; Schwartz, 2014; Desmond, 2018). It is frequently recommended that households should not spend more than 30% of their income on housing (Schwartz, 2014, 32; Desmond, 2018), yet over 50% of Americans are paying more than 30% of their earnings for housing (Glaeser and Gyourko, 2009). Furthermore, a shocking 27% of renters are paying more than 50% of their income on housing (Schwartz, 2014). The primary reason for the increasing problem with unaffordable housing in the USA is the widening gap in income inequality (Collins and Yeskel, 2005; Glaeser and Gyourko, 2009; Schwartz, 2014; Leigh and Blakely, 2016), coupled with the fact that American housing and land use policy has been crafted to predominantly serve the interests of the wealthy (Boudreaux, 2011; Bratt et al., 2013). Tiny houses may offer a means of addressing increasing housing affordability issues.

Dwelling size is not the only factor that affects affordability. Tiny house costs can vary greatly depending on factors such as whether one builds themselves or hires a builder, construction materials used and lot price. For example, one popular tiny house blog, 'Tiny House, Giant Journey' (March 15, 2016) estimates that the average THOW can cost between \$35,000 and \$45,000. However, 'Tiny House Blog' (September 26, 2016) gives a much wider estimate of \$500 to \$80,000. Therefore, depending on a person's income and building plans, a tiny house could be either affordable or unaffordable. However, it remains true that with other factors remaining constant, it is more affordable to build and live in small, rather than large homes.

There is currently a shortage of available small houses and/or apartments in the United States (Infranca, 2014). Furthermore, there is no adequate housing to serve those with low-incomes (Shlay, 2006; Schwartz, 2014). One housing scholar estimates that in the United States, there is currently a shortfall of 4.9 million affordable units (Schwartz, 2014). Schwartz (2014) explains that part of the problem around housing affordability are the current regulations that dictate the, "... size, density, and quality of homes that make them unaffordable through zoning and building codes" (48). He follows up with, "... families may be able to afford, say 500 square foot homes, but units of this size may fall below the minimum requirement" (48). Such regulations make it difficult to create small and affordable housing and are a thorn in the side of many tiny house proponents.

This review provides a chronological and critical assessment of tiny and small homes in the USA over the last century (Table 1). This study first reviews the evolution of small house dwelling in the USA. It shows that living in small homes is not a new concept, and how and why people began building increasingly larger homes, sometimes beyond their fiscal means. It also examines American counterculture movements from the

1960s to present. These ideas are important in understanding the impetus behind the current tiny house movement, and why interest in living small will likely continue to grow. The paper then examines the several regulatory barriers to small home integration. It indicates that the barriers are more than superficial, but deep-rooted and systemic. Finally, the review examines potential strategies to urban tiny house assimilation.

HISTORY OF SMALL HOUSES

The concept of small homes is not a new one. Historically, small homes sprinkled the landscape of many Western countries including the USA. Prior to the enactment of zoning regulations and modern banking practices, it is common for people to build only within their means. Traditionally, small homes not only offered a means of affordable housing, but their designs took into account locally available building materials, climate and the surrounding landscape (Downing, 1969; MCalester, 2015). Historic examples of vernacular small home designs include the frontier log cabin, bungalow, cottage, shotgun house and camp (Comstock, 2007; Walker, 2013).

Prior to the widespread application of zoning regulations, it is also common for a large main house to have small housing units built on the same property (Hunter, 1999). These small structures traditionally served varying purposes: as housing quarters for guests, servants or slaves, elderly parents, newlyweds not yet able to afford their own home, or as a means for the primary homeowner to earn rental income from tenants. This historic approach of allowing varied housing sizes within a community resulted in neighborhoods that were more diverse both socially and economically than the zoned communities of today (Talen, 2012; Ross, 2014). Considering the current economic climate in the USA, some would assert that it makes good sense for communities to modify current zoning regulations in order to allow for the legal accommodation of these small homes, now termed accessory dwelling units (ADUs), once again (Wright, 1983; Chapple et al., 2011; Calfee and Weissman, 2012; Duff, 2012; Ross, 2014; Wegmann and Chapple, 2014).

There have been several periods in American history, including the present, where there has been a shortage in the availability of affordable housing (Wright, 1983; Tighe and Mueller, 2013; Schwartz, 2014). This problem was especially prominent shortly after World War 1 (WWI) and as a result, the Architect's Small House Bureau was established in 1919 in order to assist returning veterans with homeownership (Hunter, 1999). This organization provided architectural plans for small homes (approximately 800-1,000 square feet) suited for small lots (30 to 50 feet wide) at a nominal fee to potential homebuilders (Hunter 1999, 149). When the industrial

Table 1. Evolution of tiny and small house living.

Tiny/small house term	Concept
Vernacular small home	Historically, small homes that took local building materials and traditions into account are common. Examples include the frontier log cabin, bungalow, cottage and camp.
Accessory dwelling unit (ADU)	An ADU is a smaller housing unit on the same property as a main or primary dwelling. ADUs traditionally served such purposes as housing for servants, elderly parents, and newlyweds. Sometimes termed alley or granny flats, ADUs are experiencing a resurgence in popularity.
Prefabricated small home kits	In order to address a post WWI affordable housing shortage, companies such as Sears and Roebuck sold popular small home mail order home-kits, which included all necessary building materials and could be easily delivered via train.
Mobile home	Shortly after the advent of the automobile, the mobile home emerged. Mass produced and easy to deliver, the mobile home offered an affordable housing solution to poorer classes.
Manufactured home	The term “manufactured housing” replaced the “mobile home” when federal regulations enacted manufacturing standards for such homes in 1976. However, the terms are still used interchangeably to describe this type of smaller home, which frequently faces community opposition.
Counterculture living	In the 1960s and 70s counterculture living arrangements grew in popularity that promoted values such as communal living and environmental stewardship. Precursors of today’s tiny house designs arose during this era: such as buses converted into dwellings, small geodesic domes, and hay bale homes.
Tiny house	The tiny house movement arose during the early 2000s to address a variety of concerns: such as quality of life factors, environmental concerns, and rising debt. Though there is no formal definition, many advocates contend that a tiny home is 400 square feet or smaller.
Tiny houses on wheels (THOW)	THOWs offer both downsized and mobile living and have come to be associated with the tiny house movement itself. However, THOW dwellers are often at a loss for where to put such structures due to current zoning and land use laws.

assembly line swept across the nation as a popular means of production, affordable housing packages became common. For example, Sears and Roebuck offered over 400 small home mail order home-kits that included all the necessary building materials and could be easily transported via train (Gauer, 2004; Wentling, 2017).

As both the automobile and assembly line production grew in popularity, a new type of small affordable housing emerged: the mobile home. Designed after compact railroad cars (Hunter, 1999), mobile homes were mass-produced and became increasingly popular among poorer classes. In 1976, federal regulations that created manufacturing standards for such homes were enacted, and as a result, the term “mobile home” was replaced with “manufactured housing” (Genz, 2001; Hart et al., 2003). Finally, the term “modular home” was adopted to describe housing that was mass-produced by modular components in factories, affordable and could be easily transported for assembly on site (Hunter, 1999). Today, the terms “mobile home” and “manufactured home” are often used interchangeably to describe this type of housing.

Though the advent of mobile homes offered an affordable housing solution for poorer classes, they instantly faced backlash from community members who not only found them to be aesthetically unattractive, but felt that they brought the problems associated with poverty, such as crime and decreased property values,

with them (Chernoff, 1983; Genz, 2001; Fischel, 2004; Boudreaux, 2011; Mandelker, 2016). Unlike the traditional stick-built homes, mobile homes generally depreciate as an asset because of their manufactured components (Genz, 2001). This does not lend itself to the protection of property values. In order to restrict mobile homes and the poorer classes associated with them from neighborhoods, zoning laws that either prohibited mobile homes or small homes less than a specific square footage were enacted in thousands of American communities (Chernoff, 1983; Fischel, 2015). Furthermore, municipalities created site-specific mobile home park zoning in order to relegate the poor to limited, and often, undesirable locations within urban areas (Chernoff 1983, 240). It is this backlash against mobile homes and their associated residents that has in part resulted in land use regulations that make it difficult to integrate tiny and small houses in many urban areas.

The historic concept of the “American dream” also plays a large role in the evolution of small house living. Early in the history of the United States, land ownership was synonymous with citizenship (Heskin, 1983; Shlay, 2006). As time passed, full rights were available to those without land. However, the cultural norm associating homeownership with security and stability has remained. In *Tenants and the American Dream*, Heskell (1983) writes, “Being a tenant has never been part of the ‘American Dream,’ and the status of tenants in this society has never been secure or comfortable.”

Over time, however, the form and architecture of the ideal American home has changed (Wright, 1983; Archer, 2014). Some historically popular American housing types include cookie-cutter company housing, elaborate Victorian homes, and the suburban home with a sprawling lawn (Wright, 1983; Jackson, 1985; McAlester, 2015). For many, the current economic and cultural climate is no longer conducive to the ownership of a large home on a large lot. Wages have stagnated, families are smaller, and single person living is on the rise (Collins and Yeskel, 2005; Duff, 2012). However, the “American dream” of owning one’s own detached dwelling, on its own piece of land, as opposed to maintaining tenant status, remains a strong cultural impetus (Archer, 2014). Because of this societal norm, it is likely that tiny and small house ownership is perceived as a more desirable affordable housing arrangement than apartment dwelling.

In addition to offering an achievable means of homeownership for many, the tiny house dwelling has emerged largely as a counterculture movement. There are many who would assert that our current socioeconomic system is resulting in less than ideal socioeconomic outcomes (Daly and Cobb, 1989; Harvey, 2000; Sagoff, 2007; Fainstein, 2010; Bratt et al., 2013; Harvey, 2014). There is growing recognition that people have little authentic free time to enjoy what matters most in life, such as personal relationships and meaningful work. Harvey (2014) writes, “The ‘market-based order’ is fundamentally challenged when people find out that not all values are quantifiable, that money cannot buy everything, and that what it cannot buy is something essential, or is even the essential thing” (275). Current work environments often compromise important aspects of a quality life, such as time with family and loved ones, creative expression, advocacy work and self-actualization. This realization has made some people to take small steps to adopt lifestyles that offer aspects of an alternative economy. Tiny and small living may be increasingly attractive to people because it offers the opportunity to live on a smaller wage, and pursue values other than fiscal gain.

Because of its emphasis on alternative lifestyles, the tiny house movement can be loosely linked to the various alternative communities that arose in the 1960s and 70s for similar reasons. Though today’s tiny house movement may lack the communal element typical to many of these prior alternative communities, it shares the desire to achieve simplified, meaningful lifestyles that put people, relationships and value systems first (Manzella, 2010). Furthermore, the precursors of some of today’s tiny house designs were developed in these alternative communities. Inhabitants of counterculture communities sometimes built unique small structures such as geodesic domes, hay bale homes, and buses converted into dwellings. Some of these design elements are captured in today’s THOWs and more architecturally creative tiny homes. Furthermore, the recent trend of eco-villages,

which incorporate many of the principles of early intentional communities, but have a specific focus on “green” sustainable living, suggests that the alternative communities of the 1960s and ‘70s were more than a passing fad (Manzella, 2010; Kellogg and Keating, 2011). People are still searching for alternative living arrangements that allow for the pursuit of meaningful and holistic lives in a system that many perceive to be oppressive. Some people view tiny house living as a potential way to achieve such a counterculture lifestyle.

LAND USE BARRIERS TO SMALL DWELLINGS

The concept of zoning was developed by Reinhard Baumeister, a German engineer (Talen, 2012). Zoning originated in the 1870s, an era when cities were rife with problems resulting from rapid industrialization. Early zoning measures aimed to quell the social problems associated with crowded urban areas, such as poor sanitation and fire hazards (Fischel, 2004; Glaeser and Gyourko, 2009; Boudreaux, 2011; Hirt, 2015). Furthermore, zoning was used to ameliorate issues associated with poor urban design and aesthetic concerns, such as rapidly increasing building heights, and noxious odors and noise from factories and slaughterhouses. Baumeister and other German proponents of early zoning measures, however, were adamant about maintaining compact communities that met the needs of the citizenry (Talen 2012). They designed zoned cities where both the upper and lower classes could easily walk to work, retail areas and civic spaces. Unfortunately, this initial focus on equity and compact urban form was lost when zoning was adopted in the United States.

New York was the first American city to adopt comprehensive zoning in 1916 (Talen, 2012; Hall 2014, 60). As in Europe, early zoning initiatives were rooted in populist interests that aimed to protect citizens from the evils associated with crowded inner cities, such as disease and crime. American cities embraced the spirit of social reform and zoning which spread like wildfire throughout the country. By 1927, half of the USA population lived within zoned areas (Talen, 2012).

The literature on zoning and land use regulations contends that American zoning took on two additional purposes apart from its original intent of social reform, safety and quality of life. Zoning was quickly recognized as an effective method of racial and class segregation, in addition to serving as a means of maintaining property values (Fischel, 2004; Talen, 2012; Ross, 2014; Hirt, 2015; Silver, 2015; Fischel, 2015). Zoning has also been used as a tool to marginalize social classes, specifically the poor, in the USA (Pendall, 2000; Fischel, 2004, 2015; Boudreaux, 2011). Some scholars have persuasively asserted that our entire system of American land use law is biased towards the affluent homeowner (Boudreaux,

2011; Bratt et al., 2013). The founding fathers of zoning never intended this; as a matter of fact, historic German zoning practices aimed to mix social classes as a means of achieving diverse communities that met the various needs of residents (Talen, 2012; Hirt, 2013). In the United States, however, zoning has frequently been employed as a method to keep poverty out of sight and to relegate the poor to small, often undesirable sections of communities (Fischel, 2004; Boudreaux, 2011). It has been used as a tool to promote the interests of not-in-my-backyard (NIMBY) factions (Pfeiffer, 2015).

As American cities expanded, affluent residents, developers and real estate speculators urged municipalities to zone more and more land as single-family residential and pushed for greater and greater square footage requirements (Ross, 2014). The impetus was that zoning in this manner would create upscale neighborhoods with high property values that would add to a community's tax base. The purpose for zoning in this manner then became twofold; requiring only one large dwelling per lot, poorer classes would be excluded and, theoretically, property values could be maintained in perpetuity (Fischel, 2004, 2015). As poorer classes have historically had little advocacy in development decisions, zoning measures that promote small homes on small-sized lots have rarely been implemented (Fischel, 2004; Boudreaux, 2011). The exception has been the mobile home or trailer park, usually unattractive and relegated to the outskirts of town or near an area zoned as industrial, in order to separate it from the rest of the community (Chernoff, 1983).

Some cities have excluded small homes through the establishment of zoning or restrictive covenants that mandate minimum house or lot size. Restrictive covenants that specify minimum home size are especially common in new residential developments. Other zoning regulations, however, restrict small homes by requiring large lots, frequently of about 5,000 square feet. In such an instance, it is unlikely that a lending institution would provide financing options for new home construction when a lot is valued higher than a potential tiny or small home. As a result of such exclusionary land use policies, those trying to construct small homes in urban communities are often at a loss as to where to build (Sanders and Mosena, 1982; Calfee and Weissman, 2012; Brinig and Garnett, 2013; Vail, 2016).

Current banking practices and home assessment methods are also based on the faulty premise that large single-family dwellings in single-use residential neighborhoods always offer the best investment opportunities (Gauer, 2004; Boudreaux, 2011; Ross, 2014). Many people erroneously believe that mixed-use neighborhoods result in decreased property values and investment opportunities. Recently, however, a New York City neighborhood was re-zoned from single-family dwellings to allow mixed-residential uses (single-family homes, duplexes and apartments) and the result was an

increase rather than decrease in property values (Talen 2012). The same phenomenon has occurred in mixed-use neighborhoods in Boston, Massachusetts (Ross 2014), Chicago, Illinois, Portland and Oregon (Talen, 2012). People are finding these mixed-use neighborhoods highly desirable as they lead to vibrant communities that meet all of the residents' needs within a compact area (Cullen, 1971; Langdon, 1997). The adoption of land use policy that would allow for integration of tiny houses within such mixed-use neighborhoods may result in highly sought-after communities.

In addition to land use restrictions, tiny houses face a formidable legal barrier in building codes. With an original intent similar to zoning, building codes have been developed to protect the health and safety of building occupants (Listokin and Hattis 2005). In order to address concerns associated with confined and cramped quarters, such as inadequate ventilation and fire hazards, building codes have established minimum square footage building requirements. For instance, the International Building Code (IBC) has established the minimum dwelling sized at 120 square feet for many years. However, due to increased interest in minimalist and tiny living, in 2015 the IBC revised Code R304.1 and now allows dwellings to be a mere 70 square feet. Though, state building codes vary from state to state, they are generally adopted from the IBC. However, many states are yet to modify their current minimum square footage requirements to meet the new IBC standards.

Building codes are especially a hurdle for THOW advocates (Hannabass, 2017). This is largely because currently there is no consensus on how to classify and regulate THOWs. Even among tiny house advocates there is controversy as to whether THOWs should be regulated as homes, recreation vehicles (RVs), campers, mobile homes, manufactured units, or some new type of hybrid housing (Mitchell, 2014; Heben, 2016; Spesard, 2017). Building codes are especially an issue to those who pursue THOW construction as a do-it-yourself (DIY) project. For instance, a DIY THOW builder who is unfamiliar with building regulations might not understand or follow the different weight and size restriction for trailer beds. Tiny house blogs detail numerous accounts of DIY THOW projects that once complete, are found to be non-compliant with building codes.

Many THOW advocates find the mobile nature of such dwellings to be an asset (Waldman, 2015). However, the vast majority of non-rural municipalities requires permanently habitable structures to be on a permanent foundation and hooked up to city utilities such as sewer. These requirements were primarily established in order to address public health and safety concerns (Listokin and Hattis, 2005). One might argue that they were also created in order to protect land use values, as homes that are not tied to a permanent foundation are considered a depreciating asset (Hart et al., 2003). Finally, such

standards were created in order to foster a sense of “permanence” in communities. Since the advent of trailer parks, many communities have developed policies to thwart mobile and non-permanent residents (Hart et al., 2003; Mandelker, 2016). As a result, most states have building codes that do not recognize RVs as permanently habitable structures, and the vast majority of cities have rules that state that non-permanent structures, such as RVs, cannot be occupied on city land for more than 30 consecutive days. As a result, THOW dwellers face additional challenges to urban integration.

POTENTIAL SOLUTIONS TO SMALL HOME BARRIERS

In order to integrate tiny and small dwellings, current land use regulations need to be altered. As the tiny house movement continues to gain momentum, how can communities overcome restrictive land use barriers in order to assimilate small houses into neighborhoods? The literature presents several options. Some methods may be adopted by communities relatively easily, such as the development of accessory dwelling unit (ADU) standards, while others, such as moving from traditional zoning regulations to Form Based Codes (FBCs) would require a great deal of effort and community support.

First, in order to increase the chances that communities will positively receive tiny and small homes, such houses should be integrated in a manner that is perceived as aesthetically pleasing. This is important because research has indicated that public perceptions greatly influence the built environment (Nasar, 1998). Over the last several decades, the concept of small and beautiful homes has been lacking in American culture (Susanka, 2002; Chapin, 2011; Walker, 2013; Zeiger, 2016). This is unfortunate, in that there is a rich vernacular tradition of picturesque cottages, cabins, and bungalows in the United States (Downing, 1969; Hunter, 1999; Comstock, 2007). Over time, small homes became synonymous with low-quality housing, and as a result, are often associated with the problems that face low-income communities, such as poverty and crime. However, the advent of beautifully crafted small homes, such as those designed by Tumbleweed Tiny House Company and Four Lights Tiny Houses, may lead many to reevaluate this misconception. However, there may be varying opinions as to what constitutes an aesthetically pleasing small home. For example, after the Hurricane Katrina disaster in 2005, coastal communities welcomed the quaint, Katrina Cottages, credited to architect Marianne Cusato, which emerged as an affordable housing solution for displaced residents (McIntosh, 2013). Post hurricane recovery, the demand for Katrina Cottages continues, primarily in the Gulf States (McIntosh 2013). Conversely, the Make It Right Foundation’s “Brad Pitt Houses” feature small modernist designs by architects such as Thom

Mayne and Frank Gehry. These homes have been met with a mixture of approval and disdain. While some applaud their innovative and resilient designs (Vinnitskaya, 2012), others assert that they do not mesh with the traditional neighborhood context found in New Orleans (Labine, 2010).

The increasing recognition that small dwellings can be aesthetically pleasing as well as functional and affordable is important for understanding how communities might integrate tiny and small homes within their jurisdictions, while ameliorating some of the concerns of NIMBY (Not in My Back Yard) factions. The assimilation of aesthetically pleasing tiny and small houses might be accomplished through the adoption of design review requirements that would mandate certain architectural elements, such as building materials, or by moving from traditional zoning to FBCs, the latter of which is discussed in greater detail later in this paper. However, these aesthetic requirements would need to be implemented with other policies, such as those that decrease lot sizes or increase building square footage requirements, in order that they foster aesthetically appealing tiny house infill. Regardless of the method of design regulation, it is likely that the development of policies that would mandate specific tiny houses aesthetics would be met with opposition in certain instances. This is because much of the impetus behind the tiny house movement is affordability. Regulations that require architectural detailing such as porches, quality building materials, and landscaping may make it difficult to build tiny and small homes that are low cost. In instances when the bottom line is low-cost construction, such as when tiny homes are built to address issues of homelessness in a community, the development of aesthetic requirements may not be beneficial.

Changing traditional zoning practices may be the most significant way of achieving tiny and small house integration. Because communities may perceive tiny house infill as a threat to both the urban fabric and surrounding property values, in most instances, advocating for the abolishment of land use regulations seems an unlikely venue to garner support for tiny house integration. In order to allow for tiny and small house infill by altering existing zoning policy, municipalities might choose to increase density standards, decrease lot size requirements (Sanders and Mosena, 1982; Wegmann and Chapple, 2014) and/or decrease residential square footage requirements (Chapin, 2011). This may be achieved by changing current zoning ordinances to allow for greater flexibility, or moving to FBCs, which aim to achieve functional and desirable spatial patterns in communities (Chapin, 2011; Boudreaux, 2011; Talen, 2012). Taking steps to increase density standards, decreased lot size requirements, and/or decreased dwelling square footage requirements, are ways that communities can embrace tiny and small houses in an incremental fashion. However, all these methods of land

use policy change are likely to be faced with some level of political opposition. This is because of concerns that such policies could lead to a decrease in nearby property values.

Some scholars perceive FBCs as the best method for creating a diversity of housing types and uses in a community (Talen, 2012; Ross, 2014). Examples of FBCs are those that allow living and working to take place in the same structure or neighborhood, those that aim to curb urban sprawl, and sustainability codes that focus on affordable and environmentally sensitive design (Talen, 2012). The adoption of FBCs is growing in America; as of 2011 over 200 U.S. cities had adopted them (Talen, 2012). However, the literature reveals that some scholars feel that FBCs are restrictive and, "... inhibit the natural evolution that makes for diverse neighborhoods" (Hough, 1994). Furthermore, the adoption of FBCs, is weighty endeavor in both time and effort, and can result in significant changes to a community's entire urban fabric. It may be conversely argued, however, that FBCs offer the best method for achieving aesthetically pleasing urban growth. Though codes have yet to be developed that address tiny houses specifically, many communities have used FBCs to integrate small homes into "cottage courts." There are also provisions for the assimilation of "carriage house" ADUs. FBCs may result in communities integrating small homes in a manner that avoids the stigma associated with the tarpaper shack or house trailer. Though a significant process, the adoption of FBCs may be among the best methods for communities to integrate small homes in a manner that is perceived as aesthetically pleasing.

Some urban design professionals recommend adopting a specific type of FBC known as the Smart Code (Emerson, 2006; Duany et al., 2010). The Smart Code is unique in its consideration of the concept of transects. Transects aim to facilitate the most attractive and sustainable urban development by taking an area's ecological footprint into consideration (Emerson, 2006, 8). For example, a rural transect would require different building forms and styles than one classified as urban. Like FBCs, the Smart Code does not expressly address tiny homes, however, it does include recommendations for cottages (Emerson, 2006, 48). With an emphasis on creating aesthetically pleasing communities that take sustainability into consideration, the Smart Code might be an excellent tool for communities aiming to integrate tiny houses in order to specifically address environmental concerns. However, like FBCs, the adoption of the Smart Code requires significant effort. Furthermore, FBCs and/or the Smart Code may lead to increased design requirements, and ultimately raise the cost of new development. Therefore, the Smart Code and FBCs are not the best method of integrating tiny and small homes in communities that are looking at how to add low-cost infill.

Another method of incorporating tiny and small homes

into urban communities is by making legal allowances for ADUs (Chapple et al., 2011; Calfee and Weissman, 2012; Talen, 2012; Duff, 2012; Brinig and Garnett, 2013; Infranca, 2014; Wegmann and Chapple, 2014; Pfeiffer, 2015). The development of ADU policy may be among the easiest ways for communities to take an initial step towards the allowance of tiny and small houses in a community (Evans 2017). ADUs are often constructed on large back or side lots, and may serve as housing for an elderly or young family member, or as a means of earning additional income from a rental unit. The acceptance of ADUs is growing as cities such as Sacramento, California; Santa Cruz, California; Austin, Texas, Portland, Oregon; and Denver, Colorado, have all recently enacted policies that increase density standards and allow for type of small home in order to address housing affordability concerns (Chapple et al., 2011; Calfee and Weissman, 2012; Brinig and Garnett, 2013; Infranca, 2014).

Many metropolitan areas intentionally or unintentionally discourage the construction of ADUs with such measures as burdensome and expensive permitting processes, and costly connection fees to sewer, water and electricity (Calfee and Weissman, 2012; Brinig and Garnett, 2013; Infranca, 2014). Strategies that allow communities to achieve ADU integration more easily consist of amended fee structures for ADUs as well as streamlined permitting processes (Calfee and Weissman, 2012). A prime example of a city that has encouraged ADU infill through policy is the city of Portland, Oregon (Gibson and Abbott, 2002). The city began accommodating ADUs as early as 1998 in order to address problems with housing affordability, environmental sustainability, and traffic congestion. ADU popularity grew rapidly after 2010, when the city implemented a waiver for system development charges, (SDCs) which include costly impact fees for city roads, parks and utilities. As a result of such policy, the Portland Tribune reported on March 2, 2017, that the city issued as many ADU permits in 2016 (615) as permits for standard home construction (867).

It is important to acknowledge, however, that though making legal allowances for ADUs may result in greater economic diversity in neighborhoods and allow for more affordable rental options, ADU integration does not foster tiny and small homeownership opportunities. As the ADU is generally under the proprietorship of the primary homeowner, this method of tiny home permeation does not meet the needs of those hoping to achieve a greater degree of economic freedom by owning their own small dwelling. Furthermore, the adoption of ADU infill policy is likely to be met with its share of opposition. There will be residents that see such policy as an excellent way to address affordability issues, and provide flexibility to homeowners hoping to house an elderly family member or earn additional income from a rental unit (Brinig and Garnett, 2013; Pfeiffer, 2015). Others may be concerned that the increased density standards that come with ADU

infill will result in infrastructure strain, especially with regards to parking. Therefore, in cities that do not have mass transit systems, it is imperative that potential policies address parking concerns (Chapple et al., 2011). Communities may want to require that ADU dwellers are provided a parking spot, or, adopt policy that would price neighborhood curb parking (Shoup, 2006). Other communities may be concerned that ADU policy will diminish the character of single-family-only neighborhoods (Pfeiffer, 2015). Communities such as these may benefit from decreasing lot size requirements, rather than allowing for ADUs in order to foster tiny house infill. Finally, there will likely be concern that such dwellings will be used as short-term rentals with the growing popularity of online marketplaces such as Airbnb.

The literature also suggests that new types of zoning measures could be created specifically to accommodate small houses. Examples of newly created zones include the creation of the first “urban gardens district zone” in Cleveland, Ohio, in 2007 to accommodate urban farming, and the first “eco-village zone” in Yarrow, British Columbia, in 2004 which allows a community of small houses that encourage environmentally sensitive living (Calfee and Weissman, 2012). In November 2015, Rockledge, Florida, adopted new zoning regulations that allow for two proposed “tiny house pocket neighborhoods”, a concept developed in the Pacific Northwest by architect Ross Chapin. Pocket neighborhoods are generally comprised of twelve to sixteen homes each no larger than 975 feet (Chapin, 2011). However, it is anticipated that homes in Rockledge will be much smaller than standard pocket neighborhoods, as the emphasis is on tiny and THOW living. Pocket neighborhoods are built around a shared green space and emphasize community (Chapin, 2011). Such small-scale neighborhoods allow for frequent interaction among residents, increased walkability, and are often perceived as visually appealing (Chapin, 2011; Gehl, 2013). The small-scale of pocket neighborhoods may result in an aesthetically pleasing mix of neighborhood housing types, rather than large-scale tiny house developments. Furthermore, the City Manager of Rockledge asserts that by allocating tiny houses to a neighborhood specifically of their own, surrounding property values should not be adversely impacted because of the homes’ small sizes (Stephens, 2015).

Rockledge has avoided the classification problem that thwarts so many THOW integration efforts by creating specific definitions and legal standards for THOWs. In Ordinance 1680-2015, the city of Rockledge defines a THOW as a home intended for full time residency, contrary to the definition of RVs. They acknowledge that the home is built on a trailer for the purpose of mobility, and specify that the trailer must meet weight requirements and be registered at the Florida Department of Motorized Vehicles (DMV). In order to address the

several safety issues associated with THOWs, the Rockledge ordinance requires all THOWs to meet American Society of Civil Engineers (ASCE) standards as established in the state of Florida. Measures such as these may result in the legal integration of THOWs while addressing the problems and concerns related to aesthetics, property values, safety and health.

Creating new and innovative zoning classifications may be another way for communities to adopt tiny and small houses. However, it is unlikely that such policy, at least initially, would result in a dramatic increase in the supply of affordable housing in a community. For example, this is demonstrated in the small scale of Rockledge’s new tiny house pocket neighborhoods. However, innovative zoning classifications could also lead to the integration of housing types, such as THOWs, that have previously been plagued with regulatory barriers.

Another potential solution to overcoming current land use restrictions that inhibit tiny home integration is the creation of overlay or floating districts (Shlay, 2006; Roberts, 2014). Overlay districts allow for the creation of distinct regulations in an area that must be adhered to, in addition to the regulations of an underlying zone. They allow a community to tailor land use policy to fit their particular needs and desires. An overlay district can be as small as one or two blocks, or may be more extensive. Conversely, floating districts require that certain conditions must be met before the zoning is approved for a property. Rather than being delineated on a map, the zone “floats” until the development conditions are met, then the zone is added to a map. Atlanta lawyer and tiny house advocate, Elizabeth Roberts Esq. (2014) recommends using overlay districts for the allowance of the ADU in neighborhoods that were previously zoned for large-lot single-family dwellings. This type of policy would again foster small home rental opportunities rather than small homeownership. However, it remains to be examined if overlay or floating districts could be created which would allow the division of large lots and thereby facilitate tiny home ownership opportunities. As with other methods that would result in increased density standards, decreased lot sizes, and decreased dwelling size, it is likely that overlay and floating districts would face opposition due to concerns about decreased property values and loss of single-family-only characteristics. However, the creation of such zones offers yet another way that communities might integrate tiny and small homes.

In order to address issues of housing affordability, some municipalities have enacted inclusionary zoning regulations, which require that all new housing developments include a certain percentage of low-income housing (Shlay, 2006; Ross, 2014; Schwartz, 2014). Inclusionary zoning mandates may be applied to many types of housing. There have been very wide interpretations of “low-income” in inclusionary zoning policy. In some instances, scholars would assert that the

homes constructed via inclusionary zoning measures have not served the truly low income at all (Schwartz, 2014) and may even exacerbate housing affordability problems (Bento et al., 2009). Furthermore, the required percentage for such housing never seems to meet demand for affordable housing. However, the adoption of such measures may lead to communities developing policies that would facilitate affordable tiny or small house infill, such as decreased lot sizes or increased density standards.

Of the various types of tiny and small homes, THOWs generally face the most barriers to legal integration in communities (Keyser, 2017). As a result, some tiny house advocates have worked to develop non-mandatory standards, entitled "Guidelines for Tiny Houses on Wheels" which require THOWs to be built safely, wisely and soundly (Tiny House Community, 2016). Though originally designed as certification standards, tiny house proponents felt that using the word "certification" would confuse the process with the legal certification process required of RVs therefore the term "guidelines" was instead adopted. The guidelines include such measures as requiring that quality materials be used in THOW construction (must meet IBC standards or equivalent, even if salvaged materials are used), egress windows be included in lofts and bedrooms as fire exits, proper ventilation and heating systems for small spaces be installed, and that the homes be able to withstand 130 mph winds. Currently, the guidelines are not affiliated with any government or lending institution (Tiny House Community, 2016). And if widely adopted, these standards may lead to increased cost in tiny home construction. However, such guidelines may be beneficial in that they provide a starting point for THOW dwellers to establish THOW living as a safe and viable housing option (Tiny House Community, 2016). The standards may furthermore aid in the establishment of sorely needed banking, lending and insurance practices that accommodate small home construction and financing.

Finally, social housing cooperatives and land trusts offer another potential means of accommodating downsized living and addressing affordability issues. Though these strategies are not distinctive to small dwellings, the purpose of such housing arrangements is, "...to ensure security of tenure and permanent affordability" (Stone, 2008) via collective ownership and decision-making. As much of the impetus behind tiny and small living is affordability, these strategies may be appealing to tiny house advocates. However, it is important to note that both social housing cooperatives and land trusts are methods of addressing property ownership concerns, they do not address issues associated with building codes and land use policy. Therefore, the use of either arrangement first requires that land use regulations and building codes are in place that would allow for small structures. This would be especially critical if such strategies were used to integrate

a development of THOWs, as THOWs face a myriad of legal obstacles due to their mobile nature.

There are two types of social housing methods that could be used to accommodate tiny and small homes: community land trusts (CLTs) and limited equity cooperatives (LECs). CLTs involve the creation of a nonprofit land trust that ensures that a property will be held in non-speculative ownership in perpetuity (Stone, 2008). In this arrangement, the land is held as a common resource and individuals may hold long-term leases on individual structures, such as houses. The leases allow lifetime tenure, and are inheritable and renewable (Stone, 2008). In *The Community Land Trust Reader*, Davis (2010) writes, "What CLTs do best is to preserve affordability when economic times are good and protect its homes and homeowners when times are bad." Conversely, with LECs, individuals purchase a "share" in the cooperative, which is either a home or apartment. The share price is established by a predetermined formula rather than the housing market, in order to ensure that speculative gain is not part of the process (Stone, 2008). This arrangement fosters affordability and allows shareholder input in property management decisions.

Both CLTs and LECs compose a very small part of the overall housing market. There are only approximately 240 CLTs (Davis, 2010) or about 6,000 housing units (Stone, 2008) in the U.S, many of them in rural areas. As of 2003, it was estimated that there were 425,000 units of LEC housing, the vast majority of which are located in New York City (Stone, 2008). There are several reasons such housing arrangements aren't more widespread. During the housing boom that occurred shortly after WWII, Americans were unlikely to support measures that used the word "cooperative" because terms that suggested communal arrangements were associated with the ideology of communism (Stone, 2008). CLTs, which often involve the preservation and management of open space, as well as housing accommodations, demand a lot of upfront capital (Davis, 2010). CLTs are often created on rural land that has been purposefully donated for land preservation and community establishment. In instances when land has not been donated for CLT establishment, the cost of forming a CLT is markedly higher. Therefore, the amount of capital that is required upfront to establish a CLT may make this strategy a challenging option for those struggling with housing affordability.

The prominence of the American dream, which promotes independent home and land ownership, may further deter individuals from considering social housing options. Stone (2008) notes that many people perceive such living arrangements as less than ideal because, "... residents ostensibly have no opportunity to realize any of the psychological, social and economic benefits of homeownership." However, he follows up by stating that property paradigms are evolving and that people are

willing to consider new living arrangements in order to secure affordable and stable residences. He furthermore predicts that CLTs will continue to increase in popularity in order to address growing affordability issues (Stone, 2008). This is because, both arrangements address cost-effectiveness associated with housing. As the tiny house movement and housing affordability often go hand in hand, tiny house enthusiasts may turn to social housing methods that would allow for tiny and small house living arrangements.

FRAMEWORK FOR FUTURE RESEARCH

The evidence suggests that interest in tiny and small house living will continue to grow in order to address issues of increasing housing unaffordability, and as a means of pursuing counterculture lifestyles. What remains to be examined is how municipalities can best integrate tiny and small houses into urban communities, while retaining good city form. There is also a need to investigate the relationship between individuals' perceptions of tiny house aesthetics and how those perceptions may affect resulting land use policy. For instance, some communities may prohibit ADUs and others may encourage them because of differing perceptions about ADU aesthetics, increased density standards and the creation of rental opportunities in neighborhoods. Work is currently being done on these issues (Evans, 2017). The study examines how communities are creating tiny house policy, the barriers along the way, and how perceptions of tiny homes influence policy outcomes. The research finds some preferences for the various ways tiny houses may be integrated into urban areas and for specific design elements. The study furthermore finds several "best practices" to tiny house integration, among them, the development of tiny house infill measures that will not adversely impact surrounding property values. The research may lead to a better understanding of how tiny and small house land use policy might best be crafted.

Research that examines the viability of tiny and small house living is also warranted. The review indicates that tiny and small house dwelling is being pursued in order to address both housing affordability and quality of life factors. However, it is unknown if such benefits are actualized. Research that examines such factors as tiny house dwelling longevity and dweller satisfaction is needed. An economic analysis of the tiny, small and THOW market is also warranted. For instance, it is unclear what happens with the resale price of tiny homes, especially THOWs. In general, homes are considered appreciating assets. However, because they are not on permanent foundations, THOWs may be considered depreciating assets under current finance and assessment methods. Therefore, though many homeowners consider their home to be their greatest financial investment, this may not necessarily be the case for

THOW owners. Developing an understanding of these dynamics is important, as it may influence community receptiveness to the integration of tiny and small houses into urban areas.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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