



DATE: November 26, 2018

TO: Council Sustainability Committee

FROM: Director of Utilities & Environmental Services
Director of Development Services
Deputy City Manager

SUBJECT Tiny Homes – Sustainability Considerations

RECOMMENDATION

That the Committee reviews and comments on this report.

SUMMARY

Tiny homes come in many forms and can be an attractive affordable housing option for some for various reasons. However, tiny homes present a variety of issues to consider from building code requirements to support services for extremely low-income individuals. The focus of this report is a review of the sustainability aspects of tiny homes and how they compare to other housing types.

BACKGROUND

On November 7, 2017, Council approved new regulations for Accessory Dwelling Units (ADUs). The regulations were adopted to be consistent with state legislation that was adopted with the intent of making it easier to build ADUs and are available on the City's website.¹ ADUs can be attached or detached. An ADU in Hayward can be up to 1,200 square feet and may be attached to or detached from a single-family home. Detached ADUs that are 400 square feet or smaller may be considered tiny homes.

On March 6, 2018, staff presented an informational report to Council containing an overview of tiny homes.² The report included the types of tiny homes, related regulations, and examples of tiny home communities. Council requested that the topic be agendaized for discussion at a future meeting.

¹ See "Handout" for ADU regulations at <https://www.hayward-ca.gov/services/permits/accessory-dwelling-unit>

² March 6, 2018 Council report: <https://hayward.legistar.com/LegislationDetail.aspx?ID=3361902&GUID=22FE4079-9CBD-4ACD-9B02-31EEE06AFE8F&Options=&Search=>

Relevant General Plan policies:

General Plan Policy H-3.1: Diversity of Housing Types – The City shall implement land use policies that allow for a range of residential densities and housing types, prices, ownership, and size, including low-density single family uses, moderate-density townhomes, and higher-density apartments, condominiums, transit-oriented developments, live-work units, and units in mixed-use developments.

General Plan Policy H-3.3: Sustainable Housing Development – The City shall improve affordability by promoting sustainable housing practices that incorporate a ‘whole system’ approach to siting, designing, and constructing housing that is integrated into the building site, consumes less water and improves water quality, reduces the use of energy use, and other resources, and minimizes its impact on the surrounding environment.

General Plan Policy H-3.6: Flexible Standards and Regulations – The City shall allow flexibility within the City’s standards and regulations to encourage a variety of housing types.

DISCUSSION

There are many types of tiny homes. Tiny homes can be constructed as a stand-alone structure, in the rear yard of a single-family home, or as a collection of tiny homes on one parcel of land. According to the California Department of Housing and Community Development (HCD), tiny homes are defined as:

“Structures, which may range anywhere from 80 to 400 square-feet in size, may be built with a variety of standards and no construction standards; may or may not be constructed on a chassis (with or without axles or wheels); and usually are offered for use and placement in variety of sites.”

The type of housing unit and how a unit is defined is important as there can be significant differences in planning and building code requirements for each. As noted in the March 6, 2018, Council report, a factory-built home is approved by HCD, except that the installation and utility connections are reviewed by the local building department. A tiny home on wheels may be considered a recreational vehicle or a park trailer and are regulated by California Health and Safety Code (HSC). A tiny home built on site with a permanent foundation would be reviewed and approved by the City’s Building Division, similar to an ADU.

Overview of Tiny Homes – According to the Association of Bay Area Governments (ABAG), half of California households are unable to afford the cost of housing in their local market and the Bay Area housing market has especially high housing costs. According to the California Association of Realtors³, an annual household income of \$181,130 is needed to purchase a median-priced home in Alameda County, while \$50,000 to \$75,000 is needed in most counties in the Central Valley. Tiny homes have become a housing type of great interest for several

³ <https://www.car.org/aboutus/mediacenter/newsreleases/2018releases/1qtr2018hai>

reasons. Affordability may be the biggest reason people choose to go small, but for some it is a way to live a simpler life and to reduce the size of their carbon footprint.

Other affordable alternatives for one to two-person households include:

- Micro Units (typically 150 to 250 square feet and may not have full kitchens)
- Single Room Occupancy (SRO) Units (may have shared bathrooms)
- Efficiency Units (may also be considered a studio apartment or studio unit)
- Manufactured Homes (not typically “tiny,” but may provide a good model for locating multiple tiny homes on one property)

In the Bay Area, the most common type of tiny home is an ADU. According to ABAG, the construction of ADUs has more than doubled in the last two years. ADU production in the Bay Area increased from approximately 450 in 2015 to approximately 1,000 in 2017. Since the adoption of the City’s local ADU Ordinance in November 2017, the Planning Division has received approximately thirty Zoning Conformance Permit applications for the development of ADUs on properties with existing single-family dwellings. Recently, larger subdivisions have begun to incorporate ADUs into their developments as a plan type for prospective buyers to offset the cost of homeownership by including a rental unit.

Examples of tiny home and micro apartment communities that are existing and proposed include:

- Oakland - The *Nook on Valdez*⁴ is a 71-unit micro apartment building with units ranging in size from 181 to 255 square feet. Each unit has a full bathroom, but not a kitchen. Each unit has a bar-sized sink and space for a hot plate or microwave. There is a shared full-size kitchen in a common area.
- Castro Valley – The First Presbyterian Church of Hayward, located in Castro Valley, is planning to place six tiny homes on their property.⁵ According to Alameda County staff, the required approvals are still pending.

The use of tiny homes as an approach to housing the homeless is evaluated in a recent report published by the Turner Center for Housing Innovation at UC Berkeley.⁶ The report evaluates several tiny home communities, including one proposed for a property in Hayward, and recommends several changes to state and local regulations that would streamline the design and permitting of tiny homes and tiny home villages.

Sustainability Considerations – Generally, a tiny home is more sustainable than a large home. Fewer materials are needed for construction and less energy is required to heat and cool a tiny home.

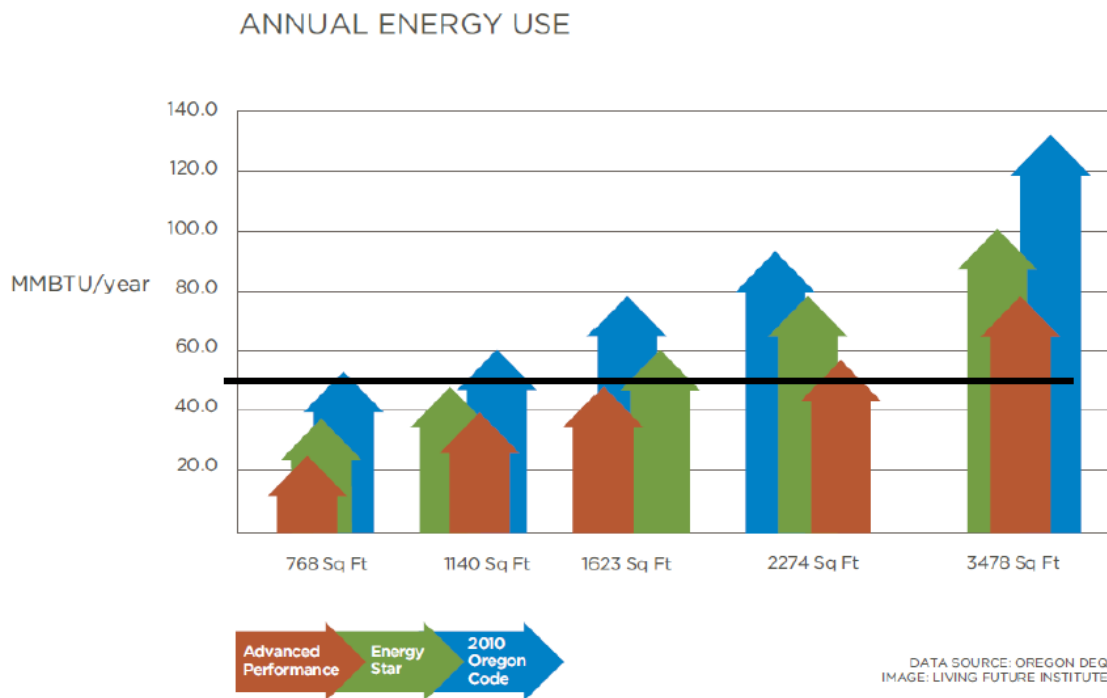
⁴ <https://www.nookonvaldez.com/>

⁵ <http://castrovalleymatters.org/2018/04/16/church-plans-tiny-homes-for-homeless-in-parking-lot/>

⁶ <http://turnercenter.berkeley.edu/student-projects>

Energy Efficiency –

- Generally, a smaller home uses less energy than a larger home. When considering a range of home sizes and configurations, a large detached home is the least energy efficient and a small unit in a multi-unit building is the most efficient.
- Given the limited energy demands of a tiny home, it may be easier to build a zero-net energy (ZNE) tiny home compared to a conventional home, however the limited roof area of a tiny home may require the use of solar panels placed on the ground.
- According to the State of Oregon Department of Environmental Quality, the environmental impacts of an “extra small home” (1149 square feet) are reduced between 20% and 40% compared to a “medium standard home” (2262 square feet), suggesting that home size is among the most important determinants of environmental impact.⁷ It should be noted that this does not take into consideration the number of people living in the home.
- As shown in the graph below, a conventionally built small home (768 square feet) meeting the minimum requirements of the 2010 code uses less energy than an advanced performance large home (2,274 square feet).⁸



Accessory Dwelling Strategies LLC

⁷ A Life Cycle Approach to Prioritizing Methods of Preventing Waste from the Residential Construction Sector in the State of Oregon, available at <https://www.oregon.gov/deq/mm/production/Pages/Green-Building.aspx>

⁸ Accessory Dwelling Strategies LLC (<https://accessorydwellingstrategies.com/>)

- Small apartments are likely to be even more energy-efficient than a tiny home. According to the U.S. Energy Information Administration (EIA)⁹, the statistical and analytical agency within the U.S. Department of Energy, “Households living in apartment buildings with five or more units use about half as much energy as other types of homes. Lower energy use in apartments can be partially explained by their smaller living space. Additionally, apartment units are bordered by other units or common areas on one or more sides and typically have fewer windows, limiting exposure to exterior temperatures.”

Land Use Efficiency – Depending on spacing, a collection of tiny homes on a single property could have a density of ten to fifteen dwelling units per acre. For comparison, townhomes typically have a density of approximately thirty units per acre. The affordable micro-apartments proposed for Depot Road have a density of approximately sixty-two units per acre.

- Generally, higher density development is a more efficient use of land and depending on the neighborhood, can promote sustainability due to a greater ability to walk, bike or use public transportation.
- Placement of a tiny home within the backyard of an existing single-family home may be a very efficient use of land and a practical way to increase housing density.
- A typical mobile home park in Hayward has a density of eight to twelve units per acre. The land use density and amenities provided at a mobile home park may be a good example for the development of a tiny home village. Some trailer parks in the United States are beginning to allow tiny homes alongside recreational vehicles and trailers.

Building Materials & Construction Cost –

- Tiny homes require fewer material inputs to construct. According to one energy company, “...it takes seven logging trucks to hold enough lumber for an average American home. In contrast, the lumber usage in tiny homes takes only half of one logging truck.”¹⁰
- On a per-unit basis, construction costs for a detached tiny home may be less than for an attached apartment. According to San Mateo County’s Second Unit Resources Center¹¹, construction costs are typically about \$375 per square foot for a home that is less than 500 square feet, or approximately \$113,000 for a 300 square foot home. Land costs are likely to be the most significant variable in the construction of a tiny home.
- The micro apartments on Depot Road (125 to 250 square feet each) are estimated to cost approximately \$487,000 per unit. The other three projects for which Council recently appropriated affordable housing funds on October 2, 2018, range from \$522,000 to \$664,000 per unit. While the per unit cost for Depot Road is lower, the units will house one person each. The other two projects will house larger households

⁹ See article titled *Apartments in buildings with 5 or more units use less energy than other home types* <https://www.eia.gov/todayinenergy/detail.php?id=11731>

¹⁰ <https://blog.constellation.com/2017/08/21/what-is-tiny-house-living/>

¹¹ The Second Unit Resources Center has design ideas, a cost calculator, and information about permitting: <http://secondunitcentersmc.org/>

so, the per bedroom costs range from \$306,000 to \$487,000. The relatively high per-bedroom costs for these projects include common areas, offices for management and support staff and also infrastructure costs, which do not decrease relative to unit size.

- A search for mobile homes in the Hayward area found that most range in size from 1,400 to 1,800 square feet and cost between \$200,000 and \$350,000. This equates to \$140 to \$200 per square foot of living area, which on a square foot basis, is significantly cheaper than the cost to build a tiny home. Space rental in Hayward's mobile home parks ranges from approximately \$500 to \$800 per month.

Consumption –

- A resident of a tiny home is likely to buy fewer things, which will further reduce their carbon footprint compared to a resident of a larger home in the same income category.

ECONOMIC IMPACT

As noted above, a resident of a tiny home is likely to buy fewer things, which will further reduce their carbon footprint compared to a resident of a larger home in the same income category. Conversely, residents of more affordable housing may have more disposable income to spend in the local community. Another consideration is that tiny homes or ADUs on properties of existing single-family homes can be an investment that provides for rental income for the homeowner.

FISCAL IMPACT

Allowing for tiny homes may not have an impact on the City's General Fund.

STRATEGIC INITIATIVES

Tiny homes support the City's Complete Communities Strategic Initiative. The purpose of the Complete Communities Strategic Initiative is to create and support services and amenities that provide inclusive and equitable access with the goal of becoming a thriving and promising place to live, work and play for all. Tiny homes can be an effective affordable housing solution and support the following goals and objectives that were established as part of the Complete Communities Strategic Initiative:

Goal 1: Improve quality of life for residents, business owners, and community members in all Hayward neighborhoods.

Objective 4: Create resilient and sustainable neighborhoods.

Goal 2: Provide a mix of housing stock for all Hayward residents and community members, including the expansion of affordable housing opportunities and resources.

Objective 2: Facilitate the development of diverse housing types that serve the needs of all populations

Objective 4: Increase supply of affordable, safe and resilient housing in Hayward

SUSTAINABILITY FEATURES

The sustainability features of a tiny home will vary depending on the specific design and location. As noted above, tiny homes generally require fewer resources to build and maintain compared to larger detached homes. Attached multifamily housing are typically even more energy efficient than detached homes. In many cases, tiny homes allow for a more efficient use of land. There is no one solution to addressing the need for affordable housing for small households, but for those who live in a tiny home, their reduced carbon footprint is a significant sustainability feature.

NEXT STEPS

Staff will present a report to City Council during a work session in January 2019. The report will address:

- tiny homes and Hayward's affordable housing requirements
- fees require to build tiny homes (park fees, utility connection, etc.)
- zoning requirements
- building code requirements

Depending on direction from the Committee, staff may address additional topics in the January report.

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