ARTbarnARTfarm EcoHousing

A Tiny House Artist Eco-Village

A proposed arts-focused tiny house community with a replicable model of affordability, context-sensitive density and adaptive infill, with the greenest design possible

Learn more: foragedesign.org/residential/artfarmecovillage

Benefits of Tiny Homes of Wheels Cluster Housing

- Adds to diversity of affordable housing choices (both rental and owned)
- Low impact development infill
- Adds density that fits in with existing residential neighborhoods - turns more neighborhoods into density supporters with positive examples
- Transitionary development approach on the housing continuum
- Housing dignity for low-income residents is not only gained but a source of pride in their uniqueness
- Makes home ownership much more in reach for many more people
- Increases equity and accessibility of who can own/build/create housing

- Provides much needed low-cost housing with greater flexibility at a price point and market category currently missing

Tiny Homes/THOW & Climate Benefits

- Efficient space living translates into environmental benefits in energy, water, waste and purchasing
- Significant reductions in GhG
- 93% reduction of energy of traditional houses
- 45% decrease in ecological footprint

Source: https://ipropertymanagement.com/research/tiny-home-statistics

Smaller Carbon Footprint

Living in a smaller home means less electricity or natural gas usage; it costs less to heat or cool a smaller space. Many tiny home builders also install energy-saving items like solar panels and washer/dryer combos that do the work of two machines in one.

On a related note, tiny house owners tend to use more fresh foods than pre-packaged or frozen. This is partially due to smaller fridge/freezer space, but it's also a part of the "tiny home cultre." The early interest in tiny homes was, after all, to get away from big city life and get back to nature, living as cleanly and simply as possible.

Other common behavioral changes among new tiny house dwellers include greater conservation of water, increased composting, more purposeful purchasing habits, and less housekeeping and maintanence.

- A tiny home uses about 7% of the energy that a traditional house does.
- Moving to a tiny home can decrease a household's ecological footprint by 45%.
- Tiny homes emit an average of 2,000 pounds of greenhouse gasses each year; traditional homes emit 28,000 pounds.
- Tiny homes use an average 914 kilowatt hours (kWh) each year while traditional homes use 12,773 kWh.
- The ecological footprint of the average tiny home is 3.87 global hectares (gha); a traditional home's footprint is 8.4 gha.
- 85% of tiny homes operate at above-average energy efficiency.

Tiny Homes & Affordability

-fraction of cost of typical housing

-increases availability of sites and providers to partner in the solution

- adds to the diversity of housing choices in an expedited low-impact way

- increases pathway to ownership model

that spaces are designed to be multi-purpose. Additionally, because tiny homes are generally so much more personalized than traditional homes, you really do get more bang for your buck, so to speak, in terms of usage. Plus, a smaller price tag means less loan interst to pay; it's not uncommon for mortgage holders to end up paying an additioal 50% of what their home is worth in interest alone.

- 60% of tiny homeowners have no credit card debt.
- On average, a tiny home costs less than one-fifth what a traditional home would cost.
- The average sales price of a newly-built single-family home is $383,900.
- The average listing price of a home on Zillow is $275,000.
- The average cost of a built-to-suit tiny house is $59,884.
- The average cost of a DIY home build is closer to $23,000.
- The most luxurious tiny homes top out at $180,000.
- One couple built their own 192-square-foot tiny home for less than $8,000.
- 78% of tiny home dwellers own their home compared to 65% of traditional home dwellers.

Source: https://ipropertymanagement.com/research/tiny-home-statistics

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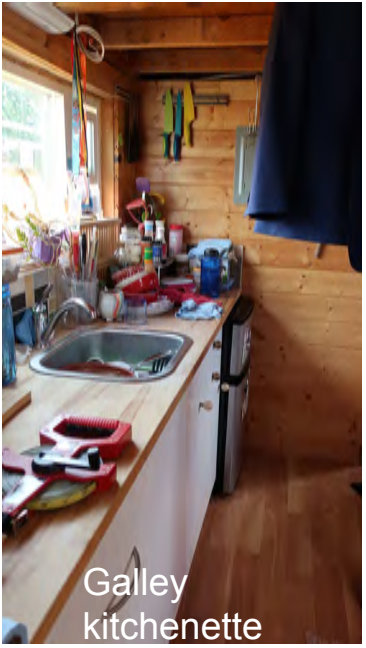
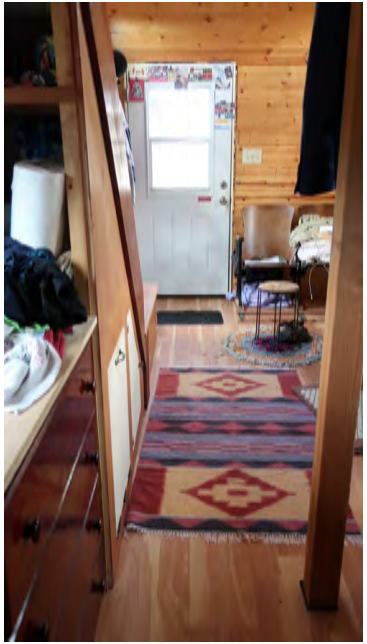
Tiny House Living

Compact, low-impact, affordable

(Images from Art Farm existing Tiny House on Wheels)





AMENDMENTS

Water, electrical and Sanitation in Tiny Homes on Wheels: Create an "all of the above" strategy to **allow opportunities for off-grid living**:

1. **solar panels and batteries for power,** rather than a required electrical hook-up;
2. **portable water tanks or other containers that are manually refilled**, rather than a site water connection, to provide potable water;
3. **greywater systems for bar sink** and shower drainage,
4. **composting toilets* and/or drain to tank and pump approaches** to provide for sanitation needs in innovative housing demonstration projects, especially those involving tiny homes on wheels.

**Composting toilets are allowed by Oregon building code since the 1970's. Link to ReCode Information and precedents. Art Farm has a THOW with a composting toilet.*
https://www.recodenow.org/composting-toilets-in-oregon/#:~:text=Permitting%20Composting%20Toilets%20in%20Oregon,to%E2%80%9D%20the%20NSF%20standard%2041


Water closet with composting toilet


Greywater planter (precedent)

AMENDMENTS

Innovative Housing Demonstration Pilot Program

Purpose: **Allow development of a limited number of demonstration projects (10) to evaluate opportunities for increasing the availability of innovative housing in Portland.**

Create a pathway to remove barriers that exist to a variety of alternative housing types that provide both environmental innovation and greater affordability.

- **A small set of pilot projects would provide a pathway to test innovative housing models, evaluate code issues, and demonstrate viability with low risk.**
- Drawing on policy precedent, staff shall create an Innovative Housing Demonstrations Policy (IHDP) to advance further study, remove unnecessary code barriers, and encourage greater innovative housing.
- **This demonstration approach will broaden the array of local examples and strategies for low-impact, climate responsive housing and increase the availability of built examples that model social, financial and environmental innovation in Portland neighborhoods.**

City of Redmond Policy Precedent

Innovative Housing Demonstration Policy (IHDP)

- **Allows for 5 alternative housing projects** via an application process
- **Purpose:** Increase affordable housing supply, and demonstrate innovation in more diverse housing types, sizes and income mixes
- **Allows flexibility in site and design standards** to support and test models
- Process to **identify potential zoning code changes** to support more innovation
- **Outlines submittal & review requirements**
- **Evaluation report provision & 5 yr. sunset clause**

Purpose:

Allow development of a limited number of projects to evaluate opportunities to increase the availability of innovative housing in Portland neighborhoods.

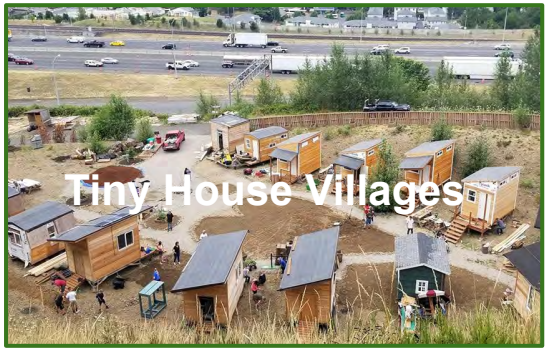
Need: Until permanent ordinances regarding innovative housing projects can be implemented, there is a need to allow a limited number of regulated innovative housing projects.

(5) Following expiration of the ordinance codified in this division, City staff shall produce a report evaluating how well the project achieved the goals of the ordinance and the goals of the enabling Comprehensive Plan policy language.

City of Redmond Innovative Housing Demonstration Policy
https://www.codepublishing.com/WA/Redmond/CDG/RCDG20C/RCDG20C3062.html

Innovative Housing Demonstration Examples

We need more innovative demonstration projects of both environmental/climate responsive design, or are supportive models that contribute to affordability and equity



INNOVATIVE HOUSING TYPES

Environmentally Innovative

- **Zero Energy Buildings**
- Zero Waste Buildings
- Passive House
- Living Buildings

Ankeny Row
A New Net Zero Energy Pocket Community

/www.greenhammer.com/insight/blog/albertina-kerr-zero-energy-housing/

INNOVATIVE HOUSING TYPES

Environmentally Innovative

- Zero Energy Buildings
- Passive House
- Living Buildings
- **Zero Waste Buildings**

Hassalo on 8th, Portland

27-story high rise featuring 293 units. The building is the first of its kind to receive a LEED Gold Certification from the US Green Building Council. Incorporating multiple green components, including solar energy, roof gardens and a membrane bioreactor-based wastewater treatment and recycling system installed in the building's basement. The system was the first urban, residential treated wastewater reuse application permitted in the USA.
https://www.waterworld.com/international/desalination/article/16200715/nyc-highrise-reuse-proves-decentralized-system-works

INNOVATIVE HOUSING TYPES

Affordable/Cooperative/Socially Innovative

- Cohousing

- Community Land Trusts

4. Perpetual Affordability:

The CLT retains the option to repurchase the structures located on the land. The CLT is committed to preserving the affordability of housing and other structures.

Lopez Community Land Trust

Sustainable families and homes for a better future

Lopezclt.org

Innovative Housing Types

Sustainable Economic Development & Food Access | **Equitable Food Oriented Development** (EFOD)

While conventional food systems work and Transit Oriented Development (TOD) may unintentionally cause harm to communities through gentrification, displacement, or extraction of local resources, EFOD instead fosters strong social capital networks, equitable asset development, increased civic engagement, and decreased displacement.

Learn more: *The Kresge Foundation, released Equitable Food Oriented Development: Building Community Power*

EFOD: THE POWER OF FOOD-BASED COMMUNITY DEVELOPMENT | Ashland Market & Cafe, 80+ affordable housing units (Oakland, CA)

Long-time community organization Mandela Partners worked alongside local residents and stakeholders to develop the Ashland Market and Cafe, a 2,100-square-foot food hall, incubator, and community space on the ground floor of an affordable housing complex. The project was catalyzed in partnership with a resident-led advisory committee that eventually selected four local food entrepreneurs as the facility's inaugural tenants. Ashland Market & Cafe vendors live in the surrounding neighborhoods and sell foods that reflect their heritage and family histories. To support and encourage community-based entrepreneurship, kiosks rental rates are kept well below market and tenants are offered business development workshops, micro-loans, and legal assistance. Ashland Market & Cafe was funded using an innovative, mix of financial instruments including revolving loans, $360,000 in federal Healthy Food Financing Initiative funds, and $1.3M in public and private investments.

Benefits of the Innovative Housing Pilot Approach

- **Innovation** Opportunity to be a leader in continuing Portland's Legacy of Innovation
- **Low Risk, High Reward** Small set of pilots provides a pathway to test innovative housing models, study code barriers, and demonstrate viability with low risk
- **Transitionary approach** Low-impact development can happen NOW while retaining future higher intensity development potential without demolition
- **Climate-responsive approach** Supports removing code barriers to more climate responsive and low impact housing types
- **Socially-responsive approach** Creates more opportunities to demonstrate affordable socially-supportive housing models that we have few example of (Cohousing & Community Land Trusts)

Creates a pathway to test creative affordable housing approaches we may not have considered yet.

The L.A. Dome Village was comprised of 20 Omni-Sphere domes which provided housing and supportive service for up to 34 individuals and family members. Located in the heart of downtown LA, it transformed an unsightly encampment site into a community of formerly homeless people.

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Learn more: ***foragedesign.org/residential/artfarmecovillage***

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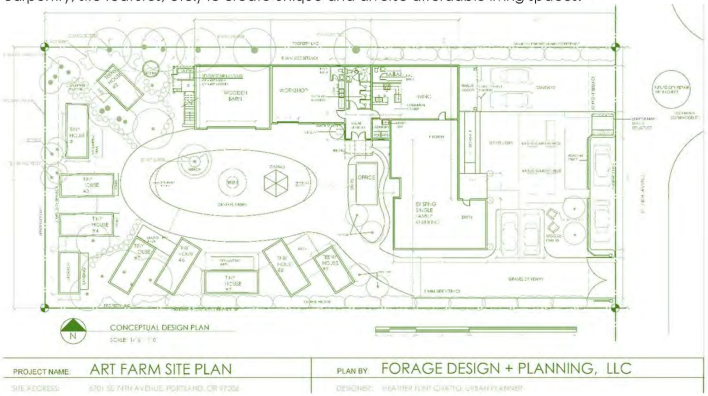
PURPOSE: An arts-focused community with a replicable model of affordability, context-sensitive urban density and infill, with the greenest design possible through efficient use of land, water and energy.

PROJECT OVERVIEW | Art Farm LLC is an artist collaborative focused on arts education and supportive creative programs. Working with a team of experts including Progressive Development Group, Forage Design + Planning, and Cascadia Clusters, the Art Farm collaborative is proposing to develop an affordable, tiny home courtyard cluster and artist ecovillage. This proposal includes adding up to nine residential units at the western half of an existing single-family residential property with zoned potential for up to ten units. The intent is to demonstrate creative approaches for affordable housing as well as a variety of innovative sustainable design features.

TNY HOUSE CONCEPT ILLUSTRATION

EXISTING SITE PLAN

AFFORDABLE HOUSING | In collaboration with Cascadia Clusters as the project contractor, the site would include a mix of permanent and flexible housing types, ideally including several Tiny Homes on Wheels (THOWS). Each residential unit would feature off-grid utilities including solar power and battery storage. Further, by providing a mix of unit sizes and options for rentals of some permanent tiny homes or flexibility for visitors to bring their artistic tiny house with them, it allows variety of housing options for different user needs. Options may also be available for work trade or rent offsets to for onsite artistry work (e.g. finished carpentry, site features, etc.) to create unique and diverse affordable living spaces.

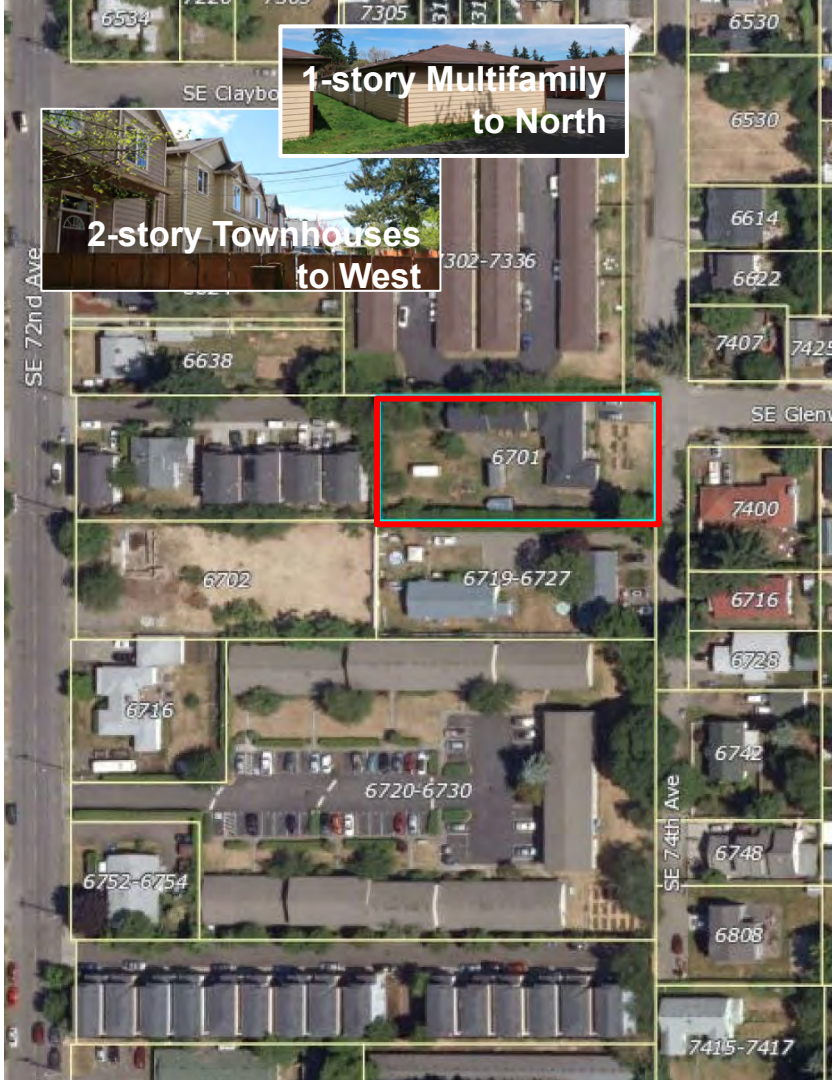


ENVIRONMENTAL PERFORMANCE | Environmental goals include net zero energy performance, onsite agriculture, a market stand, innovative stormwater management, rainwater capture and reuse through on-site cisterns, greywater filtration, and composting toilets. **The intent is to create a "triple-bottom line" approach to sustainability, equity and economy including low income housing, on-site energy generation for carbon-neutrality, with innovative stormwater management, agriculture, and arts education.**

ARTbarn | ART**farm**

Affordable Artist Housing

- 20,000 s.f. multi-family zoned property on SE 74th in Brentwood Darlington
- **Goal to create low-cost tiny house village as a replicable model of affordable housing**
- Single family residence surrounded by higher density 1-2 story multi-family housing. Existing historic barn, small workshop, and 1 tiny house on wheels (THOW).
- **Multifamily zoning for up to ten units** - aiming for THOW project now, higher intensity use 10-15 yrs
- **Deep green, sustainable design:** net zero energy, green roof, onsite stormwater management, food production

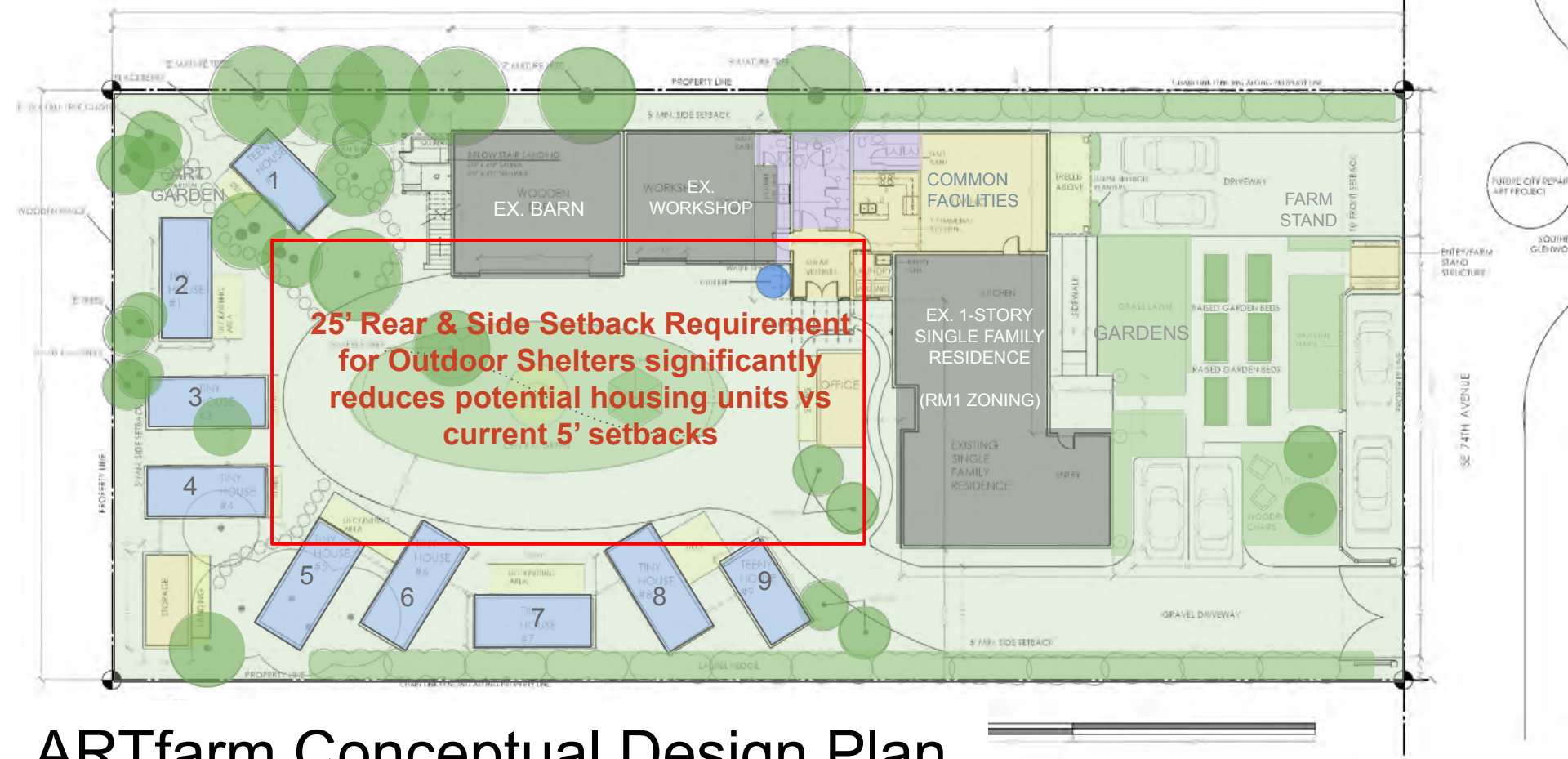


ARTfarm | Existing Site Plan

ARTfarm Conceptual Design Plan

FORAGE DESIGN | PROGRESSIVE DEVELOPMENT GROUP

- TINY HOUSES
- BATHROOMS & SHOWERS
- COMMON SPACES (Office, Kitchen, Living Room, Storage, Laundry)



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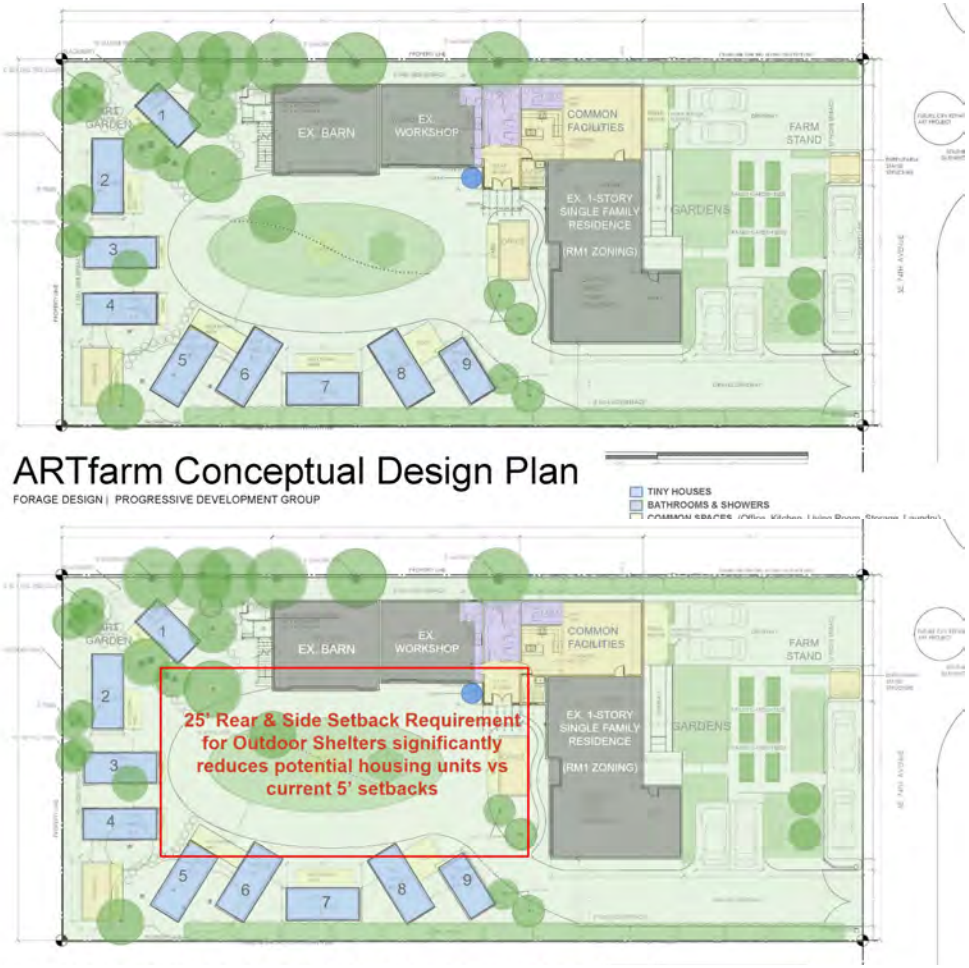
AMENDMENTS

Setbacks in Outdoor Shelters.
To encourage the feasibility of providing tiny home clusters, **side and rear setbacks should be reduced from 25 feet to 5 feet for tiny houses and tiny homes on wheels (THOW) projects.**

The 25’ setback significantly reduces the development potential of multifamily sites which otherwise could support greater density in other housing types with a 5’ setback required. This would make the project consistent with other housing types and setback requirements.



Significantly Reduced Housing Potential
with 25’ Side & Rear Setbacks

Challenge

- The current system does not equitably allow the participation by the significant number of people who want to contribute to the solution.
- There are many sites around the city that are ripe for similar interim development.
- Tiny homes and THOW supports higher intensity interim use for affordable rental housing and can provide an alternative low-bar to entry home ownership
- Retains future potential of higher intensity uses without demolition.

Recommendations

- **Reduce requirement for side and rear setbacks from 25’ to 5’ consistent with typical housing types already allowed under Code**

- **Create a by-right expedited pathway for tiny house and tiny homes on wheels village clusters that does not require a Conditional Use discretionary process if a minor adjustment is warranted.** A Type III review is lengthy and costly, and creates greater uncertainty which may deter more housing projects.

- **Allow for off-grid system connections such as solar, composting toilets, water tanks, and greywater planters**

- **Set up a Low-Cost Innovative Housing Demonstration Project option as part of the S2HC** project that would allow for a limited number of Pilot Projects to move forward to demonstrate the viability of alternative options.

20C.30.62-030 Submittal of Innovative Housing Demonstration Project.

(1) Timing. Upon the effective date of the ordinance codified in this division, the City shall immediately begin accepting applications for innovative housing demonstration project proposals. The Innovative Housing Demonstration Program shall expire five years following its adoption, or when five projects developed under this division are completed, whichever occurs first, unless extended by the City Council, or unless the City Council specifically authorizes additional projects as provided for in this division.

(2) Number of Developments. Except as described below, the City may approve up to five innovative housing demonstration projects, with no more than two projects demonstrating the same single housing type within any calendar

(See City of Redmond Innovative Housing Demonstration ordinance https://www.codepublishing.com/WA/Redmond/CDG/RCDG20C/RCDG20C3062.html

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Amendments

1. **Innovative Housing Demonstrations Policy**
2. **Eliminate or modify the 25’ side and rear setback requirements.** This would severely constrain the development potential of many sites. Current zoning allows townhouses with a 5’ setback so this is unnecessarily restrictive
3. **Allow an “off grid” option by modifying the requirement for utility hookups.**
4. **Reduce barriers to implementation** by the following:
    a. **create a parallel by-right expedited pathway for tiny house and tiny homes on wheels village clusters that does not require a Conditional Use** discretionary process if a minor adjustment (such as #2 above) is warranted. This would trigger a Type III review which is lengthy and costly, and creates greater uncertainty which may deter more housing projects.
    b. **reduce or waive permit fees for tiny house and THOW villages** (similar to precedent with ADUs), that provide affordable housing approaches but are not designated homeless shelters. (This would modify Exemptions for 30.01.096)
    c. collaborate with community partners to **connect applicants in need with free or low-cost technical assistance** for applicants that may not have access to architecture, planning and permitting expertise

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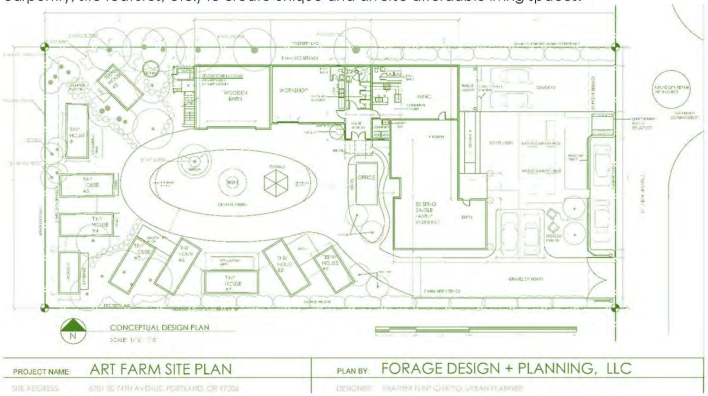

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