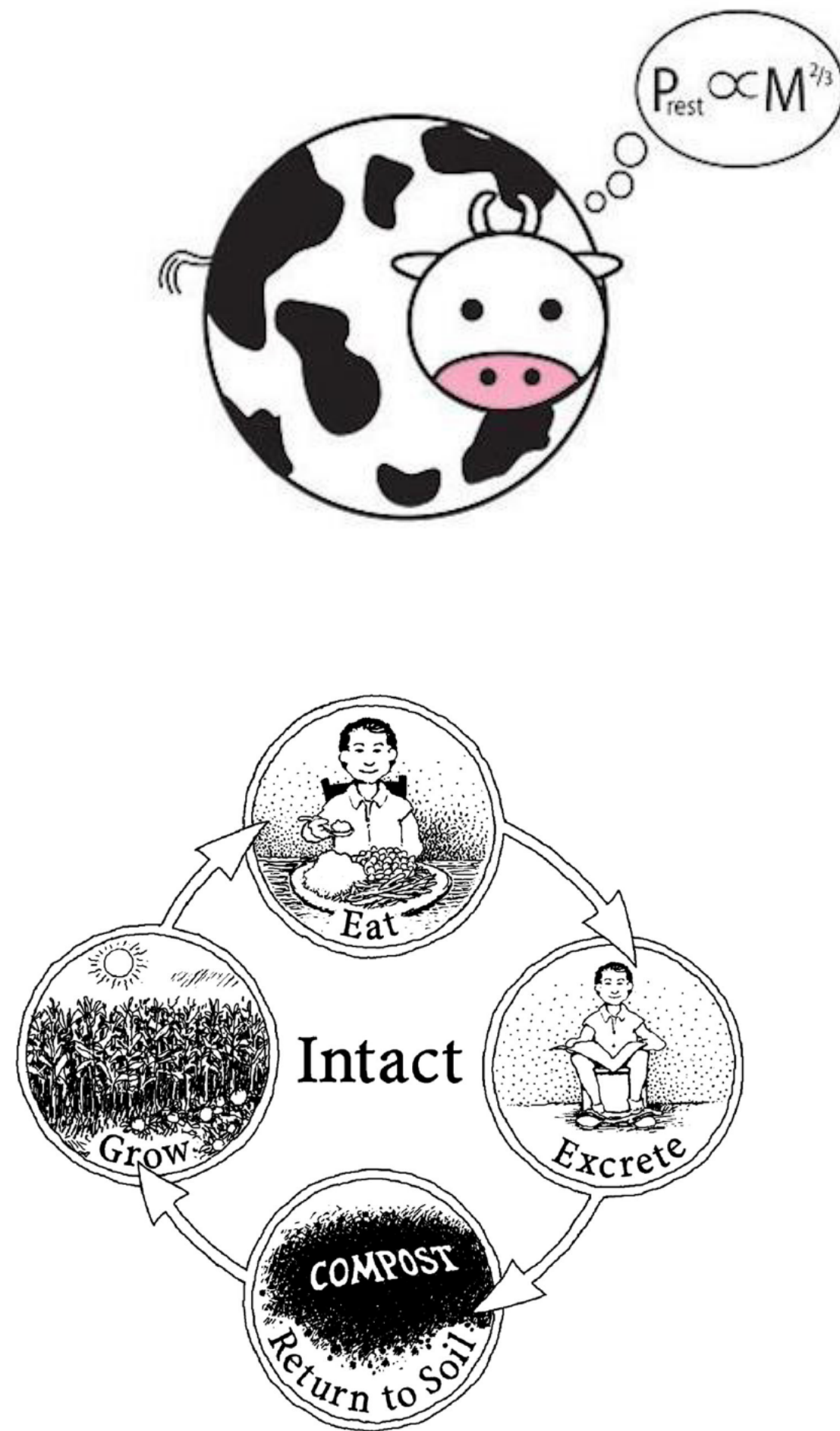




BOTTOM IMAGE: Jenkins, J., 1998. *The Humanure Handbook*, 2nd Edition, http://weblife.org/humanure/chapter2_1.html

ACHIEVING MOMENTUM FOR ECOSAN ADOPTION IN OAKLAND & BERKELEY, CA, USA

Prepared for the Rich Earth Institute | Rich Earth Summit
5 November 2026

Recommended Citation

Kimberly King,

"Achieving Momentum for Ecosan Adoption in Oakland & Berkeley, CA, USA", (2026)

<http://www.outthinkthebox.net/projects/docs/EcosanOaklandBerkeley.pdf>

outline

01. bio + the catalyst

02. why ecosan in oakland & berkeley, ca, usa

03. historical efforts

04. strategy

05. status updates

06. feasibility study pilot

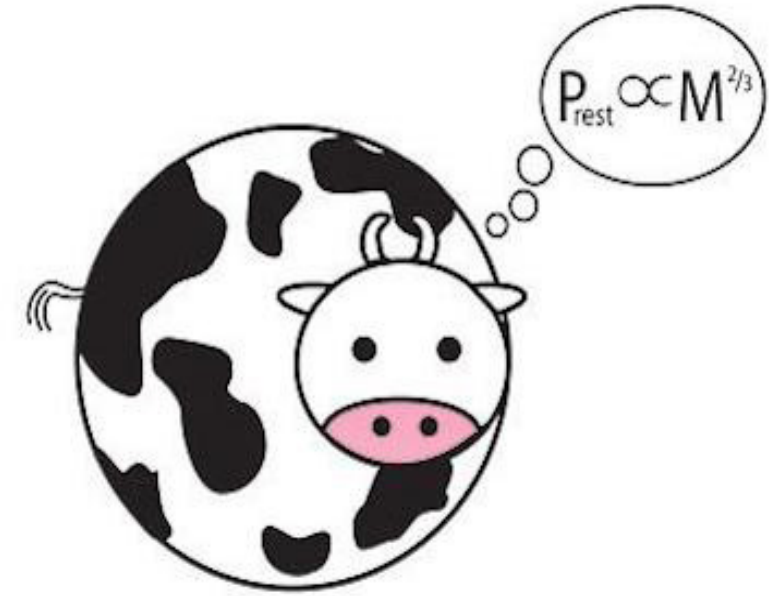
07. contact

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Presentation number: 02-2026
Oakland, CA USA
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bio



Kimberly (Kim) King <https://www.linkedin.com/in/kimgerly/>

Ecosanitation Expert

Renewable Energy Engineer

Applicable Ecosan Credentials & Certifications follow:

1994-1995 | Johns Hopkins University, Environmental and Health Engineering (Graduate Studies in Solid & Hazardous Waste Management)

2002-2003 | 40-Hour Hazardous Waste Operations & Emergency Response Operator

2015-Present | OSHA 30 Hour Training

2018-Present | Ecole Polytechnique Fédérale de Lausanne (EPFL), Planning and Design of Sanitation Systems and Technologies

2019-2020 | Technical Advisor, US TAG to ISO/PC 318 Community scale resource oriented sanitation treatment systems

2024 | US EPA Community Change Grant Industry Experts' Letters of Recommendation | <https://bit.ly/4il1jiv>

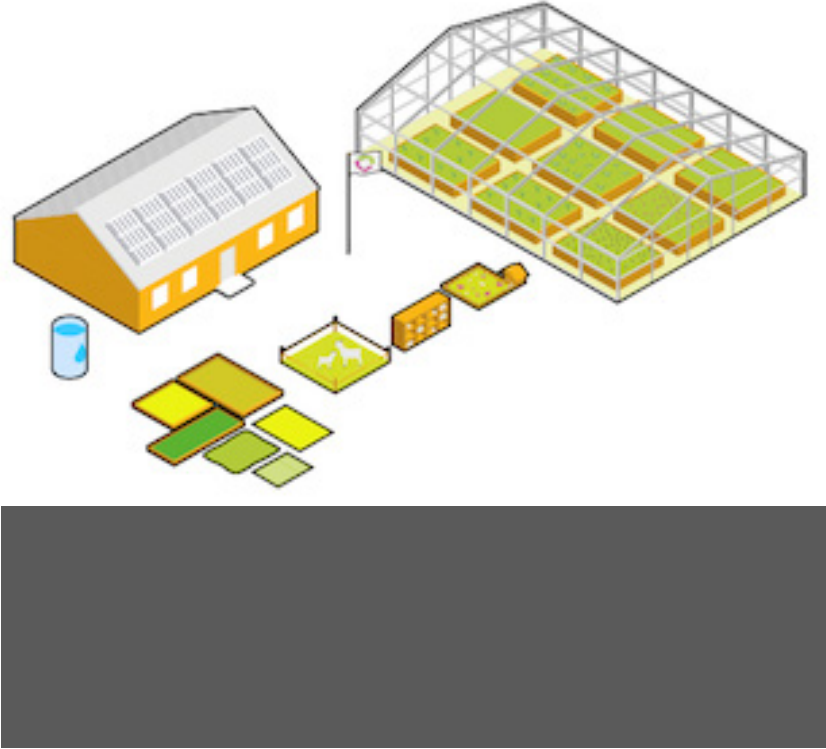
01

the catalyst

WHY DO I DO THIS?

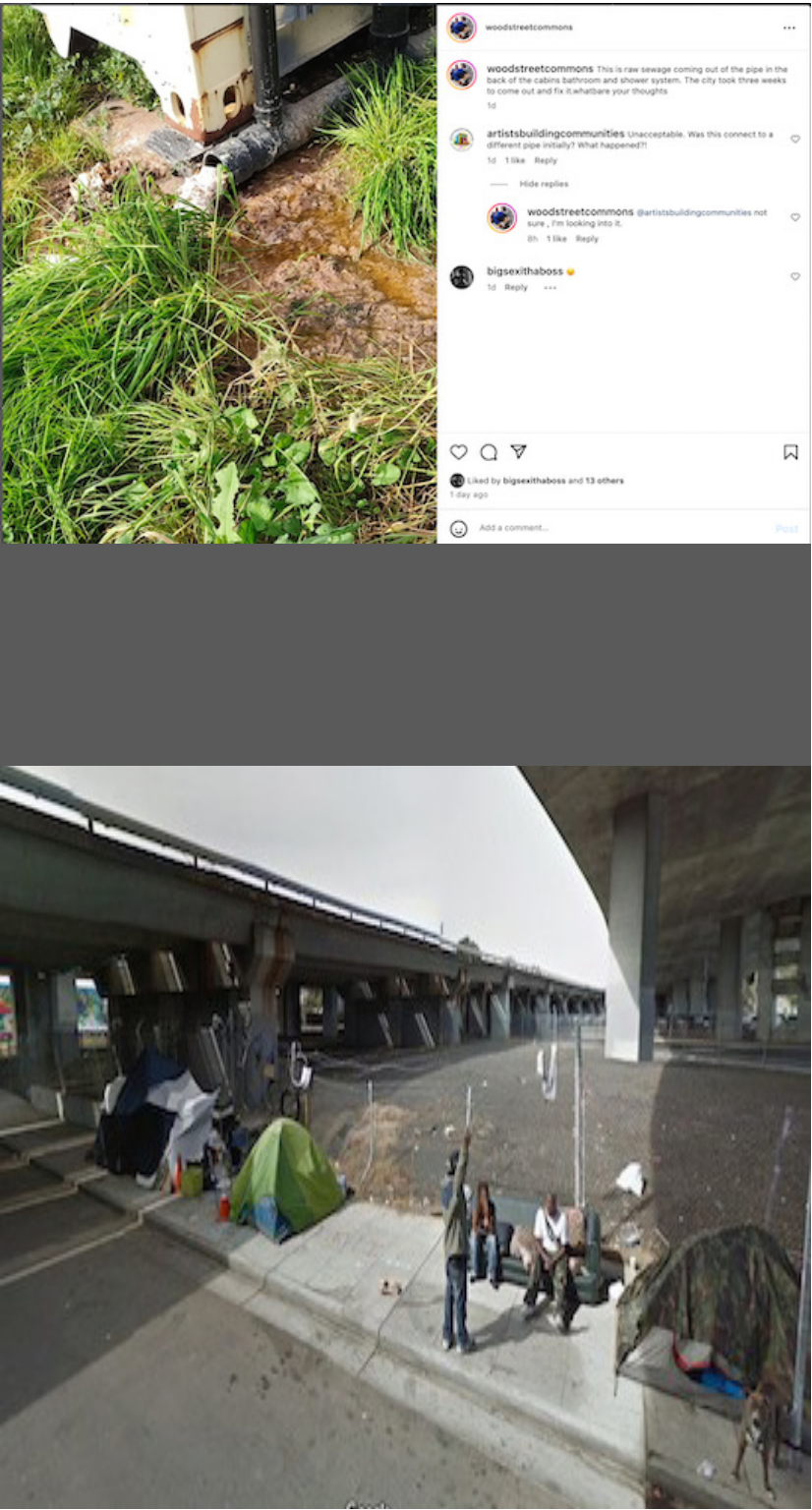
1° | Ultimate aim is to...

...reside on a tax defaulted vacant lot and grow my own food, reside in a truly affordable autonomous, completely self-supporting tiny dwelling on wheels in the city.



2° | Perform civic duty

Provide curbside communities a dignified, safe, accessible sanitation offering while they wait 6-48 months for truly affordable housing.



3° | Contingency plan

Provide an agile, adaptable, resilient disaster preparedness contingency toilet system when the municipal sanitation infrastructure is rendered inoperable.



THE CATALYST

Became an activist and learn how to safely thermophilically compost humanure. During the design phase for the 2014-2016 Laney College [SMUD Tiny Dwelling Contest](#), I had an epiphany. Zoning and planning in California municipalities for dry compost toilet system processing is not supported—the ‘adventure’ commenced to learn how to safely process humanure outside of a conventional, municipal waste treatment system.

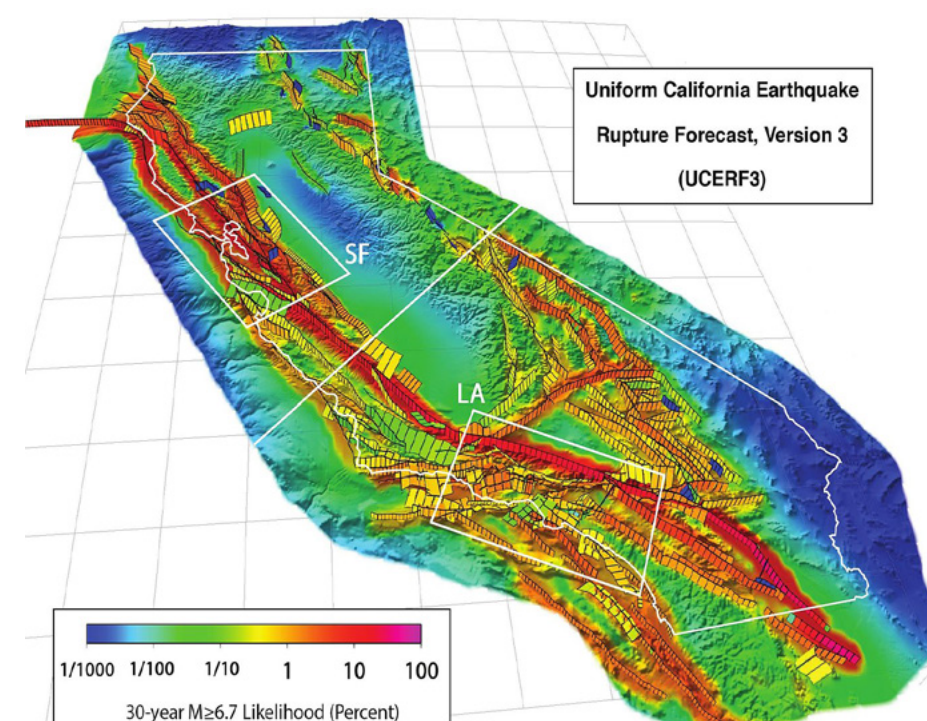
out think the box

why?

WHY ECOSAN IN OAKLAND & BERKELEY, CA USA?

- Tiny dwelling on wheels housing urban farm stewards
- Curbside communities
- Post-earthquake disaster preparedness
- Increase public toilet access

NB: East Bay Municipal Utility District (EBMUD) infrastructure earthquake retrofits will not be completed until ~2030.



California's major faults. The 3rd Uniform California Earthquake Rupture Forecast (UCERF3) estimated probabilities. The San Andreas Fault and Hayward Fault systems are red on the likelihood scale. Citation: USGS, <https://on.doi.gov/2qVm5n0>

02

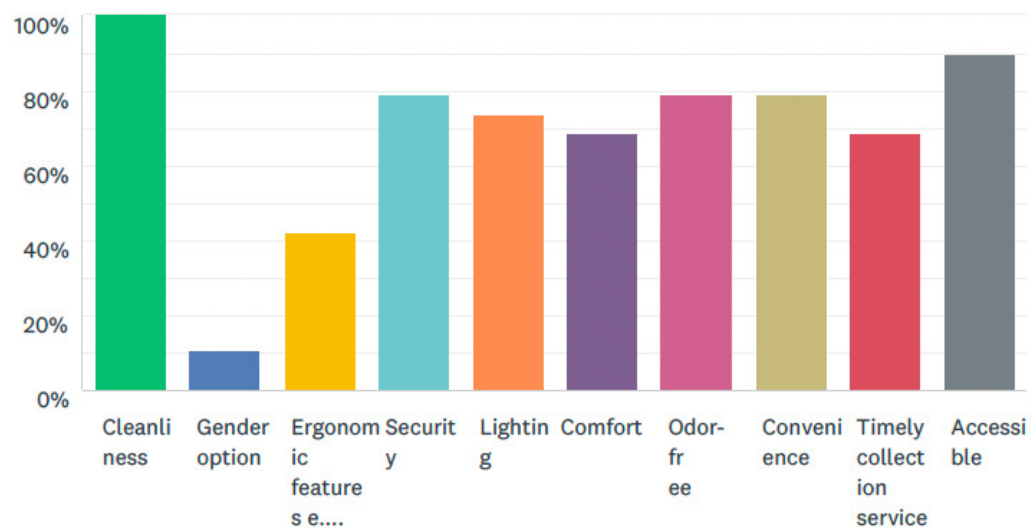
historical efforts

2018 HERE/THERE ENCAMPMENT SURVEY

19 out of 20 responses from the September 2018 HERE/THERE Encampment Survey

How important are the following to you when using the toilet? Check all that apply.

Answered: 19 Skipped: 0



ANSWER CHOICES	RESPONSES	
▼ Cleanliness	100.00%	19
▼ Gender option	10.53%	2
▼ Ergonomic features e.g. stability bar(s)	42.11%	8
▼ Security	78.95%	15
▼ Lighting	73.68%	14
▼ Comfort	68.42%	13
▼ Odor-free	78.95%	15
▼ Convenience	78.95%	15
▼ Timely collection service	68.42%	13
▼ Accessible	89.47%	17

Total Respondents: 19

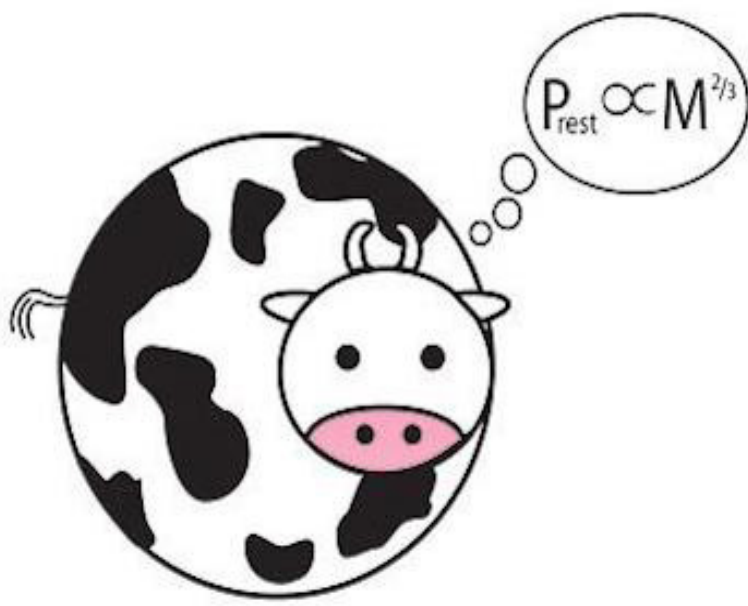
03

historical efforts

MILESTONES

ACTIVITIES SPANNING 2014-2025

This is the time line of events that brought me into this space. A compendium of my efforts and events of consequence can be viewed [here](#). From 2017 - 2023, I invested time on ranches and farms to teach myself how to design, install, tune and manage ecosan dry compost toilet processor systems. These activities included engaging a litany of stakeholders...



2014 - 2015

Laney College SMUD Tiny Dwelling Competition | I was on the initial design team. I raised composting toilet installation included in the design is not permitted for use in the urban environment. This tiny dwelling design achieve a number of [awards](#).

2016-2017

Land-Action.org 100 Microfarms in 5 Years Campaign | I was the COO. The vacant lots were to be used for community farms with tiny dwelling residences for farm stewards. Legacy [web site](#).

2017-2019

Ole Ersson presented at the [6th International Dry Toilet Conference](#) and we were invited to submit a [paper](#) to IWA Blue-Green Systems. This [permitted processor system](#) located at the Kailash EcoVillage in Portland, OR was permitted on September 2019 using the 2018 [IAPMO WE-Stand](#) Green Building Code.

2022

2 February 2022, the City of Oakland Human Services Department provided me a **Notification of Qualification** in response to my [RFQ](#) for a Single User Pilot that included an eco-sanitary dry compost toilet system.

2023

The 2023 International Association of Plumbing and Mechanical Officials Water Efficiency and Sanitation Standard for the Build Environment (**IAPMO WE-Stand**) [Chapter 6](#) includes best-practices copy from my Kailash EcoVillage O&M Manual.

2024

Responded to the Notice of Funding Opportunity (NOFO) for the US EPA Community Change Grant. The aim was to **provide eco-sanitation for curbside community inhabitants** in [West Oakland, CA](#) while they wait for placement in truly affordable housing.

2025

September meeting with local, regional, state and federal professionals to discuss ecosan dry compost processor feasibility implementation. Achieved a **provisional approval from Alameda County Environmental Health Department** for a single user system. See: [Ecosan Oakland Blog](#).

out think the box

strategy

SPANNING 12 YEARS

Historical catalyst

2014-2016 | SMUD Tiny Dwelling Contest

Timing

Accessory Dwelling Unit (ADU) permitting adoption to increase housing stock was enacted:

2017 | Berkeley

2022 | Oakland

Locating champions

- 2018 | Cheryl Davila, (Former) Berkeley City Council person
- 2023 | LaTonda Simmons, (Former) Oakland City Assistant Administrator
- 2025 | Jesse Arreguín, California State Senator & (Former) Berkeley City Mayor
- 2025 | US Senator from California, Alex Padilla (MIT, Mechanical Engineering Graduate)

Achieving buy-in

2025 -2026 | City, local, regional, state and national leadership

Addressing diminishing returns

Since 2014, homeless populations continues increasing in California due to the high cost of living—and will likely increase MASSIVELY after the next 7+ earthquake on the fully charged Hayward Fault. Implementing eco-sanitation as at least a contingency is prudent.

04

status updates

out think the box



2020 Two-bin processor Big Sur, CA, USA

Curbside community activists and inhabitants were an integral part of the stakeholder engagement process when developing a list of design requirements for commodes/toilets and cabanas for use in the urban/built environment. The aim is to provide confidence that an agile, adaptable design selected would meet quality of life expectations, as well as technical and safety requirements.

05

status updates

MILESTONES

Provisional single user pilot approvals:

- 2022 | City of Oakland, Notification of Qualification
- 2025 | City of Oakland iSupplier No. | 2016004153 | Products & Services | Consulting Services | NAICS codes 91800, 918.00, 918, 91800.00
- 2025 | Alameda County Environmental Health Department

MILESTONE 1

Provisional approvals

Implementation feasibility study information presented on 23 Sept 2025; attendee agencies follow:

- Curbside community representative
- Urban planning expert
- City of Oakland Council Person
- UC Merced Professor
- Alameda County Environmental Health Department PE & REHS
- Alameda County Emergency Responder
- Berkeley CERT Trainer
- California Water Board scientists
- CALTRANS District Branch Chief
- CalRecycle
- California Environmental Health Association (CEHA)
- State of CA Assembly & Senator Policy Analysts
- CA US Senator Alex Padilla’s Water Policy Council

MILESTONE 2

Feasibility implementation meeting

On 1 October 2025, I conducted an introductory 2-Hour training on Container-Based ecoSanitary (CBeS) Dry Compost Toilet Processor System. There were 32 attendees from around the State of California, professionals who are Members of the California Environmental Health Association (CEHA).

<https://www.ceha.org/>

MILESTONE 3

CEHA Training

In the works is a patent for a nascent single user dry toilet compost processor leachate collection system for a tiny dwelling inhabitant. Prototype design is in-progress.

The aim is for this dry compost toilet processor system with a novel leachate collector to adhere to the 2027 International Association of Plumbing and Mechanical Officials Water Efficiency and Sanitation Standard for the Built Environment (**IAPMO WE-Standard**).

I have been asked by a 2027 IAMPO Technical Design Committee Design Professional, “...to document how you comply with the standard, that can then be presented to your AHJ.”

MILESTONE 4

Patent (In-progress)

out think the box

feasibility study pilot

GOALS

Feasibility prototype #2 pilot goals:

Aside: At this time, urine diversion will not be a part of this pilot. I'm having a difficult time just getting composting humanure embraced.

- Heighten motivation for USEPA and CalEPA policy inclusion for the operative 'humanure'
- Allay current and future stakeholder safety concerns
- AHJ to adopt 2027 IAPMO WE•Stand Directives*
- Adopting humanure processing buy-in**
- Obtain site location for pilot project
- **Revenue-generating rubric; see [Concept Note](#)**
- Develop options for:
 - Current curbside community support
 - Increase everyday public toilet access
 - Post-disaster sanitation

*Most important characteristics for this performance-based composting dry toilet is safety, modularity and adherence to 2027 IAPMO WE•Stand building code design standard. See: [IAPMO WE•Stand Chapter 6](#)

**After a commode collection container is filled, secondary treatment/post-container processing is needed. Once the processor system bin is filled with humanure collected from the commode collection containers, processor contents need to achieve thermophilic composting temperatures 55°C (131° F) for ten weeks.

06

feasibility study pilot

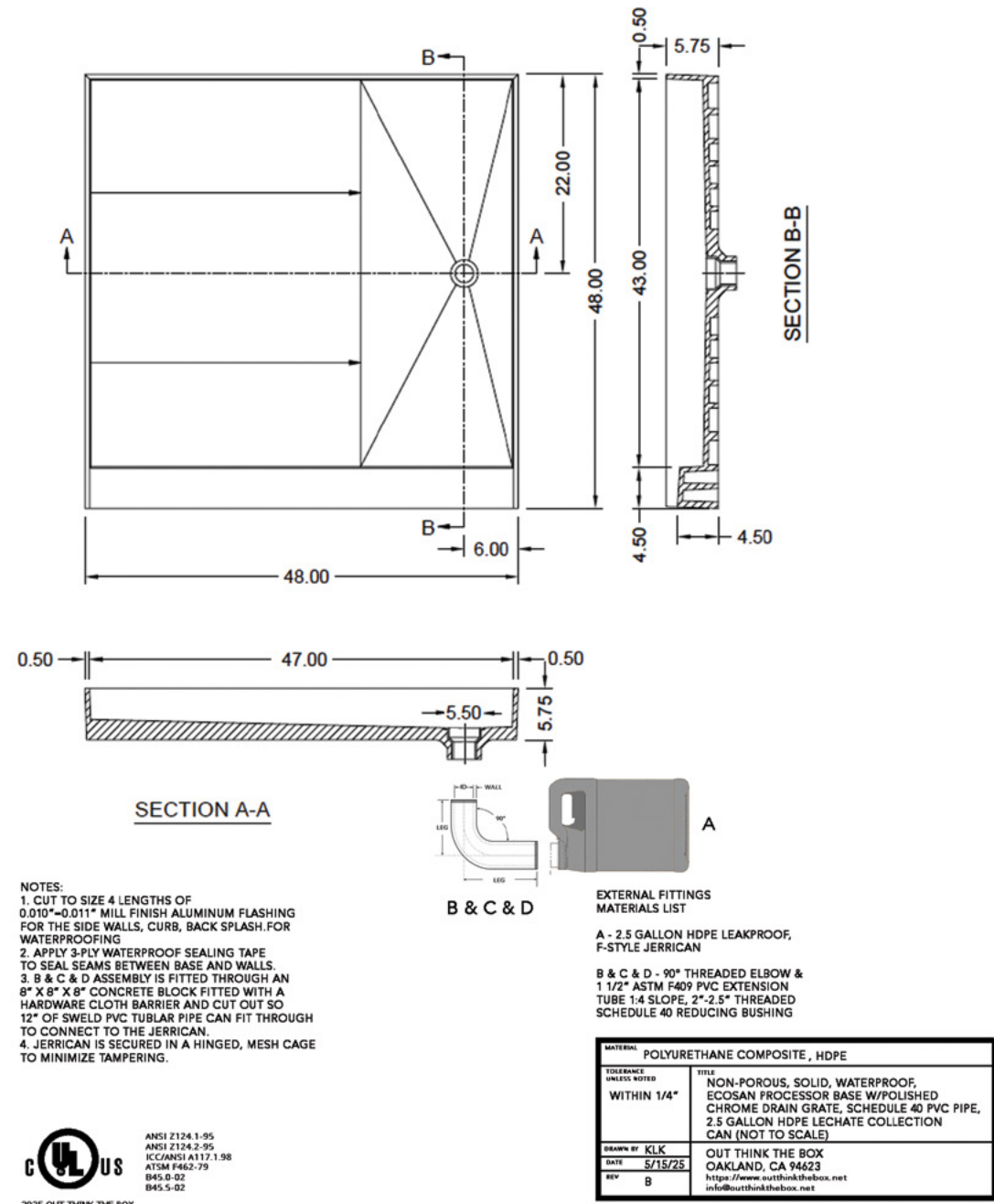
THE 1ST INSTALLATION THAT ALMOST GOT TRACTION - 2017
MOVABLE BASE PROTOTYPE #1



COLLECT. COVER. COMPOST.

ECOSAN PROCESSOR BASE W/RIGHT DRAIN

5/15/2025



Description | Berkeley, CA

In late-2017, construction of a 5-bin temporary/movable, modular concrete block processor system with a leachate collection assembly was accepted for implementation by the HERE/THERE Encampment. The system was sized to service the humanure of 20 curbside community activists for a one year period. To be located on MLK, Jr. Blvd and Adeline St in South Berkeley at 100 ft above sea level.

Features

Single bin dimensions and requirements

- Exterior | 5'3" W x 5'3" L -> 27.56 square feet (ft²)
- Interior | 4' H x 4' W x 4' D -> 64 cubic feet (ft³)
- Real Estate | 12'3" x 11'3" permitter fence -> ~ 140 square feet (ft²)

Construction materials

- Modular, offset 8"x 8"x 16" and 8"x 8"x 8" concrete blocks
- 2"x 4" pine frame beam sill plate, corrugated aluminum/heavy-duty plastic, heavy duty fixtures, and secured with latches
- Ventilation portals fitted with 1/4" hardware cloth to (pests/vermin)
- Pre-sloped, reinforced edges, moisture barrier augmented right drain processor base for leachate collection for recycling into bin
- Load support (rocks and gravel) underneath the processor pan

Operation & Maintenance (O&M)

The batch loading method is used to add humanure. Concrete blocks to be temporarily removed from the front of processor to unload finished, cured compost. Once emptied, blocks are replaced.

Prototype #2 is a permutation of this design

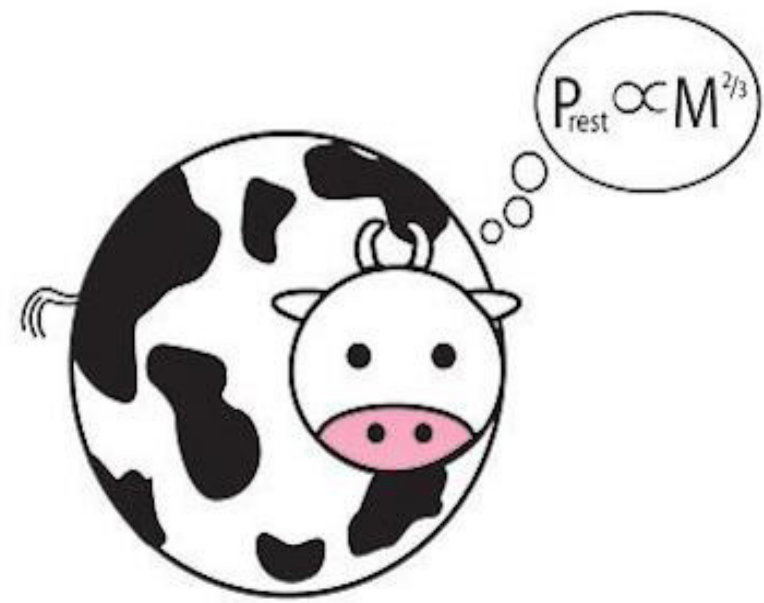
Obtain financing via the \$1.83 billion County of Alameda County Measure W Fund as a Vendor Pool Participant. Collaborating with other like-minded entities in the area.



contact

Find something everyone needs and see it to the end—even if it takes the rest of your life...

- A former Mechanical Engineering Mentor



kimgerly@outthinkthebox.net

+1 415 832 9084

<https://www.outthinkthebox.net/projects/topsoilfactory.html>

[EcoSan Oakland Blogspot](https://kimgerly.wixsite.com/ecosanoakland/blog) - <https://kimgerly.wixsite.com/ecosanoakland/blog> (TEMPORARY)

07