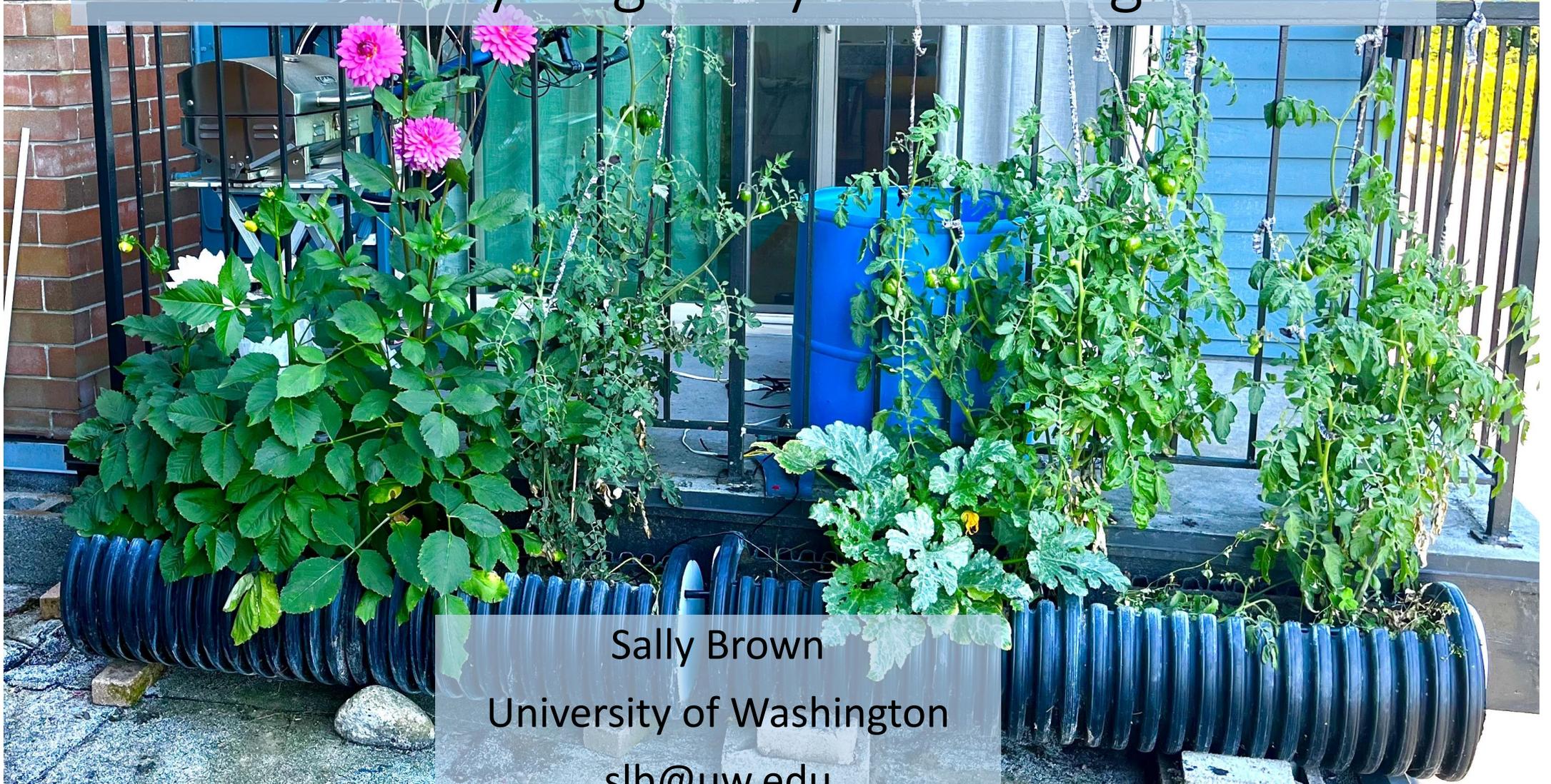


Developing urban markets for biosolids

What you get if you do it right



Sally Brown

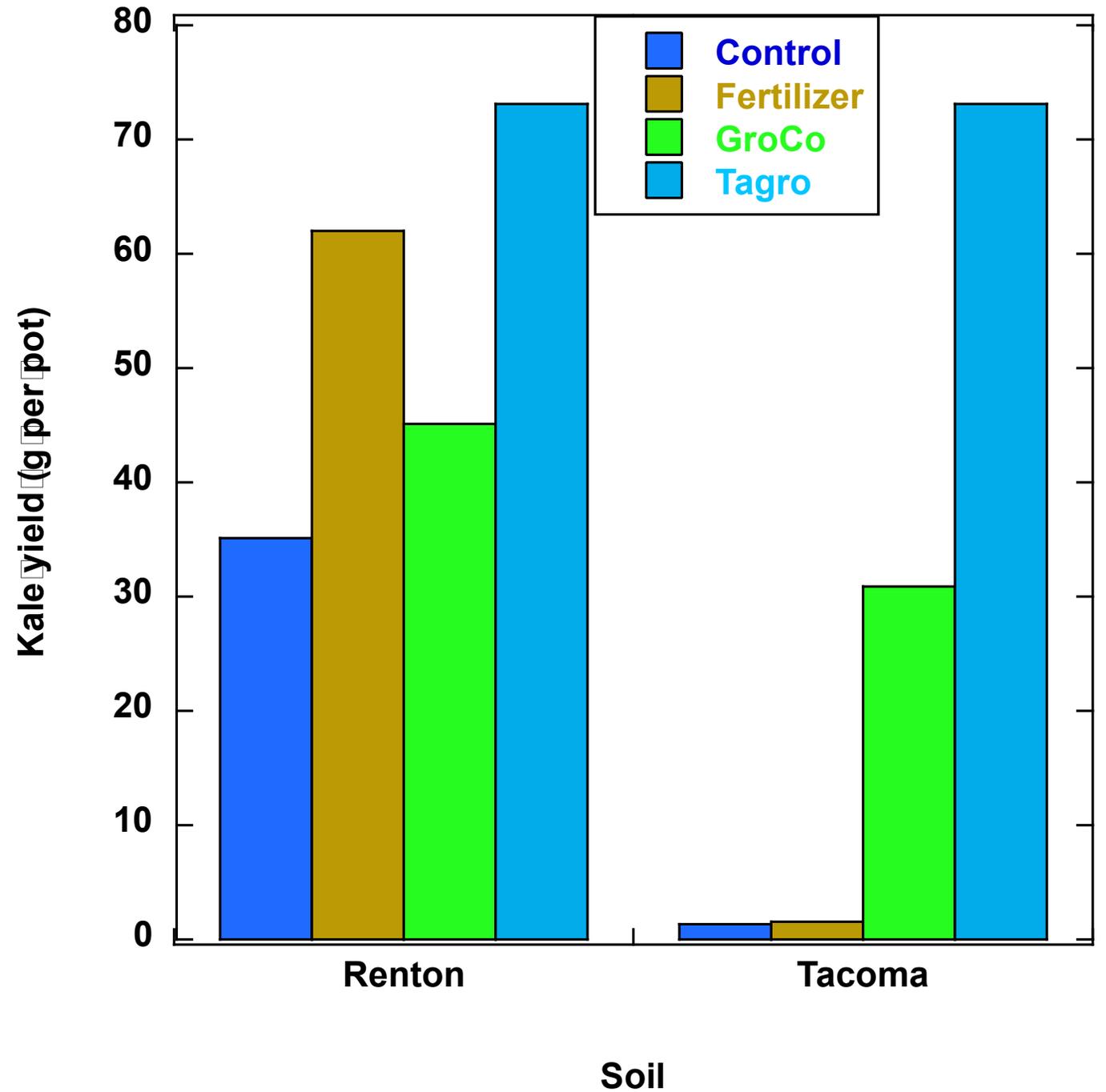
University of Washington

slb@uw.edu

Biosolids can work miracles- Some more than others



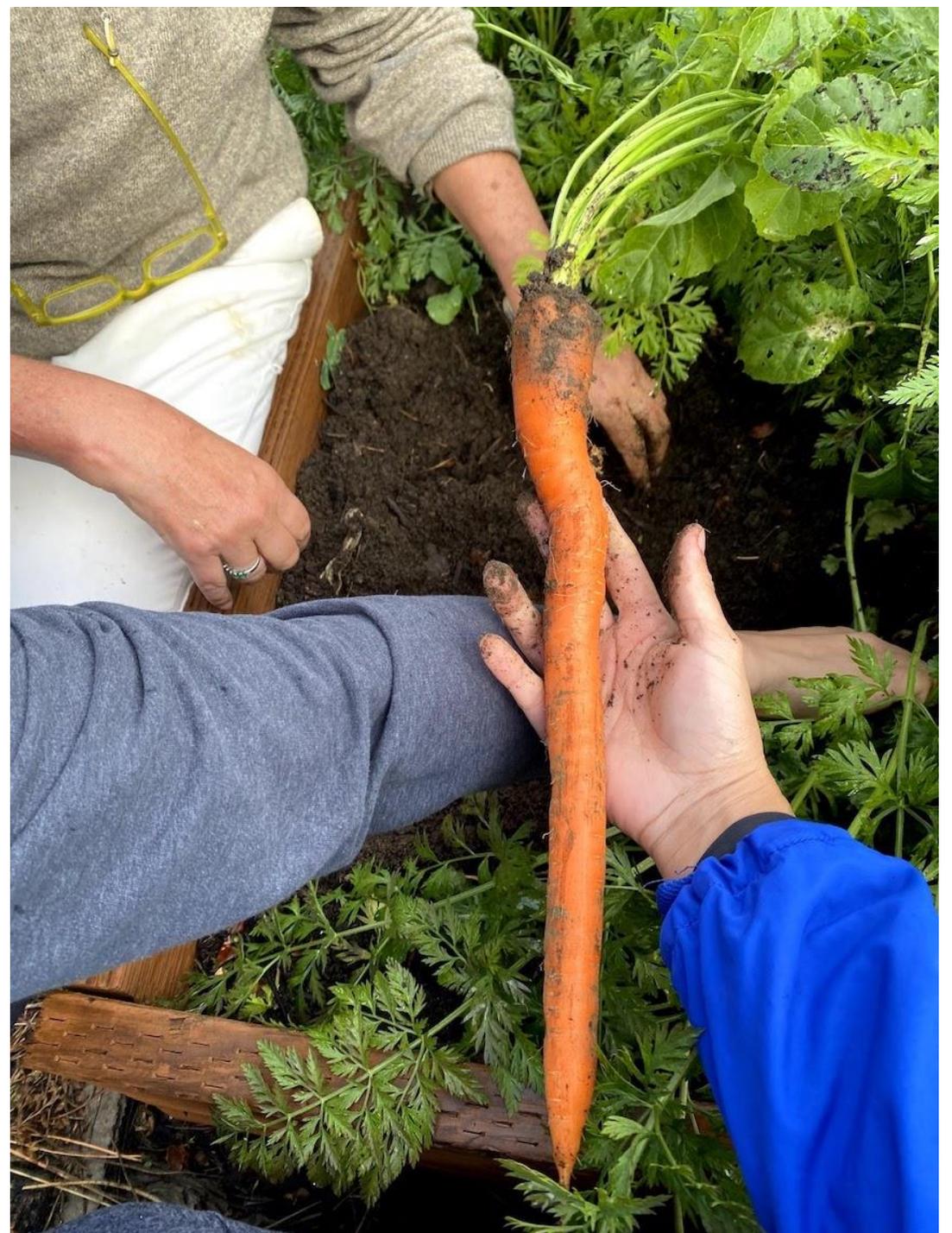
Not all biosolids products are created equal
Una et al., 2022



If you want a broad customer base

First and fundamental

- Make a product that:
 - Looks good
 - Smells good
 - Works good



Research on product development:

- *Forget contaminants
- *Focus on petunias



Tagro Mix



Compost



Yard waste 100



Walnut char blend



TECHNICAL REPORTS

Waste Management

Creating topsoils and soil conditioners from biosolids and urban residuals

Ryan Batjiaka | Sally Brown 

Then you have to talk about it in a way that shows that you have pride in product

COMMUNITY ENGAGEMENT AT TAGRO

- TACOMA'S HOME AND GARDEN SHOW
- RELATIONSHIP WITH WSU MASTER GARDENERS
- DEMONSTRATION GARDEN
- FREE PILE FOR 'YOU SHOVEL IT YOURSELF'



From Kristen Mclvor

You have to identify others with common interests

[Home](#) › [What We Do](#) › Urban Agriculture

HARVEST PIERCE COUNTY



Welcome to the rich world of growing, sharing, and harvesting food! **Did you know that Pierce County boasts a network of over 80 community food projects?** In addition to these gardens, orchards, and food forests, the community is working to build strong webs of food security through volunteer efforts like the Gleaning Project and Share the Harvest. Citizens are coming together with the belief that everyone deserves access to fresh, healthy, and affordable produce.

From Kristen Mclvor

FREE SOIL AMENDMENTS

Class A biosolids - Tagro mix,
Tagro Potting soil, also
Woodchips and cardboard for
pathways.

FREE WOOD FOR RAISED BEDS

Recycled stop sign posts are
made available if groups don't
have other resources for bed
building

FREE SOIL TESTING IF NEEDED/DESIRED

Soil testing can be done in to
look for elevated levels of
metals - most gardeners prefer
raised beds.



From Kristen McIvor

90

Number of community gardens today - up from 6 in 2006

61

Number of different property owners involved

147,880

Number of households that live within 1/2 mile of a community garden (1 mile in rural areas)

From Kristen Mclvor



ORGANICS RECYCLING - 2021 CUBIC YARDS

1120

YARDS OF TAGRO

947

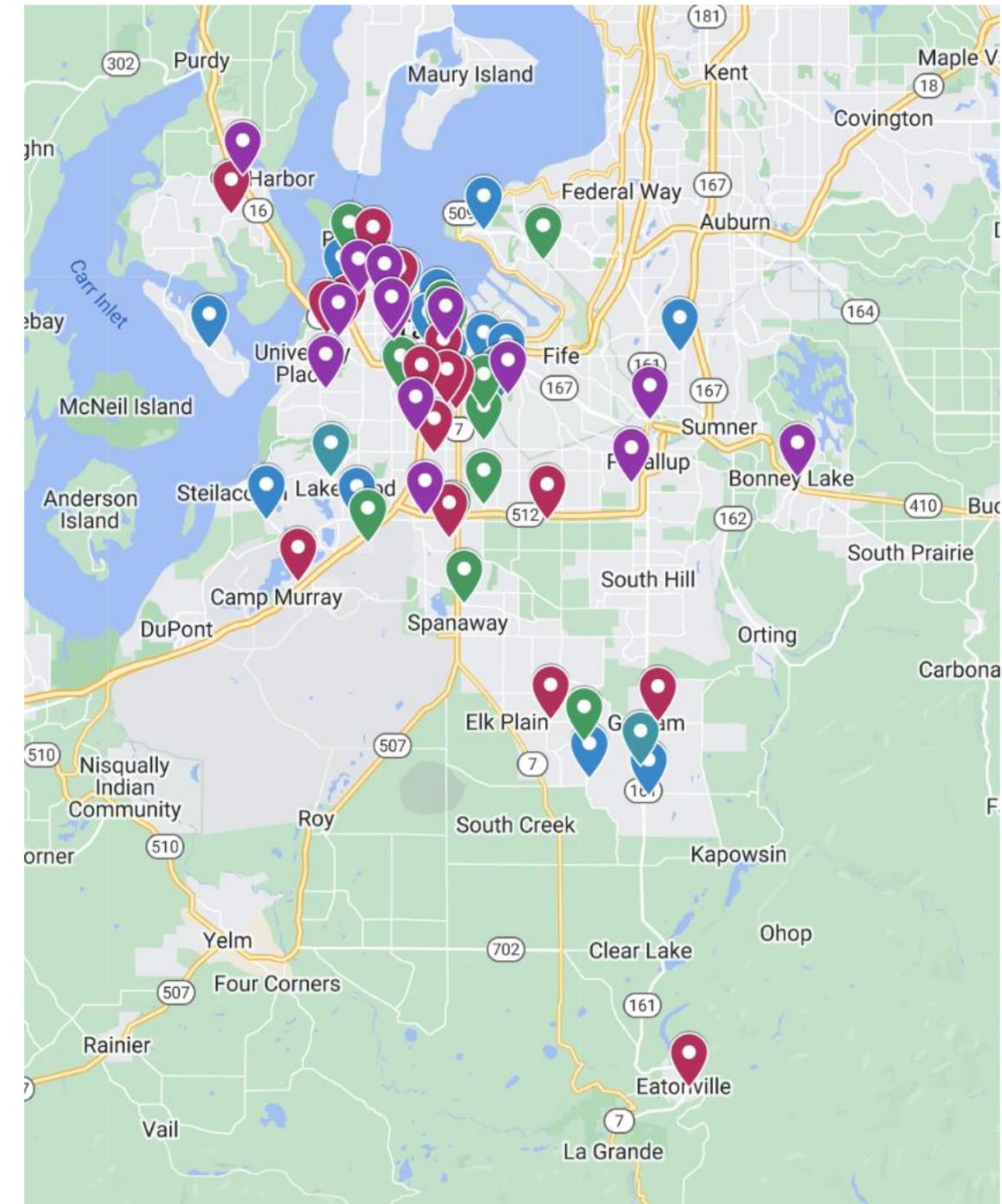
YARDS OF COMPOST

561

YARDS OF WOODCHIPS

Tagro, Tacoma

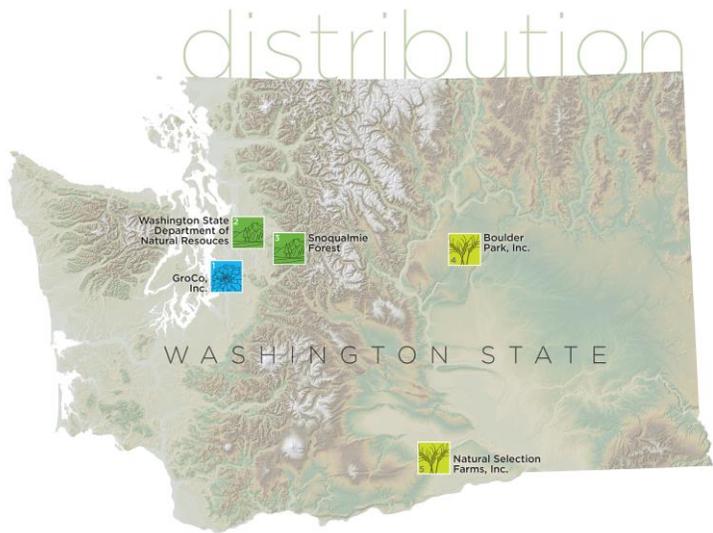
- Map of community gardens in Harvest Pierce County program
- Mean # of plots per garden=25
- Each garden gets Tagro delivered
- 80 gardens x 25 plots = 2000 customers



Tagro RAN OUT in 2018 and 2020
Costs are < \$25 per wet ton



King County, Class B
Loop biosolids
Costs > \$200 per wet ton



How Loop is used



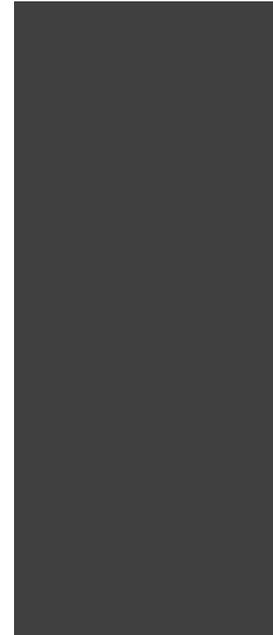
65%

Agriculture

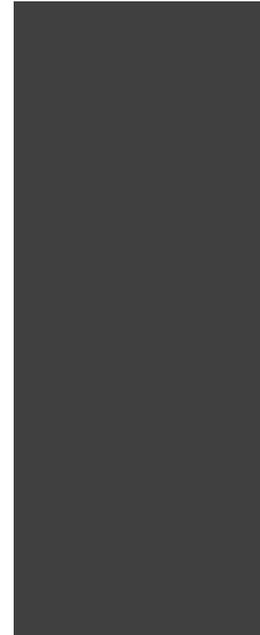


35%

Forestry



Land
Reclamation



Urban
Gardening

Following in Ryans' footsteps

- Anna Beebe developed compost blends with different feedstocks for King County biosolids
- They will be making a compost product and wanted to test for optimal blends



Top: Tagro, Urban 1, Urban 2, Forest H+BC, Forest H
Bottom: Forest L, Groco, Control+Fert, Control



Why it's time to talk about poo

Is it only Tacoma?

DC Water recently changed their treatment process and has a Class A biosolids product as a result

They followed the lead of Tacoma and King County for branding and outreach



*The fertiliser product Bloom is made from the output of sewage plants in Washington DC
(Credit: Lina Zeldovich)*

New Equipment = Marketing Opportunity



Bloom Timeline



- First product from digesters: November 2014
- First Distribution (free sample): November 2015
- First product sale: August 2016
- First Distribution & Marketing permits: November 2016
- Bloom trademark registered: January 2017
- First daily production sell-out: April 2018 (450 wt)
- First bagged product in stores: May 2018
- First month sellout: April 2019
- Sales team expansion: November 2019
- Broke \$1M in savings and revenue: 2020

They also invested in research

RESEARCH

Biosolids-Based Amendments Improve Tall Fescue Establishment and Urban Soils

Mike J. Badzmierowski,* Gregory K. Evanylo, Erik H. Ervin, Adam Boyd, and Carlyle Brewster

Urban Agriculture &
Regional Food Systems

OPEN
ACCESS



Original Research | [Open Access](#) |

Biosolids Improve Urban Soil Properties and Vegetable Production in Urban Agriculture

Odiney Alvarez-Campos✉, Gregory K. Evanylo

Journal of Environmental Quality

TECHNICAL REPORTS

URBAN POLLUTANTS

Nutrient, Metal, and Organics Removal from Stormwater Using a Range of Bioretention Soil Mixtures

Julia G. Jay, Megan Tyler-Plog, Sally L. Brown,* and Fritz Grothkopp



Bloom Products

- **Fresh Bloom:**
 - Biosolids straight from process
 - Good for farming, construction, blending application
 - Product slickiness, limits use in home gardening.
- **Cured Bloom (100% Bloom):**
 - Dried/windrowed material
 - Granular, easy to use
 - Higher nutrient content
 - Requires space and labor to produce
 - Lawn, landscape, home gardens etc
- **Blended Products**
 - Woody Blend (compost substitute)
 - Sandy Blend (preferred topdress)
 - Same end users as Cured Bloom





What Bloom Customers Grow



Hay Farm



Horticultural Society



Golf Course



Hobbyist Vintner/Grape Grower



Cut Flower Farm



Street Tree Plantings



Elementary School Garden



Wetlands Restoration



School Landscaping



Hops Farm



Home Veg Gardens

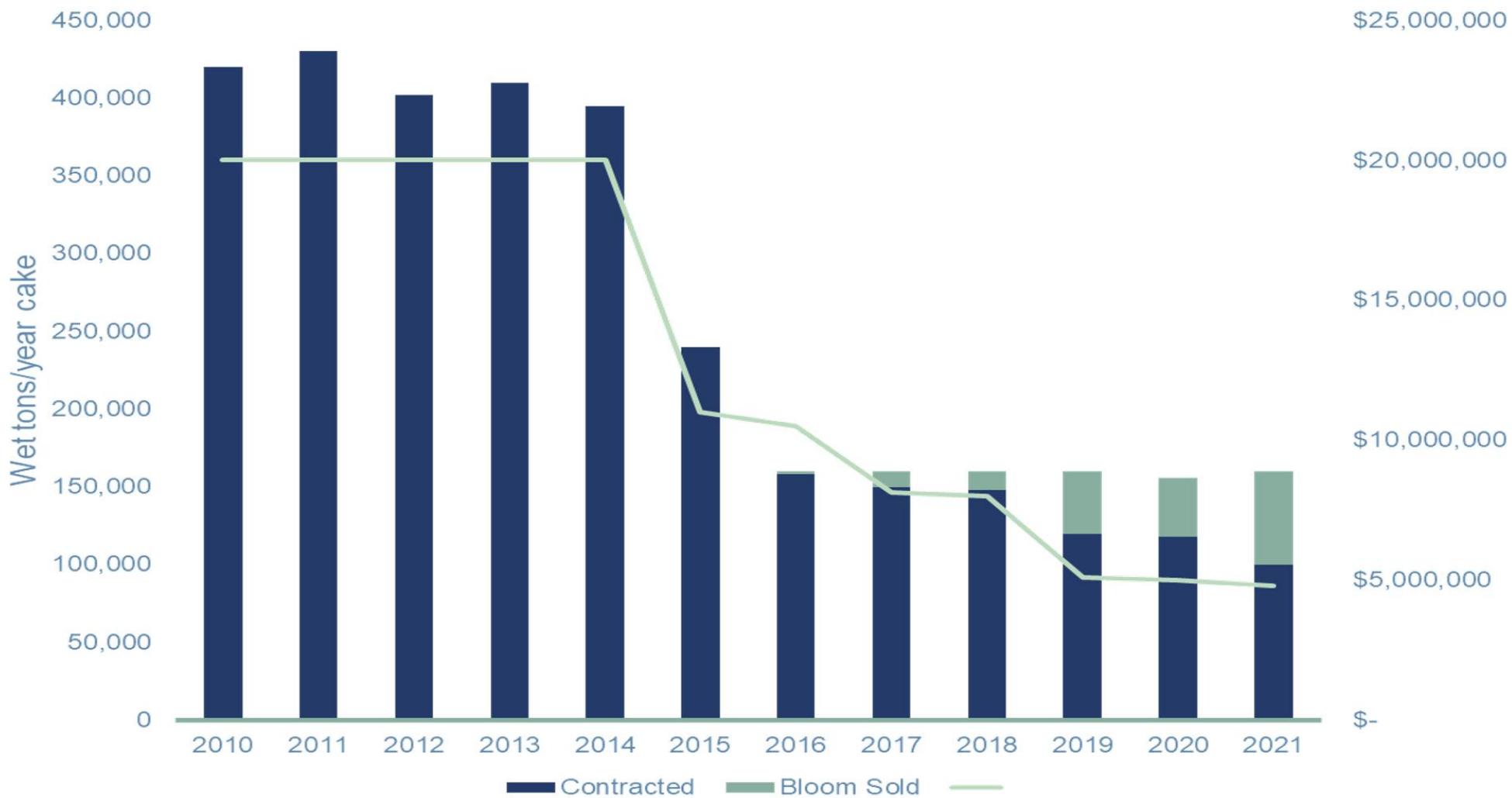


Raised Beds



Commercial Corn

At DC, Biosolids costs reduced from \$19M to \$4.8M annually



Urban uses

- Vastly expands your customer base
- Buys you resilience and advocates within your district
- Saves your utility money

