

State of Composting in U.S.

Brenda Platt
Director, Composting Makes ene Project
Institute for Local Self-Reliance

June 26th, 2015

Maryland Recycling Network

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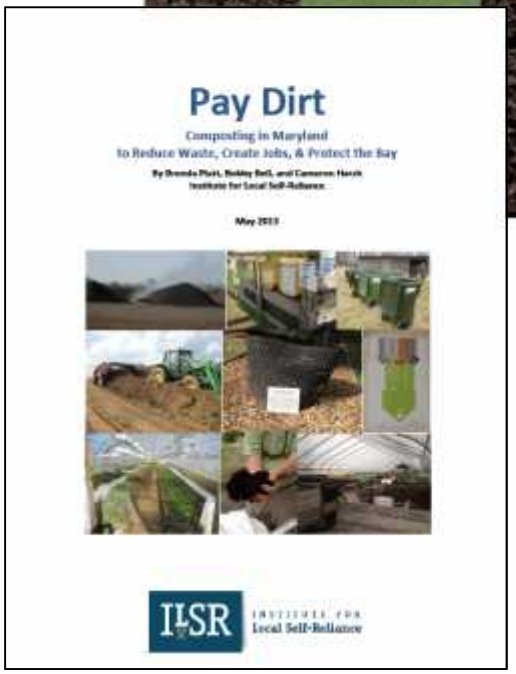
State of Composting in the U.S.

- Why compost?
  - Soil
  - Watershed benefits
  - Climate protection
  - Jobs
- How well are we doing?
- Model programs
- Many systems and sizes!
- Importance of diverse composting infrastructure
- ILSR's new hierarchy
- MD's statewide compost work group



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What has happened this year?

- Peninsula compost facility closed
- Prince George's pilot expanded
- Food rescue program started in Montgomery
- MD Zero Waste Plan developed and issued
- Former Gov. issued ZW Executive Order
- Cultivating Community Composting Forum (Baltimore)
- SHA bill (HB878 2014) implementation begun
- Minimum Organic Matter Bill introduced in Prince George's
- Polystyrene restrictions in DC, Montgomery, Takoma Park, and Prince George's passed
- Montgomery Co. Public Schools pulled styrofoam trays
- Re-introduced HB1081 (2015 #603)
- Launched Neighborhood Soil Rebuilders Composter Training Program – with ECO City Farms

The Frederick News-Post

County scraps waste-to-energy project

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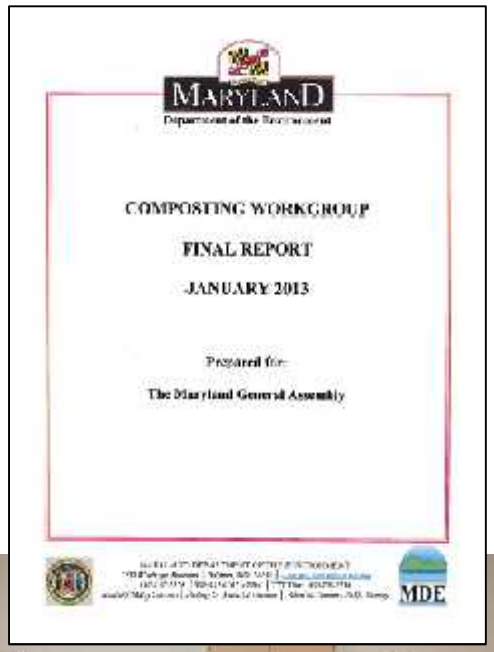
MD Statewide compost study group: recommendations (select)

- Update and streamline regulations/permitting
- Adopt performance-based permitting regs
- Promote on-farm composting
- Build and maintain comprehensive web site
- Share best practices
- Characterize how much organics generated
- Build markets for compost
- Promote compost and compost-related products as best management practices for controlling stormwater run-off and erosion
- Target large generators by providing resources and technical assistance
- Share sample zoning ordinance language



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HB878 & SB814 (passed 2014)

State Highway Administration – Compost and Compost–Based Products – Specification

http://mgaleg.maryland.gov/2014RS/bills/hb/hb0878f.pdf

To promote the use of compost as a landscaping and as a recycled material in highway construction projects in the state, the use of compost and compost-based products in highway construction projects in the state shall be a best management practice for:

(1) erosion and sediment control; and

(2) postconstruction stormwater management.

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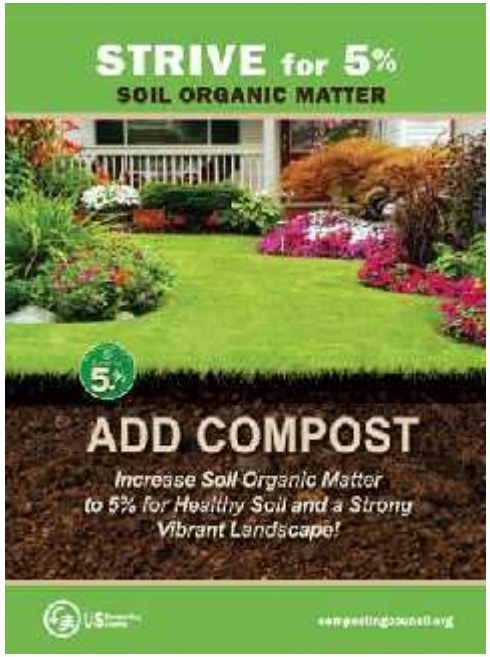
Requirements for Minimum Organic Matter

- **Leander (TX)**: All new landscapes (nonresidential and residential) are required to have a minimum of six inches (6”) of soil depth in areas planted with turf grass. This six-inch (6”) minimum soil depth will consist of 75% soil blended with 25% compost.
- **Greeley (CO)**: anyone installing a new lawn must use 4 cubic yards of compost per 1,000 square feet of area, incorporated at a depth of 6 inches.
- **King Co. (WA)**: Clearing/grading regs: Replaced topsoil must have an organic matter content of 5% dry weight for turf applications and 10% for planting beds.
- **Seattle**: New construction sites: 20-25% compost by volume in a topsoil mix for turf (5% organic matter) and 35-40% compost by volume in a topsoil mix in planting beds (10% organic matter).



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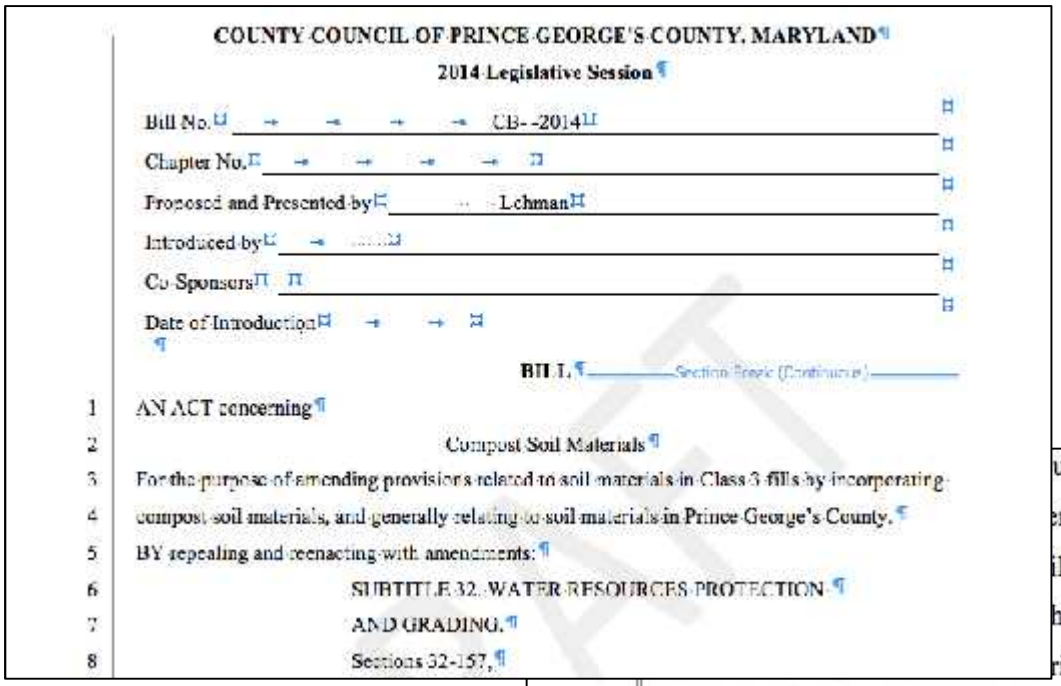
Prince George's proposed bill



COUNTY COUNCIL OF PRINCE GEORGE'S COUNTY, MARYLAND

2014 Legislative Session

Bill No. CB--2014

Chapter No.

Proposed and Presented by Lehman

Introduced by

Co-Sponsors

Date of Introduction

BILL

AN ACT concerning

Compost Soil Materials

For the purpose of amending provisions related to soil materials in Class 3 fills by incorporating compost soil materials, and generally relating to soil materials in Prince George's County.

BY repealing and reenacting with amendments:

SUBTITLE 32. WATER RESOURCES PROTECTION AND GRADING.

Sections 32-157,

ult to compact soils, at other than optimum moisture content;
erials without limit as to size provided no detectable voids are
ils may later be displaced; and top soil, intermittently layered
han rock gardens, at least twelve (12) inches of top soil must
rials with a maximum dimension greater than eight (8) inches.

(2) A top soil layer which shall include:

(i) in planting beds a minimum organic matter with a content of ten percent (10%) dry weight (30% – 40% percent compost amendment by volume);

(ii) in turf areas a minimum organic matter with a content of five percent (5%) dry weight (15% - 25% compost amendment by volume); and

(iii) a pH range of 6.0 – 8.0 or matching the pH of the original undisturbed soil.

(c) The material must be free of contamination levels of any pollutant which is, or may be considered to represent, a possible health hazard to the public or may be detrimental to surface or

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Peninsula Closing

Failure of the Wilmington Compost Facility Underscores Need for a Locally Based and Diverse Composting Infrastructure

Neil Seldman | 0 Comments | Dec 18, 2014

The rapid increase in community-scale composting in the Mid-Atlantic is sorely needed. The recent closing of the Wilmington Organics Recycling Center in Delaware, due to the loss of its operating permit, underscores the need for a distributed and diverse composting infrastructure. Source separated food discard programs from Philadelphia, Baltimore, Washington, DC, are now scrambling to find alternative facilities for their loads.

The Wilmington Organics Recycling Center was designed to receive source separated food discard collections in the Mid-Atlantic region. It was permitted, financed and built by The Peninsula Compost Group (TPCG), the facility was designed to receive 600 tons per day of source separated organic materials from government institutions, grocery chains, schools, food processors, restaurants, and other large food waste generators. A separate company, named the Peninsula Compost Company, was set up to own the plant. Its original members included the EDiS Company and Greenhull Composting (both of Wilmington, Delaware), as well as the developers, TPCG. The facility commenced operations in late 2009 composting 115,000 tons per day. For the first two years, TPCG was the managing and operations partner. During that time the facility received no complaints or Notices of Violation from the State of Delaware and the compost produced met every quality standard for unrestricted use.

However, the anticipated ramp-up to 600 tons per day of incoming food waste did not occur as anticipated, putting strains on the facility. In 2011, Waste Management Inc. (WMI) approached PCC seeking to participate in the Wilmington project and to provide food and wood waste to fill the facility's capacity. This overture and ensuing investment was welcomed given WMI's interest in accelerating organics recycling services and developing value-added compost products in the Mid-Atlantic. WMI invested millions into buying the largest individual ownership stake in PCC. When WMI announced this strategic investment in PCC in May 2011, it touted the facility's ability to add over 100,000 tons to the company's processing capacity. Despite incentives to increase the volume of organics processed, the facility never came close to reach the plant's 600 ton-per-day capacity and the material delivered by all haulers was too often contaminated.

In mid-February 2012 – within a year of WMI's investment – TPCG was removed as the operations manager and lost its voting members, a step that made WMI the majority voting member of PCC, with the largest control of the board. As WMI maintains it never could and still cannot control PCC. This is counterintuitive given that all of the Wilmington management people were direct employees of PCC, a company that WMI dominated with a majority of the board.

Between mid 2012 and its closure in fall 2014, the facility received hundreds of odor complaints,

NEWS FROM THE DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Contact: Melanie Rapp, DNREC Public Affairs, 302-739-9902

DNREC Secretary Small orders closure of Peninsula Compost facility in Wilmington

DOVER (Oct. 21, 2014) – DNREC Secretary David Small has issued a Secretary's Order to Peninsula Compost Company LLC of Wilmington requiring closure of its recycling facility. The Order, signed Oct. 20, directs that the company immediately cease accepting any material at the facility and initiate steps to implement an orderly closure in compliance with a closure plan, the Composting Approval for Closure Activities (attached to the Secretary's Order).

In addition to immediately ceasing accepting any waste into the facility, the Order requires all active composting of existing material onsite to be completed by Jan. 16, 2015. All compost and related waste must be removed from the facility by March 31, 2015.

"Peninsula Compost Company has placed an undue burden on the quality of life of residents in the City of Wilmington, parts of the City of New Castle and part of New Castle County – particularly those living in close proximity to the facility due to frequent uncontrolled odors," said Secretary Small. "The company has been unable to maintain compliance with DNREC's Beneficial Use Determination permit."

The Peninsula Compost Company began operating the Wilmington Organic Recycling Center in December 2009 with approval from DNREC via a Beneficial Use Determination (BUD) permit. The BUD approved the company to accept and process hatchery waste, food waste, yard waste, wood waste, and animal bedding, in order to produce and market quality compost products at its facility on Christiana Avenue in Wilmington. The company was processing about 115,000 tons of waste per year.

Since operations began at the facility, DNREC has coordinated with Peninsula Compost Company to improve operations and compliance. However, over time, the company has been unable to maintain compliance and minimize odors. Some of the issues at the facility related to violations and odors include:

- Equipment has been non-operational, sometimes for extended periods of time.
- Time needed to produce finished compost takes longer than originally planned.
- Waste or finished compost have been stored onsite above approved quantities.
- Non-compostable residuals from the screening process and trash have been stored onsite above approved levels.
- Trench drains and wear of the paved composting pad have allowed for standing leachate onsite.
- Poor maintenance of stormwater ponds and aeration systems.
- Gore® Cover composting system has not been maintained appropriately.
- The mixture of food waste with yard waste/wood waste has been at a ratio that is too high.
- Feedstocks and composting windrows have been contaminated with non-compostable wastes.

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MD Zero Waste Plan!

Objective 3 – Increase Diversion of Organics		
3.1	Finalize and implement new composting regulations	Underway
3.2	Publish composting facility guidance	2015 – 2020
3.3	Encourage food donation	2015 – 2020
3.4	Launch an education and outreach campaign targeted to organics	2015 – 2020
3.5	Promote compost use in a wide variety of applications	2015 - 2020
3.6	Phase in a disposal ban on commercial and institutional organics	2015 – 2020
3.7	Encourage anaerobic digestion	2015 – 2020
3.8	Decrease plastic bag usage for organics collection	2015 – 2020
3.9	Decrease disposal of sewage sludge	2015 – 2020
3.10	Institute universal organics diversion	2026 – 2030

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Table ES-1: Maryland's Zero Waste Goals

	2015	2020	2025	2030	2040
Overall Waste Diversion Goal	54%	65%	70%	75%	85%
Overall Recycling Goal	50%	60%	65%	70%	80%
Recycling Goal, Food Scraps	15%	35%	60%	70%	90%
Recycling Goal, Yard Trimmings	73%	76%	80%	83%	90%
Water Reuse	2%	7%	15%	25%	40%

Encouraging More Capacity

HOUSE BILL 603

M3 5lr1067
HB 1081/14 – ENV

By: Delegates S. Robinson, Carr, Clippinger, Gilchrist, Kelly, Korman, A. Miller, Moon, Pendergrass, and Platt
Introduced and read first time: February 12, 2015
Assigned to: Environment and Transportation

A BILL ENTITLED

AN ACT concerning

Composting and Anaerobic Digestion Facilities – Yard Waste and Food Residuals

FOR the purpose of altering certain provisions of law relating to the composting of yard waste; requiring a certain person to ensure certain yard waste is recycled in a certain manner beginning on a certain date; authorizing certain composting facilities and anaerobic digestion facilities to be located at refuse disposal systems; requiring a certain person to ensure certain food residuals are diverted from the solid waste stream in a certain manner beginning on a certain date; requiring the Department of the Environment to adopt certain regulations; defining certain terms; and generally relating to composting and anaerobic digestion facilities.

BY repealing and reenacting, without amendments,
Article – Environment
Section 9–1701(a), (k), (c), (d), and (t) and 9–1726
Annotated Code of Maryland
(2014 Replacement Volume)

BY repealing
Article – Environment
Section 9–1724
Annotated Code of Maryland
(2014 Replacement Volume)

BY adding to
Article – Environment
Section 9–1701(a–1), (a–2), and (h–1) and 9–1724
Annotated Code of Maryland
(2014 Replacement Volume)

EXPLANATION: CAPITALS INDICATE MATTER ADDED TO EXISTING LAW.
[brackets] indicate matter deleted from existing law.

HB0603/730310/1 ENV
Amendments to HB 603
Page 4 of 6

(f) The Task Force shall:

(1) identify means to promote investment in infrastructure to expand capacity in the State to divert food waste from refuse disposal facilities;

(2) evaluate the current recovery of food waste in the State, opportunities for expansion, and how to overcome obstacles to expansion;

(3) identify organic waste recycling facilities and the capacity available in the State;

(4) identify properties or development zones where infrastructure may be developed;

(5) identify any tax or other incentives that already exist to encourage infrastructure development;

(6) identify persons that generate approximately 1 ton or more of food waste per week by name and location, the locations where those persons are concentrated, and the estimated total tonnage of food waste from those persons that is expected to be diverted from disposal if adequate capacity exists;

(7) study yard waste disposal bans in place in other states;

(8) study food waste recovery requirements in place in other states;

(9) identify other states that have permitting regulations for anaerobic digestion facilities and evaluate those regulations for adoption in Maryland;

(10) evaluate whether county solid waste management plans should:

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MD HB1081 (2014 Legislative Session)

Composting and Anaerobic Digestion Facilities – Yard Waste and Food Residuals

http://mgaleg.maryland.gov/2014RS/bills/hb/hb1081f.pdf

- It expands the state's existing disposal ban on source-separated yard waste by requiring all yard waste to be source-separated for recycling if a composting or anaerobic digestion facility exists within 30 miles.
- It requires large-scale food waste generators (two tons per week or more) to source-separate food residuals if a composting or an anaerobic digestion facility exists within 30 miles.
- It requires the State to establish regulations for anaerobic digestion facilities.

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State Laws Targeting Food Waste Generators

Massachusetts:

- Targets food waste generators who generate 1 ton a week or more of food or vegetative material.
- These materials are banned from disposal effective October 1, 2014.

Vermont:

- Law gradually expands from large food generators (>104 tons per year) in effect July 1, 2014, to every generator, including households, by July 1, 2020.
- The law has interim targets in 2015 (>52 tons per year), 2016 (>26 tons per year), and in 2017 (>18 tons per year).
- Only generators within 20 miles of a certified organics management facility with available capacity and willingness to accept food residuals are covered.
- Requires trash haulers offering curbside services to provide services for leaf and yard debris by 2016 and for food scraps by 2017.
- Residences are required to source separate leaf and yard debris by July 1, 2016, and food scraps by July 1, 2020.

Other state laws or bills, cont.

Connecticut:

- Requires certain large entities (commercial food wholesalers/distributors, industrial food manufacturers/processers, supermarkets, and resorts/conference centers) generating 104 tons or more per year to divert food waste by January 1, 2014, to composting if a permitted composting facility exists within 20 miles.
- By January 1, 2020, the law applies to entities generating 52 tons or more per year.

Rhode Island:

- Targets entities generating 104 or more tons per year by January 1, 2016.
- Each covered entity shall ensure that organic waste materials are recycled at an authorized composting facility, or anaerobic digestion facility or by another authorized recycling method if entity is not more than 15 miles from an authorized composting facility or anaerobic digestion facility with available capacity to accept such material.
- Waiver may be allowed if tipping fees are not competitive.

California's organic waste recycling bill

AB 1826 passed September 2015:

- By April 1, 2016, a business that generates 8 cubic yards or more of organic waste per week shall arrange for organic waste recycling services.
- By January 1, 2017, a business that generates 4 cubic yards or more of organic waste per week shall arrange for organic waste recycling services.
- By January 1, 2019, a business that generates 4 cubic yards or more of commercial solid waste per week shall arrange for organic waste recycling services.
- By January 1, 2020, if the department determines that statewide disposal of organic waste has not been reduced to 50% of the level of disposal during 2014, a business that generates 2 cubic yards or more per week of commercial solid waste shall arrange for organic waste recycling services.
- By January 1, 2016, each jurisdiction shall implement an organic waste recycling program designed specifically to divert organic waste generated by businesses subject by the new law.
- By August 1, 2017, each jurisdiction shall report on its progress in implementing its organic waste recycling program.

Composting, lots of ways

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Not all compost is created equally

What compost do we need?

Landmanagement
United Research for Soil
Living and Working with Nature

Compost from an industrial waste treatment facility

Compost from an open windrow composting plant

First Zero Waste & Organic Cycle Organisation

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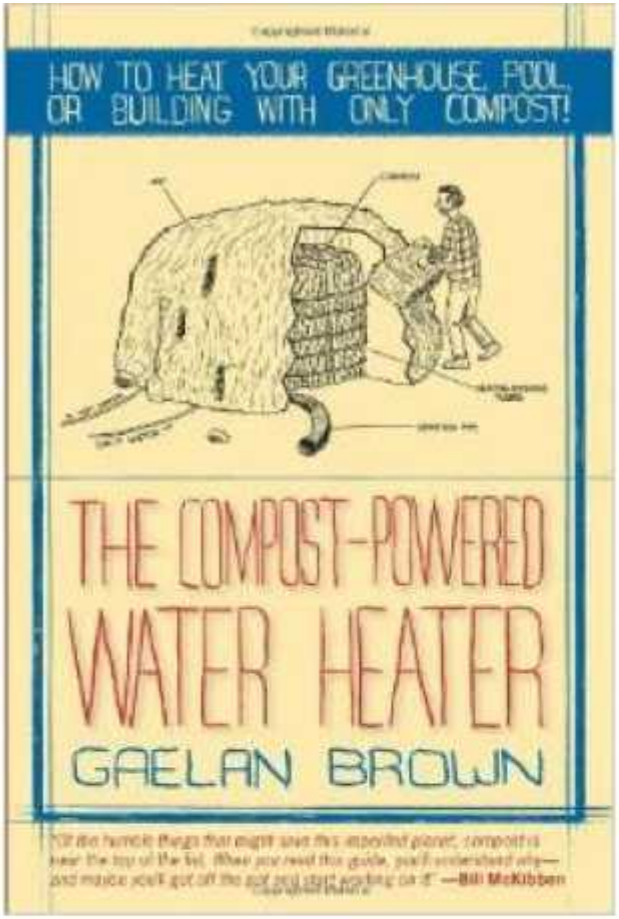

agrilab TECHNOLOGIES

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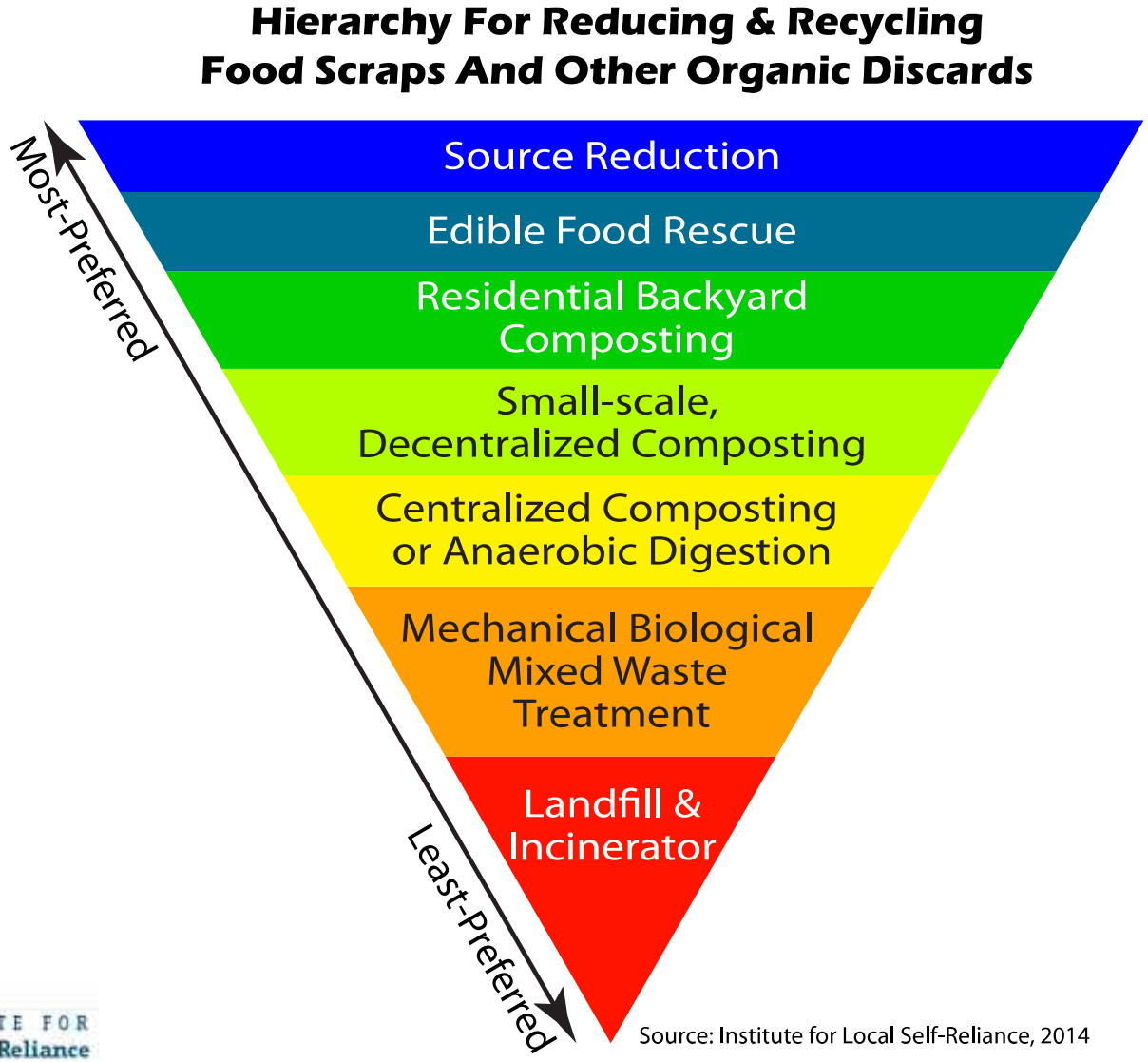
Composting to Recover Heat, Build Soil and Grow Food

ILSR's Hierarchy



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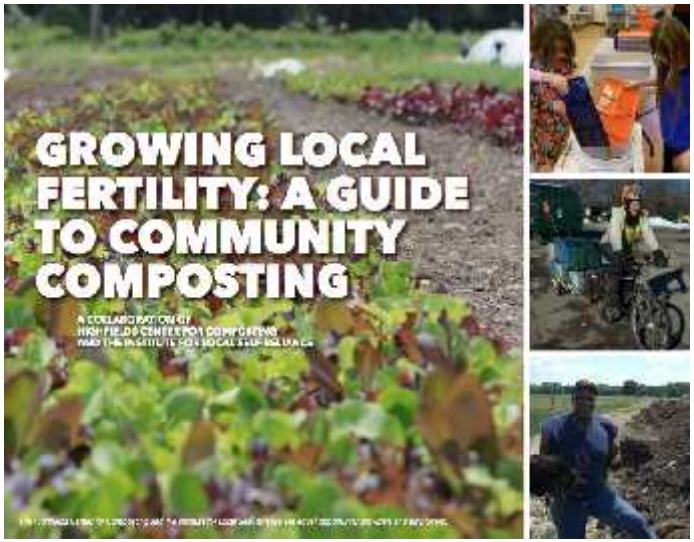
Support Community Composting

- Resources recovered
- Locally based and closed loop
- Organic materials returned to soils
- Community-scaled and diverse
- Community engaged, empowered, and educated
- Community supported



Joint project of ILSR's Composting for Community Project and Highfield's Close the Loop program

Supported by a grant by the Utilities Programs, USDA

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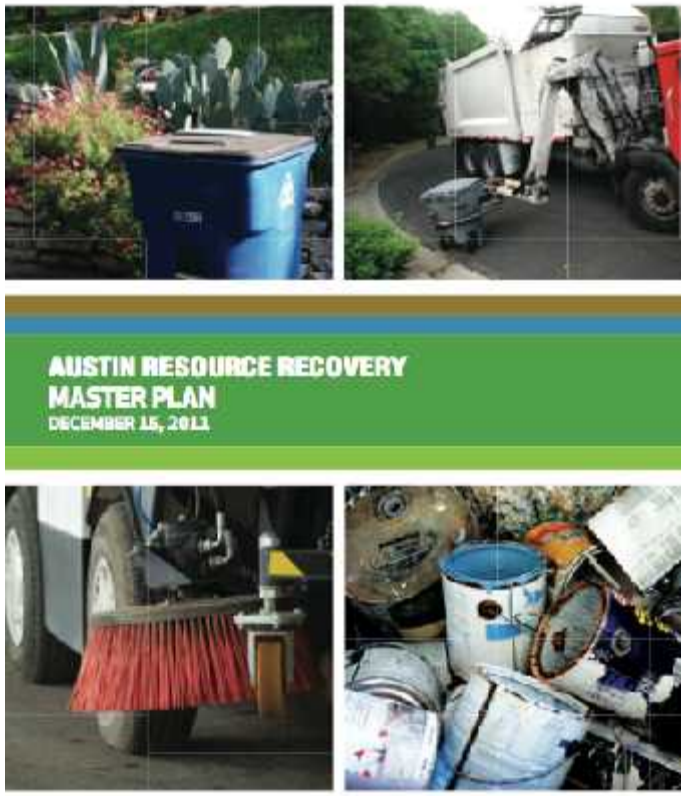
Austin zero waste plan

"…decentralized composting processes can reduce the carbon footprint of collection and transportation while consuming organics in more localized situations that do not require large organized collection programs."

"The Department recognizes that, in addition to helping the City achieve its Zero Waste goals, composting also addresses the community's interest in enriching the region's soil, strengthening sustainable food production and completing the food cycle."



The Austin Resource Recovery Master Plan (December 2011), pp. 105-106. http://www.austintexas.gov//sites/default/files/files/Trash_and_Recycling/MasterPlan_Final_12.30.pdf

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East Austin Compost Pedallers

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~30 Decentralized Compost Sites

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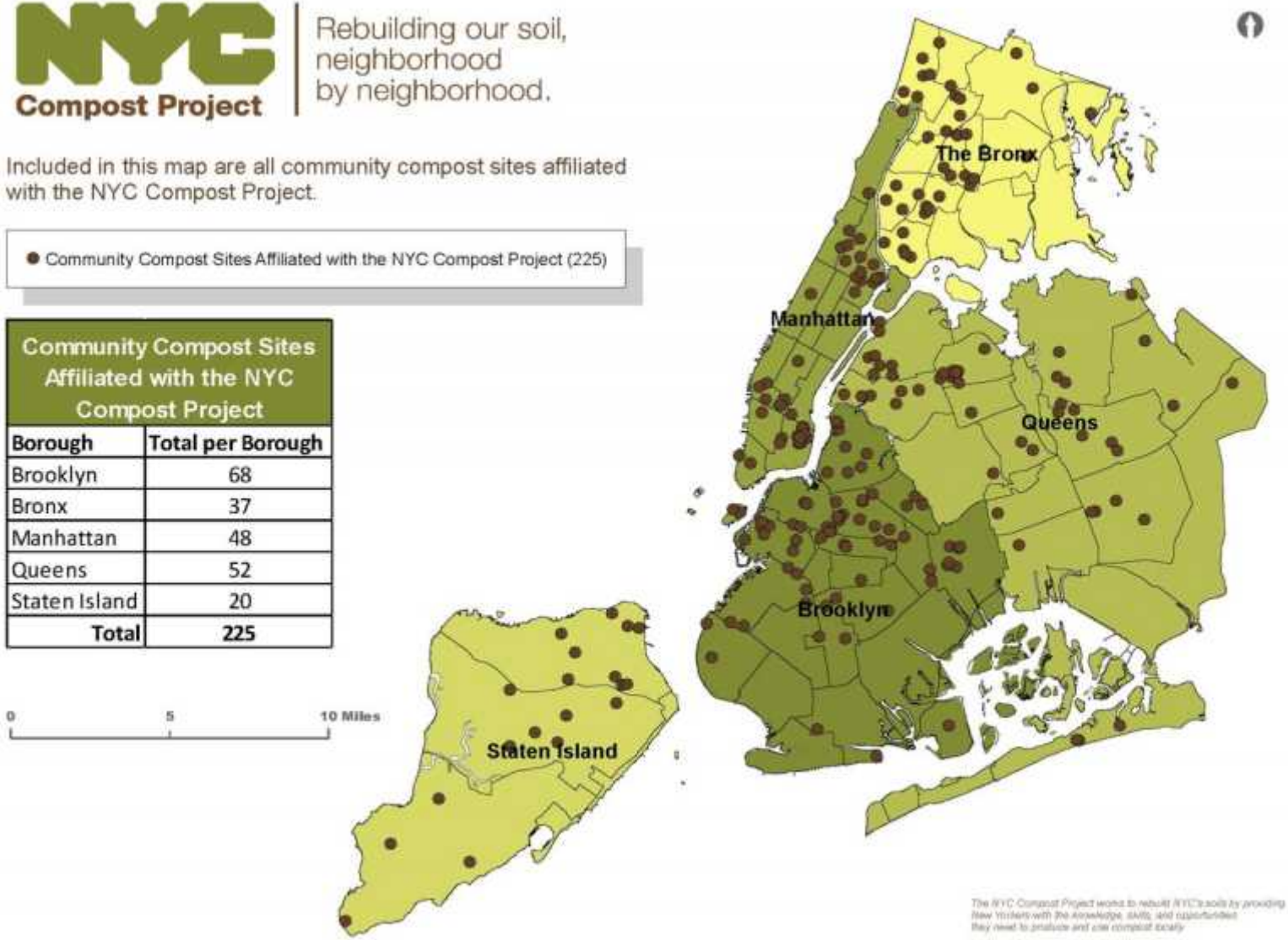
NYC Compost Project

Rebuilding our soil, neighborhood by neighborhood.

Included in this map are all community compost sites affiliated with the NYC Compost Project.

● Community Compost Sites Affiliated with the NYC Compost Project (225)

Community Compost Sites Affiliated with the NYC Compost Project	
Borough	**Total per Borough**
Brooklyn	68
Bronx	37
Manhattan	48
Queens	52
Staten Island	20
Total	**225**



The NYC Compost Project works to rebuild NYC's soils by providing New Yorkers with the knowledge, skills, and opportunities they need to produce and use compost locally.

The project is funded and managed by the NYC Department of Sanitation's Bureau of Waste Prevention, Reuse and Recycling. Learn more at nyc.gov/compostproject.

NYC Compost Project

NYC Compost Project

Battery Park Community Farm (NYC)

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Red Hook Community Farm (Brooklyn)

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Prospect Heights Community Farm (Brooklyn)

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Earth Matter (Governors Island, NYC)

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ECO City Farms (MD)

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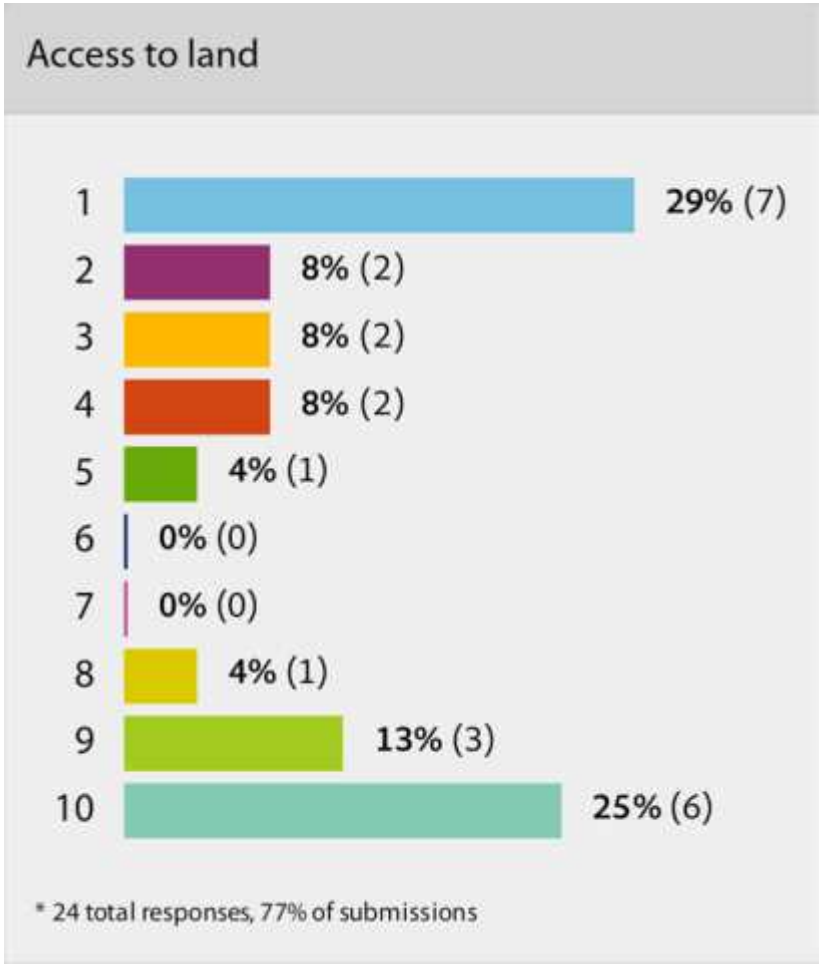
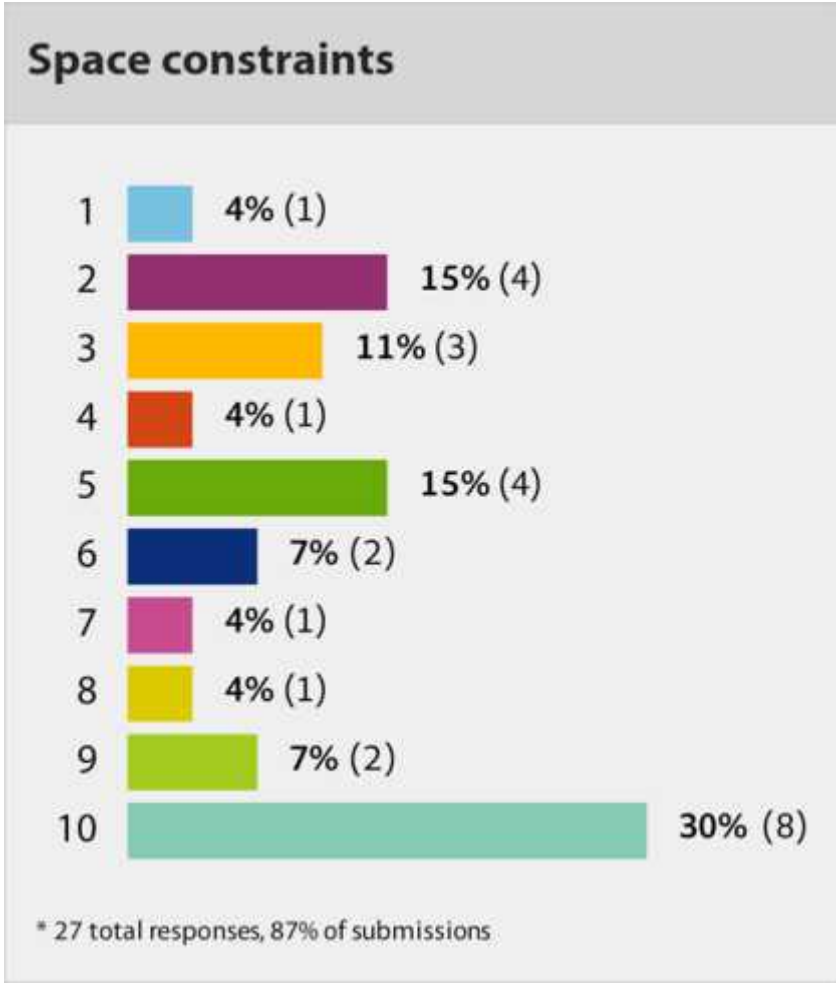
Challenges: Rate 1 to 10 10 = worst challenge





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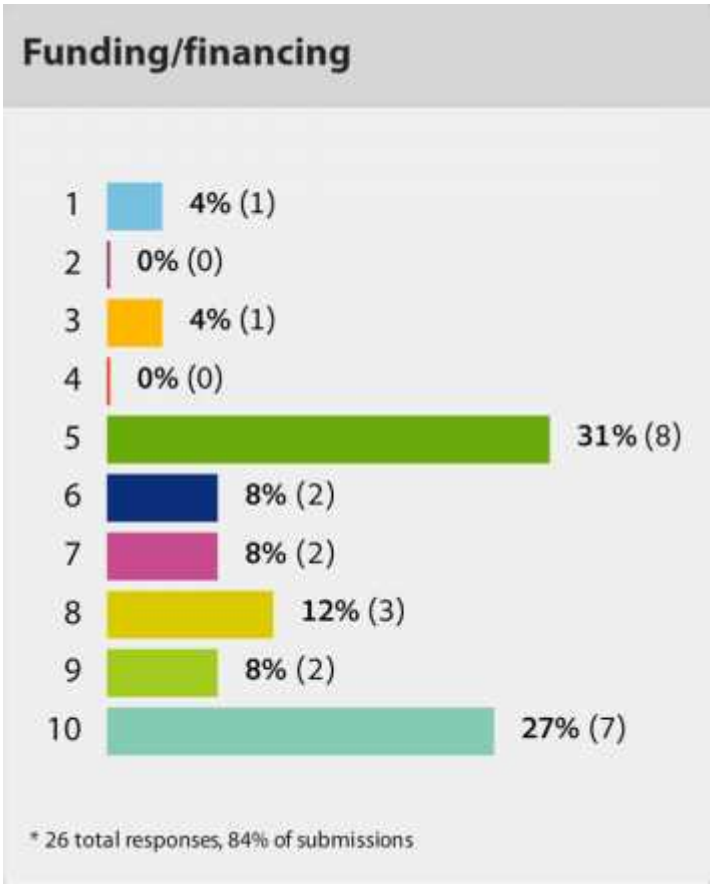
Challenges: Rate 1 to 10 10 = worst challenge



Farmer Pirates purchased a pick-up truck and trailer with $15,000 from Kickstarter

Assistance needed to help with FINANCING

- “working capital and political buy in”
- “funded staff”
- “Investment in order to get up to a medium size hauling/education company.”
- “Financing for more machinery and labor.”
- “Need funding to acquire larger facility to accommodate demand.”
- “Grant programs designed to encourage onsite site-wide composting for schools and institutions”
- “Increased access to public funding to start pilot programs.”
- “Grants to build more bins, to pay people to turn piles and do collection work, for slightly larger sites to have machinery to turn, for anaerobic digestors.”
- “Training, and funding assistance for improved equipment that mitigates odor and vectors is a #1 priority.”
- “Define an appropriate scale and a financial structure that allows community-based composting to exist with paid staff.”
- “SITE PURCHASE and PREPARATION!”
- “testing of product (e.g., a fund to pay for expensive testing that small sites cannot afford, discounts from labs).”

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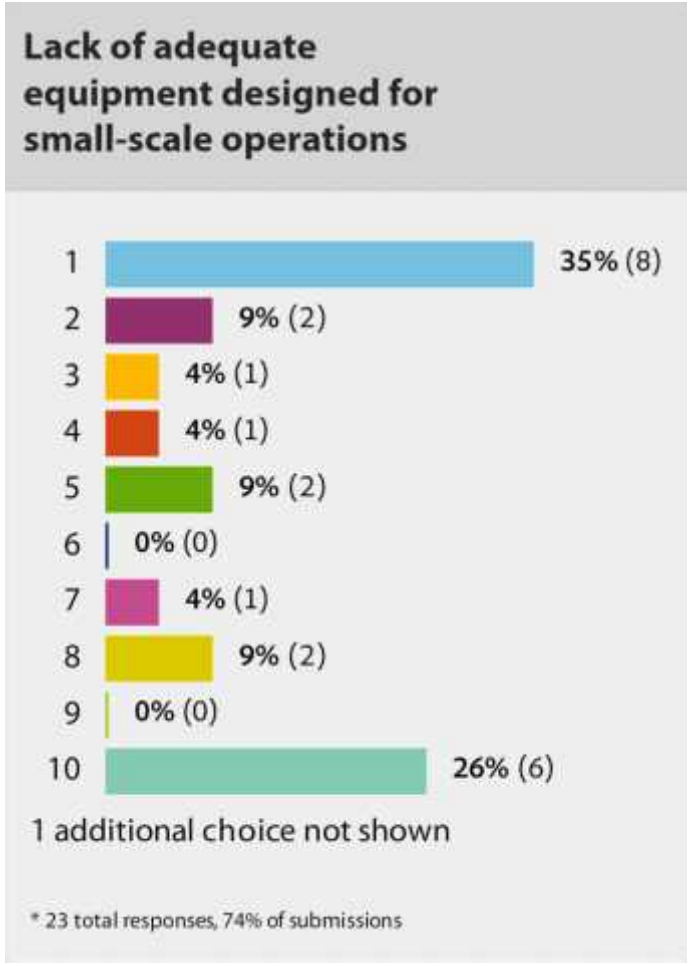
Challenges: Rate 1 to 10 10 = worst challenge



- "Design appropriate technologies for medium scale composting, cost effective, low cost, durable, has capacity"
- "Set up an engineering 'challenge' for new technology (using materials readily available from Home Depot), 60 days or less, no electricity, no moving parts, use in vacant lot until developed, flexible, transportable, 12 months a year, insulated"
- "With the private sector, work with industry partners, to address needs for: more aptly sized and powered equipment (e.g., effective human-powered equipment, smaller and affordable/donated industrial equipment, shared-equipment cooperatives)"
- "We need development of equipment appropriate to our scale, e.g., bicycle-powered sifters and shredders."

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Training Operators Is Critical

The NYC Compost Project cultivates community leaders through its Master Composter Certificate Program. These leaders volunteer their time to conduct public workshops, provide community outreach, bring people to gardens, and spread compost.

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Assistance needed to help with TRAINING & STAFF

- “Training, and funding assistance for improved equipment that mitigates odor and vectors is a #1 priority. A trained composter knows the need for proper equipment and systems to ensure and odor free, vermin free operation.”
- “Compost operator training or other compost educational programs.”
- “Trainings for community members to ensure they’re making quality compost.”
- “Technical assistance/community educators”
- “For urban contexts the compost operator trainings have got to be turned inside out and upside down to recognize some realities about how different success looks in an urban context.”
- “Statewide Master Composters classes and certification for small scale thermophilic composting assistance and oversight.”

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Neighborhood Soil Rebuilders Training Program

- Identify existing composter training programs & facilitate information sharing among them
  - ✓ Create national listserve
  - ✓ Create web resources
  - ✓ Survey existing programs
- Launch a model Master Composter training program in the DC-metro region in partnership with ECO City Farms
  - ✓ Beginner
  - ✓ Advanced
  - ✓ Master
- Produce a Master Composter Toolkit
- Replicate training program

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Wangari Garden (DC) 3-bin system

DC Dept. of Rec and Parks

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Neighborhood Soil Rebuilders Composter Training Program

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Neighborhood Soil Rebuilders

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Farmers Need Particular Support

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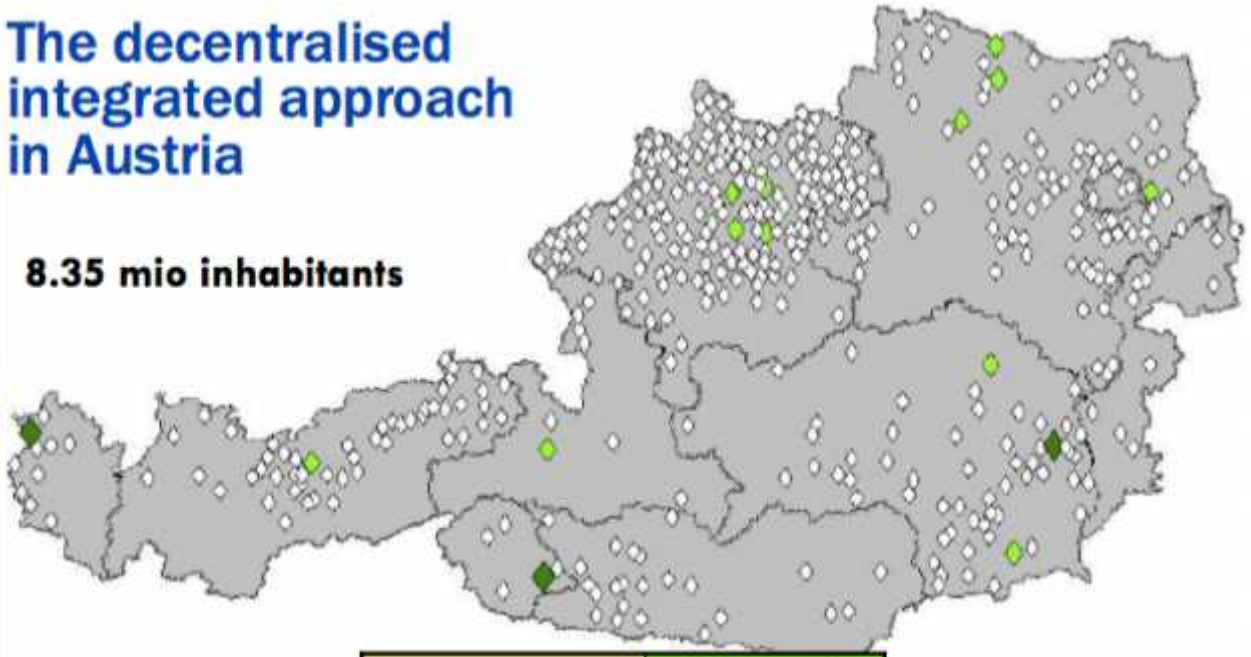
Austria: The Country of Decentralized Composting

The decentralised integrated approach in Austria

8.35 mio inhabitants



	Composting
Number	454
Total capac.	976.000
Average capac.	2.800 t

16,000 Inh per composting plant

Agricultural or municipal composting plant

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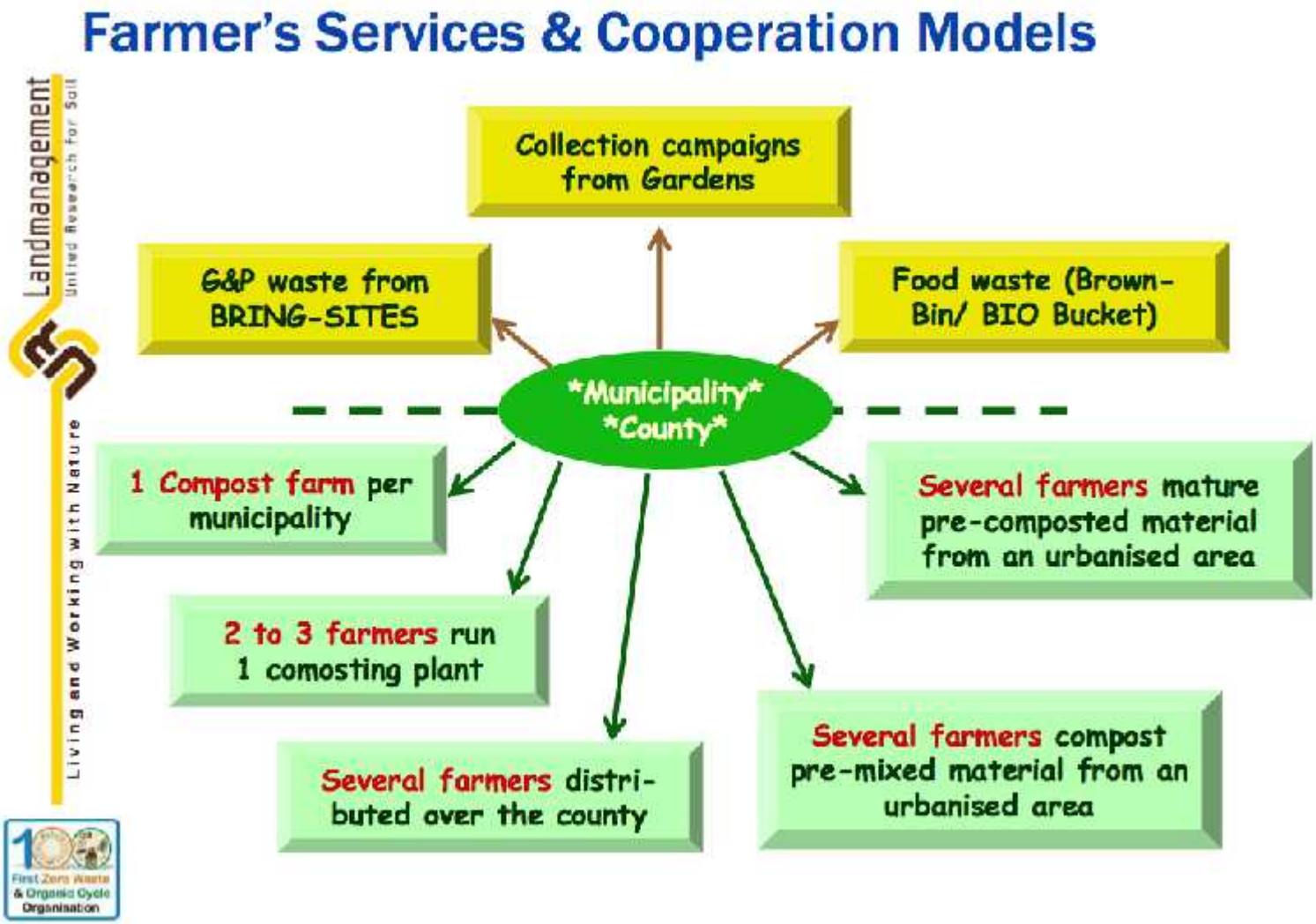
What does a farmer-centric composting infrastructure look like?



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Challenges to Expanding Composting in U.S.

- Lack of policies prioritizing composting and a diversified infrastructure
- Perception that starting composting is too costly
- Lack of collection infrastructure
- Lack of composting capacity
- Siting difficulties
- Lack of regs/permitting to facilitate responsible compost operations
- Poorly operated compost facilities that ultimately give a bad name to composting
- Contaminants (e.g., persistent herbicides)
- Zoning regulations
- Competition with cheap disposal
- "Free" unlimited set-out of residential trash
- Landfill and incinerator industry vested interests
- Lack of training programs for onsite composting
- Lack of leadership and political will

Crane-mounted claws grab piles of rubbish and plant debris from the pit floor of the new incinerator at the Solid Waste Authority. The claws move the debris to the mouths of the new incinerators. (Thomas Cordy / The Palm Beach Post)

Palm Beach Post, 5-19-15

Latest trash burner in Florida needs yard trimmings to burn ($672 million project!)

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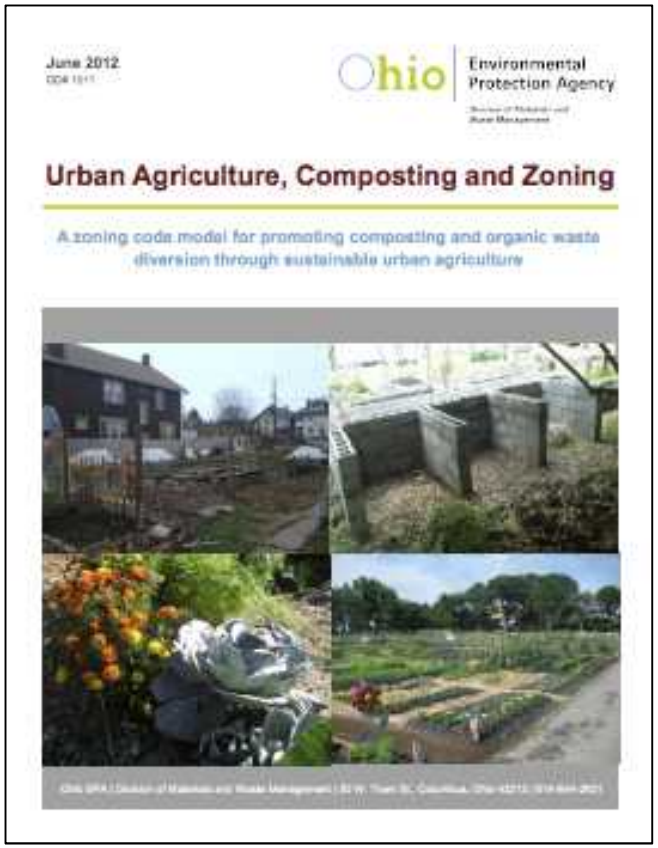
What can you do? Some ideas

- Policy (at all levels!)
- No more new incinerators / zero waste to refuse disposal facilities
- Access to land & financing
- Technical assistance and tools for locally based systems
- Model locally based systems
- Master Composter Training Programs
- Farmer Assistance
- R&D
- Spur equipment for small-scale systems
- Fight persistent herbicides
- Make connections to sustainable ag, climate protection, watershed issues, job creation, soil health, food policy, food security



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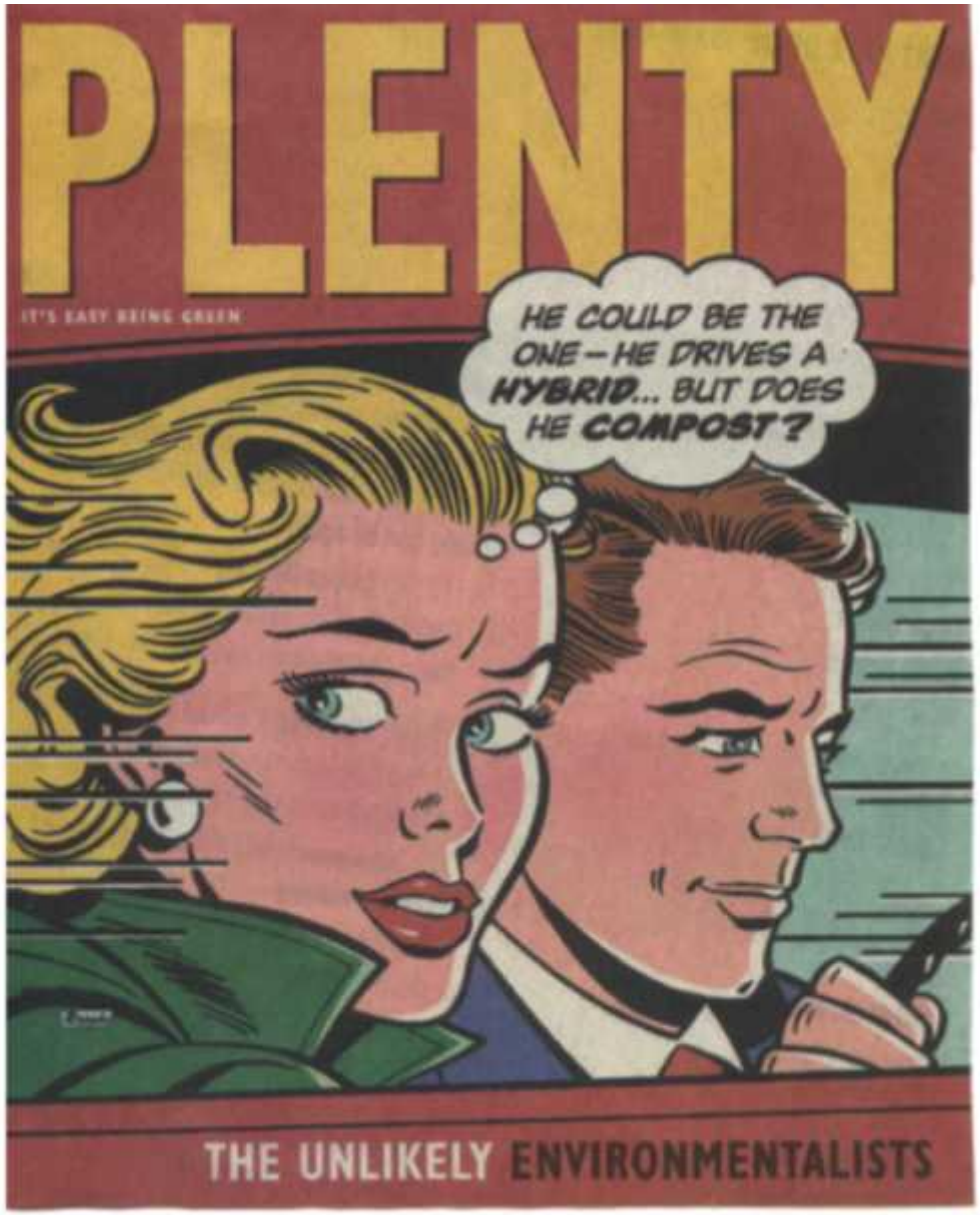

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