

Developing a Contamination Management Plan



1+ hour



Program design



Contamination reduction



Composting site operators
Composting program staff



Materials

Objectives

1. To support new and existing initiatives in developing a plan for avoiding and managing contaminants at composting sites.
2. To explore the flow of materials into and on the composting site: from project design to material (aka feedstock) collection and the creation of compost.
3. To identify points in feedstock collection and composting process where contamination can be addressed.

Note: This activity is designed to accompany ILSR's Reducing Contamination at Community Composting Sites course. While this activity touches on aspects of a food scrap collection program, it is not intended to provide an exhaustive list of considerations for planning a program.

Instructions

1. Gather a group of individuals who will be involved in the composting initiative and will have a hand in managing contamination. Ideally, representatives from each stage of the process – from collection of feedstocks to the management of the composting process and site – will be involved. If it is a large group, consider breaking up into smaller groups for discussion. Print one copy of this activity for each participant. Focus on the prompts and activities that are most relevant to your initiative.
2. Review the **Contamination Management Planning Considerations** on pages 2 - 6. The prompts provided outline considerations and possible solutions for addressing contamination at each step along the flow of materials from collection to composting site. Many prompts are written in the future tense, existing initiatives should adjust to present tense as needed. Solutions are organized into the following stages:
 - “Upstream” – before feedstocks arrive at the composting site
 - “On-Site” – once feedstocks arrive at the composting site
 - “Post-Processing” – after compost has been screened
3. Use the **Contamination Management Planning Table** on pages 7 and 8 to consolidate a list of actions that will be taken, what information or support is needed, any next steps, and who is responsible.
4. Create a visual representation of where in the composting process contamination management actions will be implemented using the **Contamination Management Material Flow Diagram** activity on page 9. Examples are provided on pages 10 and 11.

Contamination Management Planning Considerations

► Upstream Solutions

PROGRAM DESIGN

- Are all stakeholders that play a role in the success of this initiative involved in this planning process? If not, whose perspective is still needed? Stakeholders may include composters, haulers, staff, volunteers, and feedstock generators (those generating the materials that can be composted).
- Which stakeholder(s) is/are responsible for overseeing contamination control? What budget, if any, is available for contamination control?
- Are there existing or anticipated contamination challenges for this initiative? Have contamination levels been previously measured? If so, what are they?
- Do local rules regulate a maximum limit for physical contaminants for feedstocks or finished compost? Do the feedstock collection program or composting site have contamination limits? What contamination-related metrics need to be reported, when, and to whom?

FEEDSTOCKS AND SOURCE SEPARATION

- What feedstocks will be accepted? Which materials will not be accepted? Are there materials that can technically be composted, but will not be accepted as feedstocks due to contamination concerns?
- How will feedstocks be collected and by whom? Is there more than one point of collection (points where feedstocks are collected directly from generators)?
- How will proper source separation of permitted feedstocks from other materials at the point(s) of collection be encouraged and facilitated? Examples include sorting stations with clear informational signage or composting coaches.

► *Upstream Solutions, continued*

EDUCATION AND OUTREACH

- Are there specific behaviors (known or anticipated) that need to be addressed to avoid contamination in feedstock collection? Examples include removing produce stickers or keeping plastic out of food scraps at the point of collection.

- Are there known or anticipated barriers preventing proper source separation of feedstocks, such as lack of clear signage at food scrap drop off locations or confusion around what materials are not allowed in the composting stream?

- Will social marketing techniques be implemented? Examples include creating written pledges to avoid produce stickers, affixing decals with reminders to remove produce stickers near bins and drop-off sites, or celebrating generators for clean feedstocks.

- How will information about the initiative be communicated to stakeholders, how often, and where? Simple, frequent, and consistent messaging is the goal.
 - Will there be a webpage that centralizes information about the initiative?

 - Will information be translated or shared via visual communication? What languages?

 - What informational signage is needed, where?

 - Will other informational content be created, such as videos or social media?

- Will source separation training or composting site tours be provided to support stakeholder understanding of contamination issues? If so, will these be required or voluntary?

► *Upstream Solutions, continued*

LOAD INSPECTIONS AT THE POINT OF COLLECTION*

*For some drop-off programs, the point of collection will be at the composting site and not “upstream”.

- Will loads of feedstocks be inspected for contamination at points of collection? By whom?
- Will contamination levels be estimated at the point of collection? If so, will it be estimated by volume or by weight? Will estimated contamination levels be recorded, such as with photos, in a log, or in an app?
- Are contamination inspections required at the point of collection? If so, how will this be encouraged or enforced? An example includes building contamination protocols into hauler contracts.
- Will proper source separation be enforced at the point of collection, such as by tagging or rejecting contaminated loads, charging fees for contaminated loads, or by providing other feedback to generators?

► **On-Site Solutions**

OBSERVING CHANGES IN PHYSICAL CONTAMINATION LEVELS

- Have levels of physical contaminants been measured previously or will a baseline contamination audit be performed?
- Will contamination audits be used to measure changes in contamination levels over time? If so, who will conduct the audit, where, and when?
- Are there any indirect proxy measures that can be used to gauge changes in contamination over time, such as a decrease in the number of loads that are tagged or rejected because of contamination?

► *On-Site Solutions, continued*

PHYSICAL CONTAMINANT REMOVAL AND MEASUREMENT

- Once feedstocks have arrived at the composting site, at what point in the composting process will contamination be removed if needed, how, and by whom? Contamination can be removed from feedstocks, finished compost, and composting overs (hard materials such as wood chips that remain after composting and can be recomposted).
- Will contamination levels be measured? If so, will they be measured by volume or by weight? Will they be recorded, such as with photos, in a log, or in an app?
- Will this information be used to communicate with feedstock generators or haulers? How will contamination issues be tracked back to specific generators?
- How will contamination be disposed of? Where and by whom? What is the cost of disposal?

STAFF OR VOLUNTEER ENGAGEMENT

- When will staff or volunteers be trained on how to remove contamination? How, how often, and by whom?
- How will staff or volunteers be encouraged to contribute to removing contamination? Examples include providing staff bonuses or celebrating volunteers for the amount of contamination they help to remove.
- What guidance is needed on-site to facilitate contamination removal, such as clear protocols or informational signage?
- What personal protective equipment and other tools are needed for staff or volunteers?

► Post-Processing Solutions

ESTIMATING COMPOST QUALITY

- Are there local rules regarding compost quality that need to be met? Are there compost quality requirements for the compost use or market being targeted?
- Will field tests (e.g., bioassay seed germination or plant vigor tests) be used as proxy measures to estimate the quality of finished compost? If so, what tests and how often?
- Will microscopy be used to observe biological activity as a proxy measure to estimate the quality of finished compost?
- What materials or equipment are needed? What training or technical support is needed?

LAB TESTING

- Labs can test for physical, biological, and chemical contaminants. Will samples of finished compost be sent to a lab?
- What budget, if any, is available for testing compost? How often will samples be sent to a lab and for which tests?
- What laboratory will be used? Will it be a US Composting Council Seal of Testing Assurance Certified lab or another lab that is equipped to test compost samples?
- Cost-effective and widely-available testing for microplastics or PFAS in compost are still being developed. Participating in academic or industry studies may be an option. Are there any partnerships that can be leveraged to participate in or initiate a study?

Contamination Management Planning Table

[illegible]

Contamination Management Planning Table

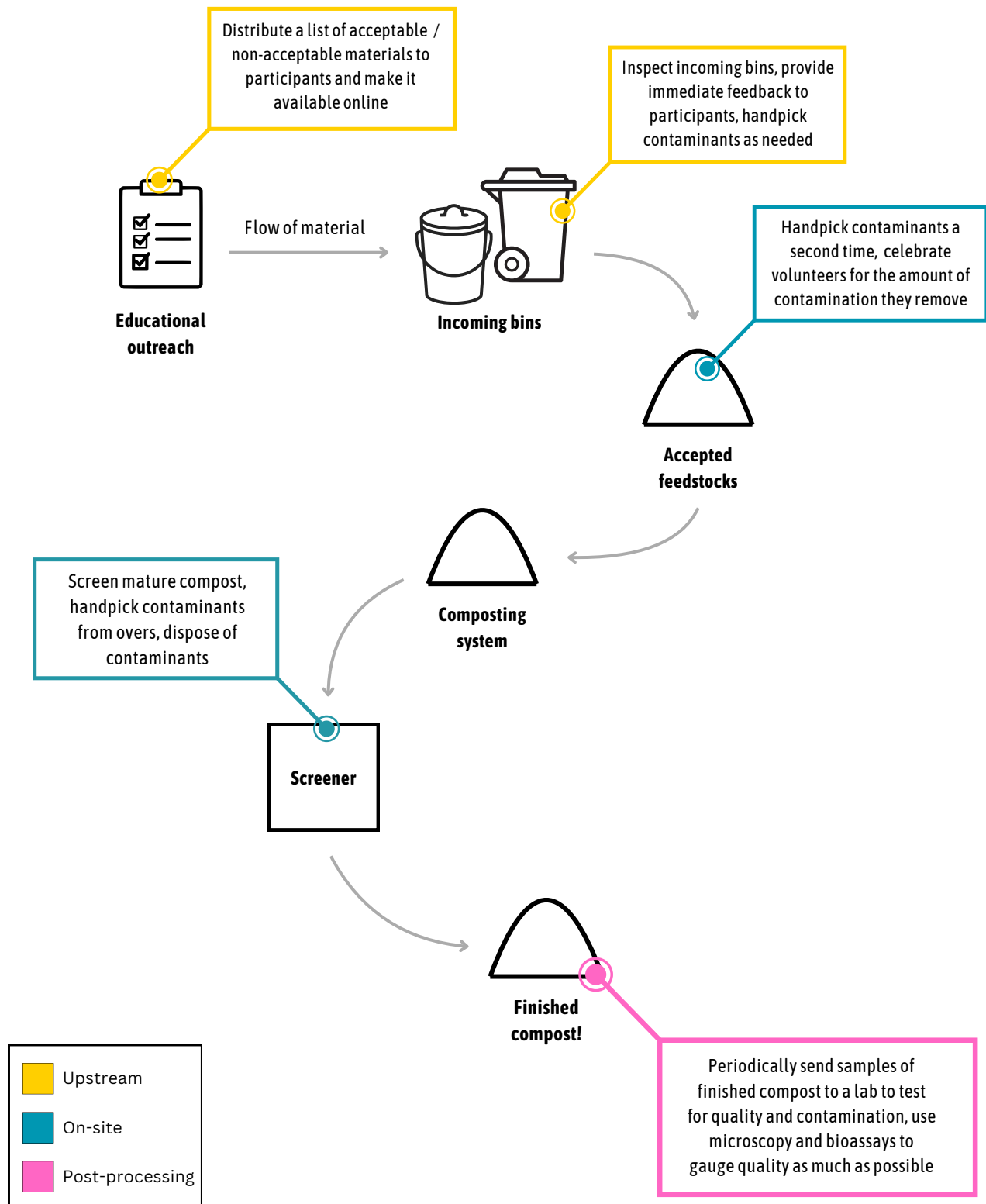
Stage of composting program	Contamination management actions to be taken	Next steps Information or support needed	Task owner

Contamination Management Material Flow Diagram

Draw a basic diagram of your composting site or a simple representation of the flow of materials through your composting site or collection program. Then, use this visual to pinpoint where key contamination measurement and management actions will take place. Examples are provided on the next two pages.

Sample Contamination Management Material Flow Diagram

Here is a sample material flow diagram for a composting site accepting food scraps via drop-off. Contamination management actions are color coded by whether they take place upstream, on-site, or post-processing.



Sample Contamination Management Material Flow Diagram

Here is a sample material flow diagram for a commercial composting site based on DirtHugger in Dallesport, WA. Learn more: [Tackling Contamination at Composting Sites | ILSR Webinar](#)

