

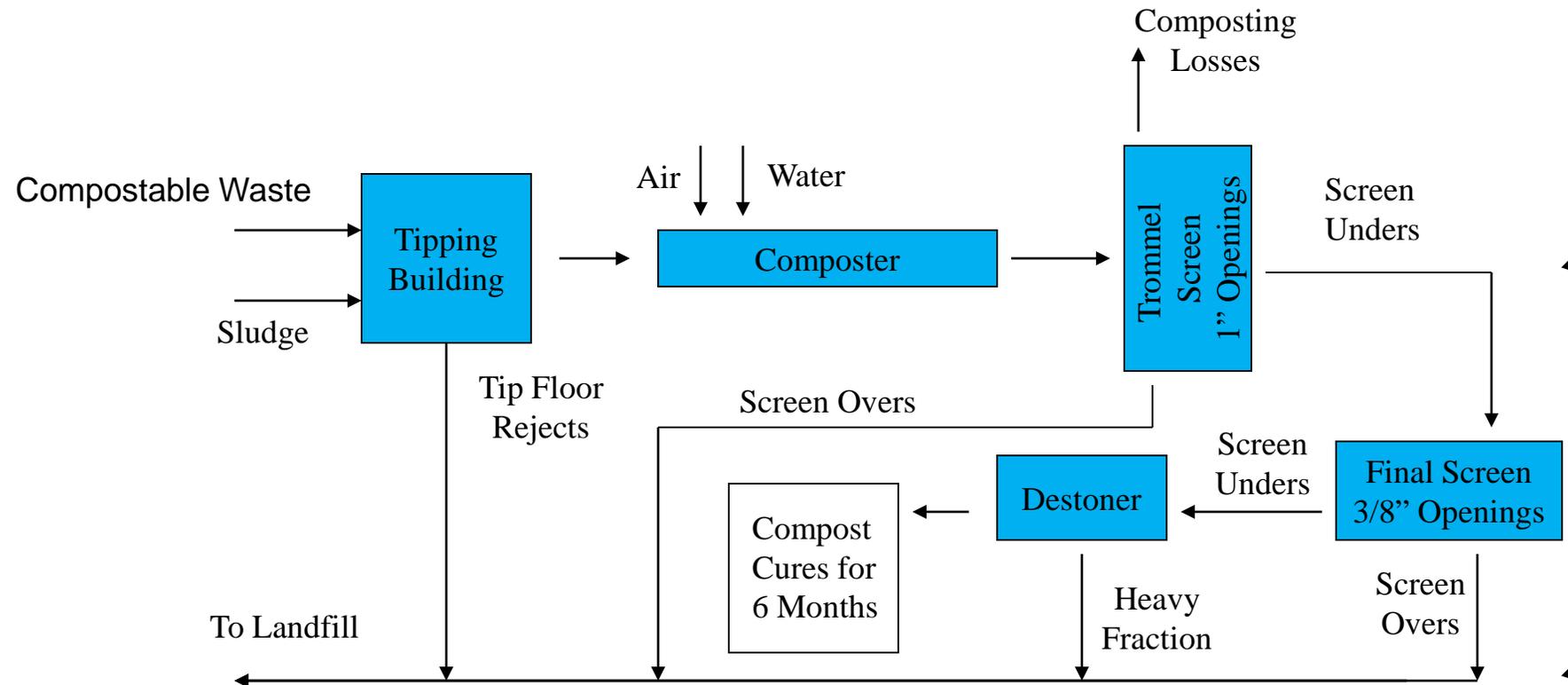


WASTE
OPTIONS
NANTUCKET

Waste Summit 2019

Co-Compost Plant: the Bedminster Bioconversion Technology Process

Materials Flow



Composting Process

Mixing Materials



Feeding the Composter



Benefits of high quality feedstock material

- Better aeration of the product and it also accelerates breakdown
- More revenue to Town from sale of product
- More consistent product
- If product quality improved it will reduce the volume of residual material that is disposed of in the lined cell
- Compost will hold 3 time more water than regular soils, making it ideal to use in sandy area to promote growth and retain water(in only take a 5% increase in organic material to quadruple it water holding capacity)



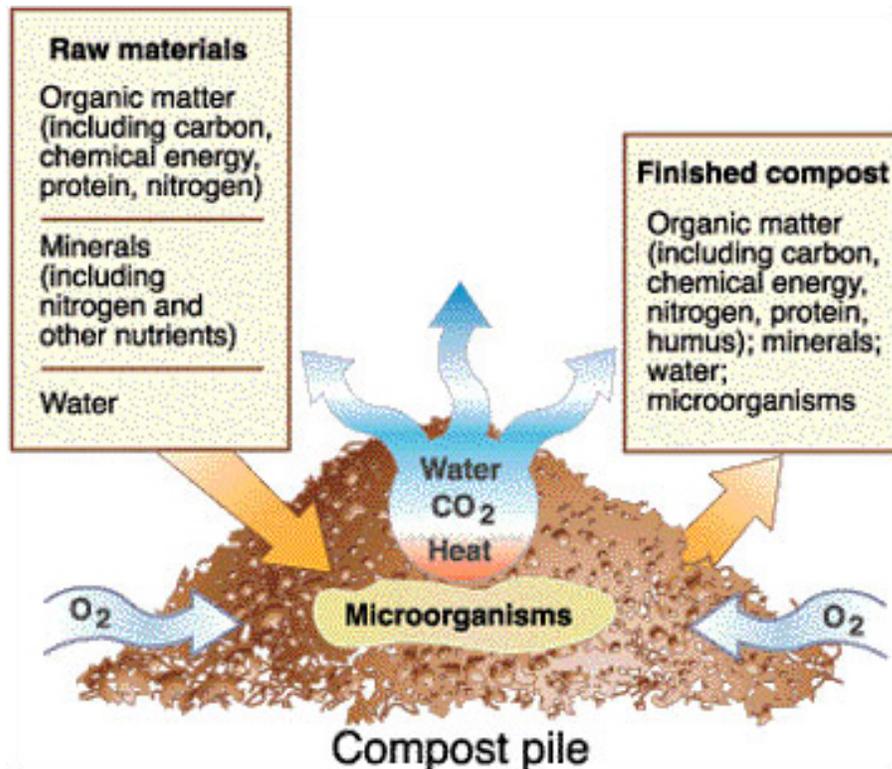
Problems that can occur with poor quality feedstock

- Lower nutritional value to the soil due to products that should not be in there (i.e. batteries, aerosol bottles, rugs)
- One glass bottle breaks into a million pieces
- Air is not evenly distributed. Less inorganic materials allows for better air distribution and faster breakdown of raw materials in the compost process.
- Foreign materials can clog the system creating hairballs and operational issues with processing equipment.
- Abundance of residual material that has to go in the lined cell, decreasing its useful lifespan.
- Machinery down time which can cause delays with processing feedstock



Composting Process

Breaking down of the material



Screening out the non-organic materials



Composting Process

Baled Residuals (2 days in summer)



Final Screening Residuals



Composting Process

Curing the product



Screening out last fraction of residuals



Composting Process

Mixing materials to boost the nutrient value



Final product



Feedstock Quality

Pristine Quality Feedstock



Fair/Poor Quality Feedstock



Benefits of use

- Reduce imported fertilizers that are causing other issues on the island
- Qualifies under Nantucket Fertilizer Regulations promulgated in 2013 for maximum land application because of lower levels of nitrogen (nitrate/nitrite) and phosphorous (phosphate).
- Can provide structure to sandy soils
- its free for residents of island for pick-up at the front bin; bulk is loaded for a per cubic yard fee.
- Great for plants and vegetables to develop a strong root base
- It fits the 3 R's (**R**educe, **R**euse, and **R**ecycle)
- A safer more sustainable product with your help



COMPOST QUALITY IMPROVEMENTS

AREAS TO IMPROVE:

- Add bag breaker. This will assist with landfill diversion of plastic and a potential revenue stream for the plastic by-product, depending on market conditions.
- Add an external Destoner to screen out stone, plastic and glass to 250 microns. This will vastly improve the product quality of the compost or topsoil, enabling greater commercialisation of these by-products to commercial and residential users.
- Add impermeable pad for compost windrowing. This will eliminate the contamination of the compost and topsoil, further improving the quality of these products.
- Add windrow turning machine for faster maturation of product

POSSIBLE ALTERNATIVE AND/OR COMPLEMENTARY STRATEGY:

- Eliminate all conventional plastic bags by mandate from entering the compost facility.
Have all organics delivered in alternative compostable products

Bag Breaker



The **BHS Bag Breaker**® opens bags at high volumes without damaging content, ensuring maximum recovery of valuable recyclables. The patented Bag Breaker® uses large, counter-rotating drums to efficiently open the bags and release the contents, discharging them from the bottom of the machine. Bags are torn into large pieces for easy removal.

Bagged material can be fed directly into the BHS Bag Breaker® with an infeed conveyor to achieve an evenly-metered flow rate.

Clean-out doors on two sides for easy access and maintenance

Easy to retrofit into existing facility

Opens bags without damaging valuable recyclables

Bags are torn to large pieces rather than shredded for easy removal

Heavy-duty construction for decreased downtime and long-operating life



What's next.

Compost Top Turner



Bagged Material sold for redistribution



Closing

- We have to remember that the Composter is just like the human body. If we eat poorly we won't feel or look good and have very little energy. In order to get quality compost that would benefit everyone, we have to feed the Composter quality feedstock/materials. The better the feedstock the better the end product.
- We can do more to better sort out the non-organic material that goes into our compostable waste stream making a good product for everyone to use.

Thank You!