Turning Trash into Treasure: Organics Management for Landfill Operations

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Let's start this with everyone's favorite topic—new regulations, especially those that disturb the way things have always been done. Many states and municipalities have enacted organic diversion legislation in some form, which prevents organic-based waste from entering landfills. This type of legislation can pose quite an operational challenge for landfill managers, as well as remove waste streams that would have otherwise generated revenue. There has been a major public push towards more sustainable lifestyles in the past few years, which could lead to organic diversions spreading throughout the country. It is therefore advantageous that landfill operators begin to explore the composting process before these diversions make their way to their state to prepare and understand the composting processes that work for their site.

Hillsborough County Landfill Biosolids Composting Facility saves the county an estimated $500,000 per year.

Popular Methods

Turned Windrows

By far the most commonly used method in the composting industry, and for good reason: it is relatively simple, effective, and can be operated with minimal equipment. The biological process relies primarily on passive aeration but turning is required to promote aeration and mix the windrows. This is usually accomplished by using a compost turner (a specialized piece of equipment) but can be operated with something as basic as a front-end loader (though this will take more time and space). On the other hand, the windrows take up almost double the space as other methods and take longer to produce a mature product.

Aerated Static Pile

A popular choice for food waste composting with a significantly smaller footprint than other methods. It involves a system of perforated pipes sitting underneath the windrows, which provides the composting material with a constant supply of aeration, removing the need to periodically turn the piles. The increased oxygen raises the temperature and speed of the biological process, which decreases the time required to a complete product. This process requires a larger capital expense up front to build the aeration system.

In-Vessel Composting

This method provides an alternative solution for sites that do not have the space or infrastructure to properly use the other popular methods. The composting process takes place in a drum or box, where the aeration and mixing occur using rotation or an auger. The footprint of this process is significantly smaller than other methods and does not require heavy or specialized equipment.

Potential Benefits

Financial, public image, regulatory, and even disposal of more challenging waste streams are just a few of the potential benefits of a composting operation. The product that you generate can be sold to support local agriculture, generating revenue and supporting local businesses. Material reuse can be marketed as an environmentally friendly way to remove organic waste.

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