

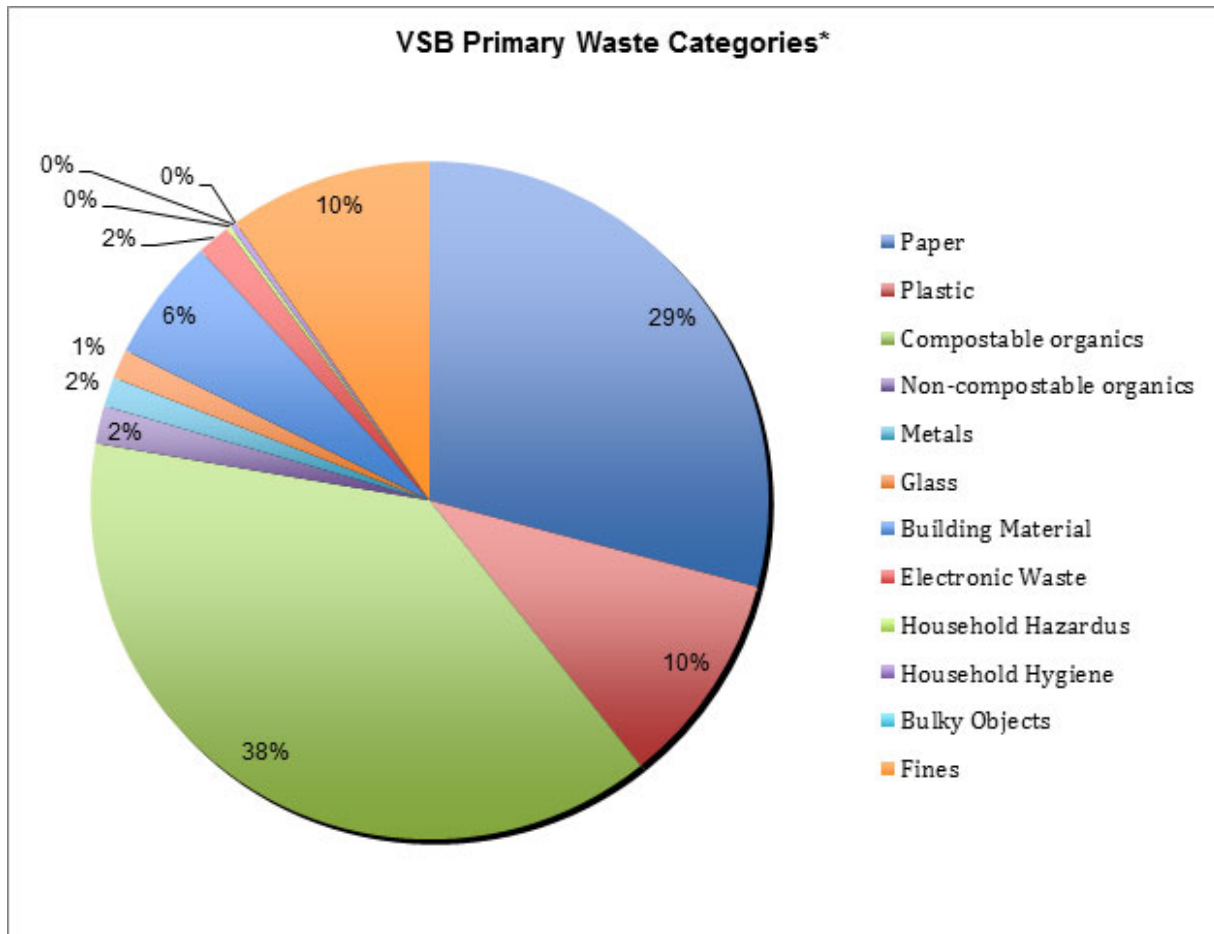


The Dirt on Composting in the VSB

This information was compiled by the Think&EatGreen@School project to support student and staff leaders to understand and communicate about their school’s new compost collection program.

What Happens to Compost in the Garbage?

A 2010 waste composition study found that 38 percent of the *garbage* produced by Vancouver schools was food waste.



In 2012, Metro Vancouver sent about 450,000 tonnes of food waste to the landfill, enough to fill up 280 olympic sized swimming pools. The City of Vancouver sent 5,500 trucks worth of food scraps to the landfill, enough to fill about 96 olympic sized swimming pools. Squished under layers and layers of other garbage, our food waste breaks down in the absence of oxygen and turns in to 2 things:

1. **Leachate;** a nasty liquid goop (pronounced LEE-chayt). While the Vancouver Landfill has a high tech system to keep liquid leachate from polluting our groundwater, the less leachate we can produce, the better! In 2013, the Vancouver Landfill collected 1,843,245 cubic metres of liquid leachate (enough to fill 737 olympic pools), which was shipped to and treated at





the Annacis Island Wastewater Treatment Plant at the cost of \$2.1 million.

2. **Methane;** a really potent greenhouse gas, which stinks like rotten eggs. Methane is 10 times more effective as a greenhouse gas than carbon dioxide. Methane from landfills is a significant contributor to global warming, also known as climate change. The Vancouver Landfill is a world-class facility and is able to collect about 60% of the gas produced in the landfill. Some of what is collected is used as fuel to heat local greenhouses, while the rest is “flared” or intentionally burned at the landfill.

It’s important to know that food waste DOES NOT help break down other garbage in the landfill. Its presence forces the landfill to devise expensive and inefficient systems to manage the 2 big by-products mentioned above. Organic digesters are a much more efficient way to use organic waste to produce methane and other gasses for energy production – commonly known as biofuel.

What Happens to Compost in the Green Bin?

Instead of being piled up with layers and layers of other garbage, our compost is strategically mixed with other organic material (like leaves and woodchips collected from around the City). It isn't squished under layers of plastics and other inorganic garbage. Instead, it’s piled up in large “wind rows” - essentially a fancy name for big piles. This is all managed at a facility in Richmond called Fraser Richmond Soil and Fibre.

Technicians at Fraser Richmond Soil and Fibre make sure all of the organic materials are properly mixed so that they break down naturally, in a similar way to healthy backyard compost. Conditions are created to ensure the pile has good airflow and lots of oxygen, which invites a whole bunch of fungi, bacteria and invertebrates (the FBI) to break down all of our organic waste in to 2 things:

1. **Soil.** Soil is essential to all of us. Healthy food is grown in healthy soil. Many of the materials to make the clothes we wear were grown in soil (in example, cotton). By composting our food waste, instead of throwing it in the garbage, we help make lots of energy rich soil that can be used to grow more plants to help feed our community's needs (animals and plants included!).
2. **Carbon dioxide.** CO₂ is produced by the organisms that break down our compost. While CO₂ is a greenhouse gas, it traps much less heat energy in our atmosphere than does methane and is a natural by-product of organic decomposition. The CO₂ released in organic decomposition is an important part of Earth’s natural carbon cycle.

Rich, finished compost isn't gross at all, but is an essential thing we all need to survive. What's really gross about compost is seeing it wasted in landfills.

It’s Now Illegal to Put Compost in the Landfill – A Policy Overview

Metro Vancouver

In 2011 the Province of British Columbia approved Metro Vancouver’s Integrated Solid Waste and Resource Management Plan ([ISWRMP](#)). “The overriding principle of the ISWRMP is the avoidance of waste through an aggressive waste reduction campaign and through the





recovery of materials and energy from the waste that remains.” The plan asks Metro Vancouver to aspire towards reducing the waste generated per capita to 90% or less of 2010 levels by 2020. The plan also sets a firm target for the entire region to move from a 55% waste diversion¹ rate in 2011 to at least 70% by 2015, with an aspirational target to achieve 80% diversion by 2020. In 2012, one-third of the region’s landfilled waste was comprised of compostables, thus organics diversion has been identified as a key way to achieve the ISWRMP’s ambitious targets.

Following from this, Metro Vancouver will introduce a ban on the disposal of organics in 2015. The ban will apply to all residents and businesses in the region. This means *everyone* will have to separate food waste from garbage. Community input on how to roll out an organics ban was collected between February 25th and June 15th of 2014. A proposal for the ban was presented to the Metro Vancouver Board on September 11, 2014. It was recommended that as of January 1, 2015, all deliveries to the landfill should contain no more than 25% organics as assessed by visual inspection. This represents less than 5% of all loads currently arriving at landfill – and will impact large producers of organic waste first, such as food distributors and retailers. As of January 1, 2016, the threshold will fall to 10% organics and then to 5% starting in 2017. Educational notices to those in violation of the ban will be given in the first 6 months of the program. Beginning in July of 2015, a 50% surcharge of the tipping fee will be given to loads in violation of the ban.

City of Vancouver

Preparing for this ban, the City of Vancouver has approved a 3 phase approach to diverting organics from its waste stream. This approach is part of a larger zero waste action plan the City is working towards to support its goal of becoming “the world’s greenest city” by 2020 (<http://vancouver.ca/green-vancouver/zero-waste.aspx>).

- Phase 1 begun April 22, 2010 - City allowed single family and duplex homes to add raw fruit and vegetable kitchen scraps to their yard trimmings in green bins for composting collection.
- Phase 2 was implemented over two years beginning in 2011 - City allowed single family and duplex residents to add the full spectrum of food waste (fruits, vegetables, meat, fish, dairy, bread, cereal products, and food soiled paper) in their green bins and converted to weekly collection of organics and every-other-week collection of garbage.
- Phase 3 began in 2013 and involved working with Metro Vancouver and the private waste hauling and organics materials processing sectors to develop and implement options for diverting food waste from multi-family residential buildings and the business community (including the VSB).

With the organics waste ban planned for 2015, commercial and institutional operations have to re-negotiate their own waste service contracts to separate organics in order to avoid additional surcharges on tipping fees at the landfill (this includes the VSB). This shift is being further supported by Community Based Social Marketing and public education campaigns led by both Metro Vancouver and the City of Vancouver.

¹ The process of diverting waste from landfills. Key strategies include: waste reduction, recycling and composting.





Vancouver School Board

In 2014 the VSB started rolling out an organics diversion program throughout all facilities in the district. The program enhances the current recycling program, which has been in place for many years. The program will allow the VSB to be compliant with metro Vancouver's upcoming organics ban. New zero waste stations will be placed in strategic locations throughout all VSB sites, where employees and students can separate and dispose of all organic, recyclable and waste materials. Organic waste will be collected from schools by Waste Management and taken to Fraser Richmond Soil and Fibre.

On September 26 of 2011 the Vancouver School Board (VSB) released a draft *Resource use and waste reduction action plan*. The draft policy document identifies several key topic areas of connection between waste handling and the VSB's broader Sustainability Framework, including: resource use and waste reduction, education and organizational culture, procurement and supply chain management, and technical design standards. By reducing resource consumption and the generation of waste across all VSB operations, the *Resource use and waste reduction action plan* aims to align VSB operations with the regional developments discussed above.

The *Resource use and waste reduction action plan* is complemented by the *Food action plan* draft released October 3, 2011. While the resource use and waste reduction action plan was clear in setting firm operational goals that can be easily tracked with measurable progress indicators (ie the 100% ban of organics from the waste stream), the Food action plan is a more forward looking document that sets out a number of strategies and goals to enable the VSB to "become a leader in just and sustainable school food systems." These strategies and goals are not as easily measured and require a significant cultural and behavioral shift to be fully actualized. A number of sub strategies and goals within this plan have implications for the way organic waste is handled and utilized in schools. The first strategy to foster an organizational culture that understands the relationships between food, health and the environment cites the management and support of on-site in-vessel composting systems as an important step towards realizing this goal. Other goals of the *Food action plan* include: reducing food-related waste and fostering an understanding of closed loop systems, and designing school sites in a way that promotes a healthy food environment, while providing a vibrant learning environment that promotes student engagement in the food system. All of these goals suggest an important role for organic waste resource recovery through active on-site composting *within* Vancouver schools.

There are a number of schools within the VSB that currently have **onsite composters** that process some fruit and vegetable scraps. The VSB's school garden policy, passed in February of 2010, outlines a process to support schools interested in installing small school composting systems and gives design specifications for a rodent resistant compost bin with a volume of ~1 meter cubed. The school board has also installed 3 Earth Tub in-vessel composters at Grandview, David Thompson and Windermere schools. The Earth Tub (made by Green Mountain Technologies) was designed specifically to compost food wastes on-site and is reported by the manufacturer to process up to 150 pounds of food waste per day. The VSB is also investigating industrial composting systems that would allow schools to compost cooked foods such as meat, dairy and breads as well disposable serving ware on school grounds.

