Food waste digesters
the missing element

A truly sustainable approach to removing food waste from the landfill

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What if...

- Every single family residence could deal with all of their food waste in their own backyard
- It was completely safe, simple and natural
- It didn’t require any maintenance - turning or emptying
- It was cost effective
- It was easy
- It was eternal
If it really worked

- All of the food waste from single family residences would be diverted from the landfill (est 25-33%)
- There would be no need for curbside pickup
  - And no cost for equipment, hauling, maintenance
  - And zero carbon imprint
- The need for large centralized facilities would be reduced (or eliminated)
- The capital cost savings would be significant
- The operating cost savings would be ongoing and growing
- The environmental benefit would be eternal
Food waste digesters work

- Home-based food waste digestion is independently tested and proven effective
- Food waste digesters (Green Cones) have been in operation for over 25 years
- Regional and Municipal authorities in the UK, Canada the US and Europe have adopted home based FWD as a growing part or primary strategy for dealing with food waste
Safely and efficiently handles all of the food waste of a family of four to five

Is a zero greenhouse gas, zero operational cost solution for single family dwellings

Will pay for itself in two years or less
Effectively deals with all types of residential food waste – animal and vegetable

Breaks over 90% of the materials down into nutrient rich water

Requires no treatment or turning and minimal emptying

The Green Cone – www.greencone.ca
CAPITAL REGIONAL DISTRICT FOOD WASTE DIGESTER PILOT PROJECT
How The Green Cone Works

- Sunlight
  Provides energy source for the digestion process.

- Removable Lid
  For easy access to digestion chamber.

- Double-walled solar cone
  Creates a heat trap of circulating air to encourage bacteria growth.

- Soil
  Filters out smells and prevents access by flies.

- Natural Micro-organisms and Worms
  Migrate freely in and out of the basket and break down the waste.

- Nutrient Rich Water
  Enters surrounding ground.

- Digestion Chamber
  Aerobic conditions to reduce methane production.

Over 90% of the waste material in your Green Cone will be absorbed as water by the soil.
The Green Cone will accept:

- Meat, fish and bones
- Cooked food leftovers
- Raw fruit and veggie scraps
- Cooked fruit and veggies scraps
- Coffee grounds and teabags
- Pasta and bread
- Dairy products
- Pet waste
- Yard and garden waste (in small amounts)
Installation of Green Cone

- Dug 2 feet into well-draining soil in full sun
- Ensure will not impede water table
- May be reinforced with ¼ inch chicken wire for enhanced rodent resistance
Reinforcing with Wire Mesh

- 2 ft. x 6 ft. piece of 1/4 inch, 23 to 18 gauge hard ware cloth and a small roll of thin wire found at hardware or lumber stores
Alternative Installation

Raised Bed

Container
Green Cones in Bear Country

- Very few household composters are truly bear-proof
- Important to establish a proper mould environment inside the green cone first before adding meats and dairy. The addition of cayenne pepper has proved to be a successful deterrent
- The decomposition process when fully active covers the waste in a mould blanket that is unappealing to animals
Rats, Racoons and other Pests

- Establish the environment inside the green cone before adding large amounts of animal attractants using accelerator powder (effective microorganisms)

- Ring the green cone rim with boulders that will fall on animals when they try to burrow under them

- Protect the plastic basket with ¼ inch wire mesh before burying it can make it impenetrable.
The Pilot Project

**Objective:** Assess the feasibility of the Green Cone as a waste management option for rural communities without curbside pick-up services

**Participants:**
- Residents on Pender, Saturna and Salt Spring Island
- Purchasers of the Green Cone from the GVCEC
- Members of the Solid Waste Advisory Committee (SWAC)
Rural Results

- Pender Island
- Saturna Island
- Salt Spring Island
Materials composted in the Green Cone food waste digester
Green Cone Ratings

Percentage of CRD residents who would recommend the Green Cone
Waste Reduction Potential

Household waste was reduced by 20-50%
Conclusions

- 97% of respondents were satisfied with the green cone and would recommend it to others.
- Most participants found the installation and use of the Green Cone to be fairly easy and experienced little to no problems.
- Participants reported a 20-50% household waste reduction.
The Green Johanna

- Effectively deals with all types of residential food waste – animal and vegetable
- Is a *hot composter* that produces excellent compost
- Works effectively year ‘round down to -40° C
- Safely and efficiently handles all of the food waste of a family of ten

www.greencone.ca/greenjo.html
The Green Johanna

- Will pay for itself in four years or less
- Is a zero greenhouse gas, zero operational cost solution for single family dwellings
- German engineered and produced
- The largest selling composter in Sweden (approx 1 million in operation)
- Currently operating in Thompson, MB, and Northern Ontario
## Resident Usage

<table>
<thead>
<tr>
<th>Food Waste Digester</th>
<th>Curbside Organics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste separated in the kitchen into kitchen caddy</td>
<td>Waste separated in the kitchen into kitchen caddy w/bag</td>
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<tr>
<td>Full caddy dumped into FWD</td>
<td>Caddy/bag dumped into container daily</td>
</tr>
<tr>
<td><strong>Green Jo – turning and layering as nec</strong></td>
<td><strong>Container moved to curbside weekly</strong></td>
</tr>
<tr>
<td><strong>Green Jo – Harvest compost</strong></td>
<td><strong>Container brought in, cleaned</strong></td>
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</tbody>
</table>
## Operational Comparison

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<tr>
<td>Initial Distribution of FWDs and support</td>
<td>Weekly residential pick up of separated food waste</td>
</tr>
<tr>
<td></td>
<td>Central process of organics</td>
</tr>
<tr>
<td></td>
<td>Marketing of finished materials</td>
</tr>
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<td>Transport to destination</td>
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If every house and townhouse in Grande Prairie had a Food Waste Digester

- 750 tonnes of waste diverted from the landfill annually\(^1\)
- Cost savings of $25,000 a year – in tipping fees alone\(^2\)
- Annual reduction of 900 tonnes of CO\(_2\) per year into the atmosphere\(^3\)
FWD – The business case

If every house in Alberta had a FWD

- 750,000 tonnes of waste diverted from the landfill annually
- Cost savings of $48 million a year – in tipping fees alone
- Annual reduction of 360,000 tonnes of CO2 per year into the atmosphere
FWD and DSI in Western Canada

- Distribution through direct ship from manufacture point
- Bulk sales to provincial, regional and municipal governments
- Partnership sales with not for profits through Community Partner Program

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