

Vashon Organics Community Meeting



King County

Department of
Natural Resources and Parks
Solid Waste Division



Tonight's Speakers



Christie True

Director, King County Department of Natural Resources & Parks



Morgan John

Vashon Organics Project Manager, King County Solid Waste



Nancy O'Connor

Zero Waste Vashon President



Kerwin Pyle

Project Manager, Recycling and Transfer Stations



Tim Raibley

Vashon Organics Study Project Manager, HDR

Zoom Webinar Highlights

Video and audio is only enabled for presenters
Questions can be submitted with the Q&A button



Please keep questions concise

Similar questions may be
grouped together



New solar array at the Vashon transfer station



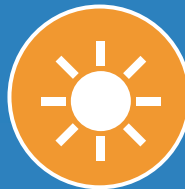
Managing Organics

Looking at options for meeting Vashon's compost needs with its own organic waste



Hearing from Residents

Discussing the results of a recent survey about interest on-island organics programs



Advancements Underway

New solar array has transformed Vashon station into a NETZERO Energy facility

INSTALLING SOLAR ARRAYS TO POWER RECYCLING CENTER ON VASHON



Meeting Agenda

01

Welcome

Christie True, DNRP Director

02

Zero Waste Vashon

Nancy O'Connor

03

Organics Management on Vashon

Kerwin Pyle

04

Organics Processing Feasibility Study Findings

Tim Raibley

05

Community Survey Results & Next Steps

Morgan John

06

Q & A



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Waste
Prevention

Resource
Recovery

Waste
Disposal



An all-volunteer group of Island neighbors working to make
Vashon a waste-to-resource community since 2014

Why waste-to-resource?

- Reduce extraction of natural resources
- Reduce carbon emissions from processing and shipping
- Reduce toxins and GHG in the environment from landfilling

Yard and food waste make up **30%**
of our Island waste stream. It can easily
be turned into a valuable product for
use right here on our island.

The circular economy in action!

Zero Waste Vashon has been working with the Solid Waste Division since 2019 to establish a community compost facility on the Island

Activities we have participated in:

- Scoping meetings
- Consultant selection
- Development of accurate feedstock numbers
- Reached out to potential Island partners
- Investigated facility siting needs
- Survey consultant selection
- Drafting survey content
- Informing community about ongoing developments via newspaper, web, e-newsletter & social media
- Promotion of survey through signboards, newspaper articles, email newsletter and social media





Moving Forward

Believe this project should move forward

It supports King County's Zero Waste and greenhouse gas reduction goals

Benefits the environment and our community

We look forward to continuing work with the County

Community education

Encourage participation

Create quality compost for our Island gardens and farms!



Vashon Island Organics Collection Program

A partnership with the island community

A very popular service at the station...

- Year over year increases in collection since 2016
- Tremendous support from community
- Capacity is appropriate for public customers
- Supported by Yard Waste fee which is lower than garbage fee
- Customers support expansion of this service

Averages show consistent feedstock throughout the year.



Organics on Vashon continue to *grow*...







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Recycling at Transfer Stations
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Vashon Island Compost Feasibility Study Overview

King County Washington



In conjunction with Matt Cotton and O2 Compost

June 2022

Overview

- 01 Background
- 02 Feedstock sources
- 03 Technologies considered
- 04 Site Considerations
- 05 Environmental
- 06 Cost Analysis
- 07 Summary

Background

Vashon Island Solid Waste Management

- MSW currently ferried off island, then trucked to Cedar Hills Landfill (at cost of ~\$150/ton)
- Yard waste is currently ferried off island, then trucked to Cedar Grove Compost (at cost of ~\$215/ton)

Zero Waste Vashon (Z WV) participation and insights incorporated

- Feedstock assessment
- Industrial waste generators engagement

Feedstock Sources

- Vashon Transfer Station Yard and Food Waste data
- Yard Waste from Other Sources
- Food waste from Industrial, Commercial, and Institutional generators

Estimates of Food Waste Available on Vashon

- Tonnage data with projected growth rate
- NAISC food generation database using SIC codes and staffing
- Specific sources identified by ZWV (breweries, grocery stores, Food Bank, coffee shops)

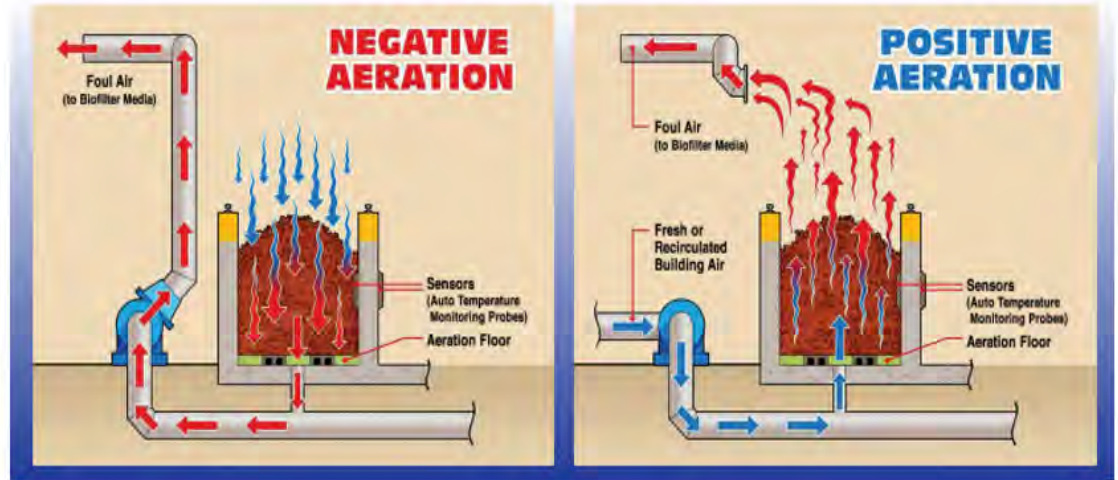
Food Waste Source	Low Range (tpy)	High Range (tpy)
Food Waste available on Vashon	370	1,860

Summary of Quantities of Feedstocks

Material	Low Range Phase 1 Quantity (tpy)	High Range Phase 2 Quantity (tpy)
Yard Waste	3,700	3,700
Food waste from residents	370	1,134
Yard waste diverted at VRTS		189
Food waste from Industrial, Commercial, Institutional		536
Additional woody waste needed (bulking material)		1,000
Total	4,070	6,559

Technologies considered

- Turned Windrow
- Aerated static pile positive pressure
- Aerated static pile negative pressure
- Aerated static pile reversing pressure
- ASP organic cover
- ASP fabric cover



Technology Preferred

Covered Aerated Static Pile or CASP

- Lower Range (Initial, phase 1) ASP, Organic Cover, Positive pressure
- Upper Range (Ultimate, phase 2) ASP, Organic Cover, Reversing pressure

Technology Example - Pipe on grade



ASP system with pipe-on-grade positive aeration. Photo courtesy of O2 Compost Technologies

Technology Example - In-floor aeration using Bunkers



Aerated static pile in-floor positive system used in Sultan, Washington. Photo courtesy of O2Compost.

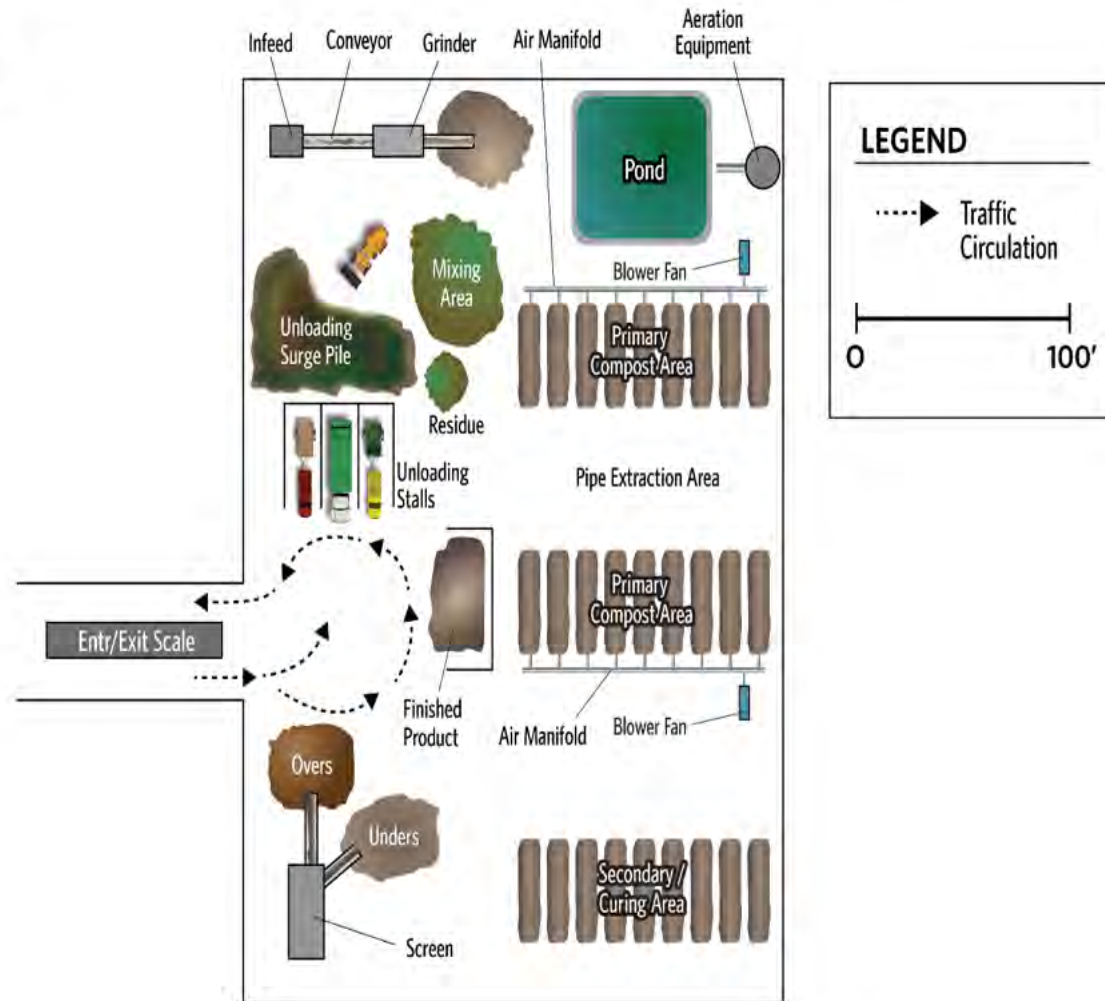
CASP Reference Facilities

Facility Name	Technology Provider	Aeration Method	Annual Throughput (tons per year)	Link to website/pictures
Sky River Equestrian Center, Sultan, WA	O2Compost	Positive	9600	https://www.o2compost.com/past-projects.aspx?item=248&c=1542
Woodland Park Zoo, Seattle, WA	ECS	Positive	1,000	https://www.compostsystems.com/product-page/woodland-park-zoo-seattle-wa
City of Lynden, WA	ECS	Reversing with process air capture and scrubbing while in negative aeration direction	8,000	https://www.compostsystems.com/product-page/city-of-lynden-lynden-wa
Port Angeles, WA	ECS	Reversing with process air capture and scrubbing while in negative aeration direction	2,000	https://www.compostsystems.com/product-page/city-of-port-angeles-port-angeles-wa
Olympic Organics	GMT	Positive aeration	22,000	Olympic Organics Case Study
Sun Peaks	GMT containerized compost system	Positive	2,100	Sun Peaks Case Study
Heyday Farms	GMT's Site Built Earth Flow In-Vessel	Positive	438	Heyday Farms Case Study

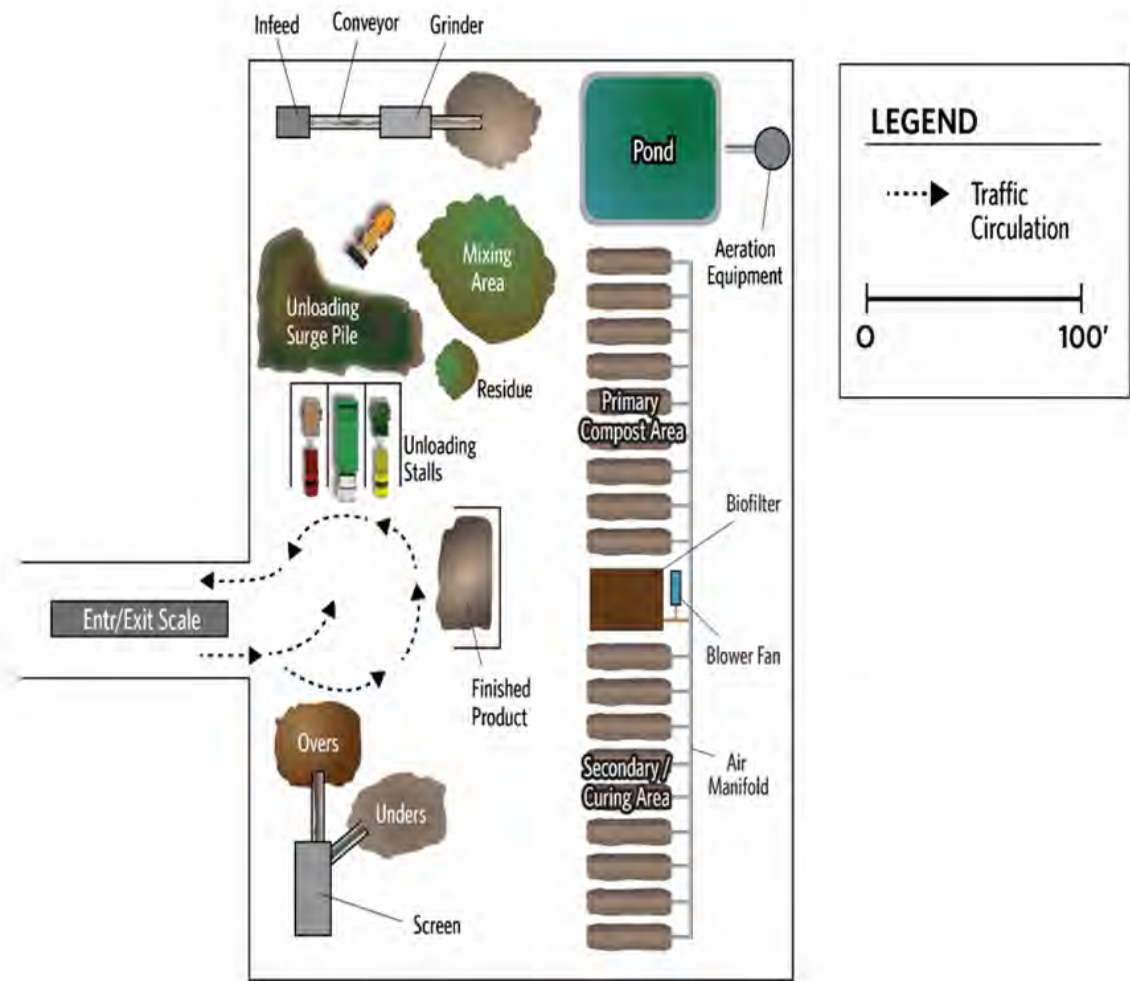
Site Requirements

Feedstock Type/Source	Low	High
	Initial Phase (SF)	Ultimate Phase (SF)
Receiving and Pre-Processing Areas	6,000 to 8,000	12,000 to 14,000
Composting, Curing, and Biofiltration Areas	33,000 to 35,000	15,000 to 17,000
Finished Product Screening and Loadout Areas	14,000 to 16,000	16,000 to 18,000
Other Support Areas	36,000 to 38,000	34,000 to 36,000
TOTAL AREA	89,000 to 97,000	77,000 to 85,000
	2 to 2.2 Acres	1.8 to 2 Acres

Low Range Phase 1



High Range Phase 2



Relative size compared to Vashon Landfill

Vashon Recycling and Transfer Station

Ruler

Line

Path

Polygon

Circle

3D path

3D polygon

Measure the distance or area of a geometric shape on the ground

Perimeter:

1,390.48

Feet

Area:

2.05

Acres



Mouse Navigation

Save

Clear

Note: Two Acre image is shown for scale only. Not for facility siting.

Westside Hwy SW

595 ft

Greenhouse Gas Analysis using EPA WARM

- Analysis was performed using the U.S. EPA's Waste Reduction Model (WARM)
- Transportation emissions are minimal
- Status quo (off-island landfilling and composting) is shown favorable due to the carbon sequestration credits built into WARM
- A Vashon Compost facility would be superior to status quo if carbon sequestration credits from landfilling are not considered.

Greenhouse Gas Comparison

Scenario	Truck Hauling GHG Emissions	Processing GHG Emissions	Total Project GHG Emissions	GHG Emissions per Ton Feedstock	Estimated Processing GHG Emissions - Without Carbon Sequestration	Estimated GHG Emissions per Ton Managed - Without Carbon Sequestration
Status Quo	39	-1,200	-1,239	-0.18	1,511	0.23
Proposed Composting (at Ultimate Phase)	0	-476	-476	-0.07	-476	-0.07

Note: The emission values represent net emissions, accounting for both direct and indirect emissions and credits associated with a given solid waste management option. Negative emissions indicate that a management scenario represents a net CO₂ sink. The favorable result for landfilling organics in the status quo is due to the carbon sequestration credits built into WARM; without carbon sequestration credits, the current waste system generates GHG emissions whereas the proposed composting facility would reduce GHG emissions

Economic Analysis

Three scenarios evaluated for economics:

- Low Range Pipe on Grade
- High Range Pipe on Grade
- High Range Reversing Bunker

Economic Analysis

Cost Component	POG Initial	POG Ultimate	ASP Ultimate
Labor Cost	\$241,075	\$241,075	\$216,834
Additional O&M Cost (Equipment, Utilities, 10% Contingency)	\$257,930	\$257,930	\$328,220
Residuals Haul/Disposal	\$10,175	\$16,400	\$16,400
Total Revenues	\$(81,400)	\$(131,000)	\$(131,000)
Annualized Capital Cost (4%, 20 Years)	\$150,000	\$174,000	\$202,000
Total Annual Cost	\$577,780	\$558,405	\$632,454
Total Cost per Ton (\$/ton)	\$142	\$85	\$97

Notes: 1. The estimated 2021 cost to haul and process off-island is approximately \$150 per ton for MSW going to Cedar Hills Regional Landfill and \$215 per ton for green waste going to Cedar Grove Composting Facility.

Summary

A Vashon Island Food and Yard/Green waste Compost site:

- Has a lower estimated cost than the current waste and compost costs off island. (excluding the cost of land)
- Requires approximately 2 acres of land
- Is environmentally superior to landfilling if carbon sequestration associated from landfilling is not included (based on the US EPA WARM).
- No site has been selected at this time.

Vashon Organics Community Survey

Respondents: 1,106 residents & businesses

96% support the idea of on-island composting facility

34% support curbside organics collection option,
dependent on cost

Majority already separate yard & food waste



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Next steps for Vashon organics



Monitor & respond to new state organics law

- House Bill 1799 signed into law March 25th
- Requires organics collection options by 2027

Pursue curbside collection options

- Implementation could begin prior to 2027 requirement

Continue with facility siting research

Panelists will do their best to address all questions submitted during the meeting.

If time does not allow us to answer all questions, answers will be prepared and posted on the King County Vashon Organics Study webpage.



Thank you for joining us!

Learn more about the compost study

kingcounty.gov/vashon-compost-study



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