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Vegetable washwater treatment opportunities and outcomes

Eric Rozema



Overview

- Project Team
- Background
- HMGA Water Project
 - Objectives
 - Current work
- Water treatment
- How to get involved



Project Team

- Jody Mott – HMGA – Environment Canada link
- Charles Lalonde – Project Manager
- Greg Riddell – Technology Specialist
- Bridget Visser – Communications
- Mike Saunders – Water Sampling Technician
- Eric Rozema – Data Analyst
- Steering Committee
 - AAFC & OMAFRA staff
 - Jamie Reaume – Project Chair



Background

- Vegetable washing and processing produces large volumes of wastewater
- Untreated discharges are damaging
- Lake Simcoe Protection Act
- MOECC discharge regulations
- Lake Simcoe and Southern Georgian Bay Clean up Fund (LSGBCUF)



The Problem

- Very few technologies specifically designed for on-farm use
- Each situation is different
- Muck soil in water causes unique problems
- High costs



HMGA Water Project

- Characterize the washwater
- Encourage tech providers to think about agriculture
- Multiple solutions
- We do it so you don't have to
- Share all our findings



Water Treatment

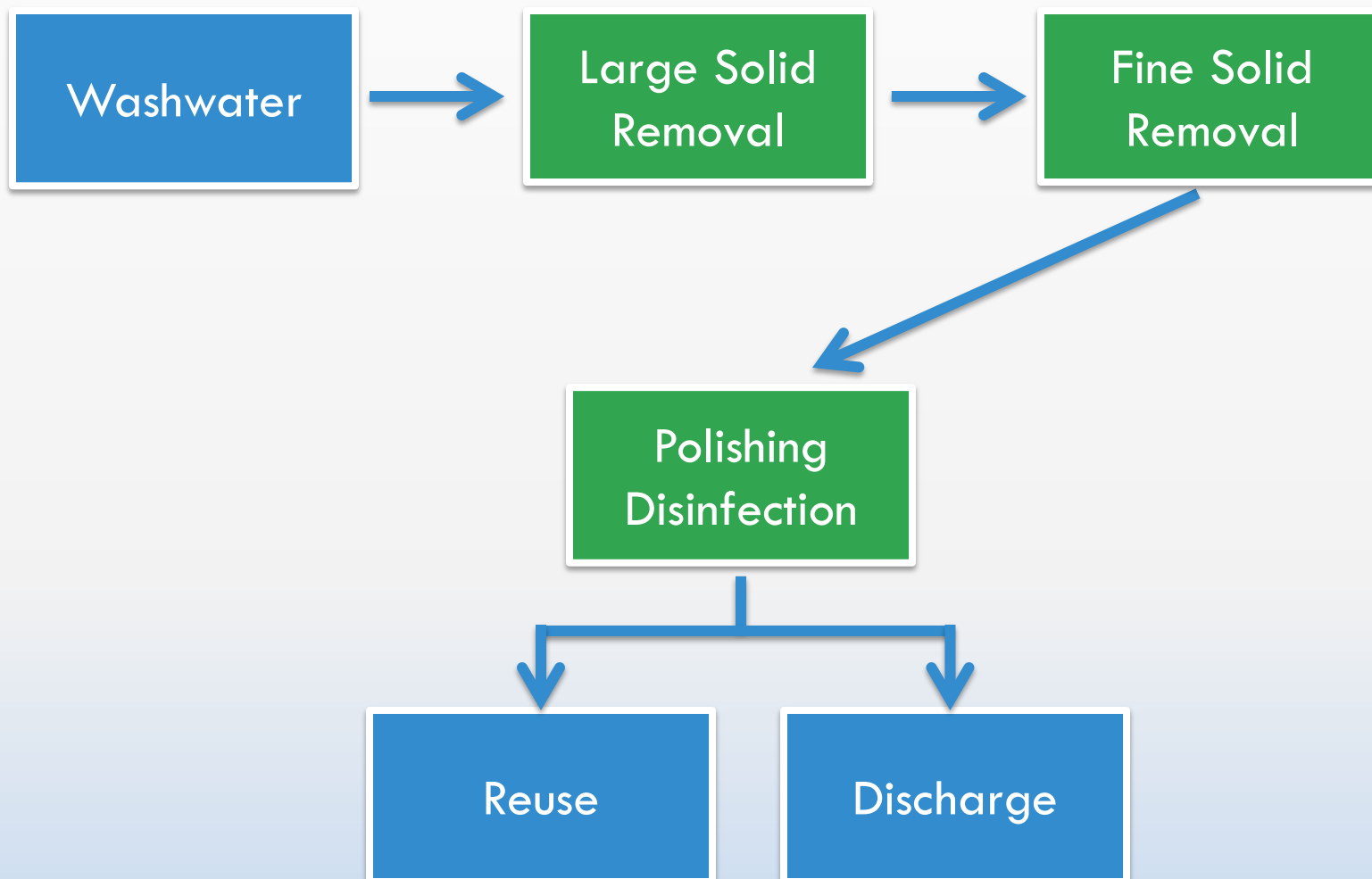
- Clearly identify the problem
 - What contaminants are present?
 - Concentrations?
 - Volumes?
 - Treatment goals

Things to consider

Capitol cost	Operational requirements and ease of use
Operating cost	Flows (min/max; batch/continuous)
Targeted contaminants (solids, nutrients, etc.)	Seasonality
Primary, secondary, or polishing	Indoor/outdoor
Discharge or reuse	Site requirements (electricity, plumbing, etc.)
Pretreatment requirements	Waste byproducts
Footprint	Proven technology? Supported by research?



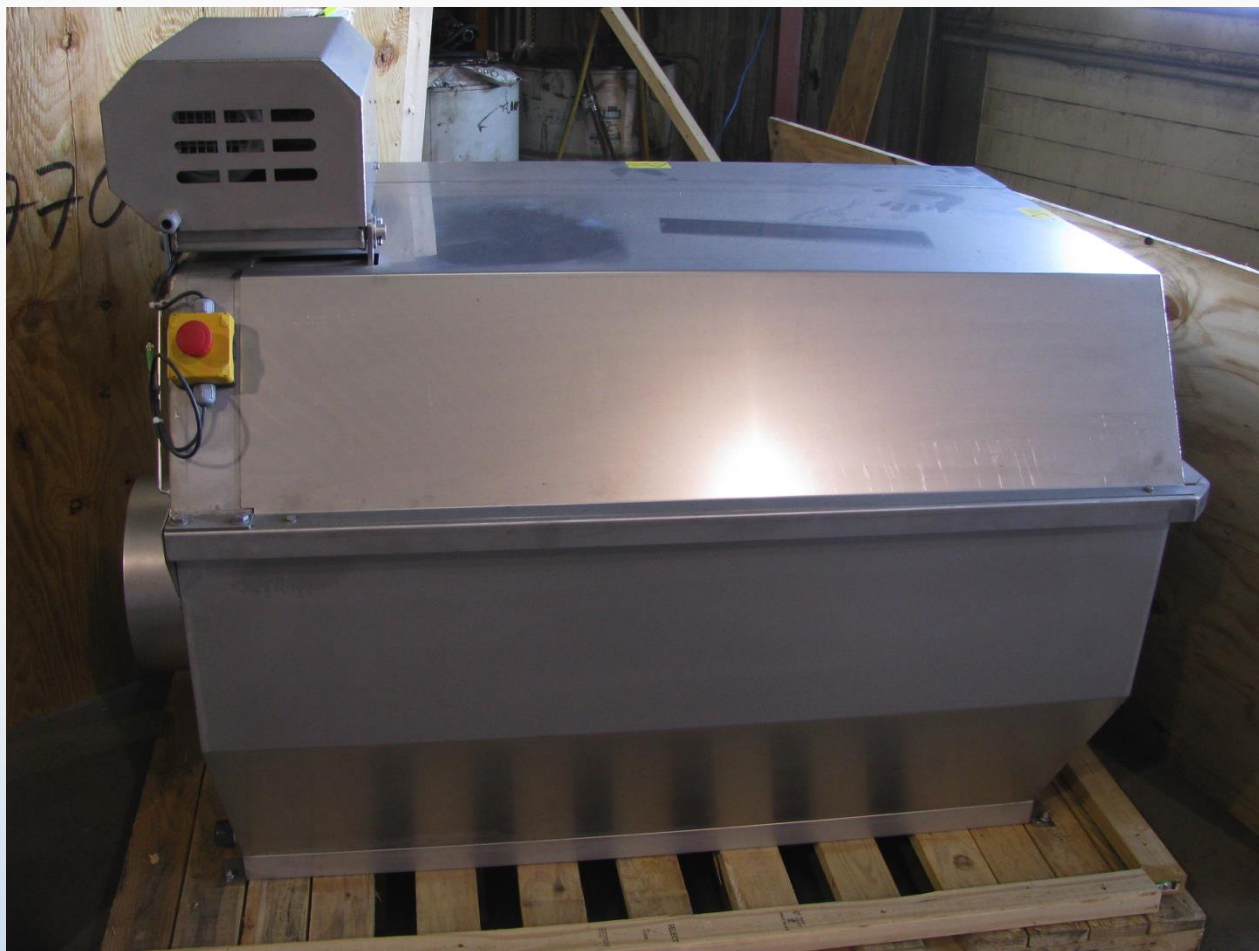
Water Treatment





Large Solids Removal

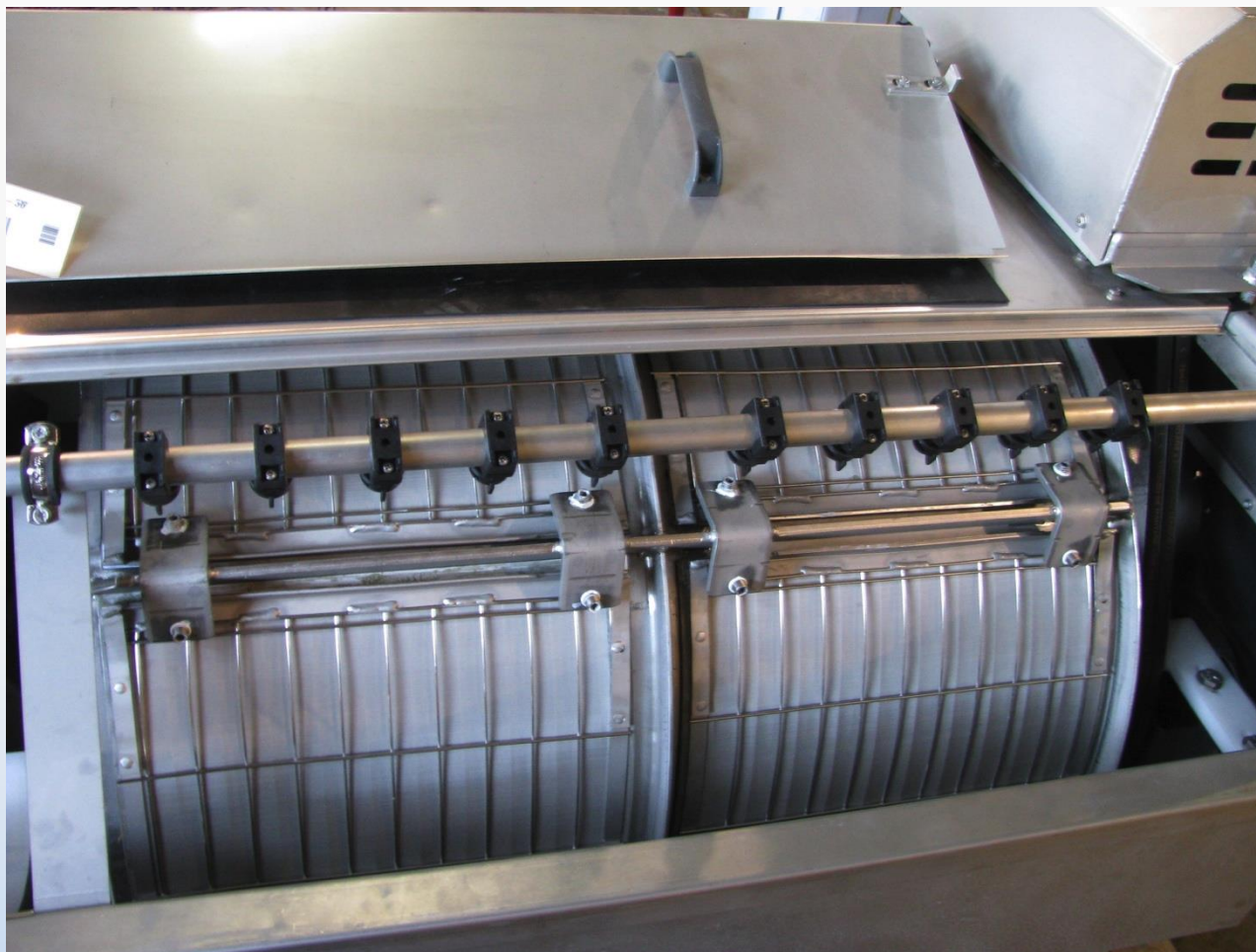
Drum filter





Large Solids Removal

Drum filter





Large Solids Removal

Parabolic Screen Filter





Large Solids Removal

Hydrocyclone





Large Solids Removal

Settling Tanks and aeration





Fine Solids Removal

- Coagulation and flocculation
- Filter bags – Geotubes
- Dissolved air flotation (DAF)





Other Techs

- Woodchip biofilters
- Vegetative filter strips
- Constructed wetlands





Polishing and Disinfection

- Membrane filtration
 - Ultrafiltration
- Reverse Osmosis (RO)
- UV, ozone, chlorination



Summary

- Washwater treatment can be complicated
- A lot of options to consider
- No perfect solution
 - Multiple components needed
- Let us help



Get involved

www.HMGAwater.ca

info@HMGAwater.ca

Visit our booth

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