

# Ocean Plastic Processing Innovation for the Pacific Northwest

Ocean Legacy Foundation

Waste Management Association of BC

February 23, 2023

















# Who we are

Canadian non-profit organization and social enterprise

- Develops and implements worldwide plastic pollution emergency response programs to end plastic pollution
- 4 pillar approach combines Education,
   Policy, Infrastructure and Cleanup (EPIC)
- Targeting ecologically sensitive, remote, complex to semi-urban terrain in
  - Rocky & sandy shorelines
  - Floodplain & flood emergencies
  - Mangrove & tropical environments
  - Temperate forests
  - Desert ecosystems

## **EPIC** Plastic Pollution Emergency Response



### **E**ducation & Research



Policy & Advocacy



Infrastructure Development



Cleanup & Restoration



# **Education & Policy**



- EPIC Academy in partnership with TELUS®
  - · Free e-learning platform
  - 15-hour curriculum in 10 parts
- Topics:
  - Ocean and land-based plastic pollution
  - Circular economy
  - Environmental impact of plastic pollution
- Knowledge → Action
  - How to advocate specific plastic pollution policies in your community
  - How to speak with media and government
  - How to start individual and community based behavioural changes
  - How to begin your own recycling programs



- Suitable for ages 14+
- Includes 10 online lessons with engaging video content and teacher guides
- · Available in French, English and Spanish with more languages coming
- Growing into a multi-million user base over the coming year







#### **Plastic Pollution Emergency Response Facility**

- Largest industrially-scaled hub for the Pacific Northwest
  - Processes materials collected from ocean, shoreline and marine industrial cleanup
  - Shares resources and build cross-sectoral relationships
  - Merges principles of the blue and circular economy to provide:
    - 400+ seasonal skilled employment positions
    - Lower carbon footprint
    - Recirculation of valuable resources back into a closed looped system
- In-house processing
  - Polyethylene (PE)
  - Polypropylene (PP)
  - Nylon (PA) *Coming 2023*





### INFRASTRUCTURE DEVELOPMENT II

- Diverted over 680,000 kg of plastic waste from landfill since July 2020
- First and only facility in North America dedicated to managing plastics from shoreline, ocean and industrial cleanup
  - Up to 11 different streams of items accepted
- Small-scale facility in Panama now operational
- Working to make new products
  - Outdoor recreation
  - Automotive
  - Boat building
  - Crab and oyster instrumentation
  - Office furniture
  - Urban infrastructure

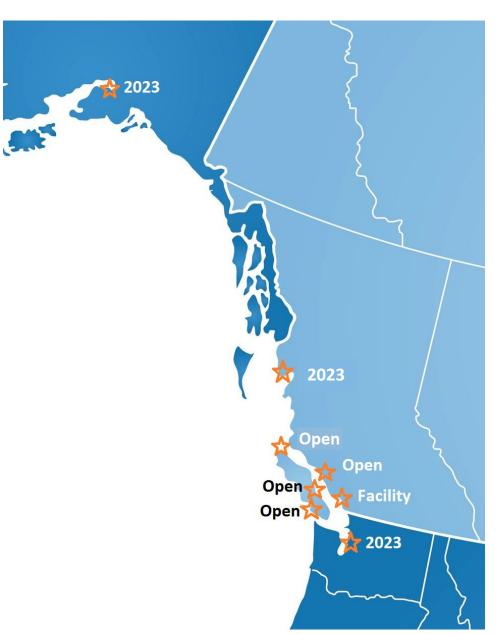




## Depot Program and Material Collection

### Preventing plastic pollution by collecting materials in the Pacific Northwest

- 4 BC depots operating in partnership with the Department of Fisheries & Oceans Canada
  - qathet (Powell River)
     Let's Talk Trash and the qathet Regional District
  - Ucluelet Surfrider Pacific Rim and the Alberni Clayoquot Regional District
  - Cumberland Vancouver Island Tourism Board and the Comox Valley Regional District
  - Port McNeil
     Fox Disposal and the Regional District of Mount Waddington
  - Port Edward Opening 2023
  - Sechelt Opening 2023
  - Maritime expansion Opening 2023-2024
- 2 in USA
  - Washington State, Alaska 2023





# Depot Program and Material Collection

- Materials consolidated and separated:
  - Ropes and netting (PP, HDPE, PA)
  - Expanded Polystyrene (EPS)
  - Billets and large items (PP, HDPE, PET, LDPE, EPS)
  - Hard Plastic, Floats, Traps and Baskets (HDPE, PP, LDPE)
  - Buoys (PP, HDPE, PA, PVC, ABS, PP)
  - Tires (rubber)
- Depots receive materials from
  - Non-profits and individuals:
    - Ocean cleanup and shoreline operations
  - Industry and Commercial
    - Legacy equipment from fishing and aquaculture industries
    - Clearing out storage yards of photodegrading material
    - Waste from cleanup operations
- Preventative waste measures







# Sorting Guide and Accepted Materials



#### **SORTING GUIDE**

### OCEAN PLASTIC DEPOT

This depot is one of the first of its kind in Canada created to collect and recycle select ocean plastics and marine debris materials from cleanup efforts as well as legacy equipment from the marine sector.

Thank you to all the volunteer cleaning efforts that are an integral part in solving this plastic pollution crisis.

#### **WE DO NOT ACCEPT**

- X Coloured Styrofoam
- X Dirty Styrofoam
- X PVC /ABS Tubing
- X Lighters, Tennis Balls
  X Containers or Bottles
- with liquid
- X Metal, Glass or Fiberglass
- X Candy/Snack Wrappers



DO NOT LEAVE
LOOSE ITEMS! All
items must be
placed in a provided storage bag
unless it is too big
to fit into bag.

No standing water please, empty all water from all items if possible before placing them in a storage bag.

Do not leave your item in the wrong category or on the ground. Help us keep things organized!

If you do not see your item included in a category then we unfortunately are not yet able to recycle your item or your regional district has a local recycling option in place.









### Building An Industry Stewardship Program

- Marine equipment is not designed with circularity in mind
  - Working with manufacturers to redesign for circularity
- Consultation process with industry and businesses to:
  - Collectively capture, transport and process material
  - Build management framework
  - Financial modelling and framework







### Track & Trace

- Developing inventory management system
  - Utilizing proprietary tracking software built on blockchain technology
  - Bags have QR codes and RFID technology to allow them to be scanned easily as they move along the chain of custody from point of collection to end product
  - Seeking certification through Zero Plastic Oceans for three grades of plastic using source types developed by OceanWorks:







- Resin types for pellets
  - PE
  - PP
  - Nylon (PA)







## Cleanup & Restoration

- 700+ km of shoreline cleaned to date
- +1 million kg debris removed during cleanup
- Operations in Mexico, Panama, Canada & USA
- Working to restore ecologically sensitive lands and waters
- Provides critical employment, training and skill building for indigenous and non-indigenous communities



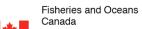
### Our Results Are EPIC

- Prioritize building relationships and meaningful employment
  - Collaboration with 12 different First Nations nationally and internationally
  - Co-created over 400+ seasonal positions
- Regularly collaborate with approximately 100+ non-profit community organizations, government, industry, businesses and citizen scientists
- Engaged with hundreds of thousands of people in direct-action cleanup, education, and recycling initiatives.



## It Takes a Global Community...





Pêches et Océans



Ministry of Environment and Climate Change Strategy















**TLOWER NICOLA** 

**INDIAN BAND** 

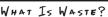




Mowachaht/Muchalaht

First Nation









Resynergi





















Diving

Hornby Island



























Easy, Awesome, Freedor











GRAYDON













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