



# Ontario First Nations Technical Services Corporation



**OFNTSC**  
Communications



**OFNTSC**  
Fire, Safety & Firefighting



**OFNTSC**  
CRTP: Water



**OFNTSC**  
CRTP: Water



**OFNTSC**  
Environment



**OFNTSC**  
Emergency Planning



**OFNTSC**  
Operations & Maintenance



**OFNTSC**  
Engineering



**OFNTSC**  
Housing



**OFNTSC**  
Infrastructure



**OFNTSC**  
CRTP: Fuel Systems Management



Ontario First Nations  
Technical Services  
Corporation



**OFNTSC**  
Environment

# Developing First Nations Waste Diversion Programs

Northern Ontario First Nations Environment Conference,  
Thunder Bay, Oct. 2, 2014

**Stephanie Allen, Environmental Scientist**  
**OFNTSC - Toronto Office**

# A bit about OFNTSC

## Staff includes:

- Engineers
- Environmental Scientists
- Infrastructure Specialists
- Housing Advisor
- Fire Safety Officer
- Operations & Maintenance Advisor
- Emergency Planning Team
- CRTP Fuel Trainer
- Communications Officer
- plus management, finance and administrative staff

- Established in 1995 by Ontario Chiefs in Assembly in response to devolution policy of federal gov't
- Provide technical advisory services to 134 First Nations and 16 Tribal Councils in Ontario
- Provide direct services to 22 unaffiliated First Nations
- Three offices: New Credit, Toronto & Thunder Bay

# OFNTSC – ENVIRONMENT



- Managed by Brian Staats, Operations Manager
- Two Environmental Scientists:
  - Stephanie Allen: Toronto office
    - Directly serves southern region First Nations & Tribal Councils
  - Deneen Brigham: Thunder Bay office
    - Directly serves northern region First Nations & Tribal Councils

# Types of Services



- **Advisory** — provision of information such as relevant regulations & policies; generic TOR; guidance material; AADNC funding
- **Technical** — scientific / technical project reviews; and project management support for UFN environment projects
- **Training** — dependent on client needs and available funding
- **Special Projects** — based on need, time, and funding availability

# Areas of Service



- Solid Waste Management & Diversion
- Environmental Assessment
- Water Quality & Source Water Protection
- Spills & Environmental Emergencies
- Contaminated Site Assessment & Remediation
- Community Sustainability & Planning
- Environmental Legislation & Regulations

# Presentation Overview

For each ton of paper you recycle, you save...

- 17 trees. 
- 240 litres of oil. 
- 160 litres of gas. 
- 4,210 KW hours of electricity. 
- 26,500 litres of water. 
- 3 cu. metres of landfill space. 

Don't Just Trash Your World – Recycle it.  
An environmentally friendly reminder from  
**Township of Langley**

- Introduction
- Determining Your Needs
  - Waste Composition & Auditing
- Diversion Program Options:
  - Blue Box Recyclables
  - Used Tires
  - Waste Electronics
  - Household Hazardous Waste
  - Scrap Metal
  - Used Oil
  - Other materials

# Waste Diversion Options for First Nations in Ontario

## Why Divert???



# Throw-Away Society



- Waste is what people throw away because they no longer need it or want it.
- As a society we are currently producing more waste than ever before.
- Landfilling is the main method of dealing with waste in Canada.

# Canada's Track Record

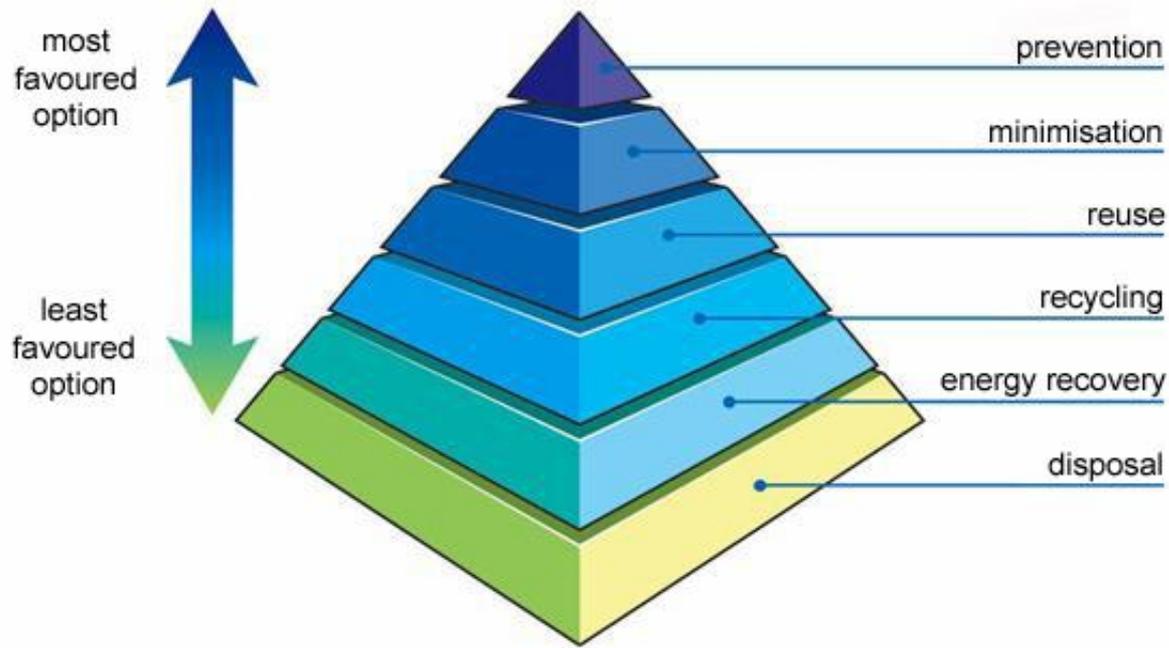
- Canada ranks in last place out of 17 countries and gets a “D” grade on the municipal waste generation indicator.
- Canada produces 791 kg per capita of municipal waste each year up from 510 kg/capita in 1980 and almost twice as much as the best performer, Japan.
- Canada data includes other sectors IC&I and construction & demolition waste
- Ontario rural municipalities approx. 790 kg/person/year
- **FNs: 496 kg/household/year Chippewas of Georgina Island; 594 kg/household/year M'Chigeeng FN**

# Issues Associated with Landfills

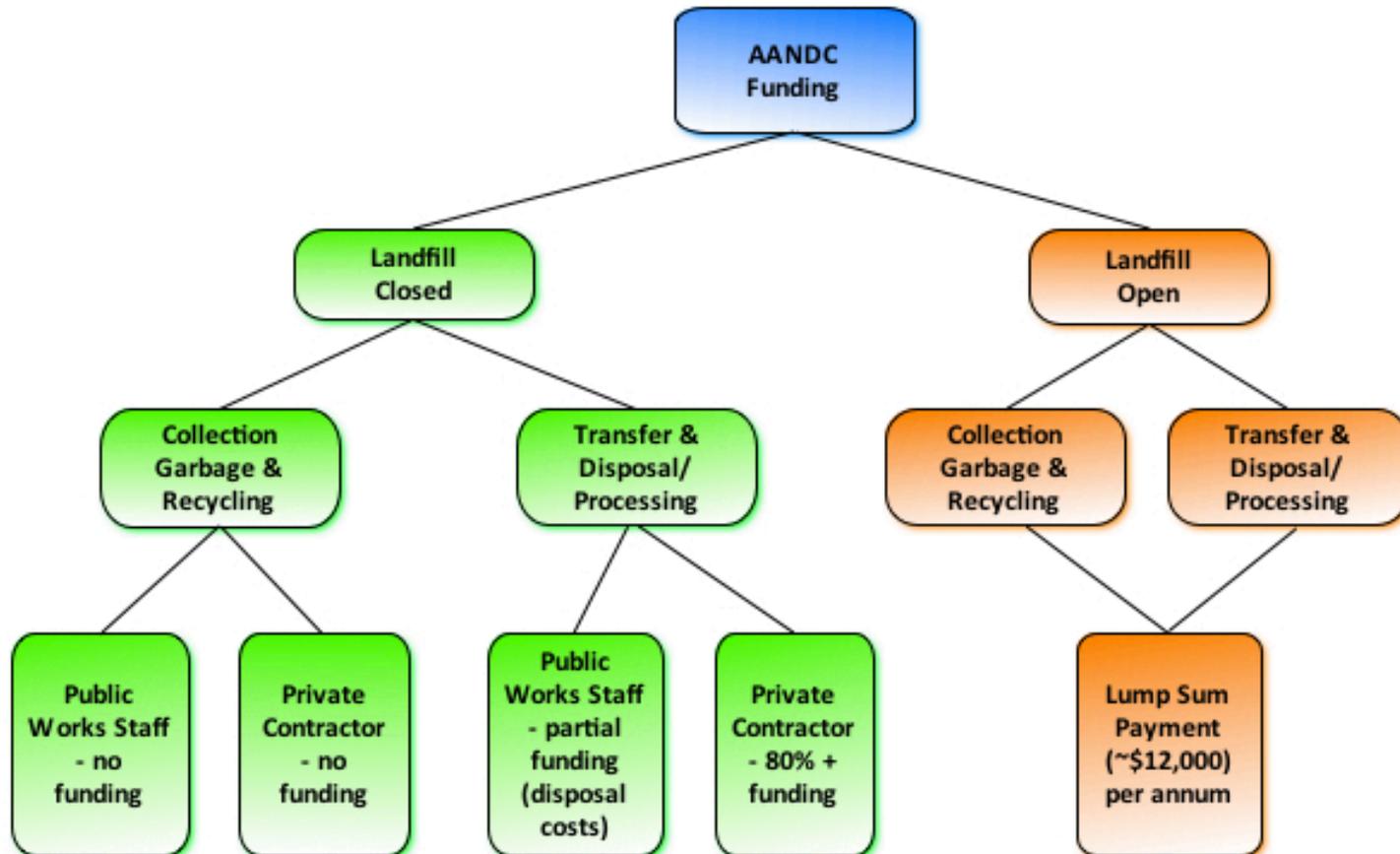


- Environmental impacts - surface and groundwater pollution, air and soil pollution, landfill gas (methane, a greenhouse gas)
- Land - land no longer suitable for other purposes, habitat destruction
- Public health impacts
- Sustainability issues - finite resources
- Waste is a resource with value

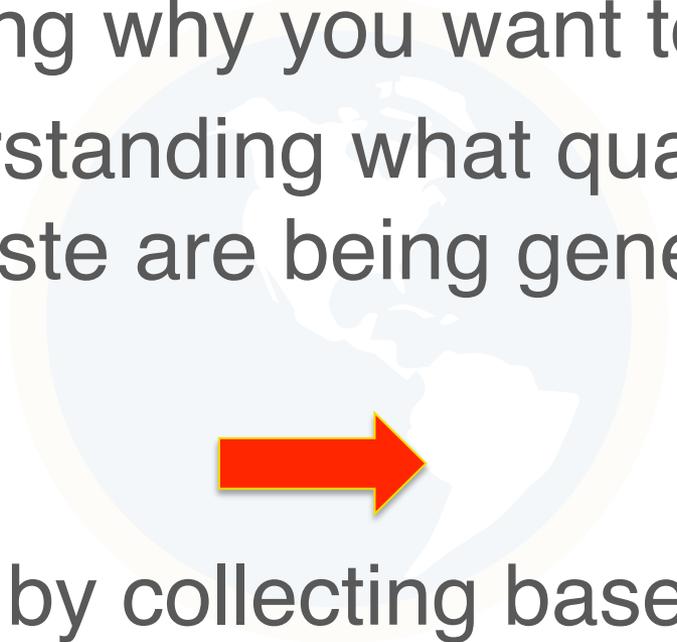
# Waste Management Hierarchy (The 5 Rs)



# AANDC FUNDING



# Where to Start?

- 1<sup>st</sup> is knowing why you want to divert
  - 2<sup>nd</sup> is understanding what quantities and types of waste are being generated in your community
- 
- You do this by collecting baseline data

# Waste Audits



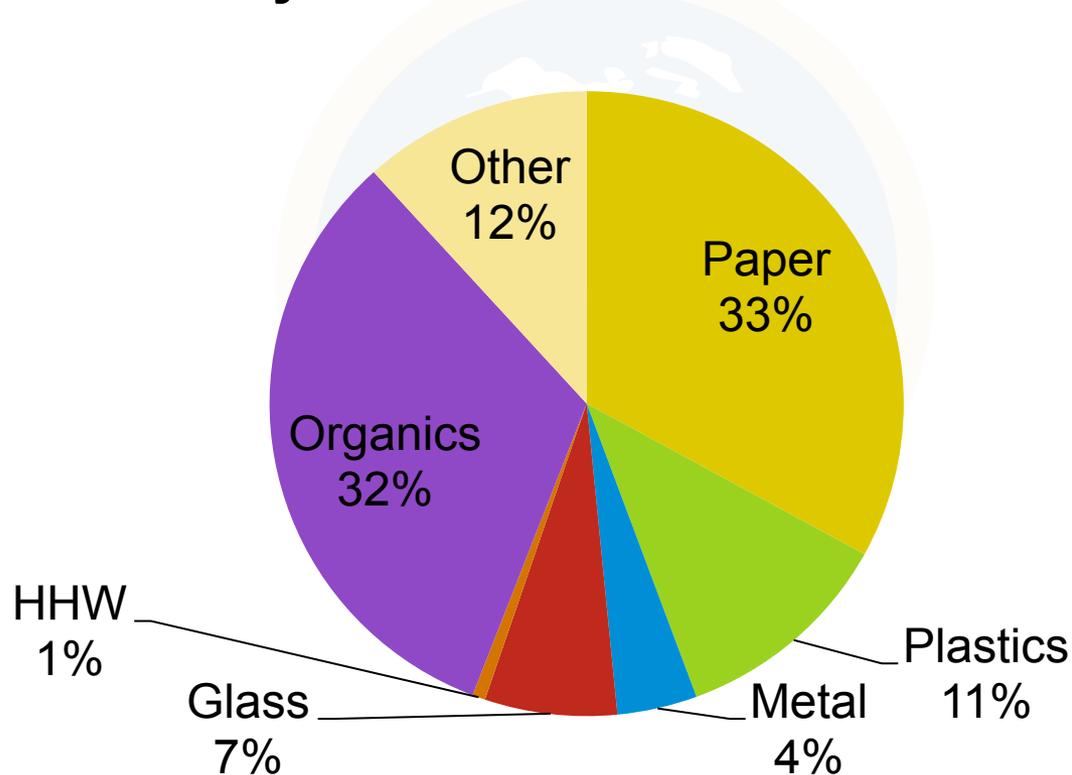
- A Waste Audit is a tool that allows you to better understand the waste generating habits of households and facilities
- Can help you to better design, set goals, and evaluate your waste diversion program
- Georgina Island, M'Chigeeng, Pikwakanagan, Curve Lake, and Aamjiwnaang First Nations have used this technique
- **OFNTSC: Transforming Your Community's Solid Waste Program Workshop & Guide**

# M'Chigeeng Waste Audit



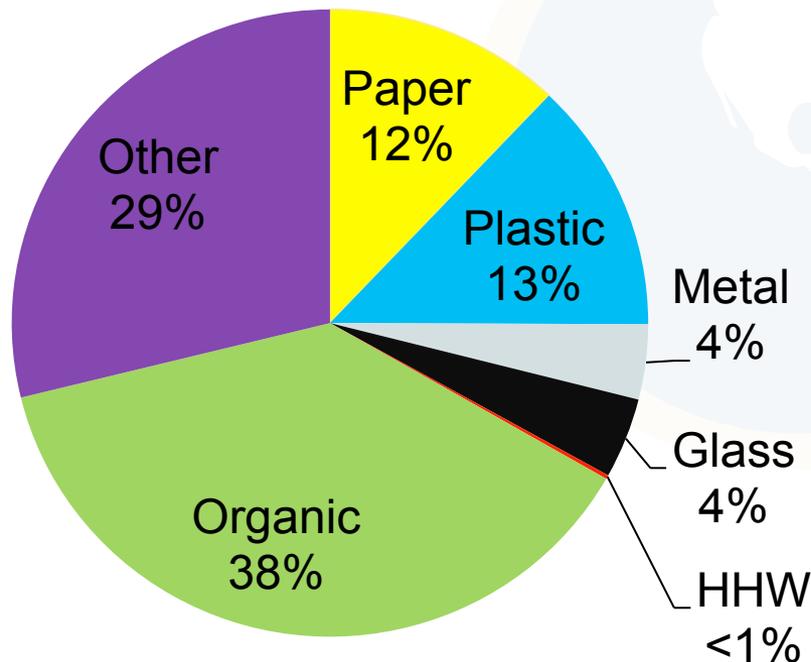
# Waste Composition: Ontario

## City of Kawartha Lakes 2006

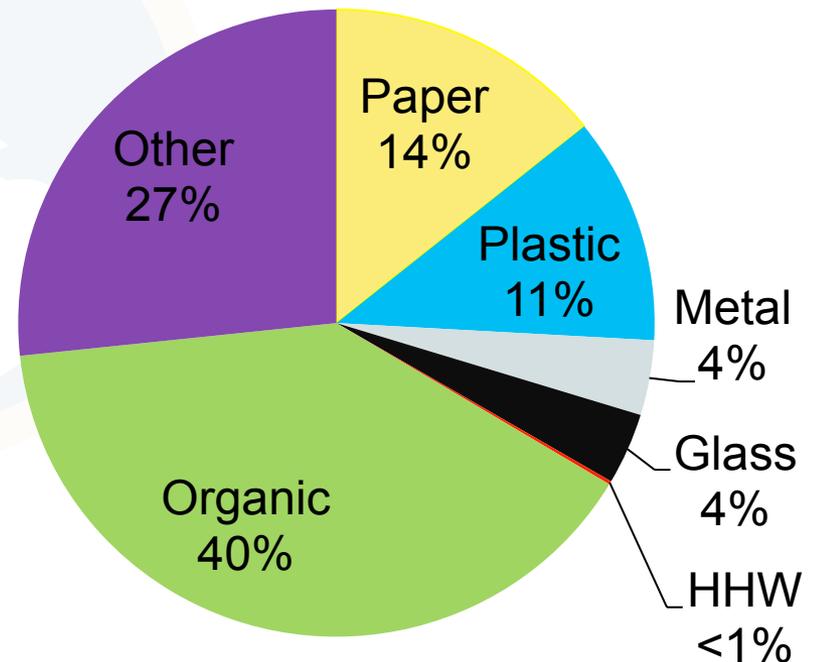


# Waste Composition: Ontario First Nations

## Georgina Island Waste Composition



## M'Chigeeng First Nation Waste Composition



# Waste Generation

- Chippewas of Georgina Island:
  - 496 kg/household/year
  - e.g.  $496 \times 100 \text{ hh} = 49,600 \text{ kg} = 49.6 \text{ tonnes}$
- M'Chigeeng FN
  - 594 kg/household/year
  - 162 kg = recyclables (27%)
  - 432 kg = garbage (73%)

# Diversion Options

- Blue Box recycling
- Electronics (WEEE)
- Used Tires
- Household hazardous waste
- Used oil
- Scrap metal
- Reusable goods
- Organics/Food waste
- Other



Algonquins of Pikwàkanagàn First Nation

**Some things are just **GARBAGE****

**Salt, fertilizer, soil and wood pellet BAGS**



**Food Packaging**  
Hot dog and bacon wrappers,  
pasta bags, deli meat bags



**Outer Wrap**  
Plastic wrap around toilet  
paper, paper towel, pop cases



**Pet Food Bags**  
Cat and dog food bags  
pet treat bags



We would like to recycle everything, but some things are just garbage. *Recycling right* ensures material from our community can be properly sorted by staff at the Ottawa Valley Waste Recovery Centre.  
[www.algonquinsopikwakanagan.com](http://www.algonquinsopikwakanagan.com)

# Waste Diversion in Ontario

- Began in Ontario in 1980s as a result of provincial waste diversion requirements
- Ontario's **Waste Diversion Act, 2002** *purpose is to promote the reduction, reuse and recycling of waste and to provide for the implementation and operation of waste diversion programs.*
- WDA shifts responsibility from government to industry, including costs
- Currently 4 diversion programs: Blue Box, MHSW, WEEE, Used Tires



# Blue Box Recycling

- Recycling is a principal way to recover value from waste and reduce disposal requirements: recycling recovers the material itself to make into new products
- 32 First Nations in Ontario have recycling programs including 4 in the northwest: Rainy River, Fort William, Eagle Lake, Pic River



# Ontario Blue Box Program

- Printed papers & packaging
- Industry stewards contribute 50% of net municipal (and First Nations) Blue Box system cost
- Program commenced Feb. 1, 2004
- Surpassed 60% diversion goal
  - Diverted 63% of residential blue box materials in 2007
- Currently looking at revising program to meet new provincial diversion target
- Stewardship Ontario



# Blue Box Recyclable Materials

- Aluminum Cans & Foil
- Steel cans
- Plastics (#1,2,5)
- Fine paper and newsprint
- Boxboard (OBB)
- Cardboard (OCC)
- Glass
- Polycoat (aseptic and gable top) containers

Material	Ontario 2007 Diversion Rate (%)
Printed Paper	79%
Paper Packaging	58%
Plastics Packaging	22%
Steel Packaging	56%
Aluminum Packaging	39%
Glass Packaging	83%

# Blue Box Recycling Depot

- Two main options for communities:
  - Depot system
  - Curbside pick-up
- Depot system is less costly, requires households to drop-off
- Depot systems in Northern Ontario recovered less than 20 kg/cap/yr of recyclable material compared to curbside collection programs which recovered 65 kg/cap/yr
- Approx costs \$800-1000/mo.



# Blue Box Curbside Pick-Up

- Curbside pick-up recommended for communities with pop'n greater than 5,000
- Ontario Regulation 101/94 requires municipalities with over 5,000 people to implement and operate recycling programs that follow certain minimum standards.
- First Nations with curbside: Rama, Nawash, Wahnapiatae, M'Chigeeng, Pikwakanagan and Curve Lake



# Successful Implementation

- Determine appropriate tools and methods to increase correct participation
  - Survey to assess attitude and barriers to participation
  - Develop communication and public engagement plan
  - Develop appropriate communication materials
- Bag Limits, Clear Bags, PAYT
- Landfill Bans
- Enhancements
  - Signage, containers, site layout
- Monitor & Modify
  - Survey users
  - Waste audit to assess capture rates
  - Revise program



# Funding for Blue Box Programs

- If you are operating a blue box collection/recycling program:
  - **Register with WDO for annual Datacall**
  - Report prior year's tonnes, costs, revenues
  - Email [Datacall@wdo.ca](mailto:Datacall@wdo.ca) for user name & password
- **First Nations are eligible and currently 18 First Nations do receive annual operations funding**
- E.g. Mohawks of the Bay of Quinte 2008 program costs \$61k, they rec'd \$21k in WDO funding (approx. 34% of costs)
- Contact Waste Diversion Ontario [www.wdo.ca](http://www.wdo.ca)



- There are 12 First Nation communities with curbside recycling collection programs that also submit to the Datacall:

- Batchewana FN
- Wahnapiatae FN
- Atikameksheng Anishnawbek
- Akwesasne
- Algonquins Of Pikwakanagan
- Chippewas Of Georgina Island
- Chippewas Of Nawash
- Curve Lake FN
- Mississaugas Of The New Credit
- Oneida Nation Of The Thames
- Mohawks of The Bay of Quinte
- Chippewas of Rama



- There are 6 First Nation communities with depot recycling programs that also submit to the Datacall:

- Sagamok Anishnawbek Fn
- Serpent River Fns
- Wikwemikong Unceded Indian Reserve
- Chippewas Of Kettle & Stony Point Fns
- Six Nations
- Walpole Island Fn



# Estimating Program Costs

- Recall Waste Generation slide 27% recyclables, good program 13% actually diverted
- Of 12 FN communities with **curbside recycling collection** the weighted average annual cost is \$64/hhld (or \$620 per marketed tonne)
- Of 6 FN communities with **depot recycling collection** the weighted average annual cost is \$37/hhld (or \$943 per marketed tonne)

# Setting Realistic Goals

- Of 12 FN communities with **curbside recycling programs** the average diversion rate is 18% (range 39% - 5%)
- Of 6 FN communities with **depot recycling programs** the weighted average diversion rate is 9% (range 21% - 2%)
- Diversion rates (blue box and all programs combined):
  - Nipissing FN is diverting 10%, remaining 90% is landfilled
  - Sioux Lookout is diverting 33%, landfilling 67%
  - Best in the province is City of Guelph divert 68%, landfill 32%
  - Best FN is Mohawks of the Bay of Quinte 39% diverted, 61% landfilled
  - Overall Ontario diverts 47%, landfills 53%

# Blue Box Resources

- Ontario Recycler Workshops:  
[www.wdo.ca/cif/initiatives/orw.html](http://www.wdo.ca/cif/initiatives/orw.html)
- Continuous Improvement Fund  
[www.wdo.ca/cif/](http://www.wdo.ca/cif/)
- Municipal Waste Association – member events  
e.g. Spring Workshop, resources
- Training: Recycling Fundamentals  
[www.stewardshipontario.ca](http://www.stewardshipontario.ca)

# Issues to Consider

- Need to find a local processor aka “MRF” – they will charge you a processing fee
- Expensive: collection, transportation, processing, program costs
- Waste composition only approximately 25% of waste stream may be recyclable
- Issues of low participation
- Might want to focus on high value materials e.g. aluminum
- However, could get 80% funding from AANDC



# Waste Electronics & Electrical Equipment (WEEE)

- WEEE includes:
  - Household appliances
  - IT equipment
  - Telecom equipment
  - Audiovisual equipment
- WEEE contains toxic metals and other hazardous materials
- WEEE Program Options:
  - Depot Program
  - Reuse Donations
  - Return to Retailer



# Ontario Electronics Stewardship

## Ontario Electronics Stewardship:

- Picks up WEEE at no cost to collector
- Arranges for transportation & recycling
- Tracks material to final destination
- Confirms 3Rs management & diversion rate



# WEEE Options for FNs

- Ban the disposal of WEEE at your landfill and provide the following diversion options:
  1. If you are operating or would like to operate a WEEE collection program
    - Register with Ontario Electronic Stewardship to act as Collection Agent
      - Paid \$165/tonne
      - Pick up of collected WEEE at no charge
      - Each location subject to site visit
      - Collection standards
        - Data security requirements
        - **Must accept WEEE at no charge**
  2. Direct community members to Reuse/Refurbishment Organizations
  3. Direct community members to Return to Retailer options
  4. Advise community members of Regional Collection Events



For WEEE Depot contact: Pierre Prim [pprim@stewardedge.ca](mailto:pprim@stewardedge.ca)

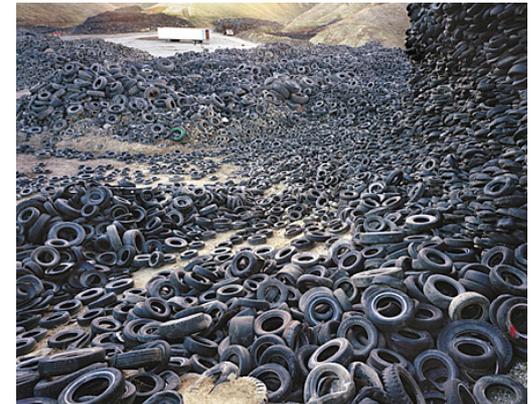
# WEEE Diversion in Ontario FNs

- Many FN communities have registered for electronics and/or tires including:
  - Wahnapiatae
  - Whitefish Lake
  - Atikameksheng Anishnawbek
  - Pikwakangan
  - Chippewas of Georgina Island
  - Mohawks of Bay of Quinte
  - Nipissing



# Ontario Used Tires Program

- Ontario program commenced Sept. 1, 2009
- Includes all motor vehicle tires
  - On-road & off-the-road (OTR)
  - Including passenger, industry & farm vehicles
- Clean up of tire stockpiles within 3 years
- Full EPR = no longer charge for individual to dispose of used tires
- Contact: Ontario Tires Stewardship



# Used Tires Options for FNs

- Interested First Nations can **register as collectors**
  - Register with OTS as collection agent
  - Paid \$0.88 per P/LT tire; \$3.05 per MT/large agricultural tire
  - Use OTS registered hauler (no charge to FN)
  - Must accept tires from community members at no charge and store on-site until minimum 50 tires

\*\* only applies to tires collected after Sept. 1, 2009
- **Generator only** - pick up of band operations generated tires at no charge
- **Return to retailer**

# Becoming a Used Tire Collector



Three mandatory requirements for communities registering as used tire collectors:

- WSIB number
- Proof of insurance
- HST number – indicate that as a First Nation you are exempt

# Municipal Hazardous or Special Waste (MHSW) aka HHW

- These items contain toxic ingredients and should be used and disposed of with caution.
- Ontario's MHSW Program requires companies that manufacture and market these products to take stewardship responsibility



# Ontario MHSW Program

Includes the following materials:

- **paints** and coatings and their containers
- **solvents** such as thinners for paint, lacquer, etc and their containers
- **oil filters**
- **oil containers** of 30 litres or less
- single use, **dry cell batteries**
- automotive **antifreeze** and related containers
- **pressurized containers** such as propane tanks and cylinders
- **fertilizers** and their containers
- **pesticides**, fungicides, herbicides, insecticides and their containers.



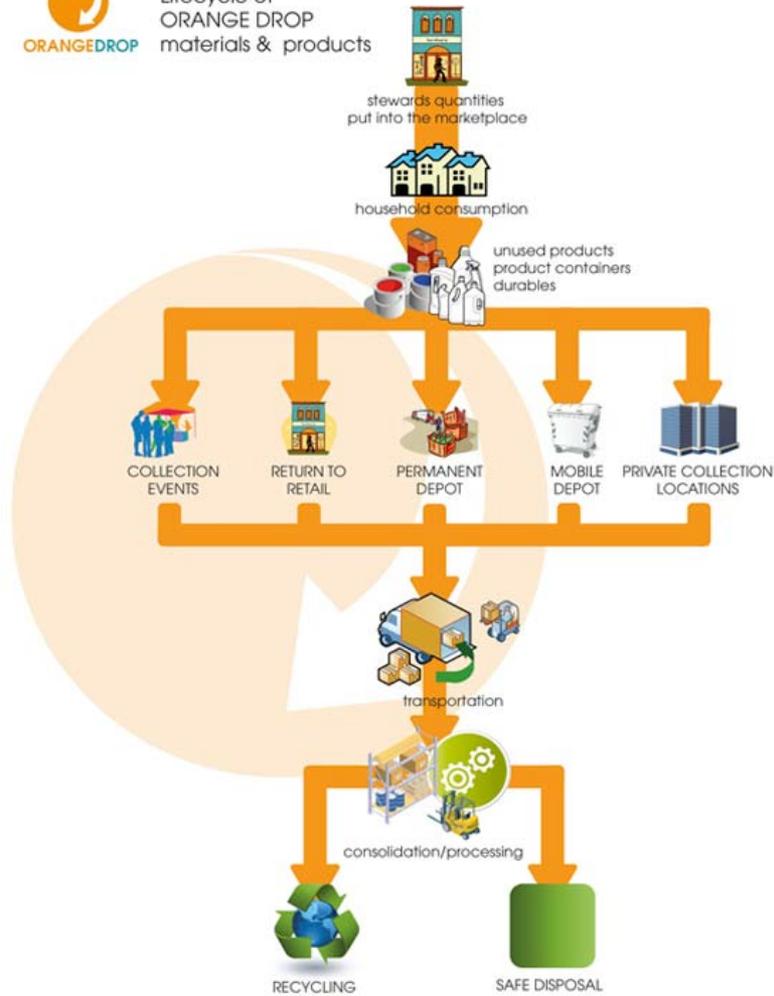


When in doubt, don't throw it out  
Make the Drop

ORANGE DROP PROGRAM MATERIALS	ORANGE DROP PROGRAMS				MUNICIPAL COLLECTION SERVICES
	Automotive	Battery	Return-to-Retail	Parks	Depots and Events
Paints and Coatings			✓		✓
Solvents					✓
Single-Use Dry Cell Batteries		✓	✓		✓
Pressurized Containers				✓	✓
Fertilizers					✓
Pesticides					✓
Antifreeze	✓				✓
Oil Containers	✓				✓
Oil Filters	✓				✓



Lifecycle of  
ORANGE DROP  
materials & products



# MHSW Options for FNs

- Return to Retailer
- Work with Stewardship Ontario to develop
  - [www.makethedrop.ca](http://www.makethedrop.ca)
- Contact a private contractor, responsible for your own costs e.g. Chippewas of Georgina Island, Wahnapiatae
- Determine your specific needs and design a program e.g. batteries
- Public education: e.g. make your own cleaners

# FNs MHSW Programs

- Host HHW event or maintain a depot
  - E.g. Wahnipitae, Georgina Island, Mohawks of Bay of Quinte
- Partner with other community to accept HHW at depot
  - Curve Lake residents have access to Peterborough County HHW depot
  - Nipissing residents have access to North Bay HHW depot
  - Pikwakanagan working on agreement with Town of Renfrew



# Used Oil Diversion Options

- Used Oil is NOT an Ontario regulated diversion material
- Diversion options include
  - Collect and have removed from FN by a licensed recycler
  - Collect and burn as a fuel in a suitable furnace
  - Direct individuals to drop off at service station, MHSW depot or collection event

# Waste Oil in Ontario

- Almost 80 per cent of the 215 million litres of used oil generated annually in Ontario is collected, one of the highest collection rates in the world. Some of the collected used oil is burned in cement kilns that have prescribed pollution controls in place. Approximately 75 million litres is re-refined by Safety-Kleen in Breslau, Ontario, and another 75 million litres are exported each year. An unknown amount is dumped illegally, polluting our soil and water.

# Used Oil Collection & Removal

- Some First Nations have a used oil recycling tank at their landfill or public works garage which is picked up at no or a minimal charge by an oil recycling company e.g. Rama, Wahta



# Used Oil Tank Requirements

- Federal Regulation requires that you use an ULC approved (ULC-S-652 or ULC-ORD-C142.21) oil storage tank. The tank is double walled and has a specifically designed venting system to allow for rapid movement of air into the tank as it is being emptied by vacuum pump so as to prevent it from collapsing



Federal approved ULC-S-652 Storage Tank

# Scrap Metal Diversion

- Many First Nations already divert scrap metal from their landfills
- Typically have separate stockpile located at landfill that gets picked up by local scrap metal recycler
- White goods included however refrigerants/freons must be removed by an MOE certified technician.
- Revenue is generated however price fluctuates with commodity prices
- [www.ontarioscrap.com](http://www.ontarioscrap.com) provides list of companies operating in Ontario by region



# Food Waste: Composting

- Largest component of residential waste stream
- Options: backyard, neighbourhood, centralized
- Composting Council of Canada
  - [www.compost.org](http://www.compost.org)
- Beausoleil FN has outdoor windrow composting



# Reuse

## Goods Exchange or Swap

- Nipissing has a “free cycle” event in the spring time as part of its spring clean up event (in May). Residents can place out items at the curb for others to take and if left behind then collected as part of spring clean up
- Mohawks of the Bay of Quinte have a similar event offered every June.

Homeygrown's Biannual Clothing Exchange

Soundwave Studios  
2200 Wood Street  
Oakland, CA

# SWAP! NOT SHOP

SATURDAY 2/28 FROM 4-9PM



18+ W/ VALID ID  
21+ TO DRINK

A VARIETY OF THINGS TO RECYCLE, REUSE, RENEW.  
WHAT DO YOU NEED TO BRING? A BAG FULL OF GENTLY USED,  
CLEAN CLOTHING, SHOES, AND USABLE HOUSEWARE ITEMS.  
+ CUSTOMIZE YOUR FINDS WITH \$5 UNLIMITED SILKSCREENING!

 **\$5 ADMISSION**  
WITH YOUR BAG OF ITEMS!

 **homeygrown** QUESTIONS? CONTACT US  
yo@homeygrown.org

# Reuse Centre at the Landfill

- Chippewas of Georgina Island have a trailer at the landfill used as reuse depot (working to have a permanent building constructed)
- Pikwakanagan is setting up a reuse centre within its landfill building

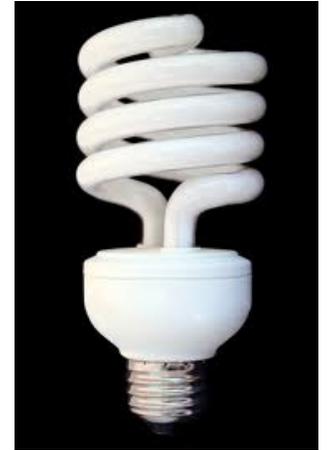


# Other Materials

- Plastic Bags e.g. KI
- Pharmaceuticals e.g. M'Chigeeng
- Fish Waste e.g. MBQ
- Fluorescent Light Bulbs
- Wood waste



[www.ofntsc.org](http://www.ofntsc.org)



# OFNTSC Services



- OFNTSC First Nations Landfill Operations & Maintenance and Waste Diversion Training course
- New one-day workshop “Transforming Your Community’s Solid Waste Management Program” and Guide for First Nations
- Professional 4 season Waste Audit in two First Nations

# Contacts

Stephanie Allen  
Environmental Scientist  
OFNTSC  
111 Peter St., Suite 606  
Toronto, ON  
M5V 2H1  
Tel. (416) 651-1443  
ext. 243  
sallen@ofntsc.org



Deneen Brigham  
Environmental Scientist  
OFNTSC  
200 South Syndicate  
Ave., Suite 206A  
Thunder Bay, ON  
P7E 1C9  
Tel. (807) 623-9595  
dbrigham@ofntsc.org