



Module 2

Setting Goals for Landfills & Diversion Opportunities

Module Goal

To determine your current landfill situation, and to establish goals to improve your landfill





Module Objectives

You will be able to:

- Describe your current landfill situation
- Determine ways your landfill can improve





Establishing Your Current Situation

What concerns do you have with how you manage waste in your community?

What are the barriers to change in your community?



Towards Zero Waste

What capacity presently remains at your landfill and how long will this last?

- Minimize residual waste quantities
- Priorities
- Reduce, Reuse, Recycle
- Residual



Calculating Remaining Service Life

Information Needed	How to Get It
Population	Your Band's Membership Officer or INAC
Waste generators	Residential, commercial, industrial, institutional
Per capita waste	Published data from province or measured directly at landfill
Equipment	What compaction equipment is used at landfill
Cover material	Cover material purchased on volume basis or measured directly
Footprint size	Footprint size measured on site or taken from plans



Typical Design Assumptions

- Landfill Disposal Area = 0.8 hectare (ha) (2 acres)
- Landfill Property Area = 20 ha (49 ac)
- Refuse Density = 400 kg/m³ (675 lbs/cy)
- Total Design Capacity = 40,000 cubic metre (m³)
- Population = 1,000
- Annual Waste Volume = 1,500m³
- Estimated Life = 25 yrs
- New capacity is difficult to acquire...take care of what you have




What are some other ways to extend the life of your landfill ?



Waste Diversion: Where to Start?



- 1st is knowing why you want to divert
 - 2nd 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
- Chippewas of 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**



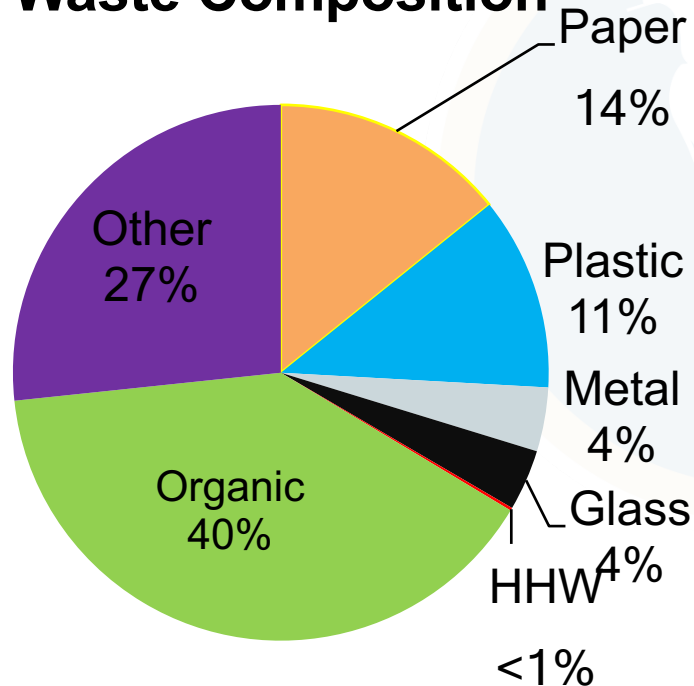
M'Chigeeng Waste Audit





Waste Audit Generation

M'Chigeeng First Nation Waste Composition



M'Chigeeng FN data

- 594 kg/hh/year
- e.g. $594 \times 100 \text{ hh} = 59,400 \text{ kg} = 59.4 \text{ tonnes/year}$
- 162 kg = blue box recyclables (27%)
- 432 kg = garbage (73%)



Diversion Options

 *Algonquins of Pikwàkanagan 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

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



Blue Box Recycling



- 32+ First Nations in Ontario have blue box recycling programs
- Containers & Fibres
- Funding is available through WDO/Stewardship Ontario
- First Nations eligible, currently 18 First Nations receive annual funding
- Average program costs: \$37/hhld depot, \$64/hhld curbside
- Contact Waste Diversion Ontario www.wdo.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, approx. 13% actually recycled by residents
- Issues of low participation
- Could focus on high value materials e.g. aluminum, paper
- Could get 80% funding from INAC



Waste Electronics Diversion



- Waste electronics contain toxic materials and should not be landfilled
- FNs with programs: Chippewas of Georgina Island, Wahnapiatae, Mohawks of the Bay of Quinte, Nipissing
- Ontario Electronics Stewardship:
- Picks up WEEE at no cost to collector and arranges for transportation & recycling
- Provides \$165/tonne
- For WEEE Depot contact: Pierre Prim
pprim@stewardedge.ca



Used Tire Diversion



- FNs with programs: Chippewas of Georgina Island, Wahnapiatae, Wikwemikong, Nipissing, Mohawks of the Bay of Quinte
- 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)
- Contact: Ontario Tires Stewardship



Household Hazardous Waste Diversion



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	✓				✓



Household Hazardous Waste Diversion



- These items contain toxic ingredients and should be used and disposed of with caution.
- Ontario's program managed by Stewardship Ontario
- Host HHW event or maintain a depot e.g. Wahnipitae, Chippewas of 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



Used Oil Diversion Options

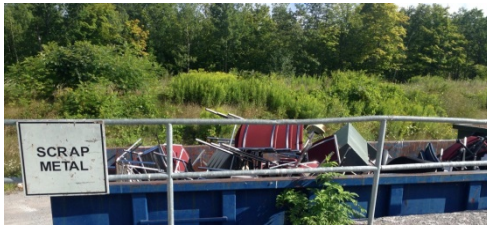


- Used Oil is not an Ontario regulated diversion material
- Diversion options include:
 - Collect and have removed from FN by a licensed recycler
 - Collect and burn as a fuel in a suitable furnace
 - Direct individuals to drop off at service station, MHSW depot or collection event

Federal Regulation requires that you use an ULC approved (ULC-S-652 or ULC-ORD-C142.21) oil 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 provides list of companies operating in Ontario by region



Food Waste: Composting



- Largest component of residential waste stream (35-40%)
- Options: backyard, neighbourhood, centralized
- Composting Council of Canada
- www.compost.org
- Beausoleil FN has outdoor windrow composting, Wahnapeitei composts at their landfill



Reuse

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



- Goods Exchange or Swap
 - Mohawks of the Bay of Quinte and Nipissing have a “free cycle” event as part of their spring clean up event.
 - Residents can place out items at the curb for others to take and if left behind then collected as part of spring clean up
- Reuse Depot
 - Pikwakanagan and Chippewas of Georgina Island have a building at the landfill used as reuse depot



Other Materials

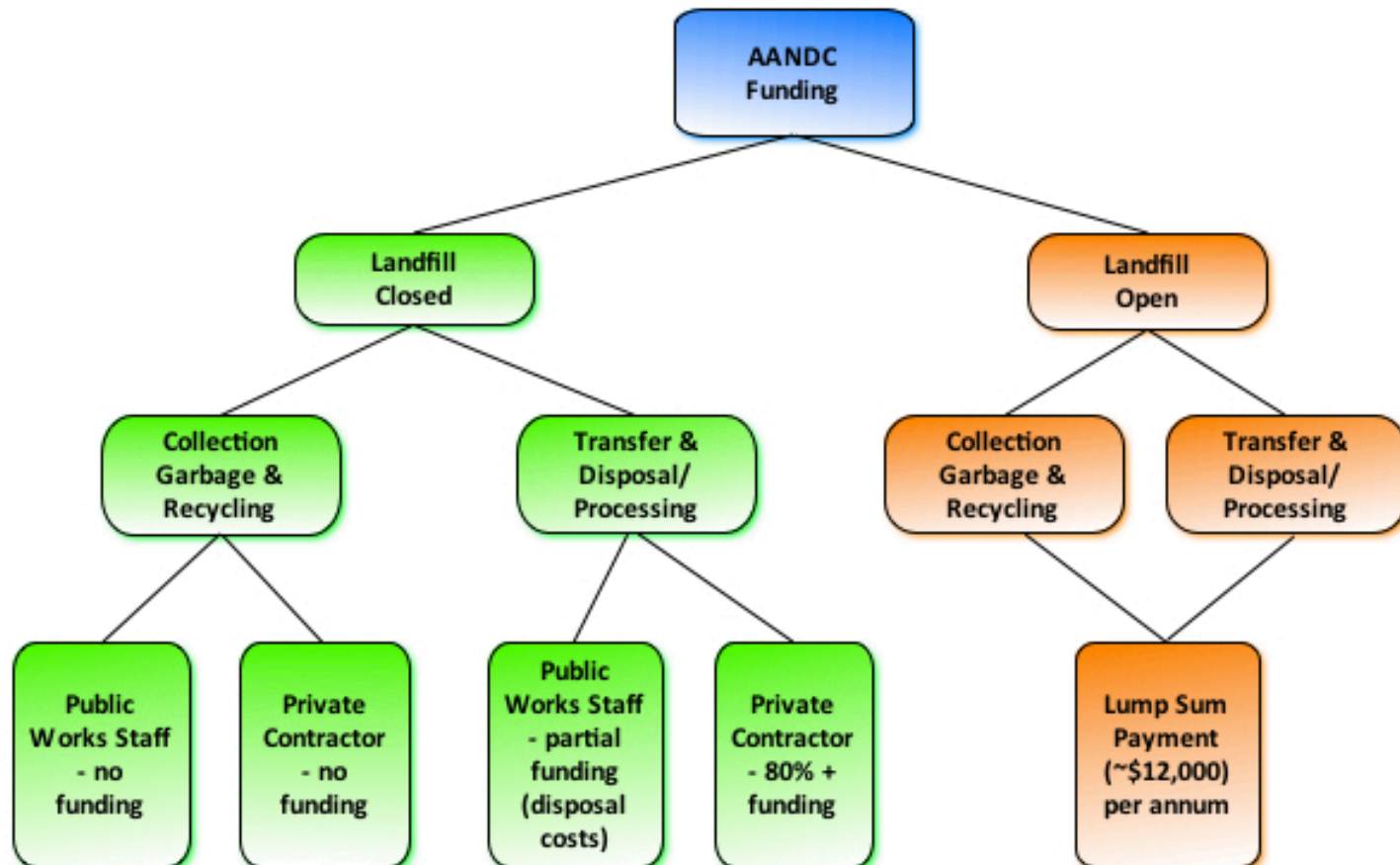


- Plastic Bags
 - Kitchenuhmaykoosib Inninuwug
- Pharmaceuticals
 - M'Chigeeng
- Fish Waste
 - Mohawks of Bay of Quinte
- Fluorescent Light Bulbs
- Wood waste





INAC O&M Funding





Goals and Objectives

What are your goals for the operation of your landfill?



Module Activity



Module Summary

- ✓ Establishing Your Current Situation
- ✓ Calculating Landfill Capacity
- ✓ Waste Audits
- ✓ Waste Diversion Opportunities
- ✓ INAC Funding
- ✓ Goals and Objectives