



NOFNEC 2016

SOLID WASTE MANAGEMENT

O&M DISCUSSION

OCTOBER 2016



Background

- Presentation for NOFNEC by Randy Edwards, Principal/Manager for True Grit Engineering.
- True Grit has worked with remote and road access First Nation communities in Northwestern Ontario for over 20 years.
- We have completed or are currently conducting Solid Waste Management Planning Studies, Waste Management Facility Siting Studies, and Waste Management Facility Design Studies.
- We are also currently evaluating the option of Municipal Type Service Agreements with two road access communities.

Waste Management Plan

A waste management planning process will assess current and future waste generation in the community and evaluate options for waste management.

Identify waste stream and options for reduction, diversion, collection, and disposal (including costs).

INAC process typically includes the following steps:

- Solid Waste Management Planning Study.
- Waste Management Facility Siting Study or Development of an MTSA.
- Waste Management Facility Design Study (landfill or transfer station).

Development of a Solid Waste Management Plan generally requires a cost share with INAC.

Plan will be affected by location of community.



First Nation Communities

Ninety-five of the 127 First Nation communities in Ontario are located in rural or remote areas or are accessible by air only:

- Urban (within 50 km of major centre)
 - 32 First Nation communities
- Rural (between 50 km and 350 km of major centre)
 - 59 First Nation communities
- Remote (over 350km of major centre)
 - 5 First Nation communities
- Air Access - 31 First Nation communities



Waste Management Options

For the Urban and Rural Communities:

- First Nation Operated Waste Disposal Site
- Municipal Type Service Agreement (MTSA)

For the Remote and Air Access Communities:

- First Nation Operated Waste Disposal Site



Municipal Type Service Agreement (MTSA)

- An agreement between a First Nation and a Municipality where the First Nation disposes of its waste in a licenced landfill operated by the Municipality.
- A disposal (tipping) fee is paid to the Municipality for the acceptance and handling of the waste (typically per tonne).
- Could include curbside pickup and/or haulage of the waste from the community to the landfill.
- Could include a waste diversion / recycling program.



Municipal Type Service Agreement (MTSA)

Criteria

- Municipal landfill must be located within a reasonable (economic) distance from the First Nation.
- Landfill tipping fees must be within available budget / funding allocations.
- Landfill must be willing / able (permitted - ECA) to accept the waste.
- For recycling, a Materials Recycling Facility must be available locally.



Municipal Type Service Agreement (MTSA)

Advantages

- Does not require expensive landfill development (capital cost) – siting, design, construction.
- Lower First Nation O&M requirements / costs.
- Reduced environmental impact on First Nation lands and waters.
- Can provide opportunities for waste diversion / recycling.
- Can provide economic development opportunities for waste pickup, haulage, etc.
- Approach is funded by INAC.



Municipal Type Service Agreement (MTSA)

Disadvantages/Considerations

- Requires negotiation / contract development with Municipality (legal agreement).
- Loss of local waste disposal (convenience), risk of unauthorized dumping in community.
- Need to consider entire waste stream including recyclables, hazardous wastes, tires, bulk wastes, metals, organic wastes / composting, construction debris.
- May require an integrated waste diversion plan / recycling. Potentially administered by community or through Municipality. If by community, then administration of subsidy programs.
- May require a waste transfer station - needs to be designed, operated, and maintained.
- INAC funding may require cost shared components.



Municipal Type Service Agreement (MTSA)

INAC Funding

The level of support for an MTSA will be determined based on a community specific basis.

The following components within a MTSA may be funded:

- Collection costs – curbside pick up
- Transportation costs – transportation from FN to landfill
- Landfill Site Tipping fees
- Recycling costs

There also is funding to support the development and negotiation of MTSA's.



Community Landfill

In this option, most wastes are disposed of within a community operated landfill facility as part of the overall waste management approach.

- Design and Construct Landfill.
- Operate and Maintain Landfill Site.
- Landfill Closure



Siting a Community Landfill

Landfill Siting

- Site design based on location, topography, geology, hydrogeology, surrounding landuse and receptors.
- Design and operation plan is required to meet the following regulations:
 - Indian Reserve Waste Disposal Regulations.
 - Small Landfill (<40,000 m³) Hydrogeological Risk Assessment, MOECC.
 - Ontario Regulation 232/98 – Landfilling Sites (sites with a disposal volume >40,000 m³)
- On-Reserve landfill requires minimal permitting.
- Off-Reserve landfill requires Land Use Permit from MNRF and ECA Approval from MOECC.



Operating a Community Landfill

Requires an Landfill Operation and Maintenance Plan, including:

- Procedures to maintain and extend the service life of engineered components / environmental controls.
- Procedures to prevent and control nuisance impacts.
- Emergency response plans.
- Complaint procedures including a procedure to respond to complaints
- Record keeping and reporting.
- Public communications plan.
- Triggers for contingency plans.
- Site closure procedures.
- Post-closure maintenance, inspection, monitoring and reporting procedures.

Operating a Community Landfill

Requires an Operation and Maintenance Plan, including:

- Site supervision and security - waste facility operator/supervisor.
- Facility operator training, health and safety.
- Facility Maintenance – fence/gates, buildings, access roads.
- Trench Excavation, Area Clearing
- Waste Compaction / Cover - equipment operation and maintenance.
- Waste Segregation, processing and packaging.
- Hazardous waste disposal.
- Ongoing Environmental Monitoring and Reporting.



O&M Costing Exercise

Salary for Site Supervisor – \$ _____

Annual Training \$ _____

Annual Maintenance – fence, buildings, roads
\$ _____

Weekly operating costs for equipment
– dozer/compactor/loader x 52 \$ _____

Hazardous Waste Disposal – prep and shipment of
wastes out of the community \$ _____

Annual environmental monitoring and reporting
\$ _____



Operating a Community Landfill

Community Landfill Operation and Maintenance

- The cost for required operation and maintenance at community landfill sites is dependent on the waste stream, waste site characteristics, and location of community.
- Current available funding is much less than costs for proper operation and maintenance of First Nation landfills.
 - Refuse site just under \$5,000 annually.
 - Landfill site just under \$20,000 annually .
- Budget 2016 committed \$409 million dollars over 5 years to support First Nations in development of sustainable solid waste management solutions on Reserve.

Questions/Discussion

