

# **Malcolm Island Solid Waste Management Plan**

## **Addendum to Regional District of Mount Waddington Solid Waste Management Plan**

### **Introduction**

The body of the Regional District of Mount Waddington (RDMW) Solid Waste Management Plan (SWMP) addresses broad objectives for the four electoral areas and the Municipalities of Alert Bay, Port Alice, Port Hardy and Port McNeill. Approved by the Minister of Environment on July 22, 1996, the SWMP envisioned an aggressive recycling program with all residual waste materials generated within the Regional District being disposed of at 7 Mile Landfill and Recycling Center. Illegal dumps were to be closed and existing local landfill retired. In the subsequent years, all the municipal landfills were closed down leaving only two private landfills in operation.

Malcolm Island, where the majority of Electoral Area A's population is located, has contributed to the Regional Solid Waste Service since its inception but has never established a local service for the collection and transportation of solid waste to the regional landfill at 7 Mile Landfill and Recycling Center (7MLRC) and, therefore has been illegally disposing of its garbage at a non-permitted dumpsite. Accordingly the purpose of this addendum to the RDMW SWMP is to establish a service on Malcolm Island that will collect and transport garbage to 7MLRC and provide a level of recycling opportunities equal to that found at the regional landfill.

## 1.0 Sub-Area Plan Goals

The overall goal is to establish an affordable, reasonable, environmentally responsible waste management system for the municipal solid waste (MSW) stream on Malcolm Island. The plan mainly deals with waste from residential sources, as the amount of commercial, institutional, industrial demolition and land clearing or construction activity on the Island is minimal. The plan takes into account the small population, above average participation in 3 R's programs, and resulting low levels of residual waste generation.

Specifically, the plan aims to:

- encourage the growth of the existing high level of personal responsibility for the amount and kind of waste that is generated;
- provide sustainability to the volunteer run 3 R's programs already established on Malcolm Island;
- provide services as required to meet, but not exceed community needs as growth occurs and provide the greater long term stability that results from an established local service;
- ensure an environmentally sound and economically responsible method of residual management.

In order to reach these goals, options for public education and waste re-use, reduction and recycling have been investigated and evaluated, as have options for management of residuals.

## 2.0 Planning Process

Planning for waste management has primarily been the responsibility of a local Public Advisory Committee (PAC) comprised of:

- the elected Regional Director for the Island.
- Ministry of Environment representatives
- Regional District of Mount Waddington representative
- representatives of the community at large

The planning process for Malcolm Island resulted in two distinct initiatives over a course of three years. The first initiative was that of a group of concerned residents of Malcolm Island in 2007. In 2008 a second initiative was started with the active support of the Regional District and the Ministry of Environment and utilized the aforementioned PAC and concluded in the summer of 2009. The details of the second process are contained in the consultation report.

Committee proposals have been presented to the general public for review and comment through community meetings and through locally circulated communications. This plan amendment reflects the considerable public input that was received during these two recent initiatives.

## 3.0 Background of the Plan

*Legal Requirements and Authority are dealt with in the main body of the plan.*

### 3.1 Planning Area

Malcolm Island is located in [□ HYPERLINK "http://www.vancouverisland.com/regions/towns/?townid=4153"](http://www.vancouverisland.com/regions/towns/?townid=4153) □ Queen Charlotte Strait□, off the northeast shore of Vancouver Island, and is linked by a 25-minute ferry ride to [□ HYPERLINK "http://www.vancouverisland.com/regions/towns/?townID=74"](http://www.vancouverisland.com/regions/towns/?townID=74) □ Sointula□ from [□ HYPERLINK "http://www.vancouverisland.com/regions/towns/?townID=71"](http://www.vancouverisland.com/regions/towns/?townID=71) □ Port

McNeill□. There are approximately 800 residents of which approximately 600 reside in Sointula. The number of people on the Island increases in the summer months. There are a few small, home-based industries, a half dozen retail and service enterprises, one small school and two docks managed by the local Lions' Club. Public transport to the Island is provided by a BC Ferries with a 30 car vessel which has 6 scheduled daily runs to Port McNeill.

Many residents live on the Island because they prefer the greater sense of community and the slower pace of life associated with living on an island. There is strong support for both self-sufficiency and environmental responsibility. This produces a population whose per capita waste production is likely below the average for the rest of the Region and the province.

Issues of accessibility, a noticeable gentrification of the community and the aging demographic makes it difficult to anticipate future population. For the purposes of waste management planning, a continuing annual population decrease of 0.5% has been assumed.

### 3.2 Waste Stream Components

The Malcolm Island WMC identifies the following components entering the waste stream.

#### Residuals

- household organics
- composite plastics, some metals and other inert materials etc.
- limited quantity of brown goods
- residual waste from users of federal docks
- miscellaneous non-recyclable paper
- glass
- household MSW
- demolition
- land clearing and construction waste
- oversized/bulky refuse
- nuisance refuse

#### Reusables

- plastic and glass containers, etc.

- lumber and building supplies

## Recyclables

- biosolids waste
- recyclable plastics
- tins and other metal
- cardboard, glossy magazines, mixed & newsprint paper
- white goods
- tires
- used oil
- car bodies
- batteries
- household chemical
- household paint
- electronics
- product stewardship materials

## Hazardous Waste

- light industrial and agricultural products
- product stewardship materials

### 3.3 Waste Stream Quantities

The small population and isolated nature of Malcolm Island make a weigh scale study unnecessary and prohibitively expensive. Exact breakdown of waste stream components by percentage cannot be accurately ascertained.

Estimated quantity for the baseline year of 2009 is derived in the following manner. Malcolm Island is similar to Cormorant Island with regards to its level of environmental awareness, consumption barriers due to island living and the limited ICI sector. Since the inception of the regional waste system, Cormorant Island has averaged approximately 425 kg of waste per capita. A similar level could be expected for Malcolm Island, or conservatively, 1.25 kg per capita per day.

The summertime population which inhabits the Island for about 3 months of the year must also be accounted for when calculating total annual waste quantities. Utilizing a conservative estimate of +40%, this population is included in Table 1. The same per capita waste generation rate (1.25kg/cap/day) has been assumed for summer residents, even though the seasonal population likely does not

generate reusable items, scrap metal, brown goods or hazardous industrial/agricultural products to the same extent as permanent residents.

Table L-1 illustrates the population and annual tonnage of waste generated during the life span of this plan.



**TABLE L-1**

**MALCOLM ISLAND POPULATION AND WASTE GENERATION PROJECTIONS**

**Estimated Waste Generation Rate: 1.25kg/cap/day**

YEAR		
POPULATION		
Sointula		
Residents		
Est POPULATION		
Malcolm Island Residents		
Est SUMMER POPULATION		
Malcolm Island Residents		
ANNUAL WASTE GENERATED IN TONNES		
Regular	+ Summer	= TOTAL
	2011	
		600
		800
		1120
	365	
	37	
	402	
	2016	
		585
		780
		1092
	355	
	36	
	391	
	2021	
		570
		761
		1065
	347	
	35	
	382	

□ Efforts will be made to further reduce the already low waste generation rate

### 3.4 Existing Waste Management System

#### Collection

There is no organized collection system and waste is disposed of illegally at a non-permitted dump.

A local contractor transports garbage to the dump through individual household agreements. Reusable/recyclable items are taken to the local thrift store or the volunteer recycling drop-off facility.

The Regional District has no established local service to manage the solid waste generated by the island's residents.

## Residual Management

An existing non-permitted dump, denoted on Figure 1, is the site for disposal of all waste not handled by the local volunteer recycling group. Use of the dump site is universally utilized.

The site is not secure and is presently open to the public at all hours seven days a week. A local contractor periodically covers the accumulated waste to lessen the exposure of wildlife and to reduce the fire potential. The costs are covered by donations to a fund administered by the Sointula Recreation Assoc..

No sampling of the dump's leachate is carried out. No noticeable drainage problems at the site have been identified.

## **Reduce, Reuse and Recycle**

Many of the island's residents compost their organic material.

□The present Recycling Centre is open for 3 hours, 2 days a week. It is located in a small shed on private property in the center of town. The centre's long-term viability is uncertain. It is operated by volunteers who also arrange for the delivery of recyclables such as tin, cardboard, newsprint, and some other metals to 7MLRC on Vancouver Island as a community service. Other materials, such as Styrofoam are taken down island by volunteers. In total, approximately 25 tonnes are recycled by the Centre annually.

The establishment of a permanent recycling depot is a major component of Malcolm Island's SWMP.

The local thrift store provides opportunities for items to be reused if demand and their condition warrants the effort.

Residents generally rely on local contractors to dispose of white goods, scrap metal, and car bodies. As quantities dictate, the contractors arrange the transportation of these materials from the Island to markets. Currently residents are reliant on 7MLRC or dealers to dispose of their tires, neither of which are located on Malcolm Island.

### **Demolition, Land Clearing and Construction Waste**

Much of the development on Malcolm Island is on acreage properties and most land clearing waste is handled on site by burning, where permissible.

There is a private business that provides demolition bins for Building Contractors. Building contractors are encouraged to use this service but some do not and transport their building waste to the non-permitted dump.

### **Hazardous Waste**

The Malcolm Island community is reliant upon 7MLRC for the disposal of hazardous waste with the result that most materials of this nature are disposed of at the dump site. Automotive and household batteries are likewise disposed of in an informal manner.

## **4.0 Solid Waste Management Plan**

The Plan focuses on developing a new curbside collection and a transfer station/recycling depot service/facility and managing these in a manner which is consistent with the Island lifestyle and compatible with available financial and other resources.

The Malcolm Island amendment will be implemented through the following action plan upon approval of the amendment to the Regional District's SWMP :

- Pass the attached draft Waste Collection and Transfer/Recycling Station Bylaw;
- Draft the regulatory Bylaw through consultation with Malcolm Island Local Service Management Committee;
- Set implementation schedule;
- Implement household MSW collection service and transport to 7MLRC;
- Site and develop transfer/recycling station utilizing Gas Tax funds;
- Promotion and education of public ;
- Monitor Malcolm Island SWMP

## 4.1 Reduce

### Education

The newly established Malcolm Island Local Service Management Committee and the electoral area director will keep residents apprised of new provincial programs and local services and initiatives through newsletters, posters and word of mouth.

Education will focus on reduction of hazardous and non-inert residual waste, home composting, as other reduction efforts have already achieved a high degree of acceptance and use in the community.

Where applicable, materials used for the Regional public education program will be made available for Malcolm Island as well.

### User Pay

A simplified user pay system will be initially adopted by allowing residents to purchase tags for times when the two bag limit is not sufficient to meet

there needs. There will be tipping fees assessed at the transfer station based on discussions with the Malcolm Island Local Service Management Committee.

## 4.2. Reuse

A permanent manned storage site/shed for reusable building materials will be operated at a location to be determined based on operational and community servicing considerations. Covered areas will provide temporary storage and can be extended to accommodate increased volumes of materials. A permanent paint exchange will be established at the depot site and residual paint transported to 7MLRC on Vancouver Island.

## 4.3 Recycle

The establishment of the manned recycling depot, with controlled access, will be the corner stone to this effort. Materials susceptible to water damage or scattering by the wind will be housed in the permanent storage shed. Transportation of non-baled materials will be carried out by utilizing back hauling of delivery vehicles who transport goods to the island but leave empty. It is the intent to mirror the recycling of all the streams currently supported by the RDMW regional solid waste program with diversion expanding in step with regional efforts.

## 4.4 Residual Management

The collection of Malcolm Island's solid waste and transportation to 7MLRC on Vancouver Island will be carried out through three means.

- Household and businesses will have curbside pickup every two weeks. Households will be allowed two cans per pickup with a surcharge added for additional waste collection needs.. The truck collecting this waste will then transport the waste immediately off island to 7MLRC.
- For items whose size exceeds the capacity of curbside pickup, a manned

bin with controlled access will be available for disposing of these items. Tipping fees will apply? The bin will be hauled off island as needs dictate.

- For those households who miss or can not meet the curbside pickup schedule, household garbage dumpsters will be available at the transfer station so waste does not overly linger in affected households. Tipping fees will apply as per the surcharge, above.

At projected population growth and waste generation rates, 7MLRC is expected to serve the community for the next 50 years.

## 5.0 System Administration

To ensure consistency in the management of programs and facilities a part-time transfer station/recycling depot operator position (16 hours per week) will be created to oversee the facilities operations. The operator will work closely with the Regional District's Operations Manager and the Malcolm Island Local Service Management Committee. The operator will receive administrative assistance from the Regional District staff.

The responsibilities of the operator will include, but not necessarily be limited to the following:

- cooperate with volunteer assistance at the transfer station/recycling depot
- ensure secondary contractors are carrying out assigned responsibilities
- assist the Operations Manager with public education initiatives
- maintain records as required by RDMW
- ensure that diversion streams have minimal cross contamination
- maintain the transfer station/recycling depot in a functional, clean and orderly manner
- ensure that the transfer station/recycling depot is available to the public at the to be determined hours of operation

Volunteers will still be encouraged to assist with the recycling program. A strong volunteer effort is considered essential to managing waste in a cost effective manner.

The Malcolm Island Local Service Management Committee will be the main body responsible holding the RDMW responsible that proper solid waste management services are provided to the community, for considering new programs or initiatives which may be appropriate for the Island and for addressing public concerns and community issues. (see Bylaw 779)

As with the main body of the Plan, the Regional District will assume general responsibility for ensuring the Plan is implemented according to schedule. The District will also prepare and negotiate contracts and ensure required operations and reporting are carried out.

The Regional Board will enact a bylaw establishing a separate waste management local service area for Malcolm Island and costs for the administration and operation of Malcolm Island's programs and facilities will be borne solely by this area unless the RDMW Board should amend the administration of solid waste.

Where necessary, the District will also adopt loan authorization bylaws to finance capital projects set out in the Plan. Associated debt payments will also be paid solely by Malcolm Island taxpayers.

## 6.0 Implementation

The following action plan can be initiated upon approval of the Malcolm Island SWMP.

COMPONENT

PROPOSED YR. OF IMPLEMENTATION

Pass the attached draft Waste Collection and Transfer/Recycling Station Bylaw.

Within 1 month

Draft the regulatory Bylaw through consultation with Malcolm Island Local Service Management Committee.

Within 2 months

Implement household MSW collection service and transport to 7MLRC.

Within 3 months

Site and develop transfer/recycling station utilizing Gas Tax funds.

Within 4 months

Promotion and education of public.

Within 2 months

Monitor Malcolm Island SWMP.

Within 3 months

## 6.1 Costs and Cost Recovery

Malcolm Island's waste management costs have been kept to a minimum due to its volunteers' efforts in waste diversion and residual disposal practices which can no longer be continued. This situation will change, however, as some Plan components will require resources to implement the necessary operational components. Needed capital investment will be covered through the use of the RDMW's Gas Tax fund.

### 6.1.1 Capital Costs

The public have been presented with information on environmental impacts, siting, capital costs and costs to taxpayers for various options. Capital costs will be incurred for projects outlined in the foregoing implementation section will be covered with Gas Tax money.

Estimated costs for capital works associated with the existing landfill are as follows:

ESTIMATED CAPITAL COSTS	
Construction of Recycling Shed	\$35,000
Site Preparation	\$15,000
Concrete/Lock Blocks Infrastructure	\$15,000
Electrical Hook-up	\$10,000
Fencing	\$10,000
<u>Equipment</u>	<u>\$15,000</u>
<b>Total Operations/Maintenance</b>	<b>\$100,000</b>

### 6.1.2 Annual Costs

Annual costs in 2009 dollars for Malcolm Island's proposed waste management services are provided below and are based on 389 properties having improvements exceeding \$30,000.

ESTIMATED OPERATIONS & MAINTENANCE

Household Pickup	\$33,000
Oversized Bin Pickup	\$5,000
Transfer/Recycling Station Attendant	\$16,500
<u>Transportation of Recycling Off Island</u>	<u>\$4,000</u>

**Total Operations/Maintenance**                      **\$58,500**

### 6.1.3 Future Annual Costs

Except for increases due to inflation and deviations from waste generation predictions, operations and maintenance costs will remain at 2010 levels for the coming 5 years with the 2010 operational costs halved assuming implementation in later half of 2010.

### 6.3 Cost Recovery

Malcolm Island's contribution to the Regional Solid Waste Program's costs are presently financed through taxation based on the net taxable value of land and improvements.

The user pay system will be limited to limiting the number of cans/ bags allowed per pick up and to purchase tags for additional bags/cans of refuse for occasions when the two can biweekly limit is not sufficient for their garbage needs with similar fees levied at the transfer station.

If diligence about minimizing and diverting waste from disposal appears to be waning as time progresses, further consideration will be given to a user pay system which rewards reductions of garbage generation.

Until then, a schedule of flat fees will be utilized on improved lots with commercial, institutional and residential utilization.

Proposed service fee amounts are shown below: The Malcolm Island Local Service Management Committee will be consulted about fee increases in excess of these projections prior to their implementation.

#### TABLE L-2

#### PROJECTED ANNUAL USER FEES IMPACTS

(Assuming Immediate Implementation in later half of 2010)

YEAR

2010  
2011  
2012  
2013  
2014

USER FEE AMOUNT

\$29,250  
\$60,000  
\$61,500  
\$63,000  
\$64,600

## 7.0 Approval, Monitoring and Amendments

Approval, monitoring and amendments shall be dealt with through consultation with the Malcolm Island Local Service Management Committee and will report semi-annually to the Regional Board.

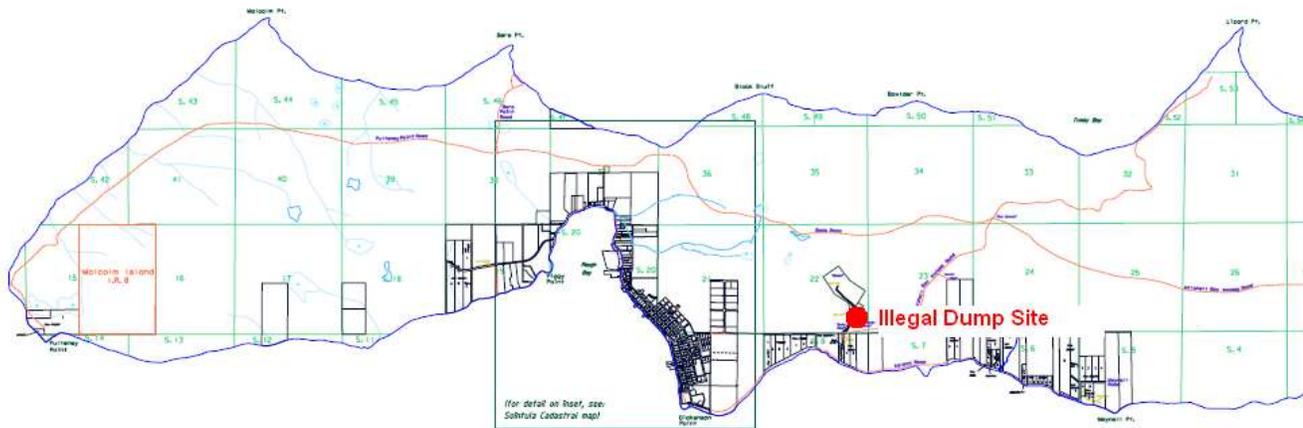


Fig. 1 Malcolm Island Cadastral Map