
TO: Larry Gardner
Manager, Solid Waste

DATE: January 5, 2016

FROM: Sharon Horsburgh
Senior Solid Waste Planner

MEETING: RSWAC, January 14, 2016

FILE: 5365-00

SUBJECT: RDN's Zero Waste Plan

RECOMMENDATION

That the Regional Solid Waste Advisory Committee (RSWAC) receives this report for information as part of the 2015 Solid Waste Management Review Process.

PURPOSE

At the November 26, 2015 Regional Solid Waste Advisory Committee (RSWAC) meeting, it was requested that a report be prepared explaining the Regional District of Nanaimo's (RDN) Zero Waste Plan.

BACKGROUND

The RDN's Zero Waste Plan is described in Section 6 of the 2004 Solid Waste Management Plan (SWMP) and is attached as Appendix 1. The SWMP is a long-term vision of how the Regional District will manage its solid waste, including diversion and future disposal needs. The RDN prepared their first SWMP in 1988 and amended that plan in 1996 to include a "3Rs Plan". In 2003, the RDN reviewed the status of the 1996 3Rs Plan and found that most of the programs and policies in the 3Rs Plan had been implemented and the diversion rate in the RDN increased from 45% in 1998 to 57% in 2003. This increased diversion came about despite the fact that two major elements of the plan, an in-vessel composting facility and a construction/demolition waste recycling facility were not constructed.

In 2002, the RDN Board adopted "zero" as the waste diversion target, meaning that the RDN will continuously strive to reduce the amount of waste requiring disposal. In addition, Policy 4H of the RDN's Regional Growth Strategy (adopted June 2003) states: *"The RDN agrees to pursue a solid waste management approach that concentrates on creating less waste, with the ultimate long term goal of eliminating the need for waste disposal (i.e. a "Zero Waste" approach)".* To reflect this new goal, the updated 3Rs Plan was named the Zero Waste Plan. The Zero Waste Plan outlines how the RDN plans to continue reducing the quantity of waste disposed.

The Zero Waste Plan was developed by undertaking the following steps:

- (I) review the existing 3Rs Plan to identify what elements of that plan should be retained and carried forward to become part of the Zero Waste Plan;
- (II) identify new waste reduction opportunities by:
 - reviewing waste diversion initiatives undertaken in other North American jurisdictions that are considered "leading edge";
 - interviewing waste management coordinators in BC and across Canada; and
 - brainstorming RDN-unique ideas;
- (III) develop a menu of components for possible inclusion in the Zero Waste Plan using the initiatives identified in the first two steps;

- (IV) present the menu of possible components to the Regional Solid Waste Advisory Committee (RSWAC) to obtain their feedback; and
- (V) develop a draft Zero Waste Plan based upon RSWAC's and staff input.

As a result of this process, the following components were adopted in the approved 2004 Solid Waste Management Plan.

Ongoing Programs

- Compost Education Program
- School Education Program
- Zero Waste Promotion and Education
- Illegal Dumping Program Expanded Disposal Bans
- Waste Composition Study
- Waste Stream Licensing and Technical Assistance
- Curbside Food and Yard Waste Collection Study
- Yard Waste Composting at RDN Disposal Facilities
- Recycling at RDN Disposal Facilities
- Residential Curbside Garbage and Recycling Collection

New Programs 2005-2007

- Single Family Organics Collection Pilot
- C/D Market Study
- User Pay Review
- RDN Internal Zero Waste Policy
- Single Family Organics Collection Program

In 2013, a review of the current SWMP was initiated with the Stage 1 review, the Existing System Report. The report concluded that the RDN has fully implemented the key components of its 2004 SWMP, including residential food waste collection and banning commercial food waste from landfill disposal. Participation in these programs has resulted in the region diverting 68 per cent of its waste for composting and recycling and achieving a 350 kilogram per capita landfill disposal rate, one of the lowest in Canada.

DISCUSSION

The RDN and its member municipalities, residents and businesses have led the way in reducing the amount of garbage that is landfilled. In 1991, the RDN introduced Canada's first user pay residential garbage collection system. Since then, the RDN and its partners have expanded curbside recycling programs, banned paper, metal, commercial food waste, clean wood waste and other recyclable materials from the landfill, and successfully promoted composting throughout the region.

In the fall of 2012, as a first step in updating the RDN's SWMP, the RDN conducted a waste composition study of the waste sent to the Regional Landfill to determine what types of waste continue to be landfilled and by which sector. The data from the study indicates that roughly 35% of the waste currently landfilled could be composted and 20% could be recycled.

Some of the milestones the RDN has achieved on the road to Zero Waste include:

- 1989 - Residents and businesses divert 10% of solid waste from the landfill.
- 1995 - Recycling, reuse and recycling initiatives divert 26% of solid waste from the landfill.
- 2000 - The RDN and its municipal partners divert 57,000 tonnes of material from the landfill or 54% of the total waste generated in the region, exceeding the 50% target set by the provincial government.
- 2002 - The RDN adopts Zero Waste as its long-term waste diversion target.
2004 - The RDN prepares an updated Solid Waste Management Plan which sets an interim goal of diverting 75% of the region's waste from the landfill by 2010. *[Note that this diversion target included biosolids which are no longer accounted for in the diversion/disposal calculations.]*
- 2005 - The RDN bans commercial food waste from the landfill. A commercial food waste diversion program involving businesses and organizations diverts more than 6,000 tonnes of food waste and organic compostables annually from the landfill.
- 2007 - The RDN and its municipal partners launch a residential food waste collection pilot project that will provide the information needed to develop a region-wide program.
- 2010 – Introduction of region wide food waste curbside collection program.
- 2012 – The region achieved a 68% diversion rate and a per capita waste generation rate of 347 kilograms.
- 2012 - Waste Composition Study was completed.
- 2013 -Stage One - Existing System Report.
- 2013 - Begin to review the 2004 SWMP.

To support the RDN's Zero Waste Plan, the RDN's SWMP includes eight guiding principles and they are as follows:

1. *The consumption of material and energy resources is set at a level that is ecologically sustainable.*
2. *The regional solid waste stream is reduced to the greatest extent possible, in accordance with the hierarchy of reduce, reuse, and recycle, and consistent with local resources and the nature of the regional solid waste stream.*
3. *The goal of environmental policy is to not exceed the capacity of the environment to accept waste and the strategies for achieving that goal cautiously anticipate the environment's capacity.*
4. *Individuals and firms are enabled to make environmentally sound choices about consumption of resources and generation of waste through provision of appropriate information, including user-pay and market-based incentives, wherever possible.*
5. *Reduction policies and strategies are developed through public consultation in a cooperative manner between government, private enterprise and community stakeholders. This may entail more flexibility in existing procedures and the setting precedents. The cost effectiveness of any strategy will be based on full accounting of costs and benefits, both monetary and non-monetary.*
6. *The strategies and policies promote community development whenever possible.*
7. *All parties must have equal access to relevant information and the opportunity to participate effectively throughout the process.*
8. *Openness and trust between stakeholders are the keys to a successful process.*

The RDN is unable to achieve all these goals alone, however, the RDN has been actively promoted these concepts through participation on policy making committees of various national, provincial and regional organizations such as the Solid Waste Association of North America, AVICC, National Zero Waste Council, the Recycling Council of BC, Coast Waste Management Association and Zero Waste Nanaimo. All of these organizations are multi-stakeholder groups that have a good track record of influencing senior government policy. Zero Waste is a very active subject of discussion in all of these groups.

The RDN's existing solid waste management system is diverse and reflects a mature waste management system. The key components of the existing waste management system are:

- Zero waste has been adopted as the waste diversion target – meaning that the RDN will continuously strive to reduce the amount of waste requiring disposal;
- Curbside collection of garbage, kitchen scraps and recyclables for all single-family homes;
- User pay waste management fees for both the landfill and the curbside collection services;
- A policy of banning materials from disposal as garbage once a stable alternative use is identified;
- An organics diversion strategy that enables the diversion of both residential and commercial food and yard waste;
- A Construction/Demolition Waste Strategy that banned the disposal of clean wood waste to drive the development of a recycling industry for waste from construction and demolition activities;
- A Waste Stream Management Licensing system that ensures private waste management facilities operate at a high standard; and
- A comprehensive Illegal Dumping Prevention Strategy.

A number of the key components of the waste management system are discussed in more detail below.

Zero Waste

The RDN's Zero Waste concept is worth highlighting. There are many significant challenges with the implementation of Zero Waste as many aspects are beyond local government's regulatory jurisdiction. For example, local government does not have the authority to regulate products or packaging such as design for environment, end of life return of product, bans or minimum recycled content. However, in these areas, the RDN is proactive and assists with the dissemination of information as well as participating on policy setting committees as noted previously.

Organics Diversion Strategy

The cornerstone of the RDN's 2004 SWMP was the diversion of organic waste from landfilling. The 2004 waste composition study indicated organic waste represented 47 % of the RDN's residential waste stream by weight and 40% of the ICI waste stream. Therefore, diverting organics was determined to be the single most effective means of increasing diversion of waste from landfilling. The 2012 Waste Composition Study showed that the total waste stream organics dropped from 178 kg/person in 2004 to 123 kg/person in 2012. There remains significant opportunity for further organics diversion.

Construction/Demolition Waste Strategy

In February 2007, the Regional Board approved a Construction/Demolition (CD) Waste Strategy. Key initiatives in the strategy include:

- Increasing the tipping fee for clean wood waste at RDN Solid Waste Facilities to create incentives to divert this material to licensed recycling facilities;
- Effective January 1, 2008, the RDN put a ban on disposal of clean wood waste in the Regional Landfill and roll-off containers of wood waste at RDN Solid Waste Facilities; and
- Arranging contracts with third party wood waste recycling facilities to manage wood waste received at the Regional Landfill and Church Road Transfer Station from small self-haulers.

As a result of the strategy, there are currently several CD waste management facilities in the RDN and clean wood waste is no longer buried as garbage in the Regional Landfill.

Construction, demolition and renovation projects generate a wide range of materials, most of which are reusable or recyclable. These include concrete, asphalt, wood, gypsum wallboard, metal, cardboard, asphalt roofing and plastic. The RDN promotes diversion of these materials through disposal bans on cardboard, gypsum (drywall), metal and wood, and high tipping fees on loads of CD waste arriving at the Regional Landfill.

The majority of CD waste is recycled or used as a fuel substitute. The following materials are managed as follows:

- Wood waste is chipped and used as hog fuel at pulp mills on Vancouver Island and in Washington State;
- Drywall (gypsum) is recycled;
- Metal is recycled;
- Concrete and asphalt are recycled; and
- Asphalt shingles are recycled for road base applications.

There is also significant reuse of building materials and fixtures through salvage operations and retail stores such as Demxx and Habitat for Humanity's ReStore.

Waste Stream Management Licensing Bylaw

RDN Bylaw No. 1386, 2004 requires solid waste management facilities operating in the RDN to maintain a Waste Stream Management License (WSML). A similar bylaw is in place in the Cowichan Valley Regional District. The authority to license and regulate solid waste facilities is given to regional districts through BC's Environmental Management Act and the RDN's licensing bylaw was enacted under the 2004 SWMP.

The RDN's licensing Bylaw No.1386 was established to fulfill the following objectives:

1. Create a high standard of operation for waste management facilities.
2. Encourage and protect legitimate waste management operations.
3. Establish a reporting system for the flow of waste materials within the RDN.
4. Protect and enhance the waste reduction rate achieved.
5. To provide a level playing field.

In the RDN, there are currently 13 facilities that hold Waste Stream Management Licenses and five applications are under review.

RDN Waste Stream Management License Holders (as of July 2015)	
1.	Schnitzer Steel Pacific
2.	Parksville Bottle & Recycling Depot
3.	Nanaimo Organic Waste (formally ICC)
4.	Progressive Waste (formally BFI) Nanaimo Recycling Facility
5.	Emterra Environmental
6.	Earthbank Resource Systems
7.	Alpine Disposal & Recycling (ADR)
8.	Pacific Coast Waste Management (PCWM)
9.	DBL Disposal Services Ltd. (formally Porter Wood Recycling Ltd.)
10.	DBL Disposal Service Ltd.
11.	Progressive Waste (formally BFI Canada), Springhill
12.	Cascades Recovery Inc.
13.	Coast Environmental Services
RDN Waste Stream Licenses (In Progress)	
14.	Haarsma Waste Solutions
15.	Gabriola Island Recycling Organization
16.	Nanaimo Recycling Exchange
17.	ABC Metal Recycling
18.	MacNutt

Illegal Dumping Prevention Strategy

The RDN has implemented an Illegal Dumping Prevention Strategy and works collaboratively with community groups. The key components of the program include prevention of illegal dumping through education; funding the clean-up of illegal dumpsites; waiving of landfill tipping fees and illegal dumping surveillance and enforcement activities. The program cost is approximately \$100,000 annually.

Education & Outreach

Both the RDN and the City of Nanaimo undertake promotion and education related to solid waste management. The RDN has information related to the solid waste management planning, bylaws and zero waste programs on the Solid Waste and Recycling pages of the RDN’s website. The RDN and the City of Nanaimo distribute approximately seven Zero Waste/Solid Waste related newsletters each year to homes across the region. The RDN contracts the Nanaimo Recycling Exchange to provide a zero waste school education program, which provides free classroom workshops to schools throughout the RDN. It is estimated that the RDN spends approximately \$200,000 annually on education.

ALTERNATIVES

There are no alternatives for this report.

FINANCIAL IMPLICATIONS

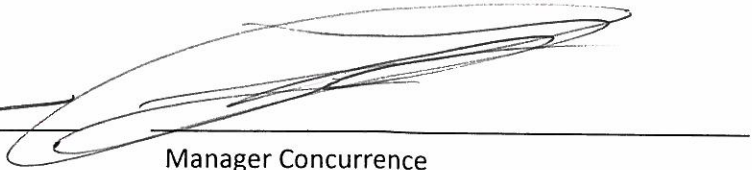
This report is presented for information purposes only therefore there are no financial implications.


SUMMARY/CONCLUSIONS

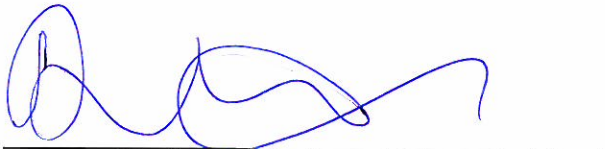
In 2002, the RDN Board endorsed the adoption of a Zero Waste Plan for inclusion in the Solid Waste Management Plan. Since that time, the RDN has introduced a number of strategies and policies, and has taken action, to reduce the amount of waste being landfilled. The RDN is considered a leader in North America with respect to its Zero Waste programs.

Through community cooperation and support, the RDN has achieved 68% waste diversion and an annual per capita disposal rate of 347 kilograms. According to the Province of BC 2012 Waste Diversion Calculator, this is one of the lowest disposal rates in Canada. Furthermore, the RDN and Cowichan Valley Regional Districts are believed to have the lowest per capita disposal rates in the world. With a continued promotion of Zero Waste concepts, there is expected to be continued improvements that will meet the future needs of the RDN.


Report Writer


Manager Concurrence


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Solid Waste Management Plan

6. Zero Waste Plan

In April 2003, the RDN reviewed the implementation status of their 1996 *3Rs Plan* as a first step in updating this component of the Solid Waste Management Plan. Most of the programs and policies in the 3Rs Plan were implemented and the diversion rate in the RDN increased from 45% in 1998 to 57% in 2003. This increased diversion came about despite the fact that two major elements of the plan, an in-vessel composting facility and a construction/demolition waste recycling facility were not constructed.

In 2002 the RDN adopted “zero” as their waste diversion target, meaning that the RDN will continuously strive to reduce the amount of waste requiring disposal. In addition, Policy 4H of the RDN’s Regional Growth Strategy (adopted June 2003) states: *The RDN agrees to pursue a solid waste management approach that concentrates on creating less waste, with the ultimate long term goal of eliminating the need for waste disposal (i.e. a “Zero Waste” approach).* To reflect this new goal, the updated 3Rs Plan is called the *Zero Waste Plan*. The Zero Waste Plan outlines how the RDN plans to continue reducing the quantity of waste disposed.

The Zero Waste Plan was developed by undertaking the following steps:

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 - interviewing waste management coordinators in BC and across Canada; and
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- (IV) present the menu of possible components to the Regional Waste Advisory Committee (RWAC) to obtain their feedback; and
- (V) develop a draft Zero Waste Plan based upon RWAC’s and staff input.

This section briefly describes each component of the Zero Waste Plan. The components are organized into two sections:

1. **Ongoing Programs** –programs that were part of the 1996 3Rs plan, were implemented and continue to operate, including programs identified in the annual budget for 2004;
2. **New Programs** – programs that have new diversion potential that will be implemented in 2005 to 2007 upon adoption of this Solid Waste Management Plan.

final draft

Solid Waste Management Plan

All costs are presented in 2004 dollars.

Solid Waste Management Plan

◆ On-Going Programs 2004

Program	Budget
<p>Compost Education Program</p> <p>The Zero Waste compost education program has several components, including:</p> <ul style="list-style-type: none"> • enhance, maintain and promote demonstration gardens; • promote usage of the yard waste management educational materials available on the RDN's website; • conduct spring and fall seminars on composting, grasscycling, zero waste landscaping, natural garden and lawn care, etc. Partnering with local garden centres that sell backyard composters and native plants will be explored. 	<p>\$5,000</p>
<p>School Education Program</p> <p>Continue contracting out design and delivery of a primary school program that focuses on the concept of zero waste.</p>	<p>\$15,000</p>
<p>Zero Waste Promotion and Education</p> <p>The Zero Waste Promotion and Education program contains the following elements:</p> <ul style="list-style-type: none"> • Continue and enhance current zero waste information initiatives including the web site, newsletters and participation in community events. • Maintain funding to the Recycling Council of BC for operation of the hotline. Promote the hotline to RDN residents and businesses. • Continue annual financial support to Recycling Council of BC for their ICI waste exchange service. Promote this service to RDN businesses and institutions. • Maintain and print the Zero Waste (recycling) directory and the online directory on the RDN web site and ensure data is up to date through annual reviews of the listings. Promote directory and reuse awareness, particularly with customers that bring reusable goods to RDN disposal. • Continue television advertising on Shaw Cable. • Promote to all sectors the availability of Zero Waste tools, particularly those available on the web such as the Recycling Directory, Zero Waste Business Tool Kit, Zero Waste Landscaping Tips, and Composting Information. Additional tools will be accessed from other jurisdictions and, with permission, modified for use in the RDN. 	<p>\$58,500</p>

Solid Waste Management Plan

Program	Budget
<p>Illegal Dumping Program</p> <p>The Illegal Dumping Program includes surveillance and enforcements activities as well as on-going clean-up of illegal dumping sites and free disposal (tipping fees are waived) for community clean-up events. To encourage community clean-ups, groups that undertake these activities will be recognized in the RDN newsletter or other media.</p>	<p>\$63,000</p>
<p>Expanded Disposal Bans</p> <p>International Composting Corporation (ICC) opened their private composting facility in Nanaimo in April 2004. Consequently, in accordance with RDN Board policy, organic waste from commercial generators (e.g. grocery stores, institutions, and restaurants) will be banned at the Regional Landfill and Church Road Transfer Station in the fall of 2004.</p> <p>Implementation of the ban would involve a “ramp up” period of increasing enforcement starting with advanced notice of upcoming ban, then notices (rather than financial penalties) for the first months of the bans implementation, and eventually implementing financial penalties that are double the tipping fees for loads containing banned materials.</p> <p>In addition, yard waste and products covered under province-wide stewardship programs will also be banned, as opportunities to divert these materials are readily available in the RDN.</p>	<p>\$24,000</p>
<p>Waste Composition Study</p> <p>Conduct a waste composition study to estimate the quantity of recyclable materials remaining in the waste stream and the source of those materials (residential, ICI or DLC). This study will assist in focusing waste diversion programs and policies where they will have the greatest impact.</p>	<p>\$25,000</p>
<p>Waste Stream Management Licensing Technical Assistance</p> <p>To support the implementation of the Waste Stream Management Licensing Bylaw (which is ultimately intended to enhance diversion in the RDN), technical assistance will be required on an annual basis to prepare site specific operating plans and requirements</p>	<p>\$15,000</p>

Solid Waste Management Plan

Program	Budget
<p>Curbside Food and Yard Waste Collection Study</p> <p>Organic waste collection could divert food waste, non-recyclable paper products and other organic waste materials in addition to providing yard waste removal service to residents in the RDN curbside collection service area. Based on a 2002 CRD waste composition study, approximately 45% of the residential waste stream is compostable. In the RDN, if only half of the residential-based organic waste is diverted through an organics collection program, 5,600 tonnes of waste would be diverted from the landfill annually. This study will research collection methods and successes in other North American jurisdictions</p>	<p>\$10,000</p>
<p>Yard Waste Composting at RDN Disposal Facilities</p> <p>To ensure an on-going opportunity to dispose of yard waste, the RDN will continue to accept source-separated yard waste at the landfill and transfer station. The drop-offs are for self-haul customers (small loads). Yard waste is transferred to private composting facilities. The tipping fee at the RDN facilities is based on the market cost of composting. Drop-off opportunities are promoted by RDN and municipalities. (Note: The cost associated with this program is directly related to volumes received at the RDN's facilities.)</p>	<p>\$268,000</p>
<p>Recycling at RDN Disposal Facilities</p> <p>The RDN provides the opportunity for self-haul customers at the disposal facilities to recycle batteries, appliances, propane tanks, fluorescent light tubes, scrap metal, tires, gypsum (at CRTS), cardboard, paper, glass, and metal and plastic food and beverage containers.</p>	<p>\$161,500</p>
<p>Residential Curbside Garbage and Recycling Collection</p> <p>Continue with residential garbage and recycling collection programs including strict can limits and comprehensive range of recyclable materials including rigid plastic containers. Provide service to approximately 23,000 households.</p>	<p>\$1,766,970</p>

Solid Waste Management Plan

◆ **New Programs 2005 - 2007**

2005	Budget
<p>Single Family Organics Collection Pilot</p> <p>Design and conduct a pilot organics collection program. Conduct pre and post surveys with participants and measure actual diversion. This pilot would address the feasibility of organics collection for some or all of the residents on the curbside collection program and help to refine the final program design.</p>	\$82,000
<p>C/D Market Study</p> <p>Conduct an analysis of the local market capacity for wood waste and construction/demolition wastes to determine the viability of a ban on all or a portion of this waste.</p> <p>In the event that a private sector C/D processing facility is established, licensed and operational by 2005 the C/D market study will not be done.</p>	\$10,000
2006	Budget
<p>User Pay Review</p> <p>Before tendering next curbside contract, re-assess feasibility of going to full user pay or a subscription-based system for garbage collection. A full user pay program would provide users with a financial incentive to further reduce waste and reward those households that already have achieved significant waste reduction. If viable, a “pay-as-you-throw” request for proposal or tender would be designed for the new curbside waste collection contract (scheduled to begin in 2007).</p>	\$20,000
<p>RDN Internal Zero Waste Policy</p> <p>Using existing municipal models, develop an internal Zero Waste Policy to ensure that the environmental impact of RDN purchasing and operations of the RDN is minimized. Environmental purchasing policies developed by other municipalities, such as the City of Richmond, will be used as a template.</p>	\$4,000

Solid Waste Management Plan

2007	Budget
<p>Single Family Organics Collection Program</p> <p>Based on the results of the curbside yard and food waste collection study undertaken in 2004 as well as the pilot collection project undertaken in 2005, a full single family curbside collection program could be implemented in 2007 based on the results of the tender process undertaken in 2006.</p> <p>The costs presented for full program implementation are rough estimates of a household organic waste collection program (food waste and soiled paper). Yard waste collection is not included at this time since not all households may require this service. The types of organic wastes collected, collection method and frequency, and composting facility tipping fees have not yet been defined. This cost estimate includes only the households serviced by the RDN although it is assumed that the City of Nanaimo will also consider implementing a similar program if it is found to be cost-effective.</p>	<p>Start-up costs (one-time): \$97,000</p> <p>On-going annual costs: \$460,000</p>

Zero Waste Plan Summary

i. Diversion Potential

The diversion potential of the Zero Waste Plan ranges from an *additional* diversion of 4% in 2004 to an additional 41% in 2009, as shown in Table 6-1. Although many of the programs listed in the plan do not contribute directly to diversion, they are believed to be essential to supporting existing and planned zero waste initiatives and without them the diversion potential of the other programs could not be realized. Upon full implementation, the RDN could achieve an *overall* diversion rate of 76%.

Table 6-1 Zero Waste Plan New Diversion Potential

Year	2004 (%)	2005 (%)	2006 (%)	2007 (%)	2008 (%)	2009 (%)
New Programs						
Expanded Disposal Bans	4	13	24	31	34	34
Waste Composition Study						
Construction/Demo Waste Market Study						
Single Family Organics Collection				5	5	5
User Pay Review						
RDN Internal Zero Waste Policy						
New Diversion (based on 2003 baseline)	4	13	24	38	39	39
Total Cumulative Diversion (based on 2003 baseline of 57%)	59	63	68	75	76	76

Solid Waste Management Plan

ii. Costs

Table 6-2 shows the annual cost for the Zero Waste Plan from 2004 to 2009.

Table 6-2. Zero Waste Plan Costs

Year	2004	2005	2006	2007	2008	2009
Ongoing Programs						
Residential Curbside Garbage and Recycling Collection*	\$ 1,766,970	\$ 1,802,309	\$ 1,838,356	\$ 1,875,123	\$ 1,912,625	\$ 1,950,878
Illegal Dumping Program	\$ 63,000	\$ 63,000	\$ 63,000	\$ 63,000	\$ 63,000	\$ 63,000
Recycling at RDN Disposal Facilities	\$ 161,500	\$ 161,500	\$ 161,500	\$ 161,500	\$ 161,500	\$ 161,500
Yard Waste Composting	\$ 268,000	\$ 165,000	\$ 165,000	\$ 165,000	\$ 165,000	\$ 165,000
Zero Waste Promotion and Education	\$ 58,500	\$ 58,500	\$ 58,500	\$ 58,500	\$ 58,500	\$ 58,500
School Education Program	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
Compost Education Program	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000
New Programs						
Expanded Disposal Bans	\$ 24,000	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500
Centralized Composting Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Waste Composition Study	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -
Curbside Organics Collection Study	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -
Single Family Organics Collection Pilot	\$ -	\$ 82,000	\$ -	\$ -	\$ -	\$ -
Single Family Organics Collection	\$ -	\$ -	\$ -	\$ 557,000	\$ 460,000	\$ 460,000
WSML Technical Assistance	\$ 15,000	\$ 10,000	\$ 10,000	\$ 5,000	\$ 5,000	\$ 5,000
CD Waste Market Study	\$ -	\$ 10,000	\$ -	\$ -	\$ -	\$ -
User Pay Review	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ -
RDN Internal Zero Waste Policy	\$ -	\$ -	\$ 4,000	\$ -	\$ -	\$ -
Total Cost per Year	\$ 2,411,970	\$ 2,372,809	\$ 2,330,856	\$ 2,905,623	\$ 2,846,125	\$ 2,884,378

* based on 2% estimated annual contract cost increase

iii. Staffing

The Zero Waste Plan is to be implemented with the RDN's existing solid waste staff complement. As needed, research, studies and some services will be contracted out.