

**REGIONAL DISTRICT OF NANAIMO
SOLID WASTE MANAGEMENT SELECT COMMITTEE MEETING**

**WEDNESDAY, MARCH 11, 2015, 1:30 PM - 3:30 PM
RDN Committee Room**

A G E N D A

CALL TO ORDER

DELEGATIONS

MINUTES

BUSINESS ARISING FROM THE MINUTES

COMMUNICATIONS/CORRESPONDENCE

UNFINISHED BUSINESS

REPORTS

Review of Stage One

Approval of Consultation and Communication Plan - Survey

Review of Solid Waste Issues and Work Plan

Future Waste Generation Projections

ADDENDUM

BUSINESS ARISING FROM DELEGATIONS OR COMMUNICATIONS

NEW BUSINESS

ADJOURNMENT

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Consultation & Communications Plan

Solid Waste Management Plan Review:

Regional District of Nanaimo

March 3, 2015

Background

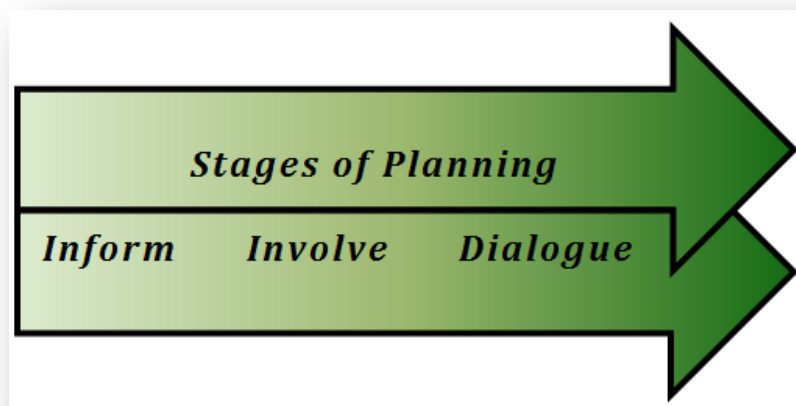
The Regional District of Nanaimo (RDN) is undertaking a review of its Solid Waste Management Plan (SWMP), which has been amended three times since provincial approval of the original Plan in 1988. The RDN has fully implemented their last SWMP, which was prepared in 2004. The current plan review is intended to identify “what’s next” and chart the course for solid waste management for the coming years.

The process to review and update the region’s SWMP is as follows:

- Stage 1 (completed report in 2013) – Review and analysis of current solid waste management system, action status of the 2005 Plan, and identification of issues and opportunities for improvement;
- Stage 2 (current stage) – Identify and review options to address the region’s future waste management requirements, select preferred options and prepare report presenting the findings; and
- Stage 3 – Prepare a draft amended SWMP, carry out a public review of the draft plan, incorporate changes from the public review and finalize the plan for Regional Board and Ministerial approval.

Community consultation is a mandatory component of the planning process and is critical to the creation of a plan that can be supported by the public. Consultation is carried out throughout the process and commonly begins with dissemination of information to more active dialogue with the community in Stages 2 and 3 as options are reviewed and selected.

Spectrum of Consultation



The Ministry of Environment outlines the expected components of a community consultation process in their document *Guide to the Preparation of Regional Solid Waste Management Plans by Regional Districts*. In addition, the RDN has a public consultation / communication framework to ensure a consistent, comprehensive and cost-effective approach to public consultation and communication

initiatives. This framework, along with the Ministry's guide, was used to prepare the following Consultation & Communications Plan.

Objectives

A Consultation & Communications and Plan is intended to achieve the following objectives:

- i. Ensure that the process to develop the plan is collaborative and reflects a broad range of perspectives
- ii. Provide opportunities to educate the public about the Solid Waste Management Plan and future options for managing waste
- iii. Provide opportunities for public input on a range of options and estimated costs
- iv. Increase support for the resultant solid waste management planning and programs
- v. Meet the consultation expectations of the Ministry of Environment.

Participants

There are several groups that may be directly and indirectly affected by the outcomes of the SWMP process. It is critical to the success of the SWMP that affected stakeholders are participants in the planning process. The following is a list of potential stakeholders:

- RDN staff
- Regional Board
- Municipal staff
- Municipal councils
- First Nations
- Ministry of Environment
- Residents throughout the region
- Businesses
- Construction and demolition industry
- Major institutions (Nanaimo General Hospital, School District 68 and 69, Vancouver Island University)
- Waste haulers
- Waste management facility owners and operators
- Neighbouring regional districts (Cowichan Valley, Alberni Valley, Comox Valley).

Consultation and Communications Plan

The RDN's framework has adopted 3 components to the plan: Participation, Engagement, and Communications. The activities associated with these three components, described in the following sections, have been employed by a number of regional districts to ensure their planning process meets the objectives listed above.

Participation

Participation refers to activities that enable a two-way conversation between those tasked with developing the SWMP and affected stakeholders, including the public. These activities provide opportunities for collaboration. Participation tools include:

- The Regional Solid Waste Advisory Committee
- The Solid Waste Select Committee
- Stakeholder Workshops

The Regional Solid Waste Advisory Committee (RSWAC) is the cornerstone of the Consultation and Communications Plan and will be in place throughout the planning process. This committee is a combination of public advisory representatives and technical advisory representatives that meets regularly throughout the planning process. The RSWAC provides advice to the Regional District Board in regards to the content of the plan and associated consultation activities. Members of RSWAC include representatives of the general public, business, waste management industry, local governments and First Nations from across the region. Terms of reference for the RDN's RSWAC are provided in Appendix A. These terms of reference have been approved by the RDN Board and applied to the establishment of the current RSWAC.

The Solid Waste Management Select Committee is made up of directors of the Regional District Board and acts as a steering committee during the process of developing the SWMP. The committee forms a direct link between the RSWAC and the Board. They are able to provide direct feedback to the RSWAC to ensure that the outcomes of the planning process are politically supportable, and also ensure that the Board is aware of the direction that the planning process is taking.

Stakeholder workshops will be held throughout the planning process as the need for them is identified. Workshops are intended to create a dialogue on specific elements of the SWMP, including generating new ideas and perspectives on issues, as well as deepening the collective understanding of those involved. The outcomes of the workshops will be used to supplement the discussions at the RSWAC meetings.

Engagement

Engagement refers to activities where the community is drawn into the conversation and input is sought from the public. The focus is on receiving information rather than providing it. For purposes of developing a solid waste management plan, engagement activities can be used to solicit input on the public's current perceptions of solid waste management as well as their feedback on options identified during the planning process.

Engagement activities will include a dedicated email address to receive email comments and inquiries, an on-line survey to identify residents' issues and concerns regarding solid waste management, and stakeholder meetings. Stakeholder meetings may be held to obtain input on options affecting a specific industry groups (e.g. construction/demolition/ renovation contractors, multi-family building managers, etc.). The broader public will be solicited for their feedback on the RDN's solid waste system.

Stage 2 & 3 involves a range of activities intended to obtain feedback on the draft plan's recommendations, including:

- Public open houses and meetings
- Exit survey at the public open houses and meetings
- On-line surveys for those unable to attend an open house or meeting
- Stakeholder meetings
- Presentations to Municipal and First Nation Councils.

The variety and breadth of engagement activities selected should be reflective of the type and range of actions proposed in the SWMP and how best to involve the affected stakeholders. Consequently, the specific tools to be employed during the Stage 3 consultation process are best identified once Stage 2 is completed or nearing completion.

Communications

Communications refers to providing information to the public and is generally one-way communication. Communication activities during the planning process will include:

- SWMP Updates for Councils
- A SWMP webpage on the Regional District website
- Newsletters
- Information display
- Promotion (e.g. newspaper and radio ads, posters, Facebook, Twitter)

Regular communications with municipal and First Nation councils are intended to keep these organizations informed on the development of the plan. The format for these communications will be through circulation of RSWAC meeting minutes to the member municipalities and First Nations as well as through regular RDN Solid Waste Newsletters

The RDN's website will be used to make SWMP resources available to the public and other interested parties on an on-going basis. A dedicated solid waste management plan web page has been developed and will include:

- Reports and memoranda prepared by the consultants (e.g. Stage 1 report)
- Advisory committee minutes and presentations
- A "tell us what you think" link to a dedicated email address
- A link to sign up for regular SWMP updates
- Information on consultation events and other opportunities for input

At any point during the planning process, information can be distributed to update residents of the key issues under discussion, as well as opportunities and ongoing encouragement for them to participate in available consultation activities. Often this information can be part of a regular regional communication, such as the RDN's Regional Perspectives or Zero Waste Newsletter. A Stage 3 newsletter can be used to provide information on the key recommendations in the draft SWMP and how residents and businesses can provide their feedback.

A mobile information display is being developed for use in malls, regional disposal facilities, community centres and at community events. Similar to the newsletter, the display will feature information on the key recommendations in the draft SWMP and how to provide input.

During the Stage 3 Consultation process, promotion is used to inform the public and affected stakeholders about the draft plan and the opportunities available to them for providing input. It is important to use a variety of tools to increase awareness and encourage people to attend or provide feedback via the website. Possible promotional tools include:

- Campaign slogan or brand to use on all materials to increase recognition and awareness
- Posters in public areas (city halls, rec centres, senior centres, other facilities) to promote open houses and other events
- Distribute hard copies of newsletter / poster to key locations
- Email distribution to key contacts (local governments, neighbourhood groups, associations, Chamber of Commerce, etc.) including information for their websites and newsletters
- Significant draw prize to increase participation (in surveys, at open houses)
- Newspaper advertising
- Radio advertising
- Media releases to all media (TV, Radio, Newspaper, Shaw, etc) and follow up to increase interviews and media coverage
- Public service announcements
- Website copy, including link to online survey and display panels and presentation materials
Include offer to sign up for email project updates
- Facebook updates
- Twitter updates
- Promote at special events and community gatherings
- Promote via presentations to community groups and service clubs
- Signage at all solid waste facilities
- Inserts and/or notification via Regional Districts' and member municipalities' mailers (if available during the consultation process)
- Signage on-site at events.

The extent that the above tools are used will be based on the content of the draft plan and the appropriate level of promotion and consultation required.

A Consultation and Communications Plan for the RDN's SWMP

A presentation on SWMP communications and consultation was provided to RSWAC at their meeting on December 11, 2014. Based on feedback from the committee, a consultation plan for the RDN's SWMP has been prepared. The following table provides an overview of the proposed communication and consultation activities planned for each stage of the process to develop the SWMP. As noted above, the breadth of the consultation and communication activities in Stage 2 & 3 will be defined once the content of the draft plan is known; a list of *potential* activities is provided below.

STAGE	PARTICIPATION	CONSULTATION	COMMUNICATIONS
Stage 1	<ul style="list-style-type: none"> • Establish Regional Solid Waste Advisory (RSWAC) and Steering Committee • RSWAC Meetings • Steering Committee Meetings 	<ul style="list-style-type: none"> • Establish protocol for tracking email and telephone input • Public workshop on waste management issues and solutions 	<ul style="list-style-type: none"> • Establish SWMP webpage on RDN website ○ Technical memos and reports ○ Advisory committee meeting minutes

			<ul style="list-style-type: none"> ○ Notices of consultation events ● Establish on-line sign-up for email updates Send out press release ● Article in RDN newsletter
Stage 2 (potential consultation and communication activities)	<ul style="list-style-type: none"> ● Regional Solid Waste Advisory Committee meetings ● Steering Committee meetings ● Stakeholder workshops 	<ul style="list-style-type: none"> ● Track email and telephone input ● Survey ● Stakeholder meetings ● Public information meetings /Open Houses ● Meeting(s) with neighbouring regional districts ● Stakeholder meetings ● Presentations to community groups and other interested organizations ● Exit surveys (at open houses and public meetings) ● On-line Survey (website link to survey) 	<ul style="list-style-type: none"> ● Website updates ● Newsletter ● Local government update for Municipal and First Nation councils ● Send out email update to distribution list ● Presentations to interested organizations (as requested)
Stage 3 (potential consultation and communication activities)	<ul style="list-style-type: none"> ● Regional Solid Waste Advisory Committee meetings ● Steering Committee meetings 	<ul style="list-style-type: none"> ● Open Houses ● Public Meetings ● Presentations to Municipal and First Nation Councils ● Meeting(s) with neighbouring regional districts ● Stakeholder meetings ● Presentations to community groups and other interested organizations ● Exit surveys (at open houses and public meetings) ● On-line Survey (website link to 	<ul style="list-style-type: none"> ● Website updates ● Newsletter, including <ul style="list-style-type: none"> ○ Key components of draft plan ○ Opportunities for input ○ Offer of presentations to interested groups ● Newspaper advertising of consultation opportunities ● Media releases ● Media interviews ● Local government update ● Facebook and Twitter

- survey)
- Receive and track email and telephone input
- postings
- FAQs (available on website and in hard copy)
- Notifications in local government publications
- Notifications on municipal websites (with link to SWMP webpage)
- Updates to email distribution list
- Public service announcements
- Information display (for use in recreation centres, libraries and other public venues)

Summarizing Input

Upon completion of consultation activities, all of the input received from the public and affected stakeholders will be collated and summarized so that it can be reported to the RSWAC. The input can be reviewed by RSWAC with the intention of determining if modifications to the SWMP should be recommended to the Board.

Once the SWMP document meets with the Board's approval, the Plan will need to be submitted to the Minister of Environment for approval, along with:

- i. Written commitments from municipalities and First Nations that are tasked to undertake measures identified in the SWMP
- ii. A report on the Public Review and Consultation Process.

The *Public Review and Consultation Process Report* should include:

- A description of all consultation activities undertaken during the course of the planning process, including:
 - RSWAC meetings
 - Steering Committee meetings
 - Workshops
 - Website
 - Stakeholder outreach, including meetings
 - Presentations to community groups
 - Newsletters
 - Media releases
 - Community displays
 - Advertising

- Social media
 - Copies of newsletters, advertising, press releases and other tools used to communicate with the general public and affected stakeholders
 - A description of First Nation engagement activities
 - The RSWAC terms of reference and a list of RSWAC members
 - Minutes of RSWAC and Solid Waste Subcommittee meetings.

Appendix A

**Regional Solid Waste Advisory Committee
Terms of Reference**

**RDN – REGIONAL SOLID WASTE ADVISORY COMMITTEE (RSWAC)
SOLID WASTE MANAGEMENT PLAN
TERMS OF REFERENCE**

1. BACKGROUND AND NEED

The Regional District of Nanaimo is undertaking a review of the Solid Waste Management Plan. Public and agency consultation representative of the diversity of the community is integral to the review. In accordance with the Ministry of Environment’s *Guide to the Preparation of Regional Solid Waste Management Plans* a single public and technical advisory committee will act as a “sounding board” of community interests and will provide advice to the Regional Board through the Solid Waste Management Select Committee.

2. ROLES AND RESPONSIBILITIES

The role of the RSWAC is to:

- Represent a balance of community interests;
- Act as advisory committee to the Solid Waste Management Select Committee on the development of the Solid Waste Management Plan;
- Review guiding principles and provide feedback for the Plan;
- Review information provided by the RDN and its consultants and provide comments and suggestions as well as highlight information gaps to be considered for the Plan;
- Provide input on design and implementation of public surveys and consultation processes;
- Assist in reviewing current programs and identifying issues and opportunities (Stage2 & Stage 3 report);
- Assist in developing and evaluating a variety of options and strategies for the draft Plan (Stage2 report);
- Participate in public consultation, as required (for example, attendance at Open Houses);
- Review public consultation results and provide input on the final Plan;
- Participate in smaller ad-hoc committees dealing with specific issues or tasks, as required; and,
- Contribute to programs and policies that are in the best interests of all residents of the RDN, balancing both community and industry needs and technical requirements.

Recommendations of the RSWAC are directed to the Solid Waste Management Select Committee.

3. COMPOSITION AND CHAIR

Chair and Vice Chair to be appointed by the Chairperson of the Board.

Voting Members:

- One representative from the Select Committee (or alternate);
- Up to 15 members representing a diversity of community interests such as from the following groups:
 - Private sector waste management industry service providers
 - Private sector solid waste facility representatives

- Non-profit group with an interest in solid waste management (e.g. reuse organization)
- Large institutional solid waste generator
- Business representatives, including one focused on the 3Rs
- Members at large for the community (community association, youth, senior)
- Regional Landfill Advisory Committee/Regional Landfill area representative
- Urban/rural geographic mix

Non-Voting Technical Advisors:

- Up to 12 members representing agencies including:
 - Regional District Staff – 3 members
 - Municipal Staff – 4 members
 - First Nations – 3 members
 - Provincial Agencies – 1 member
 - Federal Agencies – 1 member

4. RULES OF PROCEDURE

The Committee will act in accordance with the RDN Board Procedure Bylaw.

5. ADMINISTRATION

Administrative matters related to the RSWAC will be conducted by RDN staff acting through the Chair.

6. TERM

RSWAC will conclude its work when the Plan has been approved by the RDN Board. Members will be asked to commit for up to three years.

2015 Solid Waste Management Plan Review Issue Identification

The table below outlines the issues captured from the results of the findings in the Stage One Existing System Report as well as input from the following sources:


- Regional Solid Waste Advisory Committee (RSWAC) meeting September 2013;
- A solid waste haulers and recyclers roundtable meeting held in February 2014;
- A solid waste planning workshop held for RDN Board members in May 2014;
- A Zero Waste community day workshop held in October 2014; and,
- Two meetings of the RSWAC held in October and December 2014.

CONTEXT & TOPIC AREA	ISSUES IDENTIFIED
<p>1. Reduce/Reuse: ‘Reduce & Reuse’ are at the top of the waste management hierarchy, however these behaviours receive less promotion that recycling and proper waste disposal.</p>	<p><i>-How can we encourage waste reduction?</i> <i>-How to encourage behaviours that move “up the hierarchy” from recycling to reduction and reuse</i> <i>-How to move towards Sustainable product design and manufacturing</i> <i>-Is the per capital waste generation rate increasing or decreasing?</i></p>
<p>2. Extended Product Responsibility (EPR): EPR shifts the end-of-life management costs of consumer goods from local government taxpayers to procedures and consumers. In BC, the Recycling Regulation (BC Reg. 449/2004) defines the products and packaging that are included in an EPR program. Management of products is managed by stewardship organizations who – in turn- organize collection services throughout the province.</p>	<p><i>-Lack of awareness and confusion with EPR/take back systems (what to take where)</i> <i>-Uncertainty regarding the implications of future EPR programs</i></p>
<p>3. Curbside Collection Services: There is a diverse range of residential services that include 3 stream collection: garbage, recycling and food waste.</p>	<p><i>-How to improve diversion and the use of existing curbside services (yard waste, textiles, and glass and incontinence products, kitty litter)</i> <i>-Food waste participation in rural areas?</i> <i>-Does the residential collection model need improvement?</i> <i>-Does additional recovery of recyclables from the garbage Multi Recovery Facilities (MRF’s) have a role?</i></p>

CONTEXT & TOPIC AREA	ISSUES IDENTIFIED
<p>4. Industrial, Commercial & Industrial (ICI): Disposal bans are the main policy mechanism employed by the RDN to encourage recycling by the ICI sector.</p>	<p><i>-Need increased diversion of ICI waste this is supported by the 2012 Waste Composition Study</i></p>
<p>5. Construction, Demolition and Renovation: Construction, demolition and renovation waste is composed of a wide variety of materials, including recyclable materials such as wood, cardboard, metal and drywall. There are several companies that provide recycling collection to this sector</p>	<p><i>-How to encourage more diversion of construction, demolition and renovation waste</i> <i>-WCB asbestos management requirements create a challenge to the recovery and recycling of gypsum and C&D waste</i> <i>-Acceptance of creosoted materials and the appropriate tipping fee</i> <i>-Conflicting strategies for management of wood waste</i> <i>-Diversion of asphalt shingles from landfill</i> <i>-Lack of data regarding C&D waste</i> <i>-Lack of clarity on Future C&D regulations under BC's Recycling Regulation</i> <i>-Uncertain outlook for the Wood Waste Market</i></p>
<p>6. Resource Recovery/Zero Waste Policies: Recovering valuable resources from our waste streams is garnering significant attention as commodity prices fluctuate.</p>	<p><i>-When and how to implement Resource Recovery</i> <i>-Which resource recovery technology is best suited to the RDN's waste stream and size</i> <i>-How to manage hard to recycle items</i> <i>-Lack of high quality depot services in the City of Nanaimo</i></p>
<p>7. Residual Waste Management: The RDN's air space is the most important asset. Options to increase capacity are optimization of diversion, operations and airspace. The current landfill life is until 2037. Issues that emerge need to be explored further in conjunction with a long range waste generation projections in the context of the future financial model.</p>	<p><i>-What are desirable options once the regional landfill is full?</i> <i>-What options aren't desirable?</i> <i>-Illegal Dumping</i> <i>-WSML Licensing scheme/ Flow control options</i> <i>-Managing future waste generation</i></p>
<p>8. How does Waste to Energy (WTE) fit into the RDN's "Zero Waste Strategy"? Under what circumstances should WTE be considered/not considered.</p>	<p><i>- If not located in RDN</i> <i>- If only servicing RDN</i> <i>- If servicing Vancouver Island only</i> <i>- Specific technologies?</i> <i>- Large volumes typically required to make WTE financially attractive (competitive with landfilling)</i> <i>-Zero Waste International Alliance definition of Zero Waste does not allow combustion of waste for energy purposes</i></p>

CONTEXT & TOPIC AREA	ISSUES IDENTIFIED
<p>9. Financing the Solid Waste System: A sustainable financial business model is essential for the provision of solid waste services.</p> <p>The majority of funding for the Solid Waste function is currently drawn from RDN tipping fees. Since 2014, expenses are exceeding revenues with the deficit being funded by increasing the Tax requisition. Current funding mechanism not able to adapt to change in market forces. The following three mechanisms for consideration: decrease in spending, adjust tipping fees, and taxation generated the following issues.</p>	<ul style="list-style-type: none"> -How to pay for waste reduction initiatives -current method of funding the solid waste function through tipping fees is unsustainable -How to finance the RDN's solid waste management infrastructure -How to fund Nanaimo Recycling Exchange & Non-profits -Private waste export of MSW & how it destabilizes the RDN waste management system -Stable funding for non-profits -Lack of full cost recovery associated with provision of EPR Collection Services -Recycling markets limited market for post-consumer glass, and film plastic

**SOLID WASTE MANAGEMENT PLAN REVIEW
WORK PLAN & PROPOSED TOPICS**

DATES	MEMORANDUMS & DRAFT PLAN DEVELOPMENT
<p>Feb 19</p> 	<p>MEMORANDUM 1 Projected Waste Generation</p> <p>Forecasting future waste quantities is fundamental for planning waste management programs and services. If we don't know how much waste we are going to need to manage we can't plan for the types of programs and services we will need to provide. Applying the Provincial model for waste generation suggests the following: Under a status quo scenario of 70% diversion over the next 10 years forecasts a per capita waste disposal of 291kg with a total amount of residuals of 50,715 metric tonnes annually by 2025.</p> <p>Under the Province's most optimistic forecast of 81% diversion over the next 10 years a per capita waste disposal of 185kg with a total amount of residuals of 32,119 metric tonnes annually by 2025 is achievable. <i>Discussion Point: Does the RSWAC committee want to set the new target at 80% for the new plan?</i></p>
<p>April 16</p>	<p>MEMORANDUM 2 Reduce, Reuse, Education & EPR</p> <p>The main challenges related to waste reduction and reuse are the dominant culture of consumption and the design and manufacture of consumer goods. The RDN's efforts to date primarily focus on educating residents and businesses and supporting Extended Producer Responsibility (EPR) programs that are offered at by community run and privately operated recycling depots. <i>Discussion Points: Does the RSWAC advocate for stronger EPR and support the continuation of existing EPR programs, increase education efforts and advocate for more EPR programs?</i></p>
	<p>MEMORANDUM 3 The 3rd R: Recycling - Collection Services and End Uses</p> <p>Strategies and practices related to collection and end uses of food waste, garbage and recyclables are well established and accepted in the region. The responsibility for funding residential and multi-family recycling programs shifted to industry stewards in May 2014. Organics management is provided by the private sector that has been instrumental for the RDN to implement its organics management strategy, which includes a ban on commercial food waste. <i>Discussion Point: Does the RSWAC support the continuation of existing programs as well as discussing ways to harmonize or expand collection options.</i></p>

<p>May 28</p>	<p>MEMORANDUM 4 Zero Waste Plan & Regulatory Issues The memorandum will address several regulatory and community issues that were identified through issue identification phase that included gaps in data for the commercial sector and waste import/export, expanding disposal bans, review of the Waste Stream management bylaw, community planning for waste management facilities and ongoing concerns about illegal dumping. Regional districts have the authority under the BC Environmental Management Act to regulate the solid waste industry to ensure diversion, prevent abandonment of materials, track movement of waste, and protect the public interest by managing waste flow to ensure financial sustainability. <i>Discussion Point: Is the RSWAC satisfied with the level of regulation of waste facilities and haulers and the RDN’s approach for coordinating illegal dumping?</i></p>
	<p>MEMORANDUM 5 Memo 5 - Resource Recovery The memo will focus on the recovery of energy and non-energy solid waste resources at the RDN. A number of resource recovery technologies and approaches are discussed and compared with information drawn from various feasibility studies conducted over the past years. The tri region study identified a number of financial projections for Waste to Energy scenarios ranging from enhancing the existing system to potential short term (up to 2020) and long term (beyond 2020) options. The RDN has to meet 70% diversion before waste to energy can be considered as a solid waste management option; therefore WTE will only be considered conceptually during this plan development. Waste to Energy counts as recovery if 60% energy is recovered. The Metro Vancouver Waste to energy proposal raised the profile of out of district waste being managed at an in-region WTE facility. <i>Discussion Point: the RSWAC committee is divided on the Waste to Energy debate. Is there a role for Waste to Energy in future Solid Waste Planning? Is there a place for an Out-of Region WTE or an RDN WTE facility?</i></p>
<p>June 18</p>	<p>MEMORANDUM 6 Residual Management Residuals management in the RDN consists of disposal of municipal solid waste at the Regional Landfill, owned and operated by the RDN, and disposal of construction and demolition waste at a variety of privately operated facilities throughout the RDN. The Regional Landfill’s most important asset is its airspace which makes it paramount to conserve the landfill for as long as possible. Options for increasing capacity are the optimization of diversion, operations and airspace. The current fill design provides landfill capacity until 2037. Discussion Points: Are there other fill design concepts given the projected decrease in volume that could increase landfill life? These concepts need to be explored further in conjunction with a revised landfill capacity study. In addition it will be necessary to review this in the context of the financial model as the current method of funding the solid waste function through tipping fees is unsustainable.</p>
	<p>MEMORANDUM 7 Financial Management A sustainable financial business model is essential for the provision of solid waste services. The majority of funding for the RDN function is currently drawn from tipping fees charged at the Regional Landfill and Church Road Transfer Station. Since 2013, expenses are exceeding revenues with the deficit being funded by reducing spending and increasing the tax requisition. <i>Discussion Point: to bring future finances in balance: the memorandum will review three mechanisms: (i) decrease spending, (ii) increase/decrease tipping fees and (iii) tax requisition. A modelling exercise maybe required based on the projected waste tonnage to test various assumptions and combinations.</i></p>

TO: Larry Gardner
Manager, Solid Waste Services

DATE: February 26, 2015

FROM: Meghan Larson
Special Projects Assistant

FILE: 5365-00

SUBJECT: REGIONAL DISTRICT OF NANAIMO WASTE GENERATION PROJECTIONS

Issue: Forecasting future waste quantities is fundamental for planning waste management programs and services.

Background:

The Regional District of Nanaimo (RDN) is currently reviewing and updating the Solid Waste Management Plan. Ministry of Environment guidelines, for developing Solid Waste Management Plans, suggest a minimum of a 10 year planning horizon; therefore, forecasting waste generation until at least 2025 is fundamental in developing the Plan.

This *Technical Memorandum* first reviews forecasting of waste generation carried out by the province for the period between 2010 and 2015 and documented in the BC Stats report *Solid Waste Generation in British Columbia, 2010-2025 Forecast, June 2012*. Secondly, the memorandum considers where the RDN currently fits in with the provincial model. And lastly, the memorandum discusses where the RDN might vary with respect to future forecasting.

Discussion:

1. Provincial Forecasting of Waste Generation

The BC Stats report defined key sectors for waste generation and recycling/diversion as follows:

Residential - Residential waste is solid waste produced by all residences and includes waste that is picked up by the municipality (either using its own staff or through contracting firms), and waste from residential sources that is self-hauled to depots, transfer stations and disposal facilities.

Industrial, Commercial and Institutional - IC&I wastes include: industrial materials, which are generated by manufacturing, and primary and secondary industries, and are managed off-site from the manufacturing operation; commercial materials, which are generated by commercial operations, such as shopping centres, restaurants, offices and others; and institutional materials that are generated by institutional facilities, such as schools, hospitals, government facilities, seniors homes, universities, and others.

Construction, Renovation & Demolition - CR&D wastes refer to wastes generated by construction, renovation and demolition activities. It generally includes materials such as wood, drywall, certain metals, cardboard, doors, windows, wiring and others. It excludes materials from land clearing on areas not previously developed as well as materials that include asphalt, concrete, bricks and clean sand or gravel.

Local Government Recycling/Diversion - Local government recycling/diversion programs include material recycling, organics composting and other waste diversion programs offered by local governments. Recycling is the process whereby a material (for example, glass, metal, plastic, paper) is diverted from the waste stream and potentially remanufactured into a new product or used as a raw material substitute. Local government recycling/diversion figures do not include industry product stewardship, which is measured separately. For instance, it does not include materials picked up under stewardship programs such as materials picked up by local government under contract to Multi-Material BC (MMBC).

Industry Product Stewardship Recycling/Diversion - Industry product stewardship is another form of diversion of waste from landfills. It refers specifically to the collection of materials for reuse or recycling that may offer some sort of incentive for the consumer. Many manufacturers now provide programs to their consumers to recycle or safely dispose of their products. In some cases, consumers pay environmental fees to recover the costs of these programs, and deposits as incentives to participate in the return programs. This term most frequently refers to the return of materials such as beverage containers, tires, paints, batteries, pesticides and motor oil.

The report highlights three projection scenarios with varying degrees of measures taken to divert waste from disposal:

Scenario 1 - 2010 diversion and recycling programs continue as planned; plans for new industry product stewardship programs proceed as expected (e.g. Printed Paper and Packaging); and, enhanced construction, renovation and demolition (CR&D) waste programs do not materialize as quickly as expected.

Scenario 2 – Diversion and recycling programs increase collection rates; construction and demolition waste programs are implemented; and, organic material diversion programs expand significantly.

Scenario 3 – Diversion and recycling programs significantly increase collection rates; high performing construction demolition waste programs are implemented; and, organic material diversion programs expand dramatically.

Under all Scenarios overall waste generation in BC will continue to rise (+17.7%). Refer to the BC Stats report for full details on how their projections were calculated.

Scenario 1 findings:

“Current and planned diversion and recycling programs continue as planned, but enhanced construction and demolition waste programs do not materialize as quickly as expected”

- Assumes maintenance of current programs plus the addition of new programs already identified for implementation (i.e. Packaging and Printed Paper).
- More waste will be generated and, although diversion will remain at 43%, the total amount of waste requiring disposal will increase by 17.5% over 15 years.
- Materials recycled by local government will decline by 16.4% as responsibility is transferred to industry stewards. (i.e. Packaging and Printed Paper; although that material is largely collected by local government through curbside programs, the responsibility rests with the industry steward).

Scenario 2 findings:

“Current and planned diversion and recycling programs increase collection rates, construction and demolition waste programs are implemented and organic material diversion programs expand significantly”

- Assumes a stewardship program for construction, renovation and demolition (CRD) waste and moderately stronger growth in collection from newer programs.
- Assumes greater diversion of organics by local government.
- Assumes a provincial diversion rate of 62% by 2025.
- Results in a projected decline in waste disposal by 21.8% between 2010 and 2025.
- States: *“Given the trend toward increased recycling, stewardship and other practices, a scenario whereby waste diversion efforts experience moderate expansion appears to be a fairly realistic one.”*

Scenario 3 findings:

“Current and planned diversion and recycling programs increase collection rates, construction and demolition waste programs are implemented and organic material diversion programs expand significantly”

- Assumes significant advancement of all diversion strategies.
- Assumes the main driver for increased diversion over Scenario 2 is further advancement of organics programs by local government.
- Assumes a provincial diversion rate of 81% by 2025.
- Results in a projected decline in waste disposal by 61.6% between 2010 and 2025.
- “While this may seem a somewhat unlikely scenario, it is nonetheless worth examining as something for BC to strive for.”

2. Historical Waste Generation Trends

Over the 20 year period from 1990 to 2010 the total waste generation for the province increased by 40%. What this means is that while great strides were made in increasing waste diversion, per capita waste disposal was not decreasing. The BC Stats report shows a linear projection for waste generation trends over the next 10 years i.e. waste generation increases at the same rate as population. This indicates the province is projecting that per capita waste generation will remain relatively static over the next 10 years.

3. RDN Waste Generation in Relation to the Provincial Model

Applying the provincial model to local waste management practices, the RDN is considered to currently fall within the scope of Scenario 2. Scenario 2 is based on stewardship programs for CRD waste, organics diversion programs by local government and that a stewardship program for packaging and printed paper is in place. The following describes how RDN waste management practices are consistent with Scenario 2:

- *Construction, Renovation and Demolition (CRD) Waste Diversion by Local Government:*

A 2004 waste composition study determined that after organics, CRD waste was the largest component of solid waste disposed of in the Regional Landfill. The RDN's Zero Waste Plan identified the need to divert the clean wood waste from construction demolition sites from the landfill.

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

- Increasing the tipping fee for clean wood waste at RDN Solid Waste Facilities to create incentives to divert this material to licensed recycling facilities;
- 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 landfill and transfer station from small self-haulers.

Effective January 1, 2008, the RDN banned clean wood waste from disposal in the Regional Landfill and roll-off containers of wood waste at RDN Solid Waste Facilities. The initiatives of the RDN are believed to largely meet the diversion goals of what a provincially mandated CRD strategy might look like.

- *Organics Diversion by Local Government:*

The RDN currently has a two-step approach to organics diversion; Commercial Food Waste Diversion and Green Bin Residential Food Waste Collection.

In June 2005, the RDN banned disposal of food and other organic waste from commercial and institutional sources at the region's solid waste facilities, putting the first phase of its organics diversion strategy into action.

The ban on commercial food waste in the Regional Landfill followed the opening of International Composting Corporation in Nanaimo, the first composting facility licensed under the RDN Waste Stream

Management Licensing Bylaw. The International Composting Corporation is currently under the ownership of Nanaimo Organic Waste.

Extensive consultation preceded the commercial food waste and organics disposal ban in 2005 with follow-up site visits to over 200 businesses and organizations. Landfill disposal of compostable organic waste from a commercial or institutional facility is not permitted under Bylaw 1531.

The expectation is for all commercial and institutional facilities such as restaurants, grocery stores, and school and hospital cafeterias to have food waste diversion systems in place. Commercial food waste includes raw and cooked food and other compostable organic material from commercial and institutional premises.

The RDN has encouraged participation in the commercial food waste ban with little regulatory enforcement to date. The strategy has allowed affected businesses and organizations to comply using the most cost-effective and efficient methods for their operations. The second step, providing region-wide Green Bin residential food waste collection, was accomplished in October 2011. Again, the driver was the 2004 waste composition analysis which showed that food waste and compostable paper made up approximately 50 per cent of household garbage. The residential Green Bin Program enables households to help divert all food waste in the region from the landfill for processing into compost and potentially renewable fuels.

The green bin goes beyond what can be composted at home. Not just fruit and vegetable scraps but cooked food, meat, fish, bones, food soiled paper and paper packaging such as waxed fast food cups and milk cartons will be accepted in your green bin. Currently, the green bin program diverts an estimated 106kg per household of food waste from the Regional Landfill each year from the residential curbside collection program.

- *Packaging and Printed Paper Provincial Stewardship Program*

The curbside collection programs operated by the RDN and the City of Nanaimo (City) are funded through user fees sent out on their utility bills, not through taxes. By partnering with MMBC in May 2014, the City and the RDN became Packaging and Printed Paper collectors on MMBC's behalf and receive appropriate financial incentives from MMBC. As a result, the recycling portion of annual user fees charged to single family residential households has been reduced. Prior to partnering with MMBC, the RDN and the City provided residential recycling collection to all single family residential homes in the region. So far, there has been no measurable difference in the amount of recyclable material collected through the curbside collection program before and after the partnership with MMBC.

Since 1991, the RDN has progressively banned materials from landfill disposal as local recycling and processing facilities became available.

In 2010, household plastic containers were added to recyclable paper, cardboard, and metal already banned from the landfill.

Thanks to the cooperation of waste haulers and the owners and management of multi-family dwellings, 86% of complexes in the region are now meeting the requirements of the ban on landfill disposal of

household recyclable materials. All multi-family complexes should have a system in place to collect and recycle all household recyclables subject to the landfill disposal bans.

Currently, the RDN is at a diversion rate of 68% which is above the provincial diversion rate of 49% by 2014 for Scenario 2. However, the BC Stats projections are based on a provincial average which includes many districts that have less mature and developed programs such as exist in the RDN. In other words, Scenario 2 is a composite of regions having both lower and higher diversion rates yielding a provincial average of 49%. However, in considering the description of programs of Scenario 2, they mirror almost exactly what exists in the RDN.

4. Future Waste Generation

The following section discusses future waste generation in the RDN relative to provincial Scenarios 2 and 3. The RDN is considered to currently fall within Scenario 2, so this is really a “status quo” future option. Scenario 3 anticipates significant advancements in diversion strategies particularly in regards to organics management. Such advancements do apply to the RDN.

Scenario 2

Under Scenario 2, it is projected that the RDN would see an increase (+8%) in the amount of waste disposed to landfill with yearly tonnages increasing from 52,635 metric tonnes in 2014 to 56,629 metric tonnes in 2025. This increase is largely due to an increase in population in the region and the assumption that waste diversion rates nominally increase.

Scenario 2 Projections												
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Population	151,687	153,551	155,540	157,629	159,730	161,831	163,922	165,996	168,049	170,087	172,094	174,077
Per capita waste disposal (kg)	347	336	325	325	325	325	325	325	325	325	325	325
Waste Disposal (m/t)	52,635	51,617	50,599	51,279	51,962	52,646	53,326	54,001	54,668	55,331	55,984	56,629
Total Recycled (m/t)	111,850	114,890	118,065	119,650	121,245	122,840	124,427	126,001	127,560	129,107	130,630	132,135
Total Generated (m/t)	164,486	166,507	168,664	170,929	173,207	175,485	177,753	180,002	182,228	184,438	186,614	188,765
Diversion Rate	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%

Note: Baseline waste generation for 2014 had not been calculated at the time of this report. A per capita waste disposal rate of 347kg was assumed for the purposes of future projections.

Scenario 3

Under Scenario 3 it is projected that the RDN would see a decline (-32%) in the amount of waste disposal to landfill with yearly tonnages decreasing from 52,635 metric tonnes in 2014 to 35,865 metric tonnes in 2025. This Scenario assumes provincially recycling/diversion rates increase dramatically including both government recycling/diversion as well as industry product stewardship recycling/diversion causing the volume of waste disposed of in landfills to shrink drastically. For the RDN specifically, reductions would be realized through improvements to the organics diversion programs with only a modest increase from provincial stewardship programs. This is because current RDN policies are believed to largely achieve the same results of a provincial CRD stewardship program.

Scenario 3 Projections												
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Population	151,687	153,551	155,540	157,629	159,730	161,831	163,922	165,996	168,049	170,087	172,094	174,077
Per capita Waste generation (kg)	347	336	325	304	293	282	271	260	249	239	228	206
Waste Disposal (m/t)	52,635	51,617	50,599	47,860	46,766	45,626	44,438	43,200	41,912	40,576	39,189	35,865
Total Recycled (m/t)	111,850	114,890	118,065	123,069	126,441	129,859	133,315	136,801	140,316	143,862	147,425	152,899
Total Generated (m/t)	164,486	166,507	168,664	170,929	173,207	175,485	177,753	180,002	182,228	184,438	186,614	188,765
Diversion Rate	68%	69%	70%	72%	73%	74%	75%	76%	77%	78%	79%	81%

Note: Baseline waste generation for 2014 had not been calculated at the time of this report. A per capita waste disposal rate of 347kg was assumed for the purposes of future projections.

Data Limitations

It is important to keep in mind that these are projections only and there are a number of factors that can change these projected outcomes as well as influence the type of service that might be provided:

- Regional Growth – aging population, increased densification in some areas
- Industry Product Stewardship programs – rate of successful diversion
- Waste Export – where is the waste in our region being disposed of
- Consumerism – Are individual buying habits staying the same or are individuals buying more or less

All of these factors will play a role in how much waste is actually produced in the future.

Conclusion:

Applying the Provincial model for waste generation suggests the following:

- Under a status quo scenario of 70% diversion over the next 10 years forecasts a per capita waste disposal of 325kg with a total amount of residuals of 56,629 metric tonnes annually by 2025
- Under the Province's most optimistic forecast of 81% diversion over the next 10 years forecasts a per capita waste disposal of 206kg with a total amount of residuals of 35,865 metric tonnes annually by 2025

The Province states in reference to an 81% diversion that *"While this may seem a somewhat unlikely scenario, it is nonetheless worth examining as something for BC to strive for"*. It is important to note that this level of diversion is based on a Provincial average with different areas having high and lower diversion. Although the report is not explicit that all areas of the province would have to have high levels of diversion to reach this target, it definitely implies such.

Nevertheless, given that the RDN has a mature waste management system and currently has all of the elements to promote further levels of diversion, 81% diversion appears to be achievable in the context of the provincial forecast.