TECHNICAL MEMORANDUM

MORRISON HERSHFIELD

DATE:	June 11, 2014	PROJECT No.	513080100
TO:	Brooke Carere, SLRD Southern Advisory Committee		
CC:	Todd Baker, Morrison Hershfield		
FROM:	Maura Walker, Maura Walker and Associates	E-MAIL:	Maura@maurawalker.com
RE:	**Other Solid Waste Management Services**		

BACKGROUND

To facilitate the identification of options, three technical memos have been prepared by the consultants to provide a "long list" of options for consideration and discussion at the Advisory Committee meetings:

Technical Memo #1: Solid waste diversion (i.e. the first 3Rs: Reduce, Reuse, Recycle)

Technical Memo #2: Residual waste management (i.e. solid waste disposal)

Technical Memo #3: Other Solid Waste Management Services and Issues

Input from the Advisory Committees will be sought on each of the memos and this input will assist with the selection of options for inclusion in the updated plan. The selected options will be researched in more detail for their specific application within the SLRD, including estimated costs and their synergy with other plan components. A final technical memo that details the preferred options will be prepared for review by the advisory committees prior to undertaking public consultation.

This memo is the third of the memos listed above and covers a range of topics that did not fall neatly under the headings of "diversion" or "residual waste management" and includes the following solid waste management system components:

- Construction and demolition waste management
- Landclearing waste management
- Waste stream management licensing and flow control
- Land use planning
- Wildlife/human conflict management
- Illegal dumping

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

In 2011 construction and demolition (C&D) waste was estimated to account for 17% of the total residual waste sent to landfill from the Whistler Transfer Station. No data is available for the Squamish Landfill or Lillooet Landfill on the proportion of C&D waste landfilled, however approximately 75% of the residual waste received at the Pemberton transfer station is reported to be bulky items such as C&D and furniture.

In Squamish and Whistler, there programs in place to support the recycling and reuse of C&D waste including:

- variable tipping fees to encourage reduction and source separation;
- building material reuse centres in Whistler and Squamish;
- recovery of reusable and recyclable materials from mixed loads of C&D waste at the RMOW transfer station and Carney's Cheekeye Recycling Yard next to the Squamish Landfill; and
- RMOW's Green Buildings Policy, which encourages more sustainable buildings with an objective to reduce the quantity of C&D waste generated during construction and throughout the life of the building.

Some of the challenges associated with effective C&D waste management in the SLRD include:

- in Pemberton and Lillooet, there are no facilities or policies in place to support C&D waste diversion;
- contractors for large projects in the southern SLRD can opt to send C&D waste to private landfills in Metro Vancouver or the Fraser Valley to avoiding local tipping fees and regulations associated with C&D waste management; and
- there is a lack of programs to support effective C&D waste management planning at the start of a construction, renovation or demolition project (with the exception of Whistler's green building policy).

The following options are available to promote the reduction of C&D waste sent to landfill and address the above noted challenges.

INFRASTRUCTURE OPTIONS

- At the Pemberton transfer station establish separate bins for source-separated C&D waste streams including clean wood waste, contaminated wood waste and gypsum/drywall.
- Assess the potential for a private or non-profit reuse and recycling facility for C&D waste for Pemberton and Lillooet (potential collaboration with the municipality and/or SLRD)

POLICY OPTIONS

- Assess the effectiveness of RMOW's green building policy as a mechanism to support waste reduction and diversion. If deemed to be effective the SLRD and member municipalities, should consider developing similar policies.

PERMIT-RELATED OPTIONS

- Require large construction projects to commit to reusing and/or recycling their C&D waste materials as a condition of building/demolition/renovation permits. Contractors must prepare a waste management plan and track materials throughout construction.

  Several Metro Vancouver municipalities have adopted such an approach, using model bylaw language prepared by Metro Vancouver. Through the building permit process process, contractors are required to demonstrate how they will maximize the reuse and/or recycling of debris and other waste generated during construction, demolition or renovations projects. An application fee based on the size of the project is levied on the permitee. Some of this fee is refundable on submission of documentation of recycling activities demonstrating a minimum diversion levels established by the project's waste management plan.

- Establish a permit for deconstruction of a building that is significantly less costly than a demolition permit to support the reuse and recycling of building materials.
- Consider how current permitting processes can be modified to encourage the complete re-use of a building at a different location (i.e. house moving).

House moving by Nickel Bros. in Victoria

PROMOTION AND EDUCATION OPTIONS

- Actively promote C&D waste reuse and recycling opportunities.
- In conjunction with local construction associations, establish a 3Rs education and information program focused on construction, demolition and renovation contractors. Potential subject areas could include:
  - Local waste diversion and disposal opportunities
  - Permits and waste management requirements
  - Green building policies
  - Solid waste management planning tools for construction, renovation and demolition projects

EXTENDED PRODUCER RESPONSIBILITY FOR C&D WASTE MATERIALS

The Canada-wide Action Plan for Extended Producer Responsibility includes construction and demolition materials. The anticipated timeline for including C&D waste materials in BC's Recycling Regulation is 2017. At present, no details have been established regarding how EPR for C&D materials will be implemented and which materials and products will be included.

LANDCLEARING WASTE MANAGEMENT

Landclearing waste refers to tree waste, including trunks and stumps that are generated as a result of clearing land for development. In the SLRD, landclearing waste is generally managed by grinding and leaving the ground wood on-site, or by hauling stumps off-site for grinding or burning.

With increasing understanding of the health impacts of wood smoke, burning of landclearing waste is becoming less accepted as a method of solid waste disposal and alternatives are being encouraged (such as chipping, composting and conversion to bioenergy via hog fuel or pellet production).

Options for consideration in the management of landclearing waste include the following:

- Establish alternatives to the burning of landclearing waste in the northern SLRD, Pemberton and Electoral Area C.
- Develop municipal and SLRD bylaws to prohibit the burning of landclearing waste where an alternative is available (in areas where such bylaws are not already established).

WASTE STREAM MANAGEMENT LICENSING AND FLOW CONTROL

Solid waste diversion has increased in the southern SLRD. In part this has been driven by high tipping fees at disposal sites. Although high tipping fees are great drivers for waste diversion, they can also drive undesirable diversion activities such as:

- establishment of "fly by night" recycling operations that receive materials for "recycling", that may ultimately not be recycled or appropriately managed; and
- establishment of private waste transfer operations that take waste out of the SLRD to facilities with lower tipping fees and/or less regulation.

In addition to undermining environmental objectives, these types of activities can threaten the financial viability of legitimate local public and private sector facilities because they remove anticipated revenue. In the cases of public sector facilities, such as landfills with significant fixed costs, the loss of anticipated revenue requires taxation as a means of supplementing revenue. While revenue is required to manage facilities, many regions also use this tipping fee revenue to support solid waste planning, waste reduction and recycling initiatives. For private sector operations, significant revenue loss can result in the closure of the business.

To protect the current diversion rate as well as the investment in local recycling, composting and disposal infrastructure, the SLRD may want to consider the regulation of solid waste management facilities, particularly in the southern SLRD. Metro Vancouver, the Regional District of Nanaimo and the Cowichan Valley Regional District have implemented waste stream management licensing systems to encourage and protect private sector investment in diversion infrastructure. These local governments are also considering flow control to ensure the financial sustainability of their solid waste management systems. The following sections discuss these options in more detail.

REGULATORY AUTHORITY

The BC Environmental Management Act (the Act) grants the authority and responsibility to manage all municipal solid waste and recyclables to the province's regional districts. As part of this authority, under Section 24 of the Act, regional districts are responsible for developing and implementing solid waste management plans (SWMP) that provide long term visions for the management of municipal solid waste, including waste diversion and disposal activities.

For the purposes of implementing an approved SWMP, Section 25 of the Act contains provisions for the licensing of solid waste management facilities and haulers by regional districts. This tool can be used by regional districts to regulate their local solid waste industry by achieving operational and administrative control over facilities and haulers managing recyclable material and municipal solid waste in their region.

The Act allows regional districts to create bylaws respecting the following:

- The types and quantities of waste materials managed at a site;
- The types and quantities of waste materials transported within the regional district (*haulers*);
- The operation, closure and post-closure of a waste management site;
- The fees and charges applied to waste management activities;
- The recording and submission of waste management information;

- The requirement to hold a license;
- The requirement to comply with a code of practice; and,
- The requirement for operators of sites to obtain risk insurance or provide some form of security.

In particular, the Act allows for the licensing system to establish different prohibitions, conditions, requirements and exemptions for different classes of sites, operations, activities, waste or recyclables. This means that each license can be case specific.

Licenses can be used to administer and enforce any bylaw developed by a regional district under the Act's authority. The Act provides for two types of licenses that a regional district can issue, a waste stream management license (WSML) issued to the owner or operator of a site that accepts and manages municipal solid waste, and a hauler license issued to a hauler.

Regional Districts may choose to regulate their local solid waste industry for the following reasons:

- To ensure the diversion of recyclable material;
- To prevent abandonment of large quantities of solid waste or recyclable material;
- To track the movement of municipal solid waste and recyclable material;
- To assist in determining success in meeting waste reduction goals;
- To establish minimum administrative and operational requirements for facilities;
- To encourage private sector investment in waste management (through the establishment of a level playing field); and,
- To protect the public interest by managing the flow of municipal solid waste to regional district facilities to ensure financial sustainability.

APPROACHES FOR FACILITY MANAGEMENT

There are 3 approaches currently being used by BC regional districts under the authority of solid waste management plans to regulate solid waste facilities:

i. Waste stream management licensing
ii. Facility authorization
iii. Codes of practice bylaws

How and where each of these approaches is applied is described in this section.

WASTE STREAM MANAGEMENT LICENSING

Metro Vancouver (MV) introduced a regulatory program to ensure proper management of privately operated municipal solid waste and recycling facilities in their 1995 SWMP. These facilities are regulated by the Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181 as amended by Bylaw 183, 1996. The bylaw specifies operating requirements to protect the environment and public health, protect the region's land base in accordance with the host municipality's zoning and land use policies, ensure that regional, municipal and private facilities operate to equivalent standards, and to achieve the objectives of the MV Integrated Solid Waste and Resource Management Plan.

Under the Bylaw, licenses are required for the following types of privately owned facilities: disposal facilities; material recovery facilities, transfer stations, composting facilities, storage facilities and certain types of brokering facilities. As of September 2013, 44 facilities were licensed in MV.

In another example, the Regional District of Nanaimo (RDN) and the Cowichan Valley Regional District (CVRD), working in partnership, adopted Waste Stream Management Licensing Bylaws No. 1386 (RDN) and 2570 (CVRD) in 2004. Under these bylaws, the RDN and the CVRD are authorized to license all private or non-government operated municipal solid waste diversion and recycling facilities within their respective regions. The bylaws were established under the authority of both the RDN and CVRD SWMPs and were approved by the Ministry of Environment in 2005. The bylaws are a response to concerns by the recycling industry in both districts regarding competing businesses that operate with low standards. The photograph below shows one example of an undesirable operation competing with legitimate recycling operations prior to the establishment of a licensing system.

Pile of waste drywall being "stored" on private land in the CVRD
(for a perspective on the volume, note the person standing to the right of the pile)

The bylaws create a level set of standards for the recycling industry that encourages private sector investment in the solid waste management infrastructure, and enhances diversion in the regions. It is also intended to shield taxpayers from the risk and expense related to clean-up of poorly operated and/or abandoned facilities. In both the RDN and the CVRD, the WSML bylaws help improve the quality of data received from private diversion and recycling facilities, as they are required to submit monthly material statements to the districts. Improved data reporting allows both the RDN and CVRD to effectively track progress towards their waste reduction goals.

In the RDN there are currently 14 facilities covered by the licensing system including transfer stations, recycling depots, composting facilities and material recovery facilities. Disposal facilities, including landfills and incinerators, are excluded from licensing requirements and continue to be regulated by the province. Currently, there are 7 licensed facilities in the CVRD.

In the three regional districts discussed above, the license application process includes a 45-day public consultation period for new applications. License applications are reviewed by staff; and if applications are acceptable, staff also issues the license. Any applicant or licensee affected by the staff decision may appeal the decision to the Board. However, in 2012

the CVRD Board deemed it desirable to broaden the scope of the decision-making process and adopted Bylaw 3556 to amend Bylaw 2570 to replace staff approval with approval by the Board. This amendment has not been approved by the Ministry of Environment as submitted.

The three regional districts also operate their respective licensing systems on a self-financing basis, in that license application, amendment and annual administration fees have been designed to pay for the regulatory program. In Metro Vancouver the application fees range from $500 to $5,000 depending on the type of facility, with an annual administration fee of $1,000 for all licensed facilities. In the RDN and CVRD system, license application fees range from $100 to $1,000 depending on the type of facility, with an annual administration fee of $100 - $500 depending on the type of facility.

All three regulatory schemes require staff time to review applications, inspect facilities and enforce license requirements. For the RDN in particular, the cost for staff time dedicated to the WSML bylaw, at 1 Full-time Equivalent (FTE) annually, exceeds the revenue generated by the system. However, the RDN reports that the documented diversion attributed to the WSML system has been worth the expense. Nevertheless, as part of their SWMP Review, the RDN will be reviewing the fee structure contained in their WSML, to determine whether the fees should be adjusted to more accurately reflect costs.

FACILITY AUTHORIZATION

The Fraser Valley Regional District (FVRD) has implemented an alternative process for regulating their solid waste disposal and recycling industry. Instead of licensing facilities under the authority of a bylaw, the FVRD requires that any facility in, or proposed to be involved in the handling of municipal solid waste, be it processing or disposal, is required to seek authorization under the FVRD SWMP. Being *authorized* means that the facility meets the environmental, public health, zoning and aesthetics standards of the municipality where it is located, as well as those of the BC Ministry of Environment (MoE).

Like the requirements for facility licensing in MV, the RDN and the CVRD, applicants must submit an operating plan and proof of approval from the host municipality. However, unlike the licensing systems outlined above, in this approval process the FVRD also requires a letter from the MoE regional waste manager. Applications are then submitted to the Board for approval to continue the application process. If approved, the application is then reviewed by staff. Once approved by staff, public consultation is required. After consultation, staff complete a technical review to determine if the facility is feasible and whether all issues can be addressed. The Board has final approval of the application for inclusion in the SWMP.

The FVRD facility authorization process is cumbersome, but provides some level of control over new solid waste facilities. All authorized facilities must report to the FVRD the annual tonnage of material handled and its origin as part of its operations. This assists the FVRD in tracking the effectiveness of their SWMP. (Note: A similar approach to facility authorization was also intended for adoption in the SLRD, as per the 2007 SWMP. To date this process has only been used to authorize the development of Sea to Sky Soils'composting facility near Pemberton.)

The FVRD is currently considering a licencing or permit program for some or all facilities that are involved in the handling of municipal solid waste (which includes recycling). If the licensing bylaw is pursued, it would replace the Authorization Process outlined above.

CODES OF PRACTICE BYLAWS

The third approach to facility regulation is similar to waste stream management licensing, but instead of licensing all solid waste management facilities, code of practice bylaws seek to establish operating standards for specific types of solid waste facilities. This is the approach adopted by the Capital Regional District (CRD) to regulate private composting facilities in their region.

CRD'S COMPOSTING FACILITIES REGULATION

In 2004, the CRD developed Composting Facilities Regulation Bylaw 2736 to regulate the operation of composting facilities in the region. The purpose of the CRD composting bylaw is to supplement existing provincial regulations under the Organic Matter Recycling Regulation (OMRR), in particular to require leachate, nuisance odour, vector litter and dust management plans. The Bylaw was added as an amendment to the SWMP and approved by the Minister of Environment.

Under the Bylaw all composting operations within the CRD that are subject to OMRR are also subject to the requirement of the CRD Bylaw except for agricultural composting, backyard composting, topsoil producers, or the composting of general organic matter which originates at the site of the composting operation. The licensing requirements under the Bylaw are similar to those in the Metro Vancouver, RDN and CVRD systems in that all licensed facilities require operating plans, compliance with storage requirements, and approvals from the local municipality or electoral area with respect to land use and zoning prior to a CRD license being issued. The CRD Bylaw also requires security to ensure that there are funds available to clean up a site in the case of abandonment.

SUMMARY OF FACILITY REGULATION OPTIONS

	Scope of Regulation	**Establishes Level Playing Field**	**Allows for Site Specific Terms & Conditions**	**Enhances Data Availability**	**Staffing/ Admin Requirements**
Waste Stream Management Licensing	All facilities	Yes	Yes	Yes	Significant
Facility Authorization	New facilities only	No	Yes	Partial	As required
Codes of Practice	Targeted facilities	Yes	No	Partial	As required

REGULATION OF WASTE FLOW

As discussed above, Metro Vancouver (MV) has had a regulatory program to ensure proper management of privately operated municipal solid waste and recycling facilities in place since 1995. However, in May 2012 staff noted that some commercial and multi-family residential waste haulers were by-passing disposal facilities operated by Metro Vancouver and the City of Vancouver and delivering waste to disposal at facilities located out of the region.

This was a concern because these haulers were not subject to disposal bans and prohibitions at MV facilities that were in place to encourage recycling and they were avoiding paying their fair share of the costs to manage the regional waste management system and waste reduction initiatives. This meant that the rest of the waste management system users, including municipalities, businesses and residents, were paying more of these costs, which was regarded as inequitable and financially unsustainable.

Consequently, in September 2012 the MV Board initiated consultation on hauler licensing and requiring residential and commercial garbage to be delivered to MV facilities (waste flow management) as a preferred approach. In March 2013, staff reported on Phase 1 consultation findings, and after considering industry input the Board removed hauler licensing from further consideration and initiated Phase 2 consultation on waste flow management.

Following Phase 2 consultation, in September 2013, Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996, was repealed and replaced by Municipal Solid Waste and Recyclable Material Bylaw No. 280, 2013. This bylaw requires that all residential and commercial/institutional garbage to be delivered to MV facilities. The bylaw has been forwarded to the Ministry of Environment for review and is awaiting approval.

The issue of waste flow management is also under discussion in the RDN, in response to a recent action by a private hauler to export process residuals out of the RDN. In this instance, a facility accepting and sorting mixed loads of construction demolition waste to remove recyclables and clean wood was sending the remaining residual waste out of district. This is because the hauler's internalized cost to haul, transfer and dispose of residual C&D waste to its own disposal facility in Oregon was less than the cost of disposal at the RDN landfill at $120 per tonne. Similar to the situation in Metro Vancouver, the loss of revenue associated with this waste flow out of the RDN could have a significant impact on the financial sustainability of the RDN solid waste system in that the rest of the waste management system users would have to pay more than their fair share of costs.

Given the current and projected costs associated with operating the regional disposal system, the RDN will be considering waste flow management in their SWMP review, to ensure that all users pay their fair share of costs.

In both Metro Vancouver and the RDN, waste flow management is a tool that can support the financial sustainability of the solid waste diversion and disposal systems in those regions.

WASTE STREAM MANAGEMENT LICENSING AND FLOW CONTROL OPTIONS

- To pre-empt the establishment of sub-standard waste management facilities and/or private transfer stations that ship waste out of the region for disposal, undertake the development of a waste stream management licensing or

other form of control over the development of new facilities (Note: this option does not prohibit the direct hauling of waste from the point of generation to the disposal facility).

- Consider waste stream management licensing or other form of control over waste management facilities if and when a problem emerges with the establishment of sub-standard facilities and operations.
- Monitor the level of unauthorized waste export to determine if there is a need to establish a bylaw mechanism to regulate where waste generated in the SLRD can be delivered.

LAND USE PLANNING

Land use planning traditionally has not taken a community's solid waste management needs into consideration. However, effective land use planning is critical to the success of a solid waste management system.

- The siting of any type of waste management facility can be challenging due to public perception and/or the availability of suitable land. With an increasing focus on waste diversion and EPR, there is an increasing need to site and establish facilities to receive discarded materials for the purpose of recycling, composting or other forms of re-purposing;
- The long-term viability of solid waste operations requires that the allowable use (or non-use) of neighbouring lands are taken into consideration so as to avoid potential land use conflicts.
- The advanced identification and acquisition of land for future waste management facilities (e.g. a site for a future landfill or transfer station) can reduce the potential for future land use conflicts and may encourage the development of complimentary uses in the vicinity.

Land use planning options include zoning bylaws and consideration of land use for solid waste management purposes in official community plans.

Zoning is a tool used by local governments to regulate where various activities (land uses) can occur. Zoning bylaws typically identify a range of uses, such as residential, commercial and industrial. Within each broad classification, more detailed sub-types may be identified (e.g. light industrial vs. heavy industrial, or single family residential vs. multi-family residential). Certain land uses are permitted outright within each zone, and other uses may be allowed at the discretion of the local government.

Permitted land uses are defined by zoning, which speaks to current land use. Official Community Plans (OCP) indicate future intended land uses.

It is important that zoning include waste management activities and protect them from rezoning pressures and encroaching development. Municipalities and regional districts need solid waste facilities in order to achieve their waste management goals, but without adequate zoning protection, existing facilities may experience land use conflicts and be pushed out of the municipality. Furthermore, as new waste diversion programs are introduced and more waste processing capacity is required, it is important to have a sufficiently sized land base that is appropriately zoned for waste management activities. Facilities that may be difficult to site without appropriate zoning include bottle depots, recycling plants, and composting facilities. Residents may express "not in my backyard" (NIMBY) sentiments that would prevent the establishment of those facilities, unless that land use is expressly permitted. Issues that give rise to NIMBY statements are usually related to concerns about odour, traffic, clientele and noise.

The SLRD only administers zoning for unincorporated areas (the Electoral Areas). Within incorporated communities, the regulatory body responsible for zoning is the municipality.

The need for land use planning that recognizes the need for solid waste management facilities will remain a high priority as BC moves towards greater adoption of extended producer responsibility (EPR). EPR is frequently associated with "take back" programs, which requires the siting of depots. For EPR to be successful, take back depots will need to be sited with

users' interests in mind. Additionally, new initiatives to increase recycling and reuse will require siting new facilities. It will be important to incorporate these considerations when undertaking long-range planning for major infrastructure and development. Establishing where future facilities will go can help to prevent the emergence of conflicting uses.

APPROACHES TO LAND USE PLANNING

The following approaches have been adopted by regional districts and municipalities around BC.

DEDICATED ZONING

Some municipalities have dedicated zoning types that are specific to waste management activities. Others have zoning that recognizes waste management facilities as a type of land use within existing zoning types. For example, the District of Saanich Zoning Bylaw includes both a Waste Management Zone which allows

> *"buildings or structures for receiving, handling, sorting, landfilling, composting, recycling and processing solid waste and recyclable materials and accessory uses and, without limiting the generality of the foregoing, includes any use of land, buildings, or structures permitted in a Solid Waste Management Plan"*

and an Industrial / Recycling Zone which allows a variety of industrial uses including

"land, buildings, or structures for collecting, sorting, storing or shipping of paper products, plastics, glass, cans, and nonferrous metals intended for reprocessing".

In the City of Nanaimo[1], recycling depots are allowed in light and heavy industrial zones; recycling plants, compost facilities and transfer stations are allowed in the heavy industrial zone; and refund container recycling depots are allowed in a wide range of commercial, downtown and industrial zones.

Preservation of industrial land is a key issue that many local governments are struggling with in the light of development pressures for commercial and residential uses. Establishing and maintaining a strong industrial land base is critical to the economic health of a municipality and will be critical for the successful siting of the waste management services required to meet the SLRD's long-range waste management goals.

OFFICIAL COMMUNITY PLANS

Through the development of Official Community Plans (OCPs), solid waste management infrastructure needs can be articulated and appropriate locations can be identified. For example, Whistler's OCP[2] addresses the need to facilitate

[1] http://www.nanaimo.ca/UploadedFilesPath/Bylaws/BylawNo4500.pdf

[2] Objective 9.6.1 contains these and other policies http://www.whistler.ca/sites/default/files/related/1983_official_community_plan_adoption_bylaw_no._1983_2011_pg1-141.pdf

the development of EPR facilities in land use decisions, the need to require space for minimizing and diverting solid waste in developments, and the importance of providing waste diversion options for people who use preferred modes of transport (i.e. depots should be accessible by transit, walking and or/bicycles, not just private vehicles). The Whistler OCP also identifies specific locations for recycling, composting and waste facilities on a map[3].

Long range planning tools like OCPs can also facilitate the development of "eco-industrial parks" or "resource recovery parks". These types of industrial developments co-locate businesses that can use each other's waste products and energy as inputs, minimizing the amount of waste sent off site.

LAND USE PLANNING OPTIONS

To address land use planning issues, options include:

- Work with municipal and SLRD planning departments to establish dedicated zoning for waste management facilities.
- Work with municipal and SLRD planning departments to ensure that land use planning decisions do not compromise the viability of existing or planned waste management facilities.
- Work with municipal and SLRD planning departments to ensure that long-range planning tools like OCPs identify and preserve lands for *future* waste management facilities.

[3] http://www.whistler.ca/sites/default/files/related/schedule_b.pdf

WILDLIFE/HUMAN CONFLICT MANAGEMENT

Improper waste management handling and storage can attract wildlife, notably bears. Local government can play a vital role in reducing the number of bear-human conflicts related to waste. Once conditioned to human food, bears become dangerous. According to the Bear Aware website (bearaware.bc.ca), careful management of bear attractants is the first and most important step in controlling 'bear problems'. Because food-conditioned bears have largely overcome their wariness around humans, they can become more aggressive toward people when accessing or defending food sources, and are more dangerous than bears that are not food-conditioned. Additionally, eating garbage can pose health concerns for the bears themselves due to sharp packaging (glass, metal) as well as the presence of toxic substances (e.g., cleaning products, batteries).

The municipalities in the SLRD have established strategies and bylaws to deal with wildlife-human conflict management. Additionally, there are active Bear Aware groups in Squamish and Whistler. Options for consideration include:

- Due to high tourism, seasonal residents and residential growth in the area, the significant awareness-building activities that have been established over the past decade should be maintained and not reduced.
- Ensure all solid waste management facilities that receive food waste (e.g. landfills, transfer stations and composting facilities) are designed and maintained so that they do not allow access by bears.
- All municipal, provincial and SLRD litter containers should be bear-proof.
- Throughout the SLRD (including within municipalities), require all commercial garbage containers that contain bear attractants (e.g. food) to be of a bear proof design.

ILLEGAL DUMPING

The term "illegal dumping" refers to a range of activities where waste materials are intentionally disposed in unauthorized locations on public or private property. Dumping can be small or large scale and it may occur for a variety of reasons (tipping fee avoidance, illegal activity, ignorance of proper disposal options). Illegal dumping typically falls into one of the following categories:

- Abandonment of used goods on sidewalks, in alleyways and other public spaces. This is typically residential material banned from curbside collection and includes large bulky household items such as furniture, white goods, mattresses and electronics.
- Dumping of waste on logging roads, in power / railway line corridors and other rural spaces. This is often renovation debris, "grow-op" supplies, yard waste or large bulky household items.
- Deposition of valueless used goods at charity organizations' stores and drop-off bins. This is typically smaller items such as stained clothing, broken electronics and partially used paints and cleaners.

Illegal dumping occasionally occurs within the SLRD, however a specific strategy to address illegal dumping has not been developed. Current approaches that help to mitigate illegal dumping / littering in the region include illegal dumping fines (all municipalities) and litter clean up events.

APPROACHES TO ILLEGAL DUMPING

Education, Infrastructure and Enforcement are recognized as the pillars of successful Litter & Illegal Dumping Management. The following three case studies provide options that could be considered by the SLRD in development of an Illegal Dumping Strategy.

CAPITAL REGIONAL DISTRICT (CRD)

The CRD's illegal dumping strategy is multi-faceted to address several aspects of the illegal dumping issue. Initial reports indicate that there has been a positive impact, particularly related to awareness.

The strategy is made up of the following:

- On-going surveys of local municipalities, recycling depots and non-profit recycling organizations to understand the current nature and breadth of the illegal dumping problem;
- Monitoring approaches used in other jurisdictions to tackle illegal dumping for potential application in the CRD;
- A communications plan targeting the general public as well as specific audiences that they consider to be responsible for some components of illegal dumping. The plan is aimed at increasing awareness of illegal dumping as a social and environmental issue, as well as providing information on where and how to dispose of used goods appropriately;

- Funding of community clean up initiatives;
- Supporting non-profit organizations involved in the re-use of goods through:
    - Reduced tipping fees on the disposal of non-salable goods
    - Receiving abandoned household hazardous waste at Hartland Landfill for free
    - Establishing a communications campaign in 2013 that encouraged residents to "donate responsibly"; and
- Working with member municipalities towards a synchronized enforcement approach for the CRD.

As part of the communications plan, the CRD implemented a community-based social marketing campaign that focused on proper disposal methods for random dumping of waste on private property, vacant lots or roadsides and the subsequent cost implications to tax payers. The campaign included significant outreach, advertising, social media and corporate partners, including the University of Victoria's Student Society (UVSS), Jack FM and the Time Columnist. Activities in the campaign included:

- Outreach to UVic students:
    - The campaign was launched to coincide with the end of term at UVic
    - CRD staffed worked with UVSS on outreach to the student body
    - UVSS reported a 75% reduction in waste abandoned or dumped in student housing;
- Attending over 30 community events across the region promoting the campaign;
- Advertising through print, radio, transit and online. The campaign received extensive media coverage as well;
- The "Junk It Kit", which included a tarp, bungee cord, information on recycling options and a pencil. Three thousand kits were given away as a means to increase awareness; and
- A Social Media Campaign: From April 2nd to June 9th the CRD partnered with Jack FM, and asked listeners to find the community cruiser around town to spot what "Junk is in the Trunk" of the Jack FM 2012 Toyota Prius Community Cruiser. Each week for 10 weeks the CRD placed everyday household items in the cruiser. Listeners found the cruiser at community events around town and tweeted or posted on Facebook the abandoned waste items for that week and were entered to win prizes along with learning how to properly and safely dispose of those items.

REGIONAL REGIONAL DISTRICT OF NANAIMO

Illegal dumping on private and public lands in rural areas has been a long-standing concern in the Regional District of Nanaimo. The RDN has been monitoring and measuring illegal dumping for approximately 20 years and has found that although the amount of waste illegally dumped represents only .0002% of the total solid waste generated in the region, illegally dumped material can have serious effects on the environment, wildlife habitat and the ability of others to use and enjoy outdoor recreational areas. As a result, they have developed a comprehensive approach to tackle the issue. Their program includes:

- Prevention of illegal dumping through education;
- Funding the clean-up of illegal dump sites; and
- Illegal dumping surveillance and enforcement activities.

Part of the RDN's Waste Stream Management Licensing Bylaw includes a section to enforce the proper disposal of waste. The WSML bylaw requires those who generate waste be responsible for its proper disposal. If a generator's waste is found to be abandoned, the generator can be subject to a fine of up to $200,000. The authority to undertake this type of enforcement is also enabled by Section 25 of the Environmental Management Act. This component of the WSML bylaw is the backbone to the RDN's illegal dumping program.

The RDN has a Zero Waste Compliance Officer staff position, created to carry out illegal dumping prevention and Waste Stream Management License bylaw enforcement and education duties. This position undertakes complaint response, records management, inter-agency/media contacts, establishes the posting of signage in areas subject to illegal dumping activities and conducts historic site monitoring.

In instances where the officer is able to identify the generator, a written warning is issued with a request to clean up the abondoned waste. In most cases this action is sufficient to achieve compliance. In instances where a generator fails to take responsibility, the officer can charge the clean-up costs to the generator and levy a fine. In some cases the RDN will work with the RCMP and/or the Ministry of Environment.

The RDN also works with several organizations that are frequent users of backroads and trails including Vancouver Island University (VIU) woodlot staff, Island Timberlands security, Emcon Services staff and various recreational groups/users. These organizations have volunteered to observe and report illegal dumping activities and sites to assist the RDN in monitoring activities and enhancing enforcement. The RDN also maintains a website page where any member of the public can "Observe, Record and Report" illegal dumping that they come across. All complaints, regardless of the source, result in the opening of a file and an investigation.

In 2012, the RDN responded to 115 incident complaints with 43 tonnes of waste cleaned up by RDN contractors or community groups. A total of 18 files resulted in names being located and individuals directed to clean up or warned about their actions. Two uncooperative individuals were scheduled for court appearances and subsequently fined in 2013. Five additional illegal dumping signs were erected in historical illegal dumping areas as well as a problematic RDN park sites (for a total of 60 signs throughout the RDN). All signs are GPS mapped. Community groups were supported in clean-ups with 15 disposal waivers issued. The illegal dumping program is promoted through Shaw Cable, radio, newspaper and Facebook.

Program success is evident with staff declaring fewer 'hot spots' now. RDN spent $49K for contracted cleanup in 2009 compared to $17K in 2013 (87 tonnes were recovered 2009 (Mar-Dec only), vs. 43 tonnes in 2012), indicating >50% reduction by weight in materials requiring proper disposal .

The cost of the RDN's illegal dumping program is roughly $75,000 which includes $40,000 for the Zero Waste Compliance Officer (half of the cost for the officer); $10,000 to pay tipping fees associated with volunteer site clean-up and $25,000 for contracted site clean-up and signage. At the beginning of the program $25,000 was allocated for CBSM but once the program was well established, the CBSM component ceased.

METRO PORTLAND

Metro Portland (Metropolitan Area Regional Government includes the 3 counties and 25 cities around Portland, Oregon) also has an illegal dumping surveillance and reporting program backed up with enforcement capacity; however their context is abandoned waste in urban and suburban areas. The program is referred to as the RID Patrol (Regional Illegal Dumping).

According to Metro Portland's website, "since 1993 Metro's RID Patrol has been tackling the problem of illegal dumping by cleaning up dump sites, investigating evidence found there, issuing citations to guilty parties and working with local law enforcement agencies to educate people and help them reduce dumping in their neighborhoods."

Residents are encouraged to watch for and report illegal dumping. They can call Metro's RID Patrol or report online to report dump sites or identifying information, such as license plates, of people observed abandoning waste items. Metro believes that much of the illegal dumping is conducted by small, private waste haulers and consequently has taken to warning residents about the risk of using "freelance" haulers:

> You could become the victim of con artists who dump your trash illegally. The result could be an environmental eyesore and even

a citation and fine for the resident who was only trying to save a few dollars[4].

Like the RDN, Metro works with other government agencies and law enforcement to investigate illegal dumping activities. Investigating officers will try to locate the owner of the abandoned waste and, if appropriate, track down the illegal hauler.

The RID tag program (bright orange, weather-proof tags are left on dumped bulky items) are intended to raise awareness, warn dumpers and engage the community in reporting illegal dumping. The tag tells the violator to remove the item(s) or risk a fine.

The RID Patrol has the authority to fine the owners of the waste and the hauler who dumped illegally. Fines are issued (up to $500) plus the cost of cleaning up, transportation and recycling or disposing of the waste. The latter can amount to hundreds of dollars, or more in extreme cases. The Patrol's authority only covers abandoned waste illegal on publicly owned land. However, Metro will assist private property owners with investigation of illegal dumps on private property.

Since program initiation, RID tagging has resulted in the removal of 45% of items annually, sometimes even higher, presumably by the person who illegally dumped it - before cleanup crews returned the following week (many say they thought they were putting it out for 'reuse').

OPTIONS TO TACKLE ILLEGAL DUMPING

The following approaches to tackling illegal dumping could be considered for the SLRD:

- Conduct a survey of member municipalities, local recycling depots and non-profit recycling organizations as part of a process to develop an illegal dumping strategy. This survey would determine the most common materials illegally discarded and the most frequent locations, providing a basis for types of materials and "hot spots" on which to build an education campaign and clean up program.
- Initiate a comprehensive approach which includes surveys, communications, funding, advertising and the covering of tipping fees for community/non-profit clean-ups, and/or reduced tipping fees for illegally dumped materials dropped off at charitable organizations.
- Establish a bylaw that makes the generator of waste responsible for its proper disposal.
- Establish illegal dumping enforcement capacity within the SLRD and/or municipalities.
- Work with stakeholder groups to establish a practice of "observe, record and report" that will help identify problem areas for illegal dumping and assist with enforcement (assumes enforcement capacity is available).
- Establish a reporting hotline where residents and outdoor groups can report dumping location, to be targeted for contracted / volunteer cleanup.
- Post signs at frequent illegal dumping sites to educate about reporting and prosecuting dumpers. Signs could be made available to municipalities and businesses could buy at cost,
- Consider working collaboratively with CN /CP Public Affairs or BC Hydro to explore outreach strategies to prevent future illegal dumping on properties abutting power /rail lines.

[4] Metro Portland RID webpage