

Regional District of Kitimat-Stikine

DRAFT Topics for the Solid Waste Management Plan Revision Rev. 1.1

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Developed by Sarah Wilmot, in collaboration with the Regional District of Kitimat-Stikine



List of Acronyms

Acronym	Meaning
C&D	Construction and demolition waste
DLC	Demolition and land clearing waste
EPR	Extended Producer Responsibility
FOG	Fats, oils and grease
ICI	Institutional, Commercial and Industrial
LF	Landfill
LFG	Landfill gas
MF	Multi-family residential
MSW	Municipal solid waste
RDKS	Regional District of Kitimat-Stikine
SF	Single family residential
SWMP	Solid Waste Management Plan

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1 Introduction

The RDKS Administration anticipates the new solid waste management plan (SWMP) will focus on monitoring and improving the operational efficiency of all RDKS facilities, programs and services. A wide range of new facilities and programs were introduced under the previous SWMP, including engineered landfills, transfer stations, a sophisticated in-vessel composting system, and extensive waste separation programs. As such, the RDKS does not expect the new SWMP to call for major changes to current policies and infrastructure. Instead, the focus on efficiency will help to ensure that:

- Staff and contractors are well trained and can perform all of their duties competently, so fewer human resources are needed
- Operations are streamlined, so workload and wait times are kept low
- Clear policies and guidelines are in place, leading to less time needed to make decisions
- Priorities are established and resources are allocated accordingly

RDKS Administration has identified some topics that should be addressed in the new SWMP. These topics are presented in this document to stimulate discussion about the content of the new SWMP. By considering the topics now, the need for future plan amendments may be avoided.

The topics have been categorized as “policies” and “projects”. Policies require research and consultation with key stakeholders, and can be implemented with minimal capital and operating costs (other than staff time). Projects are more concrete, and require some kind of action by the RDKS, such as taking over a facility or delivering a new service

The topics identified so far that require policy development include:

1. Review of the cost recovery model in the Terrace Service Area
2. Review of the cost recovery model in the Hazelton and Highway 37 North Service Area
3. Limits on Municipal Solid Waste accepted at Forceman Ridge from industry and sources outside the RDKS
4. Access to services/facilities in other service areas
5. Contaminated soil handling and use
6. Landfill gas utilization/carbon credits
7. Setting parameters for acceptable liquid waste brought to RDKS waste management facilities
8. Require waste management space in new construction
9. Requirements for deconstruction (instead of demolition)
10. Setting an upper limit on the acceptable cost of recycling cardboard and printed paper and packaging (PPP)
11. Strategies to assist in the prevention of illegal dumping
12. Strategies to Reduce Single Use Items
13. Development of a food waste reduction strategy

The topics identified so far that would require a project-based response include:

1. Telegraph Creek and Dease Lake waste management solution
2. Potential participation of District of Kitimat in the Terrace Service Area
3. Recycling collection in the Hazelton and Highway 37 North Service Area
4. Expansion of the list of Prohibited Wastes

5. Household hazardous waste collection
6. Curbside audits of residential waste
7. Solid waste source control and enforcement for the Industrial, Commercial and Institutional (ICI) sector

These are preliminary lists, and additional policy and project topics may be identified by the Public and Technical Advisory Committee, stakeholders and the general public.

This document, along with the Step 1 Memo and Current System report, are intended to be guiding documents for the development of a new SWMP.

2 Policy Topics

The following topics will be addressed as policies in the SWMP. The final direction of the policy will be determined after research and consultation on each topic. There is no need to prioritize the policy topics, since they can all be investigated as part of the SWMP development process.

This paper describes the background information, key stakeholders and potential ramifications of different policy directions.

2.1 Review of the Cost Recovery Model – Terrace Service Area

2.1.1 Background Information

When the cost recovery model was developed, the intent was for 50% of the annual operating costs to be covered by tipping fees, with the balance covered by property taxes (calculated based on population and the value of improvements) in the City of Terrace, Electoral Area C and Electoral Area E, and a population-based contribution from the Kitselas on-reserve community.¹

In 2017, the RDKS found that significantly less waste than expected was brought to the Thornhill Transfer Station and the Forceman Ridge Waste Management Facility. This led to a revenue shortfall, which was partially offset by the structure of the contract with Bear Creek Group.

The RDKS must decide how to manage this situation on an on-going basis, particularly in the event that lower tipping fee revenue results in a deficit situation. Options include raising the tipping fee rates (to collect more revenue from the same amount of waste) or increasing the share of revenue that comes from taxes.

2.1.2 Stakeholders

- RDKS
- Financial working committee
- Businesses and residents in the Terrace Service Area
- Kitselas

¹ Collection on the Kitsumkalum reserve is managed by the community. Waste is collected by a contractor, who pays tipping fees at the transfer station. The contractor is paid by the community. This arrangement means that Kitsumkalum is not part of the cost recovery model.

2.1.3 Questions and Considerations

Should the tipping fee rate (cost per tonne/per cubic meter disposed) be increased to raise additional revenue, or should the share of the costs covered by taxes be increased?

Raising the tipping fee on all waste streams could result in waste “leaking” from the system (i.e., being sent to other waste management facilities, being dumped illegally, or burned). In this scenario, the amount of revenue from tipping fees might not increase sufficiently. Raising tipping fees on garbage while maintaining the rate for commercial cardboard and paper recycling could encourage more recycling by the commercial sector. While this would increase waste diversion, it would also reduce the quantity of waste brought in for disposal and therefore reduce revenue. The waste composition study conducted in 2017 found that over 20% of the commercial waste brought to the Thornhill Transfer Station was paper products, so a significant change in garbage tipping fees, without a parallel change in cardboard tipping fees, could drive up to 20% of the commercial waste away from the transfer station.

Raising the amount of funding generated by taxes moves away from the “user pay” model endorsed by the RDKS and decreases the incentive to properly segregate recyclable wastes and reduce waste generation. However, it is a more reliable source of funding.

The preferred option may combine raising the tipping fee rate and raising taxes. When the cost recovery model is revised, it should consider the actual tonnages received in 2017.

2.2 Review of Cost Recovery Model – Hazelton and Highway 37 North Service Area

2.2.1 Background Information

No tipping fees are currently charged in the Hazelton Service Area on garbage from residential and commercial sources.^{2,3} The service is funded by taxes from incorporated area and electoral areas and population-based contributions from First Nations. The amount of taxes to be paid by each incorporated area and electoral area is based on both the percentage of the total service area population in the area and the percentage of the total improvement value in the area, multiplied by the total requisition. For example, the District of Hazelton has 10.4% of the population in the whole service area and 2.76% of the improvement value in the incorporated and electoral areas; the average of those two numbers is 6.56%, so the District of Hazelton owes 6.56% of the total operating costs. Those costs are shared between residential and commercial property taxes. First Nations contributions are based only on their population share. As there is no taxation on First Nations communities, the tax on improvements is zero; the contribution based on population share is the percentage of the service area population divided by two (e.g. Gitsegulka has 7.0% of the service area population and therefore pays 3.5% of the total requisition).

The Kitimat-Stikine Hazeltons and Stewart Area Solid Waste and Recyclable Material Management Service was established in 2015 under Bylaw No. 657, and the Kitimat-Stikine Hazelton and Highway 37 North Area Waste Management Facility Regulation Bylaw No. 688 was adopted in 2017 (Waste Regulation Bylaw 688). The District of Stewart is a participating member of the service, and on March 20, 2018, the District of Stewart formally requested inclusion in Waste Regulation Bylaw 688. The Regional District subsequently amended the Bylaw 688 to include Stewart, which enables the District of

² Tipping fees are currently charged on asbestos, contaminated soils and waste from industrial sites.

³ Tipping fees on garbage may be introduced in the future; if they are, tipping fees will contribute a smaller proportion of the operating costs than in the Terrace Service Area.

Stewart to access RDKS owned facilities such as the Meziadin Landfill. It also brings Stewart into the cost recovery model for the Hazelton and Highway 37 North Service Area.

The District of Stewart would like the cost recovery model to be reviewed, because it believes that First Nations communities do not contribute an equal share. First Nations governments are also unhappy with the model because they feel penalized for having larger households, as the contribution is per capita, rather than per household.

2.2.2 Stakeholders

- RDKS
- RDKS Financial Working Committee
- District of Stewart
- First Nations in the Hazelton and Highway 37 North Service Area
- Other incorporated and electoral areas in the Hazelton and Highway 37 North Service Area

2.2.3 Questions and Considerations

How should the cost recovery model be revised, particularly in light of Stewart joining the service?

Through stakeholder engagement, the RDKS has heard competing preferences with regards to cost recovery, and the cost recovery model should be reviewed.

2.3 Limits on Municipal Solid Waste accepted at Forceman Ridge from Industry and Sources Outside the RDKS

2.3.1 Background Information

The Terrace Area Fees and Regulations Bylaw (671-16) includes a provision for a 25% surcharge to be levied on waste deposited at a Waste Management Facility in the Terrace Service Area by any person from outside the Service Area and any person from an Industrial Work Camp (Section 8.3). This bylaw allows for the disposal of “municipal-type solid waste” from industrial sources at the Forceman Ridge Landfill. Approval by the Manager of Works and Services is required under section 3.8 of the bylaw. The bylaw does not specify any limits on the amount that can be disposed.

One potential industrial source of municipal-type waste is Rio Tinto’s Kitimat Operations. Rio Tinto operates its own landfill for municipal-type waste (industrial waste is shipped out of the region to specialized disposal facilities). The Rio Tinto landfill will be full in approximately in 2019, and the facility managers have requested use of the Forceman Ridge Landfill. This will require them to comply with disposal restrictions, such as removing organics and recyclables from the waste stream. As an alternative to using Forceman, Rio Tinto may be able to permit their existing landfill site for continued disposal of non-putrescible material (such as construction and demolition debris).

The Terrace Area Fees and Regulations Bylaw (671-16) also allows for the disposal of municipal waste from outside the Terrace Service Area at the Forceman Ridge Landfill. However, the bylaw does not currently refer to disposal of waste from outside of the Regional District. The 1995 SWMP allowed the RDKS to look for opportunities to cooperate with other adjacent regional districts in order to reduce costs through economies of scale. The kind of cooperation enabled by the 1995 SWMP included sharing of landfill space if appropriate agreements could be reached. The two regional districts identified as being most likely to cooperate with the RDKS were Skeena-Queen Charlotte and Bulkley Nechako. The

new SWMP may address the issue of disposing of MSW from other regional districts at Forceman, as well as processing organics and recyclable materials from other regional districts within the RDKS.

2.3.2 Stakeholders

- RDKS
- Industrial generators of MSW
- Neighbouring regional districts
- All communities, residents and businesses in the Terrace Service Area
- MOE

2.3.3 Questions and Considerations

Should a limit be placed on the amount of municipal-type waste from industrial sources that can be disposed of at Forceman Ridge? If so, should the limit be by year, by landfill phase, or other parameters? How should this issue be addressed at other RDKS facilities?

The RDKS should have a policy or guideline at the administrative level that provides guidance on the maximum amount of municipal-type waste from industrial sources that can be disposed of at Forceman. A bylaw amendment is not required. Factors to consider include:

- Limiting the amount of MSW from industrial generators will help to ensure the longevity of the Forceman Ridge landfill.
- Allowing more MSW from industrial generators will increase revenue to the function, both because of increased volumes and because of the surcharge levied on industrial generators.

Should the SWMP allow MSW from neighbouring Regional Districts, which meets the disposal restrictions outlined in the relevant disposal bylaws, to be disposed of at RDKS facilities? If so, should this be allowed in both service areas, or only in the Terrace Service Area? Should the SWMP limit the amount of MSW by year, by landfill phase, or other parameters? Should the SWMP allow recyclables from other regional districts to be processed in the RDKS? If so, should any limits be set? Should organics and recyclables from the RDKS get priority access to the processing facilities?

The SWMP should include a policy statement regarding importation of waste from other regional districts. Factors to consider include:

- Prohibiting the disposal of waste from neighbouring regional districts will increase the longevity of the Forceman Ridge landfill.
- Allowing the disposal of waste from other regional districts will increase revenue to the RDKS, both because of increased volumes and because of the surcharge levied on waste from outside the service area.
- Prohibiting the processing of organics and recyclables from other regional districts will help to ensure there is enough capacity to process organics and recyclables generated in the RDKS.
- Allowing organics and recyclables from other regional districts to be processed in the RDKS could lead to greater efficiencies and economies of scale. The RDKS would also benefit from increased revenue from compost tipping fees. There would be no direct benefit to allowing out of region recyclables to be processed locally. However, some recyclables may be used on site at Forceman (e.g. glass cullet), which would reduce the cost of procuring equivalent materials.

2.4 Access to Services/Facilities in Other Service Areas (within the RDKS)

2.4.1 Background Information

Bylaw 671-16 includes a provision for a 25% surcharge to be levied on waste deposited at a Waste Management Facility in the Terrace Service Area by any person from outside the Service Area and any person from an Industrial Work Camp (Section 8.3). According to Section 3.8, the Manager, Works and Services may authorize a person to deposit solid waste from outside the Service Area at a Waste Management Facility upon request, where the deposit of such solid waste is consistent with the operational certificate for the Waste Management Facility, and on such terms and conditions as the Manager deems appropriate. The bylaw does not differentiate between different types of waste; some types of waste are used on site at Forceman Ridge, and using that waste helps the RDKS avoid costs associated with obtaining similar materials. For example, soil that is brought to the site is used to build berms or road base, and clean wood waste can be ground and added to the compost facility or used as road base. These waste streams help the RDKS avoid the cost of clearing areas and excavating soil and purchasing wood chips respectively.

Bylaw 671-16 does not address surcharges on cardboard and paper products brought to a Designated Recycling Facility. There is currently no facility in the Hazelton Service Area that is capable of managing the volumes of cardboard and paper products generated by the commercial sector. Currently the RDKS is accepting source-separated loads of cardboard and paper at its disposal facilities and is paying to have the material hauled to Terrace and processed. If a commercial generator were to haul its cardboard and paper products directly to the recycling facility in Terrace, that generator would pay \$99 per tonne, the same as generators from the Terrace Service Area (i.e. no surcharge). When the RDKS brings consolidated loads of cardboard and paper from outside the Terrace Service Area to the Designated Recycling Facility, it pays a negotiated tipping fee of \$125/tonne.

2.4.2 Stakeholders

- RDKS
- Generators/haulers
- Designated Recycling Facility operator
- Service area residents and businesses

2.4.3 Questions and Considerations

Should a surcharge be levied on all types of waste brought to RDKS waste management facilities from outside the Terrace Service Area? Should exemptions be made for specific types of waste that originate from within the RDKS in a neighbouring service area? Should tipping fees on recyclables vary depending on the source and/or who brings in the materials?

Applying a surcharge to the disposal of waste from outside the Terrace Service Area aligns with the RDKS's overall goals. The cost recovery model in the Terrace Service Area was based on the anticipated revenue from waste from within the service area and surcharges on waste from outside the service area. However, some waste streams are beneficial to the RDKS because of their value. If those waste streams do not arrive at the RDKS facilities, then the RDKS will incur costs to obtain replacement materials. It could therefore be argued that the RDKS should encourage the deposit of those materials at its facilities to avoid the costs of obtaining replacements. Removing surcharges on specific, beneficial wastes streams would encourage the deposit of those materials.

The only facility in the RDKS with the ability to process large amounts of cardboard and paper products is located in Terrace. A contractual arrangement is in place with the operator of the facility to manage cardboard and paper products generated in the Terrace Service Area.⁴ Cardboard and paper products from outside the Terrace Service area are charged a market rate for processing. A specified surcharge on cardboard and paper products from outside the Terrace Service Area would penalize generators from outside the service area for complying with disposal restrictions. There is no reason to discourage generators and haulers from bringing their cardboard and paper products to the recycling facility in Terrace, and the facility operator does not incur any additional costs for processing materials from outside the Terrace service area (i.e. does not need to receive more revenue from surcharges to offset additional costs).

2.5 Contaminated Soil Handling and Use

2.5.1 Background Information

The RDKS has reduced tipping fees for contaminated and other soils at all its facilities, because the soils can be used on site. By using soil brought in by contractors, the RDKS defers costs associated with obtaining the soil (e.g. cutting down trees, developing pits).

Some contaminated soil that is not free draining (e.g. glacial till) can be treated onsite by enclosing it, remediating it, and treating the leachate on site. The treated soil can then be mixed with compost and used to grow grass on closed landfills.

Other soils that cannot be treated on site may still be used and contained in building berms for the next phase.

2.5.2 Stakeholders

- Generators of contaminated soil
- RDKS
- MOE
- Communities in the throughout the regional district

2.5.3 Questions and Considerations

Some residents are concerned that the Forceman Ridge Waste Management Facility is accepting contaminated soils for a lower tipping fee. The SWMP should specify how different types of contaminated soil benefit the facility.

By specifying how different types of soil are used on site, the SWMP can solidify existing practices by creating policies. This may help to alleviate concerns that some residents have about how contaminated soil is treated and handled on site.

⁴ Haulers of commercial cardboard and paper pay the facility operator a tipping fee (which is set by the RDKS and is lower than the tipping fee for garbage at the transfer station, to encourage waste separation). The RDKS pays the facility a set fee per tonne processed and shares the revenue from the sale of the material with the facility operator. This system only applies to commercial cardboard and paper generated in the Terrace Service Area.

2.6 Landfill Gas Utilization/Carbon Credits

2.6.1 Background Information

The Forceman Ridge Landfill has been designed to generate minimal landfill gas (LFG) and to capture and flare the majority of the LFG that is generated. LFG generation has been reduced by restricting the disposal of organic material and by keeping the active face covered to minimize the amount of rain that falls on exposed waste. LFG capture is achieved by a series of horizontal and vertical pipes that are installed as the waste is disposed. These efforts result in carbon reductions over the business as usual case. Emissions reductions at landfills are outside the local government corporate emissions boundary, as defined in the Carbon Neutral Workbook, and may therefore be used to generate carbon credits. The emission reduction efforts in the RDKS may be eligible for carbon credits if they meet the following additional conditions:⁵

1. Emission reductions have occurred before they are counted
2. Emission reductions are credibly measured by a third party
3. Emission reductions projects are beyond business as usual (BAU): projects must have started after September 26, 2007; must not be required to fulfill a federal or provincial government's legislated or regulatory requirement; and meet one of three tests (financial, other barriers or common practice).
4. Accounting of emission reductions is transparent (the project plan and its verification process are publicly available)
5. Emission reductions are counted only once (i.e. they have not been previously committed or retired as emission reductions)
6. Project proponents have clear ownership of all emission reductions

Assuming that carbon credits are generated, the RDKS must decide how to allocate them. Carbon credits can be used to offset emissions (to help a local government become carbon neutral) or can be distributed to member municipalities to help them achieve carbon neutrality. Credits can also be sold to the Climate Risk and Investment Branch of the Ministry of Environment. This is a competitive process, and the types and volumes of offsets purchased by the province at any given time can vary.

2.6.2 Stakeholders

- RDKS
- City of Terrace
- Ministry of Environment
- Service area

2.6.3 Questions and Considerations

What is the best use of any carbon credits that may be generated by the operations of the Forceman Ridge Waste Management Facility?

If the RDKS and/or City of Terrace are already achieving carbon neutrality without the use of credits from the Forceman Ridge Landfill, then it may be most advisable to apply to sell credits to the Province. However, if any local governments are currently purchasing offset credits, then it may be more sensible

⁵ Becoming Carbon Neutral: Guidebook for B.C. Local Governments July 2014
<http://www.toolkit.bc.ca/sites/default/files/BecomingCarbonNeutralGuideV3.pdf>

to apply the credits locally. More information will be available after an outside firm quantifies the credits.

2.7 Setting parameters for acceptable liquid waste brought to RDKS waste management facilities

2.7.1 Background Information

The Forceman Ridge Waste Management Facility and the Hazelton Waste Management Facility both include infrastructure to receive liquid waste. According to the bylaws in place in each service area, “septage” is classified as a Controlled Waste (requiring a permit for disposal and with a tipping fee) and “other sewage waste” is classified a Prohibited Waste.

The definition of septage in the Hazelton Service Area is slightly broader than in the Terrace Service Area. In the Hazelton Service Area, septage includes septic tank pumpage and treated sewage sludge, including the contents of grease traps from restaurants within the Service Area when they are mixed with septic tank pumpage, and wash water that is free of hydrocarbon contamination. In the Terrace Service Area, no mention is made of grease traps or wash water (i.e. septage is limited to septic tank pumpage and treated sewage sludge).

The definition of other sewage waste is the same in both service areas.

Reporting by liquid waste haulers has been suboptimal to date; although septage is a Controlled Waste, the two liquid waste haulers have annual permits and are not required to check in or report to anyone when they are delivering their loads. Loads are typically coded simply as “residential” or “commercial”, with no further details about the source or type of liquid. Volumes are estimated by the haulers at each pump-out location; however, there is no detail regarding the waste source (i.e., septage, grease trap, oil-water separator, catch basin waste).

As the operator of the only facilities in the region that accept pumpage, the RDKS is under pressure accept all pumpout materials. The RDKS has concerns regarding grease trap waste (due to the presence of fats, oils and grease (FOG)) and catch basin waste from parking lots (due to the high likelihood of the presence of hydrocarbons). The RDKS therefore seeks to develop a policy that more clearly defines the types and sources of liquid waste that can be accepted at its waste management facilities. Eventually the RDKS may require pumpage from establishments with oil-water separators to undergo lab analysis on a regular basis before it can be brought in for disposal.

The RDKS also wishes to undertake a “source control” approach to working with owners of catch basins, oil-water separators (OWS) and grease traps. This approach calls for educating owners of those facilities about what can be put in them and where the products go. This is an outreach program that will require the RDKS to determine which commercial establishments have those facilities.

2.7.2 Stakeholders

- RDKS
- City of Terrace
- Private liquid waste haulers
- Generators of liquid waste

2.7.3 Questions and Considerations

Should the RDKS allow other sewage waste to be disposed of at its waste management facilities?

If so, what parameters should be considered when determining what is acceptable liquid waste?

Should generators/haulers be required to send samples for analysis on a regular basis before being allowed to use RDKS facilities?

How can reporting and record keeping be improved in terms of both volume, source and type of material?

The RDKS operates the only liquid waste disposal facility in the Terrace Service Area, and there are only two liquid waste haulers. It therefore seems sensible for the RDKS to work closely with the two haulers to develop policies and regulations that work for all. It is important that the liquid waste brought to RDKS facilities be compatible with the environmental controls in place. There may be some kinds of liquid waste that would overwhelm the controls and result in pollution; this would not be acceptable to the RDKS.

There is currently no list of establishments that have grease traps, OWS or catch basins. In order to conduct a source control outreach program, the RDKS would need to first identify those establishments.

The RDKS needs to work with both haulers to improve reporting and record keeping. If necessary, annual permits can be temporarily suspended the RDKS can require the haulers to meet with the solid waste coordinator to report on the contents of their tank before dumping each load.

2.8 Require waste management space in new construction

2.8.1 Background Information

A common barrier to establishing recycling and organics diversion programs in multi-family and ICI buildings is the lack of available space for collection containers in common areas. When the multi-family and ICI buildings were constructed, space was allocated only for garbage containers; providing space for recycling and organics containers may mean giving up parking spaces or making other difficult trade-offs.

To reduce the long-term impacts of this barrier, new buildings should be designed to accommodate all current and foreseeable waste streams. Many municipalities in North America now include mandatory minimum space allocations in their building requirements for both new developments and significant re-developments and renovations. Metro Vancouver, in consultation with its member municipalities and the development community, developed a model bylaw to create consistent space requirements within the regional district and to reduce the amount of work each municipality would have to undertake to prepare their own policy. Variations on the model bylaw have been adopted by several municipalities, including Pitt Meadows and the City of Richmond. The City of Kamloops' zoning bylaw also requires commercial multi-family developments to provide space for both garbage and recycling.

The 1995 SWMP called for the RDKS to encourage its member municipalities to develop bylaws requiring new ICI and multi-family developments (greater than four units) to include areas for storage of waste, recyclables and organics. No such bylaws were drafted or approved.

2.8.2 Stakeholders

- RDKS
- Member municipalities
- MF and ICI building owners
- Developers
- MF and ICI building tenants
- Waste Haulers

2.8.3 Questions and Considerations

In order to increase participation in waste diversion among residents of multi-family buildings and in the ICI sector, should member municipalities require a minimum amount of space for the storage of segregated waste streams? The new standards would apply to new construction and significant re-development.

Some stakeholders may feel that the relatively slow rate of development in the RDKS does not justify adding requirements, and that individual building owners/managers should be left to figure out solutions to having enough space for the storage of all waste streams.

Occupants of existing multi-family and ICI buildings with insufficient storage space may be disappointed if a new regulation does not apply to their buildings.

2.9 Requirements for deconstruction (instead of demolition)

2.9.1 Background Information

Demolition of buildings can generate large quantities of waste, much of which can be avoided if a more methodical approach is taken to deconstruct the building. Deconstruction can salvage reusable materials and makes it easier to segregate recyclable materials. Commonly salvaged materials from deconstructed buildings include structural beams and dimensional lumber, wood flooring, cabinetry, casework and doors, architectural details, brick and stone. Salvage operations can range from selective removal of high-value elements to full-scale deconstruction.

Building salvage is becoming an increasingly important additional service a demolition company can offer. More customers are looking for waste reduction and are using green building rating systems such as LEED and Built Green that call for waste reduction, salvage and recycling

Deconstruction can be supported by adding a new permit category for “advance deconstruction permits”, which are issued before building permits. Demolition and building permits are typically issued simultaneously, which encourages builders to demolish buildings as quickly as possible. By issuing an advance deconstruction permit, builders can take the time necessary to deconstruct, rather than demolish. These types of permits are offered in both Seattle and Vancouver.

Deconstruction can also be supported by making a deconstruction permit significantly less expensive than a demolition permit. The savings from the deconstruction permit can be used to offset any additional costs associated with the reuse and recycling of building materials.

Many local governments run a pilot program for deconstruction before launching a full-scale program. The pilot program can test the viability of the market for reusing and recycling salvaged materials. The pilot program could be as small as a few buildings that go through the deconstruction process voluntarily.

2.9.2 Stakeholders

- RDKS
- Member municipalities
- Construction and demolition industry
- Residents
- ICI sector

2.9.3 Questions and Considerations

Will the introduction of a deconstruction permit make a significant difference in the amount of waste disposed in the RDKS, and do alternatives to disposal exist for the majority of the materials that would be generated by deconstruction? Rather than offering two types of permits (deconstruction vs. demolition) at two different price points, should the RDKS require deconstruction?

The building industry may resist the idea of more expensive demolition permits and/or deconstruction requirements and may need assistance in finding markets for reusing and recycling salvaged materials. The RDKS should consult with the local building industry to fully understand any barriers (and perceived barriers) to deconstruction and work with the industry to overcome those barriers.

Universal implementation of a deconstruction permit may be difficult, because there are some areas of the RDKS that do not issue building permits (i.e. unincorporated areas). This may lead to a slow down in demolition in areas with permits and an increase in demolition and construction in areas without permits.

Deconstruction requirements (or requirements to qualify for a deconstruction permit vs. a demolition permit) should take into account local market conditions. The SWMP should address the issue of the extent to which a building will be required to be deconstructed.

2.10 Setting an upper limit on the acceptable cost of recycling cardboard and printed paper and packaging (PPP)

2.10.1 Background Information

The RDKS accepts loads of cardboard in large bins at the Hazelton Waste Management Facility and the Kitwanga Transfer Station. It will soon begin operating a similar program at the new Stewart Transfer Station. Cardboard from the ICI sector is not eligible for Recycle BC funding. Residential cardboard is not currently part of the Recycle BC program in Kitwanga. The RDKS recognizes that it may not make sense to recycle cardboard at any cost. Once a cost threshold is reached, alternatives to recycling should be implemented. These alternatives could include composting or burning (at the Meziadin Landfill).

Recycling PPP in the Greater Terrace Area is made easier by the existence of a local consolidation and transfer facility that also processes PPP from the City of Terrace under contract to Recycle BC.

In the remainder of the Regional District, the cost to collect and transport PPP to a processing facility and ship it to market is extremely high. No subsidies from Recycle BC are available at this time.

Residents of the RDKS outside the Terrace Service Area must determine how much they are willing to pay to recycle PPP.

Current costs to recycle PPP in the Hazelton and Highway 37 North Service Area include a processing fee of \$399 per tonne, plus a hauling fee that averages around \$1000 per tonne. By comparison, the cost to

landfill the material is less than \$100 per tonne. Landfilling also has external costs such as the opportunity cost of using up landfill space and the costs of extracting and processing virgin materials into consumer goods. However, the RDKS recognizes that there is likely a limit on how much residents are willing to pay to have their PPP recycled, and that alternatives to recycling should be explored.

Alternatives for managing the paper and cardboard portions of the PPP stream include composting and burning. Composting and burning would both cost less than the current cost of recycling.

Alternatives for managing the glass portion of the PPP stream include crushing it and using it as road base or drainage material at the landfill. The cost of crushing would be offset by savings associated with not needing to buy road base and drainage material.

There are no local alternatives (other than landfilling) for the plastic and metal portion of the PPP stream.

2.10.2 Stakeholders

- RDKS
- Member municipalities
- Residents of areas of the RDKS that are not currently eligible for Recycle BC funding
- ICI cardboard generators

2.10.3 Questions and Considerations

What should the cost threshold be for recycling cardboard and PPP? What is the preferred alternative to recycling?

There are two distinct opposing views for this issue. Some may feel that conserving landfill space and virgin resources is the top priority, and that cardboard and PPP should therefore be recycled at any cost. Others may place a lower priority on resource conservation and support recycling only up to a certain cost limit.

2.11 Strategies to assist in the prevention of illegal dumping

2.11.1 Background Information

“Illegal dumping” refers to the intentional disposal of waste materials in unauthorized locations. It happens in both urban and rural locations, for a variety of reasons, including avoiding tipping fees, ignorance of proper disposal options. Illegal dumping typically falls into one of three categories:

- **Urban areas, public spaces:** used goods are abandoned on sidewalks, in alleyways, in parks and in other public spaces. It is usually from residential sources and may include items not covered by the curbside collection program, such as furniture, white goods, mattresses and electronics.
- **Valueless materials as donations:** goods that have no resale value are left at thrift shops, charity organizations and in donation bins. The organizations running the shop or bin must pay to have these materials removed and disposed of properly. The materials typically include smaller items such as stained clothing, broken electronics and partially used paints and cleaners.
- **Rural areas, public and private spaces:** materials are left along logging roads, in power line corridors, along rail lines, and on private property. This is often renovation/construction debris, yard waste or large bulky household items.

Discovery and response to illegal dumping in rural areas is the responsibility of the BC Conservation Officer Service (BCCOS). The BCCOS operates a reporting hotline with a toll-free number that people can call to report illegal dumping. Municipal governments are responsible for managing illegally dumped materials in their jurisdictions.

Illegal dumping has occurred in the RDKS for many years, before tipping fees and disposal restrictions were introduced. Although the amount of material is not necessarily significant in the context of the total waste disposed, illegally dumped waste is unsightly and can be an environmental hazard, depending on the specific materials dumped and the location. Cleaning up illegal dump sites can also be a costly endeavor for both public and private landowners.

Historically, about 15 reports of illegal dumping were made annually. In 2017, 55 reports were made, and in 2018 there may be over 100. Each report is about a unique site (i.e. increased reporting is not due to multiple complaints about the illegally dumped waste).

A working group has been formed that includes representatives from the RDKS, Conservation Service, Ministry of Transportation and Infrastructure, Nechako Northcoast, Natural Resource Officers, and the Kitsumkalum Resource Officer. A representative from the RCMP was invited but did not attend. The group has discussed identifying areas of known dumping activity and various options to mitigate known sites including signage, cameras, restricting access and cleaning the sites to discourage future dumping. Public education and awareness about the tipping fees at the transfer station was also identified as an issue, because people may not fully understand how little it would cost to properly dispose of waste (i.e. people focus on rate of \$110 per tonne and are not sure how big a tonne of garbage is). The group also discussed extended producer responsibility programs as an alternative to visiting the transfer station for many products.

Additionally, the Conservation Service identified lack of staffing as a barrier. The Terrace office has three officers who are responsible for addressing all calls; issues related to wildlife take priority over illegal dumping complaints. The Terrace office will be unable to respond to any further increase in public dumping complaints. The Conservation Service would support the idea of hiring a seasonal officer dedicated to responding to illegal dumping complaints and to delivering public education campaign. It was suggested that the RDKS Board of Directors submit a request to the Province to provide funding for a such a position.

Authority of jurisdiction is also an issue; illegal dumping often happens on crown land, and the RDKS does not generally have jurisdiction over such lands. RDKS will seek a legal opinion regarding its ability to enforce by Bylaw on Crown Lands. The Natural Resource Officers will also confirm their jurisdiction/authority and advise the RDKS and Conservation Officers. Illegal dumping on privately held land is more easily enforced by the RDKS.

Current approaches that help to mitigate illegal dumping in the region include waiving tipping fees for groups or individuals who clean up abandoned materials. However, a comprehensive strategy to address illegal dumping has not yet been developed. The SWMP is an appropriate place to document such a strategy. Typically, illegal dumping strategies involve some or all of the following:

- Monitor and measure quantity of illegally dumped material;
- Share information between agencies;

- Synchronize enforcement between agencies;
- Develop and deliver a campaign targeting the general public as well as specific audiences that are believed to be responsible for illegal dumping. See example from the Capital Regional District below. The campaign should increase awareness of illegal dumping as a social and environmental issue, and provide information on where and how to dispose of used goods appropriately;



- Fund community clean up initiatives;
- Work with stakeholder groups such as recreational groups and utility companies to enhance reporting and enforcement (can include maintaining a website where any member of the public can “Observe, Record and Report” illegal dumping that they come across, or promotion of the BCCOS hotline and coordinated responses to reports called into the hotline);
- Support for non-profit organizations that receive unsaleable used goods by reducing/waiving tipping fees on the disposal of non-salable goods and encouraging residents to “donate responsibly” as part of the communications plan.

The Regional District of Nanaimo (RDN) goes further than the steps described above. The RDN’s Waste Stream Management Licensing Bylaw (WSML) includes a section that makes waste generators responsible for the proper disposal of their waste. If a generator’s waste is found to be illegal dumped, 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. The RDN employs a Zero Waste Compliance Officer, whose duties include illegal dumping prevention, complaint response, records management, inter-agency/media contacts, posting of signage in areas subject to illegal dumping activities and historic site monitoring. When the officer is able to identify the generator of illegal dumped materials, a written warning is issued with a request to clean up the abandoned waste. In most cases this action is sufficient to achieve compliance. If the generator does not respond, the officer can charge the clean-up costs to the generator and levy a fine.

2.11.2 Stakeholders

- RDKS
- Member municipalities and First Nations
- BCCOS
- MOTI
- Nechako Northcoast (MOTI’s highway maintenance contractor)
- BC Hydro
- Forestry companies
- Recreational back country users

2.11.3 Questions and Considerations

Is an illegal dumping strategy necessary in the RDKS? If so, what should be included in the strategy?

The perception in the RDKS is that illegal dumping increased significantly after tipping fees and disposal restrictions were introduced. It is important that the RDKS be able to quantify the amount of material being abandoned, whether in terms of number of reports or quantity of material cleaned up. When a tracking system is established, the RDKS will be able to monitor changes over time and evaluate the effectiveness of the strategy.

A strategy should be implemented over the entire region, rather than service area by service area. The strategy may focus on encouraging a shift in social norms and acceptability of the behaviour. This is an opportunity to use “community based social marketing” (CBSM) techniques (see Appendix A for more details on CBSM).

A comprehensive illegal dumping strategy in the RDKS could include the following elements:

- Work with BCCOS and stakeholders to establish a plan (which may include securing additional resources and funding) for clean-up of known dump sites;
- Organize stakeholder groups and volunteer organizations to clean up reported sites.
- Conduct a survey of member municipalities, local recycling depots and non-profit organizations to identify hot spots and determine the most common materials illegally discarded. This information can then be used to develop a targeted education campaign and clean up program.
- Conduct a region-wide education and behaviour change campaign
- Post signs at frequent illegal dumping sites to educate about reporting and prosecuting dumpers. Signs could be made available to municipalities and owners of private property that is used for illegal dumping
- Amend the waste regulations bylaw to make the generator of waste responsible for its proper disposal.
- Establish illegal dumping enforcement capacity within the RDKS and/or municipalities.
- Work with stakeholder groups to establish a practice of “observe, record and report” to help identify problem areas for illegal dumping and assist with enforcement (assumes enforcement capacity is available).
- Promote the existing BCCOS reporting hotline where residents and outdoor groups can report dumping location.
- Continue practice of waiving tipping fees for volunteers who clean up illegal dump sites.
- 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.

In addition, the RDKS may request funding and resources from the Provincial government to support clean-up efforts and additional enforcement staff (i.e., a seasonal Conservation Officer) dedicated to illegal dumping clean up and education.

2.12 Strategies to Reduce Single-Use Items

2.12.1 Background Information

The RDKS could use the new SWMP as a method of preventing single use items from entering the waste stream. One option is to introduce a ban on the distribution of free single use items by retailers.

Recently, the City of Victoria became the first city in British Columbia to ban the distribution of free plastic bags. The ban applies to “single use plastic checkout bags”, meaning bags used by customers to transport purchases (including take out and delivered food). When the bylaw was proposed, some Victoria residents opposed the idea, because they used the bags as a kitchen waste catcher (so they are not truly single use).

In Victoria, businesses are allowed to sell paper or reusable bags to customers, but only if a customer requests a bag (businesses may not offer). There is a minimum charge of \$0.15 for paper bags and \$1 for reusable bags (these amounts will increase to \$0.25 and \$2, respectively, in January 2019).

The bylaw in Victoria allows bags to be distributed at no cost for the following purposes:

- Packaging loose bulk items such as fruit, vegetables, nuts, grains or candy;
- Packaging small hardware such as nuts and bolts;
- Containing or wrap frozen foods, meat, poultry and fish (whether pre-packaged or not);
- Wrapping flowers, potted plants;
- Protecting prepared foods or bakery goods that are not pre-packaged;
- Containing prescription drugs;
- Transporting live fish;
- Protecting bed linens, bedding or any large item that can’t easily fit in a reusable bag;
- Protecting newspapers or other printed material left at a residence or business; and
- Protecting clothing after it has been professionally laundered.

The ban also does not apply to plastic bags purchased for a specific use, such as garbage bags.

The bylaw was passed after several years of consideration and research. It will come into effect six months after it was passed, to allow for additional education and awareness-raising. The City has budgeted \$30,000 for education. Enforcement will start six months after the bylaw comes into effect.

The City of Vancouver is in the midst of implementing a similar bylaw that covers a broader range of single use items. Vancouver is taking different approaches for different items, as summarized below.

Material Type	Planned Approach	Key Dates
Foam cups & containers	Ban	Jun 1, 2019
Utensils (cutlery, chopsticks, stir sticks etc)	May be provided on request	2019-2020
Plastic Straws	Ban (may be provided on request as an adaptive aid)	Jun 1, 2019
Plastic Bags & Cups	Reduction plans; may eventually be banned based on effectiveness of reduction plans	2019-2020

2.12.2 Stakeholders

- RDKS
- Retailers
- Customers
- Recycle BC

2.12.3 Questions and Considerations

Should the RDKS take steps to reduce the distribution of single use items? Is the City of Victoria bylaw a good model, is the City of Vancouver model preferred, or would a different approach be appropriate in the RDKS?

Those in favour of a banning the distribution of single use items often cite the following reasons:

- Plastic items pollute land and water. Plastic never break down, and is harmful to wildlife, including marine life.
- Plastics are made from non-renewable resources and contribute to climate change. Compostable plastics are difficult to compost fully, and it is virtually impossible to distinguish compostable and non-compostable plastics in the feedstock.
- The cost of manufacturing and distributing plastic items is incorporated into the cost of purchased goods; the cost of clean up is much higher and is covered by taxpayers.
- Single use items are difficult to recycle. They are a common form of contamination in other recycling streams and can get caught on recycling equipment.
- Reusable items are an easy alternative.

Those who oppose a ban on plastic bags typically have the following objections:

- Plastic items are convenient.
- Plastic items are cheap.
- Plastic bags do not take up much space in landfills or garbage collection vehicles.
- Plastic bags can be reused (either multiple times for their original purpose, or for single use purposes such as containing household garbage).
- Recycled plastic bags have value as feedstock for manufactured lumber that can be made into fencing, decks, playground equipment etc. Banning plastic bags will reduce the amount of manufactured lumber available.
- Less energy is used to make and distribute plastic bags than paper bags.
- Reusable bags must be used many times before their environmental impact is less than a plastic bag.

A resource guide was recently released by Recycle BC to help retailers encourage customers to bring their own bags. An alternate approach to passing a bylaw could be an education and awareness campaign based on the Recycle BC resource guide. It is also relevant that the latest draft stewardship plan from Recycle BC includes single use plastic bags as a form of packaging that would be covered by their Extended Producer Responsibility (EPR) program. Much of the RDKS is not covered by Recycle BC's program.

2.13 Development of a food waste reduction strategy

2.13.1 Background Information

The US Environmental Protection Agency (US EPA) has developed a Food Recovery Hierarchy, which mimics the waste reduction hierarchy (known colloquially as the 3Rs). In the Food Recovery Hierarchy, reducing the amount of food wasted is the most preferred strategy. Feeding people and feeding animals are the next most preferred approaches, followed by using food as feedstock (rather than nutrition) for energy production and compost. Landfilling/incineration are the least preferred options.



Figure 1. Food Recovery Hierarchy (source: US EPA)

More than a third of food produced and distributed in Canada never gets eaten. In 2014, the value of this wasted food was estimated at \$100 billion annually.

Nearly half of the food waste occurs once the food reaches consumers. The other half of the waste occurs during production, transportation and distribution, during processing, and by retailers such as grocery stores and restaurants.

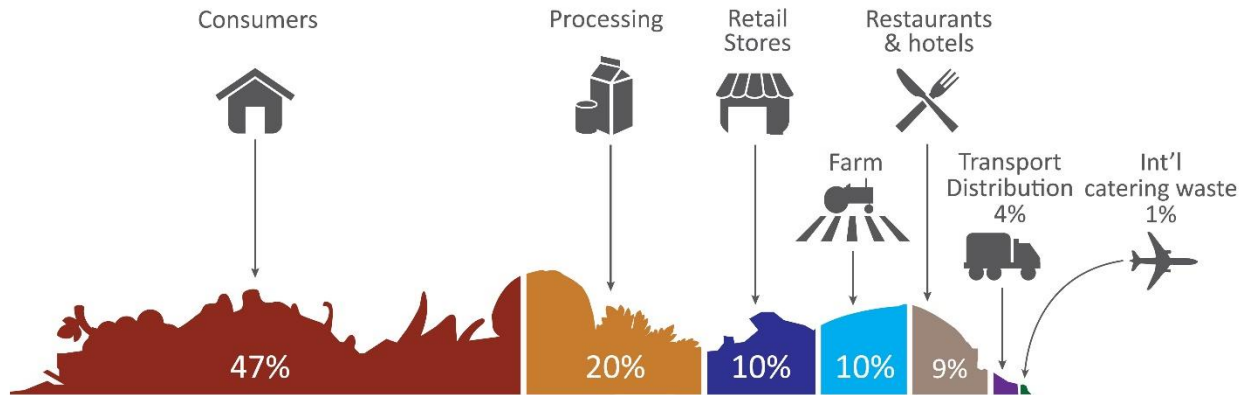


Figure 2 Food Waste in Canada (source: National Zero Waste Council)

Other studies have calculated that the average household wastes one quarter of the bought each year; that food has a retail value of over \$1500. Furthermore, 63% of the food that we dispose of could have been eaten.

These statistics demonstrate that food waste reduction (or prevention) an important part of reducing the amount of food sent to landfill.

The National Zero Waste Council of Canada released a [Food Loss and Waste Strategy for Canada](#) in May 2018 that documents the extent of food waste issue and describes how food waste can be prevented, recovered (for consumption) and recycled (for energy and compost).

In the Terrace Service Area, the focus has been on diverting food waste to the composting facility. Food waste is classified as a Restricted Waste, which means it must be delivered to the Thornhill Transfer Station in separated loads. The tipping fee for food waste is lower than the tipping fee for garbage, which creates an incentive for commercial generators to separate their food waste. These measures help to reduce the amount of food waste that is sent to the landfill, but they do not reduce the amount of food waste produced. A separate strategy could be developed to support food waste prevention.

Food waste prevention programming can be implemented throughout the RDKS, even in areas that do not have the composting facilities.

2.13.2 Stakeholders

- RDKS
- Member municipalities
- Residents
- Businesses

2.13.3 Questions and Considerations

Is a food waste prevention strategy appropriate throughout the RDKS?

How much effort should be spent on preventing food waste compared to diverting food waste to the composting facility (Terrace Service Area only)?

How will a food waste prevention strategy affect organizations that currently distribute excess food to people in need?

Should a food waste prevention strategy target residents, the ICI sector, or both?

A summary of the current food management practices was prepared by the RDKS in September 2018. The summary examined how local food producers, retailers, and food distribution organizations operate in the Greater Terrace Area. The study did not include most restaurants, but did include grocers. It found that most local producers generate little waste, by using unsellable food as animal feed or compost. Local grocers are all connected with Food Distribution Organizations (FDOs), although the proportion of food that is given to FDOs rather than disposed of (or segregated for composting) is not specified. Based on the quantity of food waste being composted and landfilled, it appears that more can be done to strengthen ties between food retailers and FDOs to increase the proportion of food waste that is addressed by the “feed hungry people” level of the Food Recovery Hierarchy.

At the household level, a food waste prevention campaign typically includes:

- Messaging about the cost of wasting food
- Messaging about the environmental impacts of wasting food
- Messaging about the health impacts of wasting fruits and vegetables
- Tips on how to shop more carefully (e.g. make a meal plan, look in your pantry and fridge first and then make a shopping list)
- Tips on how to store food so that it lasts longer
- Tips on how to store and use leftovers
- Guidance on best before, use by and sell by dates

Residential food waste prevention campaigns are relatively new initiatives that are currently being run in many larger jurisdictions such as Toronto and York. Municipalities may design and implement their own campaigns, or join a larger movement called Love Food Hate Waste. The BC Ministry of Environment & Climate Change Strategy is a partner in the National Zero Waste Council, which is the organization responsible for the Love Food Hate Waste campaign in Canada. Through the partnership, tools from the Love Food Hate Waste campaign are available to communities province-wide. A [residential food waste prevention toolkit](#) and a [food service food waste prevention toolkit](#) have been published by the Ministry of Environment and Climate Change; a number of other resources are also available on the Ministry’s [website](#).

3 Project Topics

The following topics are associated with projects that could be implemented in the RDKS. More research and consultation are required on each topic to better understand the implications of implementation. Projects will need to be prioritized, since they cannot all be implemented due to staff and resource constraints. The projects will be prioritized based on criteria developed by the RDKS and the PTAC. The criteria will cover economic, social and environmental parameters, as well as technical feasibility.

This section describes the background information, key stakeholders and potential ramifications of different projects. The prioritization of projects is found in the next section.

3.1 Telegraph Creek and Dease Lake Waste Management Solution

3.1.1 Background Information

The Telegraph Creek Landfill is owned and operated by the Tahltan Band, and the RDKS contributes to the cost of operation for the use of the facility by residents of the adjacent electoral area. The Tahltan Band is currently working with Indigenous and Northern Affairs Canada (INAC) and is pursuing the development of a transfer station, with waste being sent to the Dease Lake Landfill. The RDKS has not been deeply involved in the process, and would like to be more engaged, as off-reserve residents are also affected by the final decision. The RDKS is concerned that the operation of a transfer station may not be feasible, as hauling to the Dease Lake Landfill may be logistically difficult.

The Dease Lake Landfill is currently owned by the Ministry of Transportation and Infrastructure (MOTI). It is operated by a contractor hired by the MOTI. The landfill has some recycling infrastructure, but no scales or other means of measuring the amount of garbage brought in. The Dease Lake Landfill has become the destination for waste generated in Telegraph Creek, since the Telegraph Creek landfill stopped receiving putrescible waste and a transfer station system was installed.

3.1.2 Stakeholders

- MOTI
- RDKS
- Community of Dease Lake
- Ministry of Environment
- All communities in the Hazelton and Highway 37 North Service Area
- Tahltan Band
- INAC (and their consultants)

3.1.3 Questions and Considerations

What is the optimal waste management solution for both on and off reserve residents in the Telegraph Creek area? How can the RDKS be involved in the search for a long-term disposal solution for Telegraph Creek?

INAC and Tahltan have already made progress on moving towards the development of a transfer station and may not be willing to re-examine other options.

The RDKS would like to know if the MOTI intends to charge tipping fees at the Dease Lake Landfill for the loads that come in from Telegraph Creek. If the RDKS is expected to pay tipping fees, the RDKS would like to be involved in deciding on the best waste management solution for Telegraph Creek.

Should the RDKS agree to take over full responsibility (including ownership) of the Dease Lake Landfill?

If the RDKS takes over the Dease Lake Landfill, the landfill would become a facility under the Hazelton and Highway 37 North Service Area. The RDKS would need to consider how to pay for both the capital and operating costs of the site; these costs would need to be incorporated into any revisions to the cost recovery model (section 2.2). Bylaws 657 and 688 would need to be amended to include Electoral Area F (Dease Lake) and the Dease Lake Landfill.

The liability associated with the site should be detailed before the RDKS makes any decisions.

3.2 Potential Participation of District of Kitimat in the Terrace Service Area

3.2.1 Background Information

The District of Kitimat recently completed its own Waste Management Plan (Hatch, 2017). Without any increase in diversion activity, the Kitimat Landfill is expected to reach capacity by 2047. The plan compares three possible scenarios:

- Business as usual (weekly residential garbage collection, no recycling collection, continued use of Kitimat Landfill)
- Recycling and Forceman Ridge composting (alternating weeks of residential garbage and recycling collection, weekly organics collection, organics are processed at Forceman Ridge)
- Recycling and local composting (alternating weeks of residential garbage and recycling collection, weekly organics collection, organics are processed at a future local composting facility)

Other options may also be explored during the SWMP development process. The District could join the RDKS waste management service (i.e. become part of the Terrace Service Area cost recovery model) and participate in the Terrace Area collection program, develop a new Kitimat Transfer Station, and use the Forceman Ridge Waste Management Facility for disposal and composting. As residential collection in Kitimat is already provided by the same contractor as the RDKS collection program, this transition could likely be made without significant disruption. In addition, funding from the provincial or federal governments could be applied for to assist with the Kitimat Landfill Closure.

Another option would be for the District of Kitimat to remain outside the RDKS waste management service and access the Forceman Ridge facility as a user (i.e. pay tipping fees). The waste from Kitimat would need to comply with all disposal restrictions in place, and the “out of service area” surcharge of 25% would be applied to the tipping fee.

The RDKS Administration has advised the District of Kitimat that in order for these options to be considered, the District needs to formally request a review of the potential impacts of their use of the Forceman Ridge facility, including both the compost facility and the landfill.

3.2.2 Stakeholders

- District of Kitimat
- RDKS
- All other communities in the Terrace Service Area

3.2.3 Questions and Considerations

Do the District of Kitimat and the Regional District benefit from the District of Kitimat using the Forceman Ridge Waste Management Facility?

Is it preferable for the District to join the Terrace Service Area waste management function, or to be a facility user?

While the Kitimat landfill has a fairly long lifespan remaining, it is important to proactively manage a long-term disposal solution. The SWMP could be structured to allow, but not require, the District of Kitimat to use the Forceman facility. If there is any support for the idea, it would be wise to include allowance for it in the SWMP, to avoid the need for a plan amendment in the future.

A transition to the Forceman Ridge Landfill would require residents and businesses to change their waste management practices to comply with the disposal restrictions. There may be opposition to this change. As in the Terrace Service Area, teaching residents and businesses how to separate their organics and recyclables will require a comprehensive education and promotion program. This is a fairly major undertaking and would benefit greatly from the RDKS's involvement, as RDKS staff have recent experience with this in the Terrace area.

There may be opposition in the Terrace area to increasing the volume of waste disposed of at the Forceman Ridge Landfill.

If Kitimat joins the Terrace Service Area, the cost recovery model will need to be revised (see Section 2.1).

3.3 Recycling Collection in the Hazelton and Highway 37 North Service Area

3.3.1 Background Information

There is currently no standardized service for the collection and management of recyclables in the Hazelton and Highway 37 North Service Area. The District of New Hazelton is the only local government to provide residents with curbside collection of recycling (an unlimited amount is collected biweekly). All residents within the service area may drop off printed paper and packaging at recycling depots, but the depot locations are not convenient for all. The depot in New Hazelton operates under the Recycle BC program. The recycling drop-off facilities at the Kitwanga Transfer Station are fully funded by the RDKS. The RDKS also intends to establish drop off locations at the Meziadin Landfill and Iskut Landfill. As the existing depot in Stewart is about to cease operations, the RDKS will also establish recycling drop-off facilities at the new Stewart transfer station, which will accept PPP and cardboard.

Curbside collection programs typically collect more per capita than depot collection programs, because of the increased convenience that curbside collection provides. When a local government implements a curbside recycling program, it can offer incentives to participate in the recycling program, such as reducing the frequency of garbage collection, or by reducing the volume of garbage that is collected for the standard fee, while allowing an unlimited quantity of recycling. These incentives are most applicable

in areas that have curbside garbage collection; in the Hazelton Service Area all incorporated areas and many First Nations offer curbside garbage collection, but residents of Electoral Areas must self-haul their garbage to the local disposal site. There are currently no disposal fees for residential garbage, so it is more difficult to provide an incentive for recycling for residents who self-haul their garbage.

Through the SWMP development process, the RDKS would like to explore the viability of providing curbside collection of recyclables to most households in the Hazelton and Highway 37 North Service Area. This could be modeled on the service in the Terrace Service Area, where the City of Terrace, Kitsumkalum First Nation and RDKS each provide comparable services within their jurisdictions, or a different system could be implemented (e.g. the RDKS could be responsible for curbside collection of recyclables in all parts of the service area). Regardless of the service delivery model, the RDKS would likely play a major role in the processing and marketing of the materials and would continue to endeavour to have Recycle BC participate.

3.3.2 Stakeholders

- Municipal governments in the Hazelton Service Area
- First Nations in the Hazelton Service Area
- Residents of the Hazelton Service Area
- RDKS
- Hazelton recycling depot
- Recycle BC
- Do Your Part Recycling

3.3.3 Questions and Considerations

Should the RDKS work with municipalities and First Nations to implement a curbside recycling program throughout the Hazelton and Highway 37 North Service Area? Are residents willing to pay more for recycling in order to divert more waste from disposal?

Recycle BC is not expected to agree to funding or participating in a new curbside collection program in the near term. Some municipal and First Nation governments may wish to provide the service directly to increase local employment, whereas others may prefer to have the RDKS manage the collection contract. Residents who already recycle at the depots and RDKS drop off sites will likely welcome the introduction of a curbside service, if they believe the service is provided for a reasonable cost.

Before implementing the service, the RDKS will need to confirm where the recyclables can be taken for processing (based on processor capacity and proximity). Processors may have additional requirements that must be taken into consideration and that may affect the cost of the program.

3.4 Expansion of the list of Prohibited Wastes

3.4.1 Background Information

The Terrace Area Waste Regulation Bylaw (Waste Regulation Bylaw 671) defines several classes of Prohibited Waste. Class C Prohibited Waste includes EPR materials, tires (whether or not they are EPR materials), and cardboard and paper products (whether or not they are EPR materials). The fine for depositing Class C Prohibited Waste at a waste management facility is \$100.

Additional materials could be added to the list of Class C Prohibited Wastes. These include packaging materials that are not covered by EPR (i.e. packaging from the ICI sector), textiles, furniture etc. Before

adding any materials to the list of Class C Prohibited Wastes, it is important to verify that alternate receiving and processing facilities exist that are as convenient as the transfer station and that have capacity to manage the volume that would be generated as a result of the material being classified as a prohibited waste. The following table illustrates the possible handling of the materials proposed for inclusion as Class C Prohibited Wastes.

Material	Alternative to Disposal	Already exists?
ICI Styrofoam	Densify, ship to lower mainland	No
ICI Plastic, metal and glass packaging	Sort, bale, ship to lower mainland	Do Your Part Recycling may be able to manage additional capacity; no facility exists in Hazelton and Highway 37 North Service Area
Textiles	High quality: Reuse/thrift stores Lower quality: Bale and ship to lower mainland	High quality: Yes Lower quality: No
Furniture and mattresses	High quality: Reuse/thrift stores Lower quality: deconstruct; bale and ship textile portions to lower mainland, recycle metal portions; grind wood portions	High quality: Yes (through private sales on sites such as Kijiji) Lower quality: No

3.4.2 Stakeholders

- RDKS
- Owners/operators of existing alternatives to landfilling (e.g. thrift stores, recycling facilities)
- Residents
- ICI sector
- Provincial government (due to potential for some of the additional materials to be classified as EPR materials in the future)

3.4.3 Questions and Considerations

Should the list of Class C Prohibited Wastes be expanded to include more materials?

There has been a large shift in the way waste is managed in the RDKS in the past five years. Some waste generators may still be adjusting to the shift and need support meeting existing disposal restrictions. Adding disposal restrictions could result in backlash.

Another potential drawback to implementing more disposal restrictions is that local alternatives to disposal may be overwhelmed with material. This is particularly true because the RDKS's approach to date has been to direct materials away from its facilities, rather than providing a "one stop drop" facility at its transfer station. The RDKS may need to assist organizations that offer alternatives to disposal (e.g. help thrift stores manage donations that cannot be resold). The RDKS already supports textile recycling in this way.

Support for expanded disposal restrictions would come from generators who want to maximize waste diversion, and from owners/operators of facilities who recognize the business opportunity created by disposal restrictions.

3.5 Household Hazardous Waste Collection

3.5.1 Background Information

Many types of household hazardous waste (HHW) are covered by EPR programs. EPR programs are regulated by the provincial government. EPR programs for HHW include:

- Electronics and electrical items, including:
 - Batteries (household),
 - Cell phones and peripherals,
 - Electronic equipment and devices,
 - Information, technology and telecommunications,
 - Lamp and lighting equipment,
 - Large appliances,
 - Outdoor power equipment,
 - Small appliances, tools, sports and hobby equipment,
 - Smoke and carbon monoxide alarms,
 - Thermostats;
- Lead-acid batteries;
- Paints solvents, pesticides & gasoline;
- Pharmaceuticals;
- Used oil & antifreeze.

Throughout the province, most EPR programs for HHW operate depots or return-to-retail programs. Depots may be co-located at disposal facilities operated by local governments or as standalone facilities. In areas without depots, the EPR program usually offers annual or bi-annual “round up” events.

Stewardship Agency	Materials managed	Number of Depot Location		
		Terrace	Kitimat	Highway 37 North Service Area
BCUOMA	Used oil, oil containers, oil filters	3	1	1
BCUOMA	Antifreeze	1	0	0
Encorp	Beverage containers	1	1	1
Canadian Battery Association	Lead acid batteries	5	1	1
Call2Recycle/CWTA	Rechargeable batteries and cell phones	10	2	3
EPRA (operated by Encorp)	Electronics: computers, televisions, audio-visual, medical equipment, office equipment	2 (1 retail location accepts residential quantities only)	1	2
LightRecycle	Lamps and lighting equipment	3 (1 is for commercial only)	1	1
OPEIC	Outdoor power equipment	2	0	0
CESA	Small appliances and electrical equipment	1	1	2

AlarmRecycle	Smoke and carbon monoxide detectors	1	1	0
Thermostat Recovery Program	Thermostats	3	0	0
ProductCare (regeneration)	Paint	1	1	2
ProductCare (regeneration)	Solvents, flammable liquids, gasoline and pesticides	1	1	0
Health Products Stewardship Association	Pharmaceuticals	6	3	0
BC Tire Stewardship	Tires	10	2	2
Recycle BC	Residential packaging and printed paper	1 (plus curbside program in Terrace)	1	2

The table above reveals that the Hazelton Service Area is missing depots for antifreeze, outdoor power equipment, smoke and carbon monoxide alarms, thermostats, solvents, flammable liquids, gasoline and pesticides, and pharmaceuticals.

At the household level, some types of HHW, such as batteries, lighting products, pharmaceuticals, and used oil and antifreeze, are generated on a fairly regular basis. Other types of HHW are generated more sporadically, such as during a construction or renovation project. At the community level, all types of HHW have the potential to be generated on a regular basis; it is therefore important to have facilities in place to allow residents to manage all types of HHW responsibly. While some residents may be aware of the potential for a future round up event and be willing to hold onto HHW until the event, others may not know that that option exists, or they may not have the space or willingness to store HHW until the event.

There are also some types of HHW that are not covered by EPR programs. These include concrete sealer, driveway sealer, nail polish, and products that cannot be identified (e.g. products inherited in a house sale or in cases when the label has come off a container or become unreadable). There are currently no facilities in the RDKS for managing “orphan” HHW that is not covered by EPR programs.

3.5.2 Stakeholders

- RDKS
- Residents/businesses
- Retailers who sell products covered by EPR programs
- Product stewardship organizations

3.5.3 Questions and Considerations

Should the RDKS make it easier for residents to safely recycle or dispose of HHW, including materials not covered by EPR programs? If so, which option(s) is preferred? Options could include:

- **RDKS-funded curbside collection;**
- **Producer-funded expansion of the depot network to include areas currently not serviced;**
- **Regularly scheduled household hazardous waste round up events;**
- **RDKS-funded storage and marshalling of HHW at RDKS waste management facilities and producer-funded transfer from those facilities;**
- **Facilities to allow for the safe handling of orphan products;**
- **Lobby Province and Stewards to expand programs to include additional materials.**

In order to improve the quality of service offered to residents, the RDKS may choose to fund additional services beyond those in the approved stewardship plans written by each product stewardship organization. This is counter to the principals of EPR but may be the most practical and timely way for missing services to be provided.

3.6 Curbside Audits

3.6.1 Background Information

The RDKS would like to be able to inspect residential garbage when it is set out for disposal to look for materials that should be in the recycling or organics streams. Staff refer to this practice as “curbside audits” or “can tipping”. The purpose of this enforcement approach is to encourage all residents to participate equally in the service. This approach is seen as a final option to pursue if diversion of materials remains low once education and awareness efforts have been fully implemented. Routes for can tipping would be selected on the basis of observed contamination rates at the transfer station, since the routes serviced by each truck are known. The routes being examined would be announced in advance, to give residents an opportunity to improve their practices before being inspected. The RDKS would also like to periodically publicize the routes with the best compliance, to encourage friendly competition between neighbourhoods.

Containers that are found to contain recyclables or organics would still be collected, but residents would be informed that they needed to start complying with the bylaws. Residents would be offered education and/or training before any penalties would be imposed.

Implementation will require coordination with the collection contractor, so that the inspections can happen before the waste is collected.

The RDKS would like this program to be approved in the SWMP so that it can later be implemented without need for further approval.

3.6.2 Stakeholders

- RDKS
- Residents
- Collection contractor

3.6.3 Questions and Considerations

Should the RDKS use can tipping as a way of finding out which households need additional support in order to fully participate in the waste diversion system?

Some residents may be uncomfortable with having their waste examined in front of their residence. However, the collection bylaw (RDKS Bylaw 674, section 17) allows the RDKS to inspect the waste set out for collection.

Some residents may cite barriers to proper sorting, including lack of space to store separate streams and lack of time to sort material. The RDKS is committed to working with residents to develop systems that work for them and enable them to participate fully. In particular, the RDKS would proactively offer workshops to multi-family buildings and other facilities in which space constraints may be an issue.

During the SWMP consultation work, the RDKS will confirm the overall diversion target and determine how much time, energy and goodwill should be spent on implementing the can tipping program, relative to its expected impact on the diversion rate.

3.7 Solid Waste Source Control and Enforcement for the ICI sector

3.7.1 Background Information

Currently the RDKS enforces disposal restrictions when waste is brought to a disposal or transfer facility. Any warnings or fines that are imposed for failing to comply with disposal restrictions are charged to the hauler who brought the waste in. It is up to the hauler to pass on the messages and/or fines to the generator responsible for failing to comply with the bylaw. The RDKS would like to take a more proactive approach to working with ICI generators to ensure that they have the systems and training in place to meet the requirements of the bylaw. This approach is analogous to the source control programs used by other local governments to reduce pollutants in the liquid waste stream. A solid waste source control approach could include:

- An initial visit to every ICI location to determine their baseline waste management practices.
- Regularly scheduled visits to ICI generators that do not have appropriate systems in place. Work with management and staff to remove barriers and kick-start participation.
- Annual or bi-annual visits to ICI generators that do have appropriate systems in place
- Authority to conduct dumpster audits on any ICI generator to check how well systems are working

A benefit of this type of approach is that it levels the playing field for all ICI generators; those who have not implemented systems to segregate waste will be found, and they will not be allowed to have an unfair advantage over those who have spent time and money to put the necessary systems in place.

An enforcement strategy/mechanism is needed when a business is found to not have the right segregation systems in place and/or when non-segregated waste is found during a dumpster audit. During consultation on the SWMP, a range of enforcement options will be presented and discussed, including fines and requirements for more frequent system or dumpster audits.

The RDKS would like this program to be approved in the SWMP so that it can later be implemented without need for further approval. If this option is approved for the SWMP, implementation will require

coordination with the collection contractor, so that the inspections can happen before the waste is collected.

The RDKS will need to decide if it will keep the option to penalize haulers who bring in non-conforming loads, or if this “source reduction” approach will replace that practice. It is recommended that both tools be used.

3.7.2 Stakeholders

- RDKS
- ICI generators
- Haulers

3.7.3 Questions and Considerations

Should the RDKS use a source control approach to require solid waste segregation by the ICI sector? If so, how should compliance be enforced?

ICI generators may object to the RDKS getting involved in their internal waste management processes and inspecting their waste.

Haulers will likely support this approach, as it should reduce the likelihood of them bringing in non-conforming loads and being required to pay a fine. Haulers may also find that they do not need to spend as much time conducting outreach to their ICI clients, since the RDKS would be taking on a proactive role.

The RDKS may wish to investigate the potential for developing “codes of practice” for different types of ICI waste generators. Codes of practice are typical in wastewater source control programs. They set out minimum requirements for waste treatment, equipment maintenance and record keeping for different kinds of operations, and form part of the sewer rates and regulation bylaw. A discharging operation operating under a Code of Practice does not typically require a discharge permit. A similar approach could be used to define the standards for waste segregation for different kinds of operations. A business in compliance with its relevant code of practice could have less frequent inspections.

During the SWMP consultation work, the RDKS will confirm the overall diversion target and determine how much time, energy and goodwill should be spent on implementing the source control program, relative to its expected impact on the diversion rate.