



MORRISON HERSHFIELD

# Potential Options for Other Solid Waste Services & System Financing to Consider for the RSWMP



PEACE RIVER  
REGIONAL DISTRICT

**April 23, 2020**

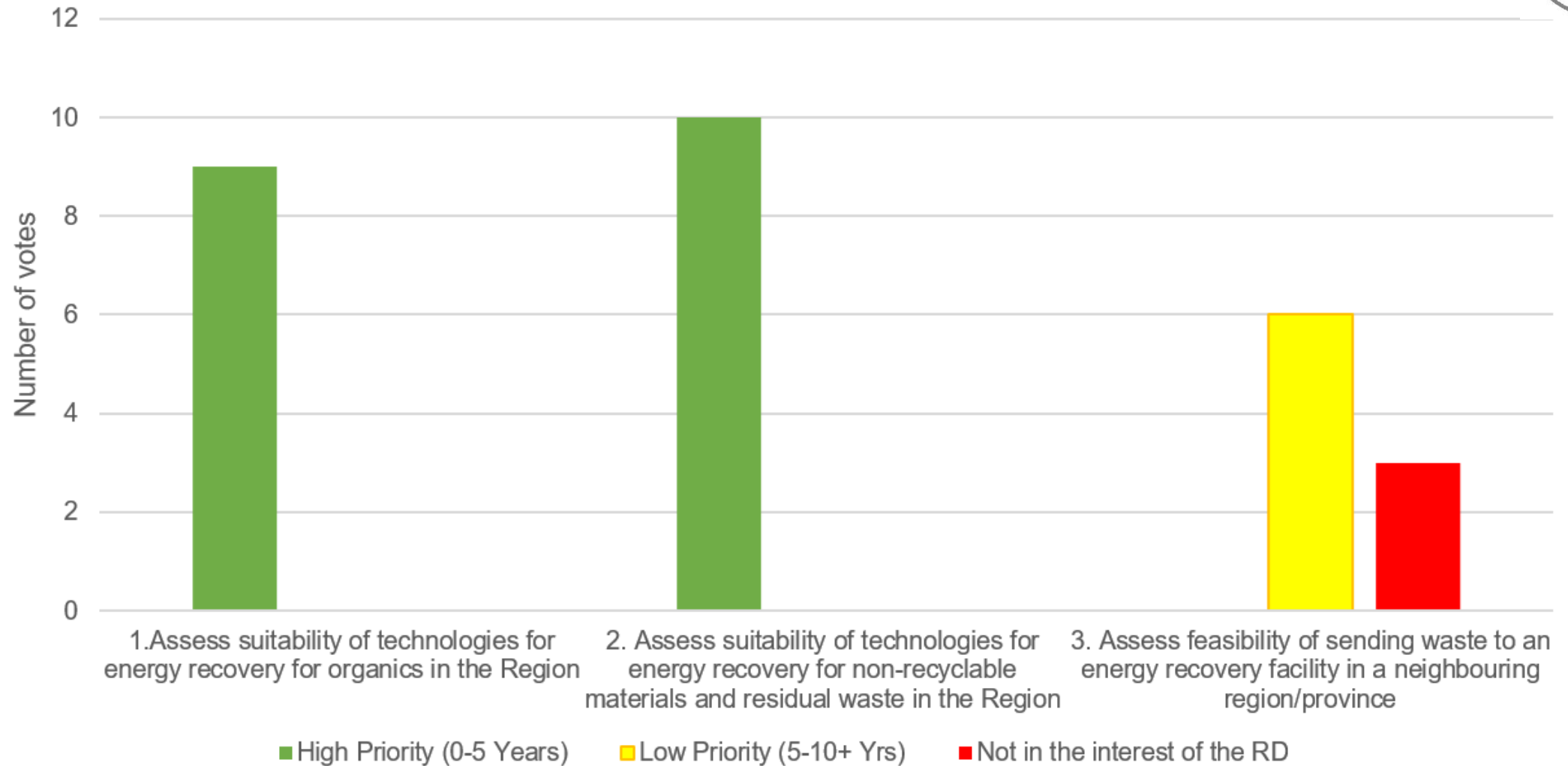
# Outline



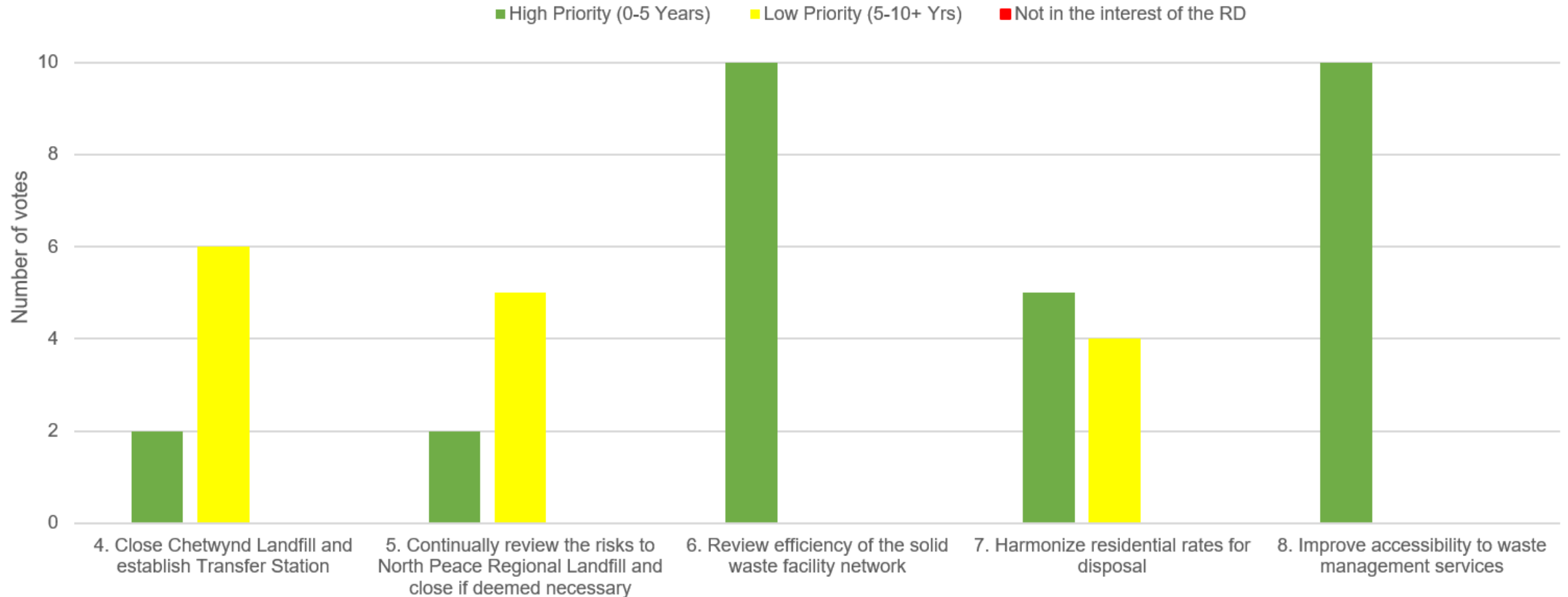
- Prioritized Energy Recovery & Residual Waste Strategies
- Other Solid Waste Issues
- Solid Waste System Financing
- Impacts
- Narrowing down strategies
- Next steps



# Priorities – Energy Recovery Strategies



# Priorities – Residual Waste Management



# Strategies to Consider



Strategies to consider relating to:

- Curbside collection in rural areas
- Illegal dumping
- Cost recovery and system financing
  - Tipping fees and taxation
  - Limiting recycling cost
  - Residential disposal rate harmonization
  - Disposal fees for ICI waste diversion
  - Disposal fees for unsorted residential waste

# Other Issues – Rural Curbside Collection



## 1: Offer curbside collection in rural areas

A. Assess the feasibility of a rural curbside collection service and implement if feasible

### Cost considerations:

- Population density and proximity to processor/disposal site
- Need for depots to continue accepting bulky / large-quantity waste from residents
- Estimated costs at \$1.4 million or more



# Other Issues – Illegal Dumping



PRRD is currently:

- Education and promotion of current waste management options
- Promoting RAPP (Report all Poachers and Polluters)
- Optimizing operating hours at transfer stations
- Piloting spring and fall clean-up events for residents and businesses to clean up their properties
- Waiving tipping fees for the waste collected via roadside clean-up programs on Crown land.





## **2: Develop an illegal dumping strategy**

- A. Establish an inter-agency working group and develop an illegal dumping strategy aimed to improve tracking and reduce the number of illegal dumping incidents
- B. Prepare and implement strategy, including assessing illegally dumped materials, identifying problem areas, assessing accessibility to Transfer Stations, improving public outreach and enforcement.



# Funding Solid Waste Systems



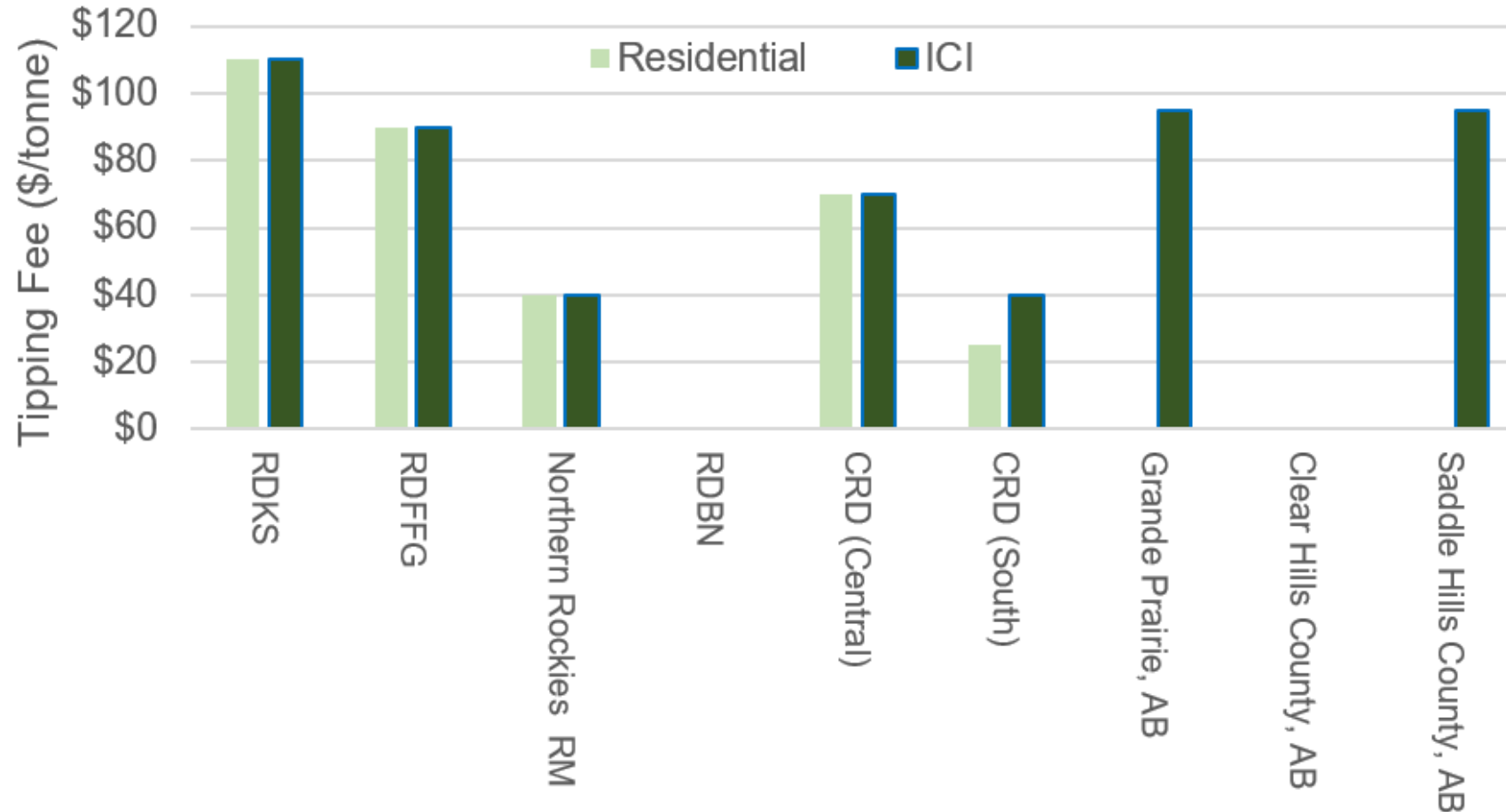
Regional Districts in BC face similar challenges:

- Diversion programs requiring increasing resources
- Revenues from landfill tipping fees decreasing
- Provision of cost effective services across a large network of solid waste facilities
- Resistance by residents and businesses to higher fees and increasing taxes

# Funding Solid Waste Systems



MSW tipping fees in neighbouring jurisdictions:



# Strategies to Fully Fund Solid Waste System



## **3: Assess cost recovery through tipping fees and taxation**

A. Assess cost recovery model to implement tipping fees and taxation that fully funds the solid waste management system

Consider:

- Challenges associated with adding new programs or facilities
- Importance of forecasting costs and confirm sources of revenue



# Strategies to Fully Fund Solid Waste System



## **4: Set limit on acceptable recycling cost when other management methods are considered**

- A. Establish cost threshold when alternative lower-cost options (e.g. burning or landfilling) are pursued until recycling is no longer cost prohibitive
- B. Lobby for improved EPR while increasing tipping fees for other materials and/or raising taxes to sufficiently fund recycling and educate residents about the cost of recycling



## **5: Harmonize residential disposal rates**

- A. Remove tipping fees for small volumes of sorted household garbage at Transfer Stations and Landfills and fund disposal via taxation
- B. Review waste disposal fees paid by First Nation communities in lieu of taxes and adjust to align with PRRD's Regional residential disposal rates

# Strategies to Fully Fund Solid Waste System



## **6: Incentivize ICI waste diversion by increasing disposal fees**

- A. Gradually increase ICI disposal fees for unsorted waste, controlled, and restricted waste and carry out education and outreach program to implement changes and increase waste diversion





## **7: Incentivize residential waste diversion by increasing disposal fees for unsorted waste**

- A. Update bylaw to increase tipping fees for unsorted household garbage at all manned solid waste facilities
- B. Provide education and enforcement to support bylaw implementation



# Summary of Guiding Principles



## STRATEGIES FOR OTHER ISSUES

### STRATEGY 1

#### Offer Curbside Collection in Rural Areas

- *Promote the first 3Rs (Reduce, Reuse and Recycle) with targeted efforts*
- *Prevent recyclables from going into the garbage wherever practical*

### STRATEGY 2

#### Develop an Illegal Dumping Strategy

- *Support polluter & user-pay approaches; incentivize to maximize behaviour outcomes*
- *Collaborate with other Regional Districts; seek partnerships with others wherever practical*
- *Ensure waste materials are managed responsibly as technology or local options are developed*

# Summary of Guiding Principles



## STRATEGIES TO FULLY FUND SOLID WASTE MANAGEMENT

### STRATEGY 3

**Assess cost recovery through tipping fees and taxation**

- *Support polluter & user-pay approaches; incentivize to maximize behaviour outcomes*

### STRATEGY 4

**Set limit on acceptable recycling cost when other management methods are considered**

- *Ensure waste materials are managed responsibly as technology or local options are developed*

### STRATEGY 5

**Harmonize residential disposal rates**

- *Ensure waste materials are managed responsibly as technology or local options are developed*

### STRATEGY 6

**Incentivize ICI waste diversion by increasing disposal fees**

- *Promote the first 3Rs (Reduce, Reuse and Recycle) with targeted efforts*
- *Support polluter & user-pay approaches; incentivize to maximize behaviour outcomes*

### STRATEGY 7

**Incentivize residential waste diversion by increasing disposal fees for unsorted waste**

- *Promote the first 3Rs (Reduce, Reuse and Recycle)*
- *Support polluter & user-pay approaches; incentivize to maximize behaviour outcomes*
- *Prevent recyclables from going into the garbage where practical*

# Impacts: Strategies to Address Other Issues

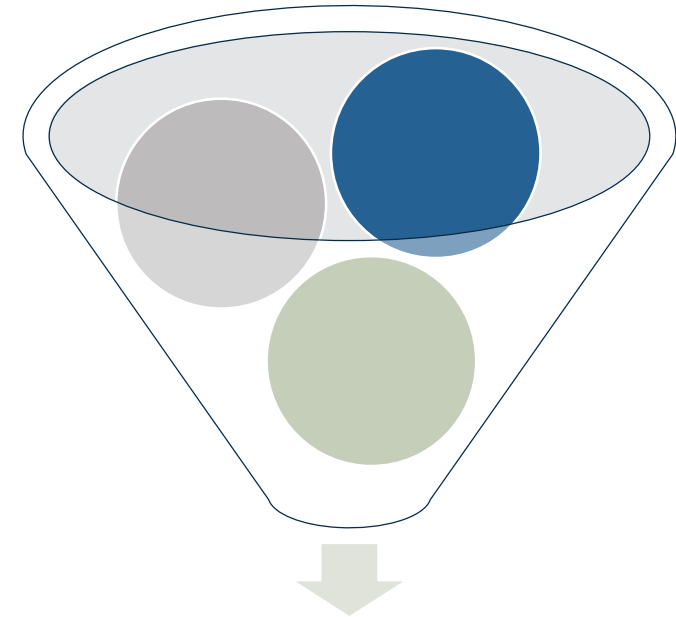
Strategy	Operational Costs	Capital Costs
Strategy 1. Offer curbside collection in rural areas	High	Medium-High
Strategy 2. Develop an Illegal dumping strategy	Low-Medium	Low

# Impacts: Strategies to Fully Fund Solid Waste System

Strategy	Operational Costs	Capital Costs
<b>Strategy 3. Assess cost recovery through tipping fees and taxation</b>	Low-Medium	Low
<b>Strategy 4. Set limit on acceptable recycling cost when other management methods are considered</b>	Low-Medium	Low
<b>Strategy 5. Harmonize residential disposal rates</b>	Low	Low-Medium
<b>Strategy 6. Incentivize ICI waste diversion by increasing disposal fees</b>	Low-Medium	Low
<b>Strategy 7. Incentivize residential waste diversion by increasing disposal fees for unsorted waste</b>	Low-Medium	Low

# Exercise – Narrowing Down Strategies

- Which ones are the most impactful strategies and actions?
- Are there any that the PRRD should not pursue?



**Preferred Options to be included in the  
Draft RSWMP for Public Consultation**

# Potential Strategies

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Placeholder slide for Committee of the Whole to highlight voting results from the PTAC meeting



# Next Steps

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- Meet with PTAC and COW to agree on Preferred Options to include in the new RSWMP (June)
- Consultation in early Fall





# Questions? Comments?



## Thank you!



**MORRISON HERSHFIELD**

*People • Culture • Capabilities*

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# MEMORANDUM



**TO:** Loryn Day, Solid Waste Coordinator  
Peace River Regional District

**FROM:** Veronica Bartlett,  
Morrison Hershfield

**PROJECT No.:** 190397600

**RE:** **Memo 3:** Potential Options for Other Solid Waste  
Services & System Financing to Consider for Inclusion in  
the Regional Solid Waste Management Plan

**DATE:** April 14, 2020

P:\2019\190397600-REGIONAL SOLID WASTE MANAGEMENT\08. WORKING\MEMO 3 OTHER SW SERVICES & COST RECOVERY\MEM\_2020-04-14\_PRRD OTHER SW SERVICES AND SYSTEM FINANCING OPTIONS\_1903976\_FINAL.DOCX

Under the Environmental Management Act, Regional Districts are required to have a solid waste management plan, which must be developed in accordance with the solid waste management planning guidelines provided by the BC Ministry of Environment and Climate Change Strategy (MOE or the Ministry) for content and process. The Peace River Regional District (PRRD) commissioned Morrison Hershfield (MH) to review the current Plan and support the development of a new Regional Solid Waste Management Plan (RSWMP) to provide the direction for solid waste management for the next 15 years. In November, MH produced a report that presented a comprehensive summary of the current regional solid waste management system and an assessment of the Region's performance against the initiatives and strategies outlined in the last RSWMP (the 2009 RSWMP was last updated in 2016). It identified strengths and challenges with the existing system and emerging issues and opportunities that should be considered in the development of a new RSWMP.

This is the third and final technical memorandum (memo) in a series of three, each presenting potential management options on key solid waste related topics:

1. Waste Diversion (reduce, reuse, recycle and compost)
2. Energy Recovery and Residual Waste Management
- 3. Other Solid Waste Services & System Financing**

Each memo's content will be presented to the Public Technical Advisory Committee (PTAC) and the Committee of the Whole (COW). The feedback on these will be considered as MH develops a fourth memo outlining preferred options to be included in the new draft Regional Solid Waste Management Plan, which will be presented to the public during consultation<sup>1</sup>.

This memo provides information on other solid waste management options that have not been covered already by the previous two memos. This memo covers important topics, such as tools for preventing illegal dumping and considerations for financing the Regional solid waste management system. The memo outlines a number of potential strategies and potential actions for improving current practises.

The options in this memo are based on feedback obtained through a public survey conducted during the fall of 2019, discussions with the Public Technical Advisory Committee (PTAC) and the COW, and on communication with PRRD staff and PRRD's solid waste committee.

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<sup>1</sup> As part of the Consultation Plan, there will open houses where the public at large can provide feedback.

## CONTEXT

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This memo addresses aspects of waste diversion and residual waste management that have not been addressed sufficiently by the previous two memos. Some of the topics have been covered briefly already but are further discussed in this memo with potential strategies outlined in more detail.

### Solid Waste System Financing

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Over the last few years, a typical operational budget for solid waste management services has ranged from \$11 to \$14 million annually.

The annual capital budget for infrastructure projects varies between \$2 million and \$7 million, depending on the nature of capital improvements involved. The estimated average is \$4 million per year.

Sources of revenue to fund the solid waste management are:

- Tipping fees
- Taxation
- Sale of recyclables
- Financial incentives paid by stewardship agencies (e.g. Recycle BC)
- Permits and fees
- Grants for capital expenditures (occasionally)

First Nation communities currently pay a \$50 per household fee in lieu of taxes. These fees are to simulate taxes, as First Nations are not taxed directly by the PRRD. First Nation communities pay all applicable fees at the landfills and transfer stations. Some First Nation communities have charge accounts and are invoiced monthly, whereas others pay at the time of use.

### Tipping Fees

The PRRD currently has tipping fees that do not distinguish between residential and ICI waste, though this is currently under review by the Board. The Solid Waste Disposal Fee Amendment Bylaw No. 2342, 2018 outlines the fees and regulations for the acceptance of waste at the Regional District's waste facilities. Waste materials are distinguished between regular, controlled, and restricted waste. Table 1 shows the tipping fee structure of common waste materials of each category.

*Table 1 Tipping Fee structure of common regular waste, controlled and restricted waste<sup>2</sup>.*

Regular Waste	Controlled	Restricted
Sorted garbage: \$55 per tonne 8 garbage bags or less: \$0.80 per bag	Clean soils, clean concrete rubble (no rebar / smaller size): \$0 per tonne	Waste loads with greater than 10% of Old Corrugated Cardboard: \$250 per tonne
Unsorted garbage: \$110 per tonne	Concrete (rebar / larger size): \$55 per tonne	
Wood waste and scrap metal: \$55 per tonne	Demolition, land clearing, and construction waste (including asphalt shingles): \$110 per tonne	

According to the solid waste fee bylaw (Solid Waste Disposal Fee Amendment Bylaw No. 2342, 2018), ICI customers<sup>3</sup> are currently charged the same amount as residential customers. The solid waste fee bylaw contains a hierarchy of fees for regular waste, controlled waste, and restricted waste, and also for separated/diverted or mixed waste. Disposal fees can range from \$55 to \$250 per tonne depending on the classification of waste received. Concrete, wood, scrap metal and asphalt shingles are accepted for recycling at the PRRD's Landfills and fees apply to these materials. The ICI sector is required to bring other recyclables to a private facility, where fees are applied.

The Regional Board has approved an increase by Consumer Price Index + 1% (3.3%) in 2020 across ICI tipping fees for all classifications of waste. The Board will vote on the proposed increase in March/April 2020. The increases come as the PRRD's fees have not seen any increase since 2014 and fees need to better align with increasing system costs, explained further in the section below.

### **Current Challenges to Finance the Solid Waste Management System**

In early 2017, China announced its National Sword program, resulting in import limitations and strict quality standards on specific recyclables entering the country. China previously recycled about half of the globe's plastics and paper products. The new strict requirements placed on recyclables left many collectors without end markets for specific recyclable materials.

Recycling in the PRRD is currently managed through two programs: Recycle BC (a regulated provincial stewardship program) and the Recycling Services Contract (RSC). There are 10 registered Recycle BC depots and 3 satellite Recycle BC depots, which accept residential printed paper and packaging. The RSC manages all remaining recyclable materials (residential and commercial). Thus far, the Recycle BC program appears to be successful in weathering these market changes as many of their end markets are typically in BC or in other parts of North America. In 2019, the PRRD has received approximately \$40,000 in financial incentives from Recycle BC for the collection of residential PPP from 13 transfer stations. However, only two of the seven member municipalities who offer curbside collection for recyclables are eligible for financial support from Recycle BC.

<sup>2</sup> As per Solid Waste Disposal Fee Amendment Bylaw No. 2342, 2018.

<sup>3</sup> Waste generated from the ICI sectors comes from a variety of sources such as commercial haulers, restaurants, hotels, businesses, schools, work camp waste, light industrial facilities, hospitals etc.



The cost to the PRRD of managing the remaining recyclable materials in the Region has increased significantly over the last two years, as the price of recyclable materials has plummeted and transportation costs have increased. The PRRD is currently subsidizing recycling in the Region through the RSC. In 2019, the RSC was worth \$1.7 million. In 2018 the cost of recycling via the RSC was approximately \$375 per tonne (for collection, consolidation, and marketing). This does not include transportation, which adds another \$50 per tonne.

The previous memo (Memo 2: Potential Energy Recovery and Residual Waste Management Options) included a strategy to review efficiency of the solid waste facility network. Maximizing efficiencies is an important strategy that will help with lowering the overall costs of the solid waste management system.

### Strategies to Address Other Solid Waste Issues Not Addressed To Date

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The two strategies presented in this section address issues that have emerged during the planning process or that have not been addressed adequately to date by previous potential strategies.

#### STRATEGY 1. OFFER CURBSIDE COLLECTION IN RURAL AREAS

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Seven member municipalities provide curbside garbage collection, either paid through taxation or utilities for solid waste services. Residents within the PRRD who do not receive curbside collection must self-haul the material to a nearby transfer station or landfill, where residents pay tipping fees. Fees are applied at all landfills and manned Transfer Stations with the exception of Hudson's Hope Transfer Site and Tumbler Ridge Transfer Site, where residents pay for waste disposal through municipal taxation.

##### Applicable Guiding Principles

- ♦ *Promote the first 3Rs (Reduce, Reuse and Recycle) with targeted efforts*
- ♦ *Prevent recyclables from going into the garbage wherever practical*

At a COW meeting in February, members asked for the PRRD to review the possibility to offer curbside collection to rural residents. The COW reflected concerns that recycling and garbage disposal is not currently as accessible for rural residents as for residents of the municipalities.

Since the Regional District is currently not providing any curbside collection service and only drop-off services to residents at landfills and Transfer Stations, it is difficult to provide an accurate cost estimate of a curbside collection service.

Under the Recycle BC program, Regional Districts are eligible to join the program as contracted collectors if they implement a curbside collection program for recyclables, provided that the area meets a number of criteria (e.g. minimum population of 5,000 residents, household density of > 0.42 households/hectare, etc.). Additionally, the service area must have had a curbside garbage collection program in place for a minimum of two years<sup>4</sup>. A partnership with Recycle BC's recycling program requires low recycling contamination rates (3% contamination threshold), which can be difficult for some areas to meet without significant education efforts.

The Regional District of Kitimat Stikine (RDKS) offers a three stream curbside collection (recycling, organics and garbage) for the 3,000 households in the Greater Terrace Area, which covers an area of

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<sup>4</sup> Recycle BC, Curbside Eligibility Criteria Consultation Presentation Material, November 13, 2019.

2,500 ha. The RDKS is actively working to develop a partnership with Recycle BC to get financial support for the residential recycling curbside collection in the Greater Terrace Area to lower overall collection costs. Without partnership with Recycle BC it is costing the RDKS approximately \$176 per hectare or \$147 per household per year. In addition to collection costs, the RDKS is also paying processing fees for recyclables.

Table 2 shows potential collection costs in the PRRD's rural areas using RDKS per-household and per-hectare collection costs.

*Table 2 Estimated curbside collection costs in PRRD's rural areas using population density and area costs from the Regional District of Kitimat Stikine.*

Service Area <sup>5</sup>	Households (Civic address count)	Area (ha)	Population Density (households/ha)	Estimated Collection Costs based on # households (\$)	Estimated Collection Costs based on area size (\$)
Electoral Area B	2,370	1,675,825	0.001	\$348,426	\$295,646,294
Electoral Area C	2,949	59,731	0.049	\$433,548	\$10,537,642
Electoral Area D	2,959	1,182,622	0.003	\$435,018	\$208,636,213
Electoral Area E	1,553	1,677,842	0.001	\$228,315	\$296,002,278
<b>Estimated Total Costs</b>				<b>\$1,445,308</b>	<b>\$ 810,822,427</b>

When collection costs from the RDKS are applied to the PRRD's rural areas, it is clear that a collection service is likely to be costly. However, the extent of the cost is still unclear. It is likely to cost the PRRD at least \$1.4 million per year in collection costs to provide a curbside collection service to all its rural areas, but the total costs are most likely even higher. The RDKS provides collection to a service area with 0.42 households/hectare and the PRRD has a density of only 0.136 households/hectare in its most densely populated area; Charlie Lake. Charlie Lake Fire Protection Area is part of Electoral Area C which has a population density of only 0.049 households/ hectare. Using costs from RDKS, a three stream curbside collection introduced in only Charlie Lake is likely to cost between \$244,000 and \$2.1 million.

Overall there are many factors that influence collection costs, such as proximity between serviced households, distance to the processor/disposal site, etc. When looking at the extremely high cost (over \$800 million) derived by using PRRD's area size, it is obvious that the RDKS costs cannot easily be translated to the PRRD areas. A cost assessment that takes into account PRRD's unique parameters would be required to better estimate rural curbside collection costs.

<sup>5</sup> Service areas exclude incorporated communities. These already have curbside collections in place.

If the PRRD were to offer curbside collection, residents would still require access to depots for materials not suited to collect at the curbside, such as bulky waste or larger quantities of garbage. Therefore it is difficult to realize cost savings in other areas if a curbside collection service was provided.

It would be suitable for the PRRD to assess the feasibility of a rural curbside collection service. The cost-effectiveness may change if for example Recycle BC begin to offer financial incentives to rural communities or if there is interest from private service providers to collaborate. The feasibility assessment will need to address how collection costs can be funded.



## Strategic Actions

1A Assess the feasibility of a rural curbside collection service and implement if feasible.

## STRATEGY 2. DEVELOP AN ILLEGAL DUMPING STRATEGY

Illegal dumping is an ongoing issue for the PRRD. The Region has many rural areas with significant distances between transfer stations and landfills. In addition to illegal dumping of waste materials away from waste management facilities, there is also frequent public abuse of unmanned transfer stations (Figure 1). Some of the main factors influencing illegal dumping include the disposal cost, the perceived inconvenience to access disposal facilities, and a lack of education on local waste disposal and recycling options. Residents may be unaware of convenient disposal options in their area.

In accordance with the last RSWMP, the PRRD is planning to continue with the consolidation and replacement of the remaining unmanned transfer stations in the Region, to provide secure and attended full-service sites as the main strategy to limit abuse. During the Plan update, PTAC and COW will be asked if the PRRD should continue the consolidation.

The PRRD is currently addressing illegal dumping through the following initiatives:

- Providing education and promotion of current options to recycle and dispose of waste safely at a waste management facility.
- Encouraging people to report illegal dumping incidents on Crown Land and supporting community clean-up efforts. Residents can report illegal dumping by calling the RAPP (Report all Poachers and Polluters).
- Optimizing operating hours at transfer stations to discourage illegal dumping.
- Piloting spring and fall clean-up events for residents and businesses to clean up their properties and dispose of material generated from their own property. Tipping fees are waived at all landfills, and Tier 1 and Tier 2 transfer stations during the event. .
- Waiving tipping fees for the waste collected via roadside clean-up programs. The clean-up efforts involve volunteer groups and must be restricted to road right-of-ways that are Crown



Figure 1: Public Abuse at Unmanned Transfer Station



land. A contractor hired by the Province collects the bagged waste and brings it to the landfills, where they are entitled up to \$500 of waived tipping fees.

In 2018, there were incidents reported via RAPP for illegally dumped materials. Incidents of illegal dumping reduced during the spring clean-up campaign in 2019. However, it is too early to establish a correlation between waiving of tipping fees and reduced illegal dumping. During the 2020 Spring and Fall Clean Up events, the Tier 1 and Tier 2 Transfer Stations will be extending the hours of operations to 7 days week of the two week event.

Although the PRRD's previous RSWMP included a commitment to develop an illegal dumping strategy, a strategy was never developed.

It would be beneficial to develop an inter-agency working group aimed to identify solutions and mitigation strategies for illegal dumping. The working group could for example include representatives from the PRRD, member municipalities and electoral areas, the local Conservation Office, First Nation communities, neighbouring Regional Districts and the RCMP.

An illegal dumping strategy can set out the responsibilities of all parties, actions to take and data reporting requirements to improve tracking, outreach, and staffing. The first step in forming a strategy could be to conduct a survey to determine the most common materials illegally discarded and the most frequent problem areas. This will provide a basis for types of materials and "hot spots" on which to build an education campaign and clean-up and enforcement programs.

The strategy can include, but is not limited to, the following potential actions:

- Assess the most common materials illegally discarded and the most frequent problem areas.
- Re-assess level of access to rural Transfer Stations.
- Conduct targeted outreach campaigns if/when specific stakeholder groups are identified.
- Establish a reporting mechanism where residents (e.g. neighborhood watch programs) and outdoor groups can report dumping location, to be targeted for contracted / volunteer cleanup.
- Restricting access and installing cameras at popular dumping sites.
- Post signs at frequent illegal dumping sites to educate about reporting and potential fines for illegal dumping.
- Establish enforcement capacity.

The strategy should have input from stakeholder groups such as First Nations, the agricultural community (e.g. the BC Cattlemen's Association), BC Hydro, and back-country user groups (mountain bikers, fishermen, etc.).

#### **Applicable Guiding Principles**

- ♦ *Support polluter and user-pay approaches, and manage incentives to maximize behaviour outcomes where practical*
- ♦ *Collaborate with other Regional Districts and develop collaborative partnerships with interested parties wherever practical*
- ♦ *Ensure all waste materials are managed responsibly as technology or local options are developed*

The working group may want assess the suitability of providing access to disposal of garbage at all rural Transfer Stations during all hours with a drop-off option by gates for residential small garbage volumes when the sites are closed.



### Strategic Actions

- |    |  |
|----|--|
| 2A | <i>Establish an inter-agency working group and develop an illegal dumping strategy aimed to improve tracking and reduce the number of illegal dumping incidents.</i>                           |
| 2B | <i>Prepare and implement strategy including assess illegally dumped materials, identify problem areas, assess accessibility to Transfer Stations, improve public outreach and enforcement.</i> |

## STRATEGIES TO FULLY FUND SOLID WASTE MANAGEMENT

The PRRD is facing similar challenges to many other Regional Districts across BC including:

- Diversion programs (e.g. recycling and education) requiring increasing resources, for example staffing and increased costs (capital and operational).
- Revenues from landfill tipping fees are decreasing due to decreasing disposal tonnages (often thanks to the success of diversion programs).
- Challenges with providing cost effective services across a large network of solid waste facilities.
- Resistance by residents and businesses to higher fees and increasing taxes.

Tipping fees can be used as an effective means to encourage waste diversion. However if solid waste services are mainly funded via tipping fees, increased diversion can result in increased costs and decreased revenues, which results in a long term financial shortfall. Some Regional Districts with close proximity to a neighbouring region with lower tipping fees have seen waste generators hauling waste out of the region to avoid high disposal costs (waste and tipping fee leakage).

Table 3 shows and overview of the tipping fees for MSW set by PRRD's neighbouring jurisdictions.

# MEMORANDUM

Table 3 Overview of tipping fees for MSW set by neighbouring jurisdictions.

Region	Residential tipping fees (\$/tonne)	ICI tipping fees (\$/tonne)	Contaminated/un-segregated loads	Comments
<b>Regional District of Kitimat Stikine (RDKS)</b>	\$110	\$110	\$100 / \$500 fine depending on nature of contamination	<p>The RDKS is divided into two service areas with separate funding models; cost sharing is not possible between the service areas as per current bylaws. One service area (rural and smaller communities) is fully funded by taxation and First Nations contributions. The other service area (Terrace and surrounding communities) is funded through taxation and tipping fees. The Terrace service area is currently operated with a surplus; however, the service area for smaller communities is experiencing financial deficits.</p> <p>Residents in the Terrace service area are provided curbside collection and tipping fees are mainly collected from commercial and industrial customers. 25% surcharge is applied to out-of-service-area waste such as waste generated by industry.</p> <p>All RDKS facilities are manned.</p>
<b>Regional District of Fraser Fort George (RDFFG)</b>	\$90	\$90	\$180.00/tonne	<p>Solid waste management services are funded through a combination of tax requisition and tipping fees. RDFFG's tax requisition cover approximately 15% of the solid waste expenditures based on the 2020 budget.</p> <p>The majority of RDFFG's facilities are manned.</p>
<b>Northern Rockies Regional Municipality</b>	\$40 (≥500kg)	\$40 (≥500kg)	N/A	<p>Solid waste management services are funded through a combination of tax requisition and user fees. Based on the 2019 budget, approximately 60% of the solid waste management expenditures were expected to be funded through taxation. The manned regional landfill has a scale and charges tipping fees.</p>

Region	Residential tipping fees (\$/tonne)	ICI tipping fees (\$/tonne)	Contaminated/un-segregated loads	Comments
<b>Regional District of Bulkley-Nechako</b>	No tipping fees charged	N/A	N/A	Mainly funded through taxation. Tipping fees are applied to C&D waste, contaminated soil and white goods with ozone depleting substances. RDBN commits to develop a strategy to increase cost recovery from municipal solid waste and other materials in the RDBN in the near future (RDBN SWMP, October 2018). In developing the strategy the RDBN will reassessing the feasibility of implementing tipping fees at all facilities. We understand that the RDBN only has manned facilities.
<b>Cariboo Regional District</b>	Central Cariboo \$70.00 (≥500kg)	\$70	\$200.00/tonne	Volumetric tipping fee applied at sites without scales. MH's understanding is that the solid waste system is partially funded by taxes. Many facilities appear unmanned.
	South Cariboo \$25.00 (≥350kg)	\$40	\$50.00 (\$80.00 commercial loads)/tonne	
<b>Grande Prairie, AB</b>	No tipping fees charged*	\$95	\$190.00/tonne	*Free to residents. \$95.00 per tonne for non-member residents. Limited information is available on the funding model and staff at facilities.
<b>Clear Hills County, AB</b>	No tipping fees charged	N/A	N/A	No tipping fees stated on website and it appears all services are payed through taxes. Operates their own landfill - Clear Hills County Landfill. All transfer stations that accept waste appear manned.
<b>Saddle Hills County, AB</b>	No tipping fees charged	\$95	\$190.00/tonne	Using the landfill in Grande Prairie County. Residents can use the landfill and Saddle Hills County transfer stations for free. Commercial tipping fees apply. Hence, the solid waste system is largely tax funded. All facilities appear manned.

As illustrated by the table above, the tipping fees vary between different jurisdictions. Many accept residential disposal at no charge often due to solid waste facilities being unmanned or facilities may be lacking scales. Based on MH's experience, taxation is the dominating funding mechanism in northern parts of the Province. The tipping fees of PRRD and of many neighbouring jurisdictions are substantially lower than many southern Regional Districts.

The following section provides a summary of five potential strategies and initiatives that aim to improve the financial effectiveness and funding of solid waste management in the Region.

## STRATEGY 3. ASSESS COST RECOVERY THROUGH TIPPING FEES AND TAXATION

The implementation of potential strategies and actions identified during the planning process in the previous two memos will result in increases to operational and capital costs. These additional costs will need to be recovered through increases in taxation or tipping fees. The PRRD may want to assess cost recovery options to diversify revenue sources and review the long term financial performance of the system.

After the Comox Valley Regional District updated its Solid Waste Management Plan in 2012, there were questions about how new initiatives, such as necessary landfill upgrades, on-going landfills closures and a new composting facility would be paid for. A financial model was developed to determine long term costs and assess whether current revenues would be enough to pay for the system over time.

The result of the analysis was to increase tipping fees and establish a new tax for all residents in order to fully fund the system. The tipping fees were raised substantially from \$90 per tonne to CVRD's current fee of \$130/tonne). After raising tipping fees and introducing tax requisition the CVRD has reviewed these rates annually to assess if they are sufficient. The Capital Regional District also faced similar challenges – additional waste reduction and diversion initiatives resulting in higher costs and lower revenue from tipping fees. Long term financial modeling was used to inform the necessary tipping rates sufficient to pay for the solid waste system over time.

Any new programs or facilities, such as a Regional Waste to Energy facility, will result in increased costs to the PRRD. It is important to forecast these costs and confirm sources of revenue (e.g. tipping fees and taxation) and rates that will be required to fund the system.

### Applicable Guiding Principles

- ♦ *Support polluter and user-pay approaches, and manage incentives to maximize behaviour outcomes where practical*



### Strategic Actions

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|----|---|
| 3A | Assess cost recovery model to implement tipping fees and taxation that fully funds the solid waste management system. |
|----|---|

#### STRATEGY 4. SET LIMIT ON ACCEPTABLE RECYCLING COST WHEN OTHER MANAGEMENT METHODS ARE CONSIDERED

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The first memo (Memo 1: Potential Waste Diversion Options) identified the need to lobby for better service levels for existing Extended Producer Responsibility (EPR) materials managed in the Region and for the inclusion of new materials, regardless of the source (residential or ICI), under the Recycling Regulation. The PRRD wants to place a priority on encouraging stewardship organizations taking more responsibility for recycling in rural communities.

##### Applicable Guiding Principles

- ♦ *Ensure all waste materials are managed responsibly as technology or local options are developed*

To limit future cost increases to provide recycling services, the PRRD may also want to look for local alternatives to sending collected materials long distances for recycling while still diverting materials from landfills. The PRRD is piloting the use of cardboard and mixed paper in a vermicomposting process in the summer of 2020.

As a last resort, the PRRD may want to set an upper limit for acceptable recycling costs. If the cost threshold is exceeded, the PRRD would consider landfilling, which is less favourable based on the 5R waste pollution prevention hierarchy. As long as the recycling costs exceed the agreed limit, alternatives to recycling are implemented until recycling costs can be reduced below the agreed threshold. A cost threshold would be revisited every year.

To enable the flexibility to landfill recyclables when recycling is cost prohibitive, the PRRD and its member municipalities will need to consider amendments to the bylaws to allow this alternative practice. The Ministry may not be fully supportive of such changes and early discussions with Ministry representatives are encouraged if this strategy is favoured.

This is a cost-reduction approach that can have negative impacts that need to be carefully considered. For example, if landfilling is deemed as the only feasible option, the entire concept of source segregation would come into question. The public may not understand why anyone should continue to separate recyclables at the household, and this can undo the education and outreach efforts for recycling that have been undertaken by the PRRD and member municipalities over the last decade. There could be push back from the public on this approach - the public may either be philosophically opposed to landfilling recyclables, or the public may question why any recycling should be undertaken at all (e.g. why not landfill everything?).

Alternatively, the PRRD may simply want to continue to lobby for improved EPR programs when producers are taking increased responsibility for the end-of-life collection and recovery of their materials in the Region. In addition the PRRD may want to consider charging higher tipping fees for other materials and/or raising taxes to sufficiently fund recycling, which is the main objective of Strategy 3. As outlined in the memo on Waste Diversion Options, PTAC and COW wanted to see more education for residents about the cost of recycling in the Region and on ways residents can help to reduce costs.



## Strategic Actions

- 4A *Establish cost threshold when alternative lower cost options (e.g. burning or landfilling) are pursued until recycling is no longer cost prohibitive.*
- 4B *Lobby for improved EPR whilst increasing tipping fees for other materials and/or raising taxes to sufficiently fund recycling and educate residents about the cost of recycling.*

### STRATEGY 5. Harmonize Residential Disposal Rates

Rural residents have expressed a concern that they are subjected to more tipping charges resulting from the current system, compared to residents in areas with garbage collection. Residents within the PRRD who do not receive curbside collection of garbage must self-haul the material to a Transfer Station or Landfill. All landfills and manned Transfer Stations collect tipping fees from residents (with the exception of Hudson's Hope Transfer Site and Tumbler Ridge Transfer Site, where residents pay for waste disposal through municipal taxation). PRRD staff have noted that some residents are avoiding manned sites to access free residential disposal at unmanned sites.

#### Applicable Guiding Principles

- ♦ *Ensure all waste materials are managed responsibly as technology or local options are developed*

To provide similar levels of service and charges to both residents of unincorporated and incorporated communities, the PRRD can either provide a rural curbside collection service (refer to Strategy 1) or alternatively revise the current fee structure at the Rural Transfer Stations and Landfills. The PRRD could look at the feasibility of offering 24/7 access to free residential disposal at manned Rural Transfer Stations for bagged (small-volume) sorted household waste. This would not be needed at the Landfills as residents have access to curbside collection services here.

Based on 2019 data, residential tipping fees account for approximately \$860,000 in annual revenue and a small portion (approximately \$107,000) came from Rural Transfer Stations (including Dawson Creek TS). The rest came from residents paying weight-based tipping fees at the landfills. The changes to the fee structure would apply to both Rural Transfer Stations and Landfills.

By waiving the tipping fee for residential customers at Transfer Stations and Landfills and making disposal more accessible to all residents, the PRRD could potentially realize cost savings in other areas. The PRRD would be able to cease the spring and fall clean-up events. The 2019 events costed the PRRD \$184,000, not including lost tipping revenue. Based on the 2019 pilot, the quantities of waste collected during the clean-up event equated to \$200,000 of waived (lost) tipping fees. The PRRD may have received waste during these events that would have never been disposed if it was not for the free clean-up initiative. In addition the events may have helped to prevent illegal dumping and reduce associated clean-up costs.

In addition the PRRD would be able to cease the coupon program, which can save approximately \$72,000 per year. This estimate is based on the postage costs for the coupons and the average monthly waste quantities disposed of since May 1, 2018 using coupons.

The PRRD is encouraged to investigate and pilot the waiving of residential tipping fees at transfer stations and landfills prior to a system wide implementation.





The PRRD will need to consider the importance of having a solid waste management system that is based on user-pay incentives in the context of MOE's Provincial guiding principles for regional solid waste plan developments, which support the user-pay approach. The potential move away from user-pay system may require the PRRD to provide further justification to the Ministry.

It will be important that sites still are still open during specified operating hours to accept recyclable materials. Facility staff have an important role in educating residents on waste diversion options available and which materials are prohibited from disposal (e.g. used oil and anti-freeze products, paint, flammable liquids, pesticides, waste gasoline, and electronics).

The PRRD may also want to revisit waste disposal fees paid by First Nation communities in lieu of taxes to reflect the drive to harmonize residential disposal rates across the Region.



### Strategic Actions

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|----|--|
| 5A | <i>Remove tipping fees for small volumes of sorted household garbage at Transfer Stations and Landfills and fund disposal via taxation.</i>              |
| 5B | <i>Review waste disposal fees paid by First Nation communities in lieu of taxes and adjust to align with PRRD's Regional residential disposal rates.</i> |

## STRATEGY 6. Incentivize ICI Waste Diversion by Increasing Disposal Fees

ICI waste is only received at the Bessborough, Chetwynd, and North Peace Regional Landfills and makes up approximately 75% of the waste that is received at the landfills. An analysis of ICI waste quantities accepted over the last five years at PRRD's Landfills shows that ICI MSW accounts for the majority of the ICI waste materials (48% of the waste accepted), followed by soils (34%) and separated bagged and bulky waste account (30%), and Demolition, land clearing, and construction waste (18%) and diverted wood waste (15%).

### Applicable Guiding Principles

- ♦ *Promote the first 3Rs (Reduce, Reuse and Recycle) with targeted efforts*
- ♦ *Support polluter and user-pay approaches, and manage incentives to maximize behaviour outcomes where practical*

A significant portion of that MSW, which is currently being landfilled, is divertible material. A waste characterization study of the residual waste disposed at the PRRD's Landfills was conducted by Tetra Tech in 2018. The report presented the proportion of waste received at all PRRD landfills by sector. The waste composition study showed that the largest components of ICI<sup>6</sup> waste were compostable organics (32%), paper (19%) and plastic (12%). The study also showed that work camps, which are a large source of ICI waste in the PRRD, have exceptionally high organics diversion potential, with compostable organics representing 52% of the waste stream.

The PRRD may want to encourage greater ICI waste diversion and provide an effective deterrent for the disposal of recyclable materials by increasing disposal fees for commercial solid waste compared to residential sources. The PRRD may want to either increase disposal fees across all waste categories, including those that are also diverted from landfilling, such as soils, wood waste, shingles and scrap

<sup>6</sup> The ICI sector includes businesses and institutions such as restaurants, grocery stores, light industrial facilities, hospitals, schools and work camps.

metal. Alternatively the PRRD may want to simply increase disposal fees of residual waste (i.e. non-divertible) material, and in particular the disposal fee for unsorted MSW that contain recyclables.

Based on the 5 year average, ICI waste generators contribute approximately \$3,880,000 in tipping fees at the Regional Landfills annually. With option 1, the PRRD would increase fees across all waste categories by the same increment. For example compared to the five year average, a 5% increase in ICI fees would result in increased revenues of \$194,000 whereas a 20% fee increase would result in a revenue increase of \$776,000.

In option 2, the PRRD would keep fees for separated/divertible material unchanged and only increase ICI fees for mixed waste, controlled, and restricted waste. When compared to the five year average, If ICI fees are increased 10% for these waste categories, there could be a potential increase to the budget of approximately \$172,000 whereas if the fees are increased 50%, there could be a potential increase to the budget of approximately \$861,000.

By keeping the fees of divertible/separated waste low compared to disposal fees for mixed waste loads, controlled waste, and restricted waste, the PRRD can more efficiently encourage improved waste diversion of waste and may not cause increased illegal dumping of ICI wastes.

Along with fee increases, the PRRD is encouraged to increase education efforts to affected stakeholder groups about required waste stream waste separation requirements, material restrictions, and upcoming disposal fees. The PRRD may want to obtain feedback from the ICI Waste Working Group, which has been proposed as part of the updated RWMP to develop an overall ICI waste diversion strategy



### Strategic Actions

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|----|---|
| 6A | <i>Gradually increase ICI disposal fees for unsorted waste, controlled, and restricted waste and carry out education and outreach program to implement changes and improve waste diversion.</i> |
|----|---|

## STRATEGY 7. INCENTIVIZE RESIDENTIAL WASTE DIVERSION BY INCREASING DISPOSAL FEES FOR UNSORTED WASTE

The PRRD's current solid waste fee bylaw does not distinguish between sorted and unsorted waste. The PRRD may want to revise the bylaw to better incentivize sorting and segregation of recyclable materials and penalize residents for disposing unsorted garbage containing materials with local options for diversion. This strategy aligns with the previous one which targets ICI waste diversion.

The PRRD is encouraged to increase education efforts to residents about the required waste stream waste separation requirements and the implication on tipping fees. The PRRD will also need to consider enforcement measures such as protocols for facility operators to follow when residents bring unsorted waste.

### Applicable Guiding Principles

- ♦ *Promote the first 3Rs (Reduce, Reuse and Recycle) with targeted efforts*
- ♦ *Support polluter and user-pay approaches, and manage incentives to maximize behaviour outcomes where practical*
- ♦ *Prevent recyclables from going into the garbage wherever practical*



## Strategic Actions

- 7A Update bylaw to increase tipping fees for unsorted household garbage at all manned solid waste facilities.
- 7B Provide education and enforcement to support bylaw implementation.

## POTENTIAL IMPACTS ON COSTS

There are many strategies involving investigations into particular aspects of the waste management system. Investigations that show a strong cost/benefit case are likely to lead to implementation. The PRRD is committed to considering environmental, social and economic implications for all assessments.

Table 4. Anticipated financial impact related to the identified strategies.

#	Strategy	Operational Costs	Capital Costs	Comments
<b>Other Solid Waste Services</b>				
1	Offer Curbside Collection in Rural Areas	High	Medium - High	Capital costs depends on if the service is provided using PRRD-owned collection trucks or contracted. Either way, this option poses significant costs to PRRD and tax payers.
2	Develop an Illegal Dumping Strategy	Low-Medium	Low	Costs depends on extend of illegal dumping strategy and associated actions.
<b>Solid Waste System Financing</b>				
3	Assess Cost Recovery Through Tipping Fees and Taxation	Low-Medium	Low	
4	Set Limit on Acceptable Recycling Cost When Other Management Methods are Considered	Low-Medium	Low	
5	Harmonize Residential Disposal Rates	Low	Low-Medium	The extent of infrastructure changes to allow 24/7 access to garbage disposal will determine capital costs.
6	Incentivize ICI Waste Diversion by Increasing Disposal Fees	Low-Medium	Low	A revised tipping fee structure must be supported by an educational and outreach program as well as enforcement measures. The extent of this program determine operational costs during the implementation phase.
7	Incentivize Residential Waste Diversion by Increasing Disposal Fees for Unsorted Waste	Low-Medium	Low	Same as above.

## NEXT STEPS

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During the PTAC and COW meetings on April 22/23, 2020, committee members will be informed of the potential strategies highlighted in this Memo. There will be an opportunity to provide feedback to ensure that all feasible options have been explored. Committee members will also be asked to identify if there are any options that are not in the interest of the Region to pursue. Through a group exercise during the PTAC meeting, members will be asked to consider the importance of each strategy and corresponding actions in terms of high and low priority for the Region.

The strategies that are short listed at the PTAC and the COW meetings will be part of a final memo of all Preferred Options, which will be considered by the same committees at meetings on June 25/26. Committee members will then have a second chance to review the list of preferred options. This process will inform the content of the updated RSWMP, which will be brought to the Public for consultation later in 2020.

## FEEDBACK FORM – Potential Options for Other Solid Waste Services & System Financing

- To be used by:** Members attending the PTAC meeting on April 22, 2020, or the COW meeting on April 23, 2020, via teleconference and those unable to attend the meeting.
- Submission:** E-mail scanned copy of the completed form to Veronica Bartlett, [vbartlett@morrisonhershfield.com](mailto:vbartlett@morrisonhershfield.com) by Wednesday, April 29.
- Instructions:** Please indicate how you prioritize the different strategies presented in the Report *re: Memo: Potential Options for Other Solid Waste Services & System Financing to Consider for Inclusion in the Regional Solid Waste Management Plan* attached to the meeting agenda package. The purpose of the exercise is to narrow down the strategies and actions to be considered for the Preferred Options.

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### Strategies to Address Other Solid Waste Issues

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For each strategy please select if it is of:

- ***High priority,***
- ***Lower priority, or***
- ***Not in the interest of the region to pursue***

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Where applicable and warranted, provide justification, comments, or notes relating to the proposed strategies and actions selected; this will provide some context for your selection. Your feedback is important to us and will be incorporated in Morrison Hershfield's recommendation of strategies to be considered for inclusion as part of the Preferred Options.



#	Strategy & Possible Actions	Priority	Comments
<b>Strategies to Address Other Solid Waste Issues</b>			
1	<b>Offer curbside collection in rural areas</b> A. Assess the feasibility of a rural curbside collection service and implement if feasible.	<input type="checkbox"/> High Priority (0-5yrs) <input type="checkbox"/> Lower Priority (5-10+ yrs) <input type="checkbox"/> Not in the Interest of the Region to Pursue	
2	<b>Develop an illegal dumping strategy</b> A. Establish an inter-agency working group and develop an illegal dumping strategy aimed to improve tracking and reduce the number of illegal dumping incidents. B. Prepare and implement strategy including assess illegally dumped materials, identify problem areas, assess accessibility to Transfer Stations, improve public outreach and enforcement.	<input type="checkbox"/> High Priority (0-5yrs) <input type="checkbox"/> Lower Priority (5-10+ yrs) <input type="checkbox"/> Not in the Interest of the Region to Pursue	

#	Strategy & Possible Options	Priority	Comments
<b>Strategies to Fully Fund Solid Waste Management</b>			
3	<b>Assess cost recovery through tipping fees and taxation</b> A. Assess cost recovery model to implement tipping fees and taxation that fully funds the solid waste management system.	<input type="checkbox"/> High Priority (0-5yrs) <input type="checkbox"/> Lower Priority (5-10+ yrs) <input type="checkbox"/> Not in the Interest of the Region to Pursue	



#	Strategy & Possible Options	Priority	Comments
4	<b>Set limit on acceptable recycling cost when other management methods are considered</b> A. Establish cost threshold when alternative lower cost options (e.g. burning or landfilling) are pursued until recycling is no longer cost prohibitive. B. Lobby for improved EPR whilst increasing tipping fees for other materials and/or raising taxes to sufficiently fund recycling and educate residents about the cost of recycling.	<input type="checkbox"/> High Priority (0-5yrs) <input type="checkbox"/> Lower Priority (5-10+ yrs) <input type="checkbox"/> Not in the Interest of the Region to Pursue	
5	<b>Harmonize residential disposal rates</b> A. Remove tipping fees for small volumes of sorted household garbage at transfer stations and landfills and fund disposal via taxation. B. Review waste disposal fees paid by First Nation communities in lieu of taxes and adjust to align with PRRD's Regional residential disposal rates.	<input type="checkbox"/> High Priority (0-5yrs) <input type="checkbox"/> Lower Priority (5-10+ yrs) <input type="checkbox"/> Not in the Interest of the Region to Pursue	
6	<b>Incentivize ICI waste diversion by increasing disposal fees</b> A. Gradually increase ICI disposal fees for unsorted waste, controlled and restricted waste and carry out education and outreach program to implement changes and improve waste diversion.	<input type="checkbox"/> High Priority (0-5yrs) <input type="checkbox"/> Lower Priority (5-10+ yrs) <input type="checkbox"/> Not in the Interest of the Region to Pursue	



#	Strategy & Possible Options	Priority	Comments
7	<b>Incentivize residential waste diversion by increasing disposal fees for unsorted waste</b> A. Update bylaw to increase tipping fees for unsorted household garbage at all manned solid waste facilities. B. Provide education and enforcement to support bylaw implementation.	<input type="checkbox"/> High Priority (0-5yrs) <input type="checkbox"/> Lower Priority (5-10+ yrs) <input type="checkbox"/> Not in the Interest of the Region to Pursue	

