



PEACE RIVER REGIONAL DISTRICT

SOLID WASTE MANAGEMENT PLAN MONITORING AND ADVISORY COMMITTEE MEETING

A G E N D A

for the meeting to be held on **January 5, 2018** in the
Regional District Office Boardroom 1981 Alaska Avenue,
Dawson Creek, BC, commencing at **10:00 a.m.**

Conference Call: 1-877-385-4099 Participant ID: 8464917#

1. **Call to Order:**
2. **Introductions:**
3. **Election of Meeting Chair:**
4. **Minutes:**
 - M-1 SWMP Monitoring and Advisory Committee (PMAC) Meeting Minutes of January 19, 2016
 - M-2 PMAC and Solid Waste Committee Joint Meeting Notes of January 5, 2017
5. **Notice of New Business:**
6. **Topics for Discussion:**
 - Overview of Amendments to the Regional Solid Waste Management Plan
 - Adoption of the revised Terms of Reference
 - Representation from the construction, demolition and renovation industry
7. **New Business:**
8. **Adjournment:**



PEACE RIVER REGIONAL DISTRICT
Solid Waste Management Plan
Monitoring and Advisory Committee Meeting Minutes

DATE: Tuesday, January 19, 2016

PLACE: Regional District Offices, Dawson Creek, BC

PRESENT: Joe Braun, Tervita Corporation
Roy Dondale, Excel Transportation
Cory Pomeroy, Oscar's Disposal Ltd.
Dzengo Mzengeza, Northern Environmental Action Team
Kevin Henderson, City of Dawson Creek
Victor Shopland, City of Fort St. John
Jason Jensen, Village of Pouce Coupe
Doug Beale, District of Tumbler Ridge
Mike Fitzgerald, Member at Large - Electoral Area B
Rob Henry, Member at Large - Electoral Area E
Wayne Hiebert, Member at Large - Electoral D

Staff

Jeff Rahn, General Manager of Environmental Services
Paulo Eichelberger, Manager of Solid Waste
Loryn Day, Solid Waste Coordinator
Suzanne Garrett, Corporate Services Coordinator

- 1) Call to Order The meeting was called to order at 10:05 am
- 2) Background Mr. Rahn, General Manager of Environmental Services briefly outlined the purpose of the Solid Waste Management Plan Monitoring and Advisory Committee (PMAC).

Section 9.2.2 of the Regional Solid Waste Management Plan stipulates that the Regional District will form a Plan Monitoring and Advisory Committee. In 2016 the Regional Board approved the establishment and Terms of Reference for the Committee. The role of the Committee will be to monitor the implementation and effectiveness of the Plan, and to identify concerns and issues that may arise in the implementation process.

- 3) Election of Chair As there were no volunteers to assume the position of Chair for the Committee, Mr. Rahn took on the role.

ADOPTION OF THE AGENDA:

- 4) Adoption of the Agenda BY CONSENSUS,
that the Solid Waste Management Plan Monitoring and Advisory Committee Agenda for the January 19, 2016 meeting including New Business and additional items for the agenda, be adopted.

Notice of New Business

Topics for Discussion

- Overview of the Committee Terms of Reference
- Overview of the Regional Solid Waste Management Plan

New Business:

CARRIED.

Terms of Reference:

Mr. Rahn briefly reviewed the Terms of Reference, outlining the goals and objectives of the Committee, its structure, rules of procedure and reporting to the Regional Board.

Regional SWMP:

Committee members reviewed a power point presentation outlining the Regional District's Solid Waste Management Plan, how it has evolved, operational aspects, etc.

Customer Satisfaction Survey – in September 2015 a survey was inserted in the Northeast News, posted on the Regional District's website and was made available at transfer stations and landfills. In the two and a half months 200 surveys were returned. Overall, residents were positive about the solid waste services provided.

BY CONSENSUS,

That the Solid Waste Management Plan Monitoring and Advisory Committee recommend to the Committee of the Whole that the Customer Satisfaction Survey, that was distributed late in 2015, be included in the 2016 cleanup coupon mail out to area residents to solicit more public input on the provision of solid waste services in the region.

CARRIED.

A discussion ensued regarding recycling. It was noted that the Regional District will be forwarding a letter to the Multi-Material BC (MMBC), with a copy to the Ministry of Environment, expressing the need for MMBC to deliver curbside collection of packaging and printed paper in all member municipalities in fulfillment of MMBC's stewardship plan commitments pursuant to the provincial Recycling Regulation.

Recess The meeting recessed for lunch at 11:50 am

Reconvene The meeting reconvened at 12:30 pm

BY CONSENSUS,

That the Solid Waste Management Plan Monitoring and Advisory Committee recommend to the Committee of the Whole that when the recycling request for proposal is drafted that the scope of work is standardized to include acceptance of either sorted materials or co-mingled materials from Industrial, Commercial and Institutional (ICI) or other sources.

CARRIED.

Discussion ensued regarding incentive based fees – designed to provide financial incentives to encourage waste reduction, diversion and recycling.

BY CONSENSUS,

That the Solid Waste Management Plan Monitoring and Advisory Committee recommend to the Committee of the Whole that staff be authorized to prepare a report which explores options for developing additional tipping fee incentives to promote and encourage waste reduction, diversion and recycling.

CARRIED.

Committee
Report

BY CONSENSUS,

that the recommendations from the Solid Waste Management Plan Monitoring and Advisory Committee Meeting of January 19, 2016 be recommended to the Committee of the Whole for approval.

CARRIED.

The meeting adjourned at 2:45 pm

Jeff Rahn,
Meeting Chair

S. Garrett,
Corporate Services Coordinator



**PEACE RIVER REGIONAL DISTRICT
Plan Monitoring Advisory Committee and Solid Waste Committee
Joint Meeting Notes**

DATE: Thursday, January 5, 2017
PLACE: Calvin Kruk Centre for the Arts, 10401 – 10th Street, Dawson Creek, BC

PRESENT: Solid Waste Committee members

Director Karen Goodings, Electoral Area 'B'
Director Dan Rose, Electoral Area 'E'
Alternate Director Mel Deck, District of Chetwynd
Director Dale Bumstead, City of Dawson Creek
Director Lori Ackerman, City of Fort St. John
PRRD Chair Brad Sperling, ex officio

Plan Monitoring Advisory Committee

Victor Shopland, City of Fort St. John
Joe Braun, Tervita
Mike Fitzgerald, Electoral Area B
Corey Pomeroy, Oscar's Disposal
Doug Beale, District of Tumbler Ridge
Sheldon Gibbs, Oscars Disposal
Dzengo Mzengeza, Northern Environmental Action Team
Kevin Henderson, City of Dawson Creek
Lindsay Heal, Recycle It Resource
Wayne Hiebert, Electoral Area D

Staff

Chris Cvik, Chief Administrative Officer
Shannon Anderson, Deputy Chief Administrative Officer
Paulo Eichelberger, General Manager of Environmental Services
Fran Haughian, Communications Manager/Commission Liaison
Phil Kovacs, Manager of Solid Waste
Loryn Day, Solid Waste Coordinator
Suzanne Garrett, Corporate Services Coordinator

1) Call to Order The meeting was called to order at 10:10 am

Agenda

Welcome and Introductions
Meeting Objectives
1. To determine the effectiveness of the Solid Waste Management Plan
2. To determine the future direction of the Solid Waste Management Plan
Survey Results
Break Out Session
Prioritize Issues
Did we meet the objectives of the meeting?
Where do we go from here?
Closing remarks/summary

- 2) Survey Out of a possible 28 surveys forwarded to both Committees, 18 were returned. Based on survey results the following four topics were identified:
- a. Tipping fees
 - b. Waste diversion and recycling education programs
 - c. What does a full service site look like / hours of operation (tied results)
 - d. Residential clean up coupons
- Plus any other topics the Committees would like to see addressed that were not identified?
-
- 3) Break out session Participants were given 5 minutes at each station (topic) to provide suggestions, solutions – what is working, what needs improvement, what needs to be addressed or changed.
-
- 4) Discussion Points - Phases – confusing → where are we in the Plan?
- any changes to Solid Waste Management Plan require MoE sign off
- Look at incentive based tipping fees and options for commercial “Multi-Family Dwellings” (MFD) – all material into one bin, this should be addressed, commercial/MFD owners of building should pay higher fees, may create incentive to find space for recycling bins on their properties
- Focus on capturing ICI materials in solid waste composition study
-
- 5) Prioritize Issues Following the break out session Committee members prioritized ideas that need to be explored further, as noted on the following pages:

5) Prioritize Issues (continued)

Tipping Fees	
<p>Break Out Discussions:</p> <ul style="list-style-type: none"> - Tipping fees not working - If no tipping fees, industry could use system to save money - No tipping fees would not promote waste diversion - Stiffer tipping fees - Tipping fees support the user pay philosophy - Tipping fees help fund SW - Clarification on what portion of property taxes go to SW - Ways to change behaviour: education, technology, enforcement - There needs to be encouragement for communities without tip fees to move to a tip fee structure - Tipping fees major reason for illegal dumping - Need to separate commercial and residential with respect to tip fees - Direction from Board regarding tipping fees 	<p>Focused Discussions:</p> <ul style="list-style-type: none"> - They are working → encourage separation/diversion - Residential Fees separate from Commercial Fees <p>Residential Fees</p> <p>a) Not Working</p> <ul style="list-style-type: none"> - Illegal dumping is caused from tipping fees - Taxes and tipping fees can be viewed as double dipping → even triple dipping with eco fees residents pay at the store - People see no value in garbage → worthless; disconnect that there is a value/cost with the disposal of items - Amount received - Not going to site to pay so goes to bins or is burned/buried <p>b) Working</p> <ul style="list-style-type: none"> - Encourages diversion and separation; adds focus (along with education) - Use pay → make more waste you pay more <p>Incentive Based Tipping Fees (IBT)</p> <ul style="list-style-type: none"> - No tipping fees could result in decreased diversion rates - IBT are more effective for commercial - Clarify what IBT is → higher incentive/penalty based fees <p>Commercial</p> <ul style="list-style-type: none"> - Should be different - But still incentive based → incentive is not high enough - Enforced by RD - IBT have helped divert wood, cardboard, etc. - Affects their bottom line \$ <p>Multi-family units (apartments) - Something needs to happen – would go into commercial; cities do not pay/pick up their garbage</p>
<p>Next Steps (To Do for Staff):</p> <ul style="list-style-type: none"> - Research separated residential fees from commercials fees <ul style="list-style-type: none"> • How is it working elsewhere; MOE Amendment parameters; best practices; implications - Research level of service for more remote locations from other areas 	

5) Prioritize Issues (continued)

Waste Diversion and Recycling Education Programs	
<p>Break Out Sessions:</p> <ul style="list-style-type: none"> - SWMP peppered with diversion → stop looking at barriers to achieve - Significant aspect - Recognize diversity of region → Urban and Rural → work together; holistic approach → address entire region - Need to understand that there is cost implications for waste diversion; mirrored with cost of not doing; programs will cost money - TR doesn't see as much action; transportation costs makes things more expensive; would like to know its diversion rate - Diversion key component with Education; educate residents of diversion programs - Make it work the people - Conflicting education - Expand on pilot programs (paint etc.) - Waste diversion and programs for Industry <ul style="list-style-type: none"> • No recycling for industry (how much is going into the landfill that is recycling from industry) • Need for targeting industry recycling • Rules and regulation for industry → mandate or charge more • Are work camps educated/following programs • Incentives has to be big enough • Are industry offered options? → yes but nobody at site monitors the bins and they get contaminated → need to target education and programs to work site staff • RD take a more proactive approach → pop in/ audit and educate them • Huge amount and wont recycle as its hard to handle 	<p>Focused Discussion:</p> <ul style="list-style-type: none"> - More effort on industry (willing to pay) - Curbside for municipalities; more encouragement from Board and Committee - Education → flexibility in how we educate; flexible year to year - Illegal dumping; need more than just pushing to Conservation Officers → what more can we do? Look up Terrace and Sooke illegal dumping and what happened there
<p>Next Steps (To Do for Staff):</p> <ul style="list-style-type: none"> - Research illegal dumping in Terrace and Sooke - Increase education/focus to Industry and Business - Look at how tipping fees/coupon and how that affects industry and educate based on that - Partner with industry to hand out flyers via invoices/rental agreements etc. 	

5) Prioritize Issues (continued)

What does a Full Service Site Look Like (Hours, etc.)	
<p>Break Out Sessions:</p> <ul style="list-style-type: none"> - 60 hours/week M-S - Available to working public – shifts, flexible - Attendant!! - Tires, paint, batteries → accept at site and deal with it - Recycling, waste disposal, compost, metal, wood - Locations → strategic and convenient - Capacity (ie. No line ups, exit/access) - Clear educational material - Attendant must know rules - Facility to be clean and neat (no mud) - Easy to haviquate in facility - Security and surveillance then implement carrot/stick incentives - Consistent hours - Winter/summer hours - Share sheds – consistent/manage → signage/organization → what is allowed or not - Agricultural plastics - 24 hr access, not attendant (limited), full access → small manned sites → who cleans up batteries/oil - How do you control hazardous items –oil/paint - Stewardship programs at each site (distributors don't take all items ie. Used oil) - 	<p>Focused Discussion:</p> <ul style="list-style-type: none"> - Hours of operation – based on area; be consistence; go out to each community for hours - 24 hour access → pilot project(?), ownness on residents, card access for after hours to see who access - Create sub regional functions → for higher level of service - Risks <ul style="list-style-type: none"> • Lock compactors for safety; how would you access after hours • People hurt after hours? <ul style="list-style-type: none"> - Advantages; convenient - Ground level → stairs for orange bins can be hard to use for some residents
<p>Next Steps (To Do for Staff):</p> <ul style="list-style-type: none"> - Refer to tipping fees sections 	

5) Prioritize Issues (continued)

Residential Clean Up Coupons	
Break Out Sessions: <ul style="list-style-type: none"> - All households to receive (like in 2016) - Coupons – no expiration date - Online access for coupons - Coupons should be more specific to each homeowner (ie license plate on coupons, etc.) P.I.D. number - Implement tracking system at Transfer Station or Landfill (no coupons) → paperless; attendant assists - Never say no - Eliminate program? - Change number of coupons or increase tonnage on coupons - More flexibility in program - Expand program to multi-dwellings 	Focused Discussion: <ul style="list-style-type: none"> - Paperless/ handled on site; online and print out at home - Tonnage transferable
Next Steps (To Do for Staff): <ul style="list-style-type: none"> - Look at online program 	

Parking Lot Items:

- How changes to the Solid Waste Management Plan have been handled, changes that were not originally in the Plan; ie. amendments.
- Look at 2 tier system for fees (residential / commercial / industrial) – talk to MoE what are parameters for revisions/amendments
- What are implications if tipping fees are phased out?
- Look at what equal level of service means
- Triple Bottom Line
- Hours of Operation is a reason for illegal dumping
- MMBC
- Getting to yes
- Eliminate Coupon Program
- Is it possible to create a sub-regional function to provide for “greater” service
- Composting

5) Wrap Up Members felt that the morning session was worthwhile. Good discussion, input from contractors was valuable, good to hear their point of view.

6) Adjournment The meeting adjourned at 1:00 pm

Director Dan Rose,
Chair – Solid Waste Committee

S. Garrett,
Corporate Services Coordinator



APPENDIX B – ATTACHMENT C

1) Revision of Section 2.2 (Solid Waste Management Facilities & Services)

Within this area, the Regional District operates ~~four~~three regional landfills. These are shown in Table 1 below, along with their annual waste disposal quantities.

Table 1: 2006 Waste Disposal Tonnages

Facility Name	2006 Total Waste Disposed (tonnes)
Fort St. John <u>North Peace Regional</u> Landfill	39,898
Rose Prairie Landfill	2,000 *
Bessborough Regional Landfill	18,145
Chetwynd Landfill	7,399

~~* estimate only, no weigh scale on site~~

The Regional District also operates ~~32~~30 transfer stations, ~~five~~16 of which are staffed. ~~The majority of these~~Bagged waste is placed in compactors at the staffed transfer stations ~~use and~~into PL-6 waste containers ~~that are suitable for accepting bagged waste at the unstaffed transfer stations.~~ The Regional District ~~currently does not allow~~s for the disposal of bulky waste ~~at its~~in earthen pits at three Tier 1 transfer stations ~~and landfills,~~ although ~~there are some sites where~~ illegal dumping of these materials in rural areas and the unattended transfer stations poses an on-going challenge.

There are ~~11~~4 locations within municipalities where recycling bin systems are operated by the PRRD ~~where both for residents and commercial businesses can to~~ bring materials for recycling. ~~These are located outside of municipal centres.~~ Recycling bins are also provided for residents at all of the staffed transfer stations. Recycling of scrap metal, wood waste, batteries, tires and other items is also facilitated at the regional landfills for both residents and commercial businesses, ~~and at some of the larger transfer stations, e.g. Hudson's Hope and Dawson Creek.~~ There are also four privately operated recycling facilities, serving the communities of Chetwynd, Dawson Creek, Fort St John, Tumbler Ridge, and Hudson's Hope. Curbside collection of recyclables is ~~not~~ currently offered by the municipalities of Fort St. John and Pouce Coupe.

2) Revision of Section 2.3.1 (How Much Garbage Is There?)

In 2007, the total amount of waste disposed at all the PRRD landfills was almost 71,000 tonnes. Figure 1 below shows the distribution of waste over the four regional landfills that were in operation during 2007.



3) Revision of Section 5.2.2 (Conduct a Waste Composition Study)

More accurate waste composition information is needed to support waste diversion programming, and the tracking of success as new programs are implemented. The Regional District will budget for undertaking periodic waste composition studies at the regional landfills, with a focus on the Bessborough [Landfill](#) and ~~Fort St. John~~ [North Peace Regional Landfills](#) which receive the majority of the waste disposed in the region. The first waste composition study will take place in Phase 1, but it is likely that the exercise will be repeated periodically. Ideally, waste composition analysis should be undertaken every 5 years, or following the implementation of any major programs that are considered likely to significantly affect waste composition.

4) Revision of Section 5.2.3 (Establish Minimum Operating Standards for Landfills)

While the landfill operations at the ~~four~~[three](#) sites are generally in good order, the PRRD recognizes that improvements can be made to the sites, to improve operational efficiency and minimize impacts on the surrounding neighbours. Contractors are employed to provide day to day management services, and variations in their performance have been observed in the past. To address this, minimum operating standards will be developed for each landfill, in keeping with the BC Landfill Criteria developed by the Ministry of Environment, as well as the provisions of the Operational Certificates or Permits for the landfills. Best management practices that minimize environmental and neighbourhood impacts will also be incorporated into the minimum standards.

5) Addition To End of Section 5.2.3 (Establish Minimum Operating Standards for Landfills)

[Closure of the landfills in the PRRD will occur in progressive phases. The unit cost per hectare for landfill closure will vary depending on the design of the final cover. The landfill closure cost rate per square meter is expected to be between \\$19/m² \(soil cover\) and \\$85/m² \(geomembrane cover\). The final cover design for the Chetwynd Landfill and North Peace Regional Landfill \(Ft. St. John Landfill\) contains geosynthetic materials. Soil is readily available at the Bessborough Landfill which makes an earthen-based final cover economically feasible.](#)

[Details of the cost and area of landfill closure projects anticipated over the next decade are summarized below:](#)



<u>Landfill Closure – Phase Areas And Estimated Capital Costs</u>			
<u>Landfill Site</u>	<u>Landfill Closure</u>	<u>Closure Area (m²)</u>	<u>Closure Cost</u>
<u>Chetwynd Landfill</u>	<u>B</u>	<u>16,475</u>	<u>\$1,401,000</u>
<u>Chetwynd Landfill</u>	<u>C</u>	<u>13,338</u>	<u>\$1,134,000</u>
<u>Bessborough Landfill</u>	<u>1</u>	<u>27,365</u>	<u>\$520,000</u>
<u>Bessborough Landfill</u>	<u>2</u>	<u>38,769</u>	<u>\$737,000</u>
<u>Bessborough Landfill</u>	<u>3</u>	<u>11,900</u>	<u>\$227,000</u>
<u>Bessborough Landfill</u>	<u>4</u>	<u>14,792</u>	<u>\$282,000</u>
<u>North Peace Regional LF</u>	<u>1</u>	<u>18,545</u>	<u>\$1,317,000</u>
<u>North Peace Regional LF</u>	<u>2</u>	<u>50,393</u>	<u>\$2,996,000</u>

6) Revision of Section 5.2.4 (Identify Development Needs For Waste Management System)

The PRRD operates ~~four~~three landfills and ~~32~~30 transfer stations throughout the region, in a combination of rural and urban areas. ~~Some~~Unstaffed transfer stations are very simple, offering only disposal of bagged waste using small PL-6 containers. ~~The staffed transfer stations~~Other locations are at former and those located at landfill sites, ~~and~~ are larger stations. ~~These that~~ offer waste disposal ~~and~~ as well as ~~some~~ recycling opportunities. The ~~four~~three regional landfills are located at Fort St. John, ~~Bessborough~~Dawson Creek, ~~and Chetwynd and Rose Prairie~~. These sites accept waste from the member municipalities and rural areas surrounding them. Some recycling opportunities, for items such as scrap metal, tires, and lead-acid batteries are also provided.

The existing network of landfills and transfer stations throughout the region provides the framework for the existing residuals management or waste disposal services. They also have the potential to be service delivery locations for new programs and services. To increase access and bring greater equity to rural and urban service levels, the PRRD will evaluate the inter-relationship between the transfer station network and the transfer stations, as well as the needs for future landfill capacity in the region. Outcomes of this work will identify:

- Opportunities to improve efficiencies within the transfer station network
- A means for establishing a consistent and standardized level of service for residents across the Regional District



- Different levels of upgrades and other changes required for existing transfer stations in order to support future programs
- Alternatives for landfills that are nearing the end of their life

7) Revision of Section 5.2.5 (Continue Planned Development and Operation of the Bessborough Landfill)

In keeping with the Operational Certificate and the Design and Operations Plan for the Bessborough Regional Landfill, the Regional District will embark on the development of the next waste disposal phase, Phase ~~2A~~², shortly following Plan adoption. It is anticipated that Phase ~~2A~~ would begin to receive waste for disposal in early 2009. This expansion builds on consultation undertaken in October 2006 with immediate neighbours of the landfill, as well as the direction of the Regional Board.

8) Addition To End of Section 5.2.5 (Continue Planned Development and Operation of the Bessborough Landfill)

The Regional District will progressively develop other waste disposal phases at the Bessborough Landfill over the duration of the Plan once Phase 2 nears capacity. The unit cost per square meter for development of the Bessborough Landfill can vary from \$62/m² to \$122/m² depending on the level of stormwater management required to be implemented for each new landfill cell.

Details of the cost and area of the development of the Bessborough Landfill anticipated over the duration of the Plan are summarized below:

<u>Bessborough Landfill Cell</u>	<u>Cell Area (m²)</u>	<u>Cell Construction Cost</u>
<u>3</u>	<u>20,506</u>	<u>\$2,502,000</u>
<u>4</u>	<u>17,184</u>	<u>\$1,066,000</u>

9) Revision of Section 5.3.3 (Investigate Replacement Options for Fort St. John Landfill)

5.3.3 Investigate Replacement Options for ~~Fort St. John~~ Landfills Nearing Capacity

~~The Fort St. John Landfill is one of the four regional landfill operated by the PRRD, and provides disposal services for the City of Fort St. John as well as many of the transfer stations in the North Peace, from Pink Mountain to Charlie Lake. This landfill is fast nearing the end of its current design capacity, and it will be necessary to identify new disposal capacity to handle the 35,000—40,000 tonnes disposed in the Fort St. John landfill each year.~~



Recognizing that the process for developing new disposal capacity is a lengthy one, the Regional District will examine a range of options for providing replacement disposal capacity for ~~the Fort St. John~~ those ~~landfills having less than 10 years of available airspace, beginning in Phase 1.~~ These options will include, but are not limited to:

- Utilization of existing disposal capacity at other PRRD regional landfills
- Development of an agreement with a private waste disposal facility
- Development of a new landfill site within the North or South Peace area
- Expansion of existing regional landfills
- Development of waste-to-energy facilities for use as disposal capacity

An assessment of the available airspace remaining for each of the Regional District landfills will be conducted annually to determine the life time of the remaining airspace. The results of this assessment will be provided in the SWMP annual report to the Plan Monitoring and Advisory Committee (PMAC) and Board as indicated in Section 9.2.3 (Performance Measurement & Reporting).

~~Recognizing that this investigation phase will be lengthy, the PRRD began some preliminary landfill siting activities in 2007.~~ A preliminary assessment of potential sites was undertaken in 2006, which identified two possible sites within a 30 km radius of the ~~existing landfill—the~~ Rose Prairie Landfill (now closed), which would require expansion and upgrade to an engineered landfill, and a green field site which would require complete development.

As part of the consultation activities undertaken during the Plan Review, it was recognized that many residents in the Rose Prairie and Montney communities are concerned about the negative impacts that an expansion to the closed Rose Prairie Landfill site could cause. There ~~was~~ also has been considerable interest from the public in investigating non-landfill approaches to disposal capacity. The Regional District will continue to work with all stakeholders to identify feasible, environmentally responsible and cost-effective options for developing replacement disposal capacity. It is anticipated that any options short-listed ~~as a result of this investigation in Phase 1~~ will need to be reviewed in consultation with the stakeholders, the Ministry of Environment and any other relevant agencies as needed.

10) Addition To End of Section 5.3.4 (Explore Feasibility of Joint PRRD-Industry Waste to Energy Facility)

The Regional District will pursue options for the development of a waste-to-energy facility at the North Peace Regional Landfill for the beneficial use of the landfill gas generated which is currently being flared. These options will require the installation of infrastructure necessary for the pretreatment of the landfill gas for the removal of moisture and other contaminants. Types of



waste-to-energy options that may be considered along with approximate construction costs for the necessary infrastructure are provided below:

<u>Waste-To-Energy Options For Gas Generated By North Peace Regional Landfill</u>	
<u>Waste-to-Energy Facility Option</u>	<u>Construction Cost</u>
<u>Combustion of gas on-site using reciprocating engines for electricity generation</u>	<u>\$3,057,000</u>
<u>Transport of gas off-site for connection to nearby natural gas pipeline</u>	<u>\$2,522,000</u>
<u>Transport of gas off-site 2 km for connection to natural gas well</u>	<u>\$3,416,000</u>

11) Addition to End of Section 5.4.1 (Implement Incentive-Based Tipping Fees)

The Regional District understands that adjustments to the incentive-based tipping fee model may be necessary for commercially generated solid waste from the ICI sector. Tipping fees for commercial solid waste will be increased as necessary to encourage greater diversion and provide an effective deterrent for the disposal of recyclable materials.

12) Revision to Section 5.5.1 (Continue Existing Waste Reduction Program)

~~Currently, r~~ Recycling and waste reduction education programs are provided by PRRD staff or by a consultant~~the Northern Environmental Action Team (NEAT)~~ on behalf of the Regional District, ~~through a contract between the two organizations. The organization was formed as a not-for-profit community group, and has been in operation since 1989. The PRRD has contracted with NEAT since 1997 to provide its waste reduction education programming. NEAT~~ is responsible for the development and implementation of waste reduction education promotion programs in the Regional District, the objectives of which are to reduce the volume of waste produced by residents and businesses, encourage the re-use of goods and materials by residents and businesses, and to maximize participation in recycling, composting and other waste reduction initiatives.

Specific waste reduction education activities have ~~and continue to~~ included:

- Operation of the “Green Line”, a toll-free hotline number providing waste reduction & recycling information for the BC Peace Region
- Development of waste reduction education programs for businesses
- Composting education
- Sale of residential backyard compost units
- Household hazardous waste handling and reduction education



- Materials exchange program support
- Special events e.g. yard waste drop-off in Fort St. John
- School-based programs to encourage greater awareness of waste reduction in schools, children and youth
- Design and distribution of brochures, tools and educational materials on a range of waste reduction topics
- Maintenance of the www.prrrdy.com website
- Production of the “~~Prrrdy~~[pRRRdy](http://www.prrrdy.com) Says” Newsletter
- Ongoing support for waste reduction education and awareness throughout the region
- Acting as Waste Information Centre for the PRRD regarding tipping fees, facility locations, operating hours and policies.

13) Addition to End of Section 5.7.3 (Develop Construction & Demolition Waste Working Group)

It is likely that the C&D Waste Working Group will include members of the PMAC and that regular scheduled meetings of the C&D Waste Working Group may also be combined with PMAC meetings.

14) Revision to Section 5.7.4 (Develop ICI Waste Working Group)

Target members of the ICI Waste Working Group include representation from business associations, Chambers of Commerce, School Districts 59 and 60, Northern Health Region, construction contractors, PMAC members, and the colleges and institutions in the region. The PRRD will act as a facilitator to kick-start the working group, through outreach with construction and building associations, major industry players in the various communities, and the hosting of meetings and support of discussions.



15) Revision to Section 5.8 (Triple-Bottom Line Evaluation for Phase 1)

Table 2: Summary of Triple Bottom Line Evaluations for Phase 1

TRIPLE-BOTTOM LINE CRITERIA	UPGRADE TRANSFER STATIONS	INCENTIVE-BASED TIPPING FEES	IMPLEMENT DISPOSAL BANS	REUSABLE SHOPPING BAG PROGRAM	YARD WASTE COMPOSTING	PRRD GREEN PURCHASING POLICY
■ Total Capital Cost (\$)	■ \$576,000 <u>9,000,000</u>	■ Negligible – no new costs to impose and enforce policy	■ Negligible – no new costs to impose and enforce policy	■ Low	■ \$100,000 <u>108,990</u> ¹	■ Low
■ Annual Operating Cost (\$)	■ \$500,000 <u>2,126,041</u> ²	■ Negligible – policy enforcement is a part of landfill operations contract responsibilities	■ Negligible – no new costs to impose and enforce policy	■ \$2500 <u>2,725</u> ¹	■ \$75,000 <u>81,743</u> ¹	■ Low – incremental over existing levels of expenditure
■ Operating Cost per tonne	■ \$177 <u>3,041.55</u>	■ Negligible	■ Negligible	■ \$43 <u>47</u>	■ \$31 <u>33.4</u>	■ Low
■ Approximate Annual Cost per Household	■ \$19.70 <u>9.56</u> /hh ³	■ < \$1/hh	■ < \$1/hh	■ < \$1/hh	■ \$3.13 <u>2.84</u> /hh	■ < \$1/hh
■ Landfill life cycle cost savings (based on \$54 <u>78.60</u> /tonne lifecycle cost)	■ \$37,995 <u>55,304</u>	■ \$252,839 <u>365,804</u>	■ \$190,162 <u>274,550</u>	■ \$3,160 <u>4,559</u>	■ \$133,392 <u>192,570</u>	■ \$3,017 <u>4,402</u>
■ Net Diversion Potential (tonnes)	■ 699	■ 4,654	■ 3,493	■ 58	■ 2,450	■ 56
■ Greenhouse Gas Reduction Potential in CO ₂ /tonne of material	■ 1,686	■ n/a	■ n/a	■ 0	■ 525.1	■ Negligible
■ Equivalent to taking this many Honda Civics off the road for 1 year	■ 296	■ 1,719	■ n/a	■ 0	■ 96	■ 0
■ Landfill space savings (cubic metres)	■ 1,166 <u>1,037</u>	■ 7,757 <u>6,905</u>	■ 5,822 <u>5,182</u>	■ 97 <u>86</u>	■ 4,084 <u>3,635</u>	■ 93 <u>83</u>
■ A volume equal to this many school buses	■ 19.4 <u>17.3</u>	■ 129.3 <u>115.1</u>	■ 97 <u>86.4</u>	■ 1.6 <u>1.4</u>	■ 68.1 <u>60.6</u>	■ 1.5 <u>1.4</u>
■ Ability to be equitably implemented across region	■ Medium	■ Medium	■ Medium	■ High	■ High	■ High
■ Accessibility and Convenience	■ Medium - High	■ Medium	■ Medium	■ High	■ High	■ Medium - High

¹Cost updated for 8.99% inflation from 2008 to 2016.
²Annual operating cost determined from 2016 operating costs.
³Based on 2016 census data (28,746 total private dwellings in PRRD) and 2016 tax rate model being implemented by PRRD.



16) Addition to End of Section 6.2.2 (Implement Incentive-Based Tipping Fees)

6.2.2 Implement Additional Incentive-Based Tipping Fees

The Regional District will utilize available waste tracking data and results of waste composition audits to determine if modification of the tipping fee structure is warranted to increase the diversion rate of waste generated from the ICI sector. Incentive-based tipping fees for a particular waste stream may have to be increased in a progressive step-wise manner after which the impact of the fee increase on the diversion rate would be evaluated. This process would be repeated until there is evidence that the modified tipping fee structure is resulting in an increase in waste diversion.

17) Revision to Section 6.2.5 (Implement Curbside Recycling Program in Member Municipalities)

While the Regional District does not provide collection services directly to municipal residents, the cost for processing the curbside recycling material is covered by the Regional District through an agreement with a designated Recycling Contractor for the region. ~~the~~ This SWMP document is intended to recognize and support initiatives within the region that contribute to reducing waste disposal. ~~Both the~~ The City of Fort St. John, District of Tumbler Ridge, District of Taylor, City of Dawson Creek, and the District of Chetwynd have expressed interest in commencing a curbside recycling program, initially for single-family residential households in their communities. These potential programs are therefore included in the SWMP.

The design of a curbside collection program for recyclables will need to take into account the following considerations:

- Level of source-separation – This is the degree to which individual residents will be required to separate their recyclables into different categories, prior to setting it out for collection. This will be dependent on the types of materials being accepted by the program, and the capacity of the facility where the collected materials will be processed.
- Method of collection – Recyclables collection programs in different communities utilize various combinations of bags, boxes, carts or other containers to facilitate collection. The program design will need to incorporate the type of collection system, again based on the processing facility that will be accepting the material, and the expected ease of use by residents
- Processing location ~~and capacity~~ – the member municipalities implementing a curbside collection program will need to determine how ~~and where~~ the collected material will be transported to the Regional District processing facility ~~processed~~, and what level of responsibility the municipality ~~processing service providers~~ will have with respect to



~~sorting and marketing~~ensuring the level of contamination in the recovered materials meets minimum standards.

- Need for transfer locations – the design of the program would also need to consider whether an intermediate transfer location will be required, where recyclable materials collected from individual households could be consolidated and/or compacted before hauling to the processing location. The municipality may also have the option to establish an agreement directly with the Regional District Recycling Contractor for the municipality to manage the processing of the material prior to transport to the Recycling Contractor or processing and shipment of the collected material directly to a recycling broker. The Recycling Contractor would offer a financial incentive to the municipality for processing or processing and shipment of the material.
- Need for transfer locations – the design of the program would also need to consider whether an intermediate transfer location will be required, where recyclable materials collected from individual households could be consolidated and/or compacted before hauling to the processing location.

~~Implementation of a curbside collection program in any municipality will also need to include a decision on the role and responsibilities of the PRRD and the participating member municipalities, to determine whether and how the PRRD would be involved.~~ Many regional districts have benefited from the economies of scale associated with regional-level recycling service provision, and addressed cost sharing through contractual arrangements between municipalities or through municipal requisitions. In addition, where municipalities have implemented a “collection-only” level of service without consideration of long-haul transportation, processing and marketing of recyclables, there is the potential that the collection service provider will not have a suitable interest in maintaining program quality, reducing contamination of recyclables, or supporting education and promotion activities. To address these issues, the PRRD and designated Recycling Contractor will work closely with member municipalities seeking to establish curbside recycling programs to determine how best to structure programs so as to support the overall intent of the Plan.

18) Revision to Section 6.4.2 (Develop Transfer Station to Replace Fort St. John Landfill)

6.4.2 Develop Transfer Stations ~~to Replace Fort St. John~~ Closed Landfills

~~The Fort St. John landfill is nearing the end of its useful life and is scheduled to be closed by 2010–2011. For those landfills that reach capacity and are subsequently closed, Given that~~ a replacement disposal option is likely to be farther away from the city ~~that~~than the ~~current~~distance is to the closed landfill, it may be necessary to develop a transfer station to replace the closed landfill, and provide a convenient location close to the city for waste disposal.



Estimated costs are provided below, based on the PRRD existing budget for operating similar sites, as well as estimates from other regional districts with similar facilities.

Table 3: Cost Estimates for Classes of Transfer Station

TRANSFER STATION TYPE	CAPITAL COSTS	ANNUAL OPERATING COSTS
Class 1	\$192,000 2 - \$3 million	\$165,000 250,000 - \$400,000
Class 2	\$2 - \$3 million 525,000	\$250,000 - \$400,000 165,000

The selection of replacement disposal capacity for any of the ~~Fort St. John~~ PRRD landfills will be addressed in Phase 1 (Section 5.3.3 – Investigate Replacement Options for Landfills Nearing Capacity). Depending on the outcome of that investigation, and the potential location of a new disposal solution, there may be a need to select the larger type of transfer station, to avoid curbside collection vehicles and commercial haulers from having to drive excessively long distances from the city to the new site. As more definitive plans for replacement disposal capacity are established, this will be considered in more detail.

19) Revision to Section 6.4.3 (Develop Replacement Landfill Capacity for Fort St. John Landfill)

6.4.3 Develop Replacement ~~Landfill~~ Capacity for ~~Fort St. John~~ Landfills Nearing Capacity

Once a replacement disposal solution has been selected through the activities identified in Phase 1 (Section 5.3.3 – Investigate Replacement Options for Closed Landfills), it will be necessary to proceed with the design and development of the new site. Regardless of the location selected by the PRRD as a replacement for the ~~Fort St. John~~ landfill nearing capacity, or the type of facility that is developed, there are a number of significant components that will need to be put in place:

- Consideration of First Nations treaties and land management requirements as part of the site selection process
- Land acquisition or long-term lease of land for the location
- Feasibility study, preliminary and detailed design phases
- Construction and development
- Development of operational and environmental management plans
- Securing of necessary permits
- Facility commissioning, staffing and management

Depending on the type of disposal solution that is identified, there may be additional components that will need to be considered, such as financing, operational contracts, or other



partnerships. The Regional District also recognizes that specialized consultation activities, both with stakeholders and the Ministry of Environment, will be required in order to establish a new disposal solution to replace the ~~Fort St. John L~~andfill that is nearing capacity.



20) Revision to Section 6.5 (Triple-Bottom Line Evaluation)

TBL CRITERIA	SHARE SHEDS	DISPOSAL LIMITS	CURBSIDE RECYCLING IN MUNICIPALITIES	CONTINUE TRANSFER STATION UPGRADES	DEVELOP C&D REUSE CAPACITY	REUSE & RECYCLING PROMOTION FOR ICI
■ Capital Cost (\$)	■ \$36,000 <u>39,236¹</u>	■ Low	■ Assumed none	■ \$1,152,000 <u>3,150,000</u>	■ \$70,000 <u>76,293¹</u>	■ Negligible
■ Annual Operating Cost	■ \$6,000 <u>6,539¹</u>	■ Low	■ \$144 <u>156.95</u> /household/year (estimated) ¹	■ \$990,000 <u>797,265²</u>	■ \$10,000 <u>10,899¹</u>	■ \$5,000 <u>5,450¹</u>
■ Operating Cost per tonne (\$/tonne)	■ \$48 <u>52</u>	■ Low		■ \$531 <u>570</u>	■ \$22 <u>23.70</u>	■ \$8 <u>8.83</u>
■ Landfill Cost savings per year (based on \$54 <u>78.60</u> /tonne lifecycle cost)	■ \$6,846 <u>9,904</u>	■ \$128,671 <u>186,125</u>	■ \$280,577 <u>405,969</u>	■ \$75,990 <u>109,961</u>	■ \$24,999 <u>36,156</u>	■ \$33,503 <u>48,496</u>
■ Approximate Annual Cost per Household	■ \$0.45 <u>0.49</u> /hh	■ < \$1/hh	■ \$144 <u>156.95</u> /hh/year (estimated) ¹	■ \$34.35 <u>27.66</u> /hh	■ \$0.83 <u>0.90</u> /hh	■ < \$1/hh
■ Net Waste Diversion Potential (tonnes)	■ 126	■ 2,368	■ 5,165	■ 1,399	■ 460	■ 617
■ Greenhouse Gas Reduction Potential in tonnes of CO ₂ /tonne of waste	■ 146	■ 288	■ 12,450	■ 3,372	■ 235	■ 1,017
■ Equivalent # of Honda Civics taken off the road for 1 year	■ 27	■ 53	■ 2,264	■ 592	■ 43	■ 185
■ Landfill Space Savings (m ³) ³	■ 210 <u>217</u>	■ 3,947 <u>3,513</u>	■ 8,608 <u>7,663</u>	■ 2331 <u>2,076</u>	■ 767 <u>682.5</u>	■ 1,028 <u>915.4</u>
■ Equivalent # of School Buses	■ 3.5 <u>3.6</u>	■ 65.8 <u>58.6</u>	■ 143.5 <u>127.7</u>	■ 39 <u>34.6</u>	■ 12.8 <u>11.4</u>	■ 17.1 <u>15.3</u>
■ Ability to be equitably implemented across region	■ Medium	■ Medium	■ Medium	■ Medium - High	■ Low - Medium	■ Medium
■ Accessibility and convenience	■ Medium	■ Medium	■ High	■ Medium - High	■ Low - Medium	■ Medium

¹Cost updated for 8.99% inflation from 2008 to 2016.
²Annual operating costs determined from 2016 operating costs.
³Assumes an airspace utilization factor of 0.674 tonnes/m³.



21) Revision to Section 7.1 (Phase 3 Objectives)

The objectives of Phase 3 are:

- Continue to improve existing programs and waste management system infrastructure
- Investigate long-term waste management facility options
- [Investigate options for the beneficial use of landfill gas](#)

The sections that follow describe the programs and policies that will be implemented to deliver these objectives, and connect with the guiding principles in the Plan.

22) Addition to End of Section 7.2.2 (Continue Transfer Station Capital Upgrades Program)

[The PRRD will also consider public convenience and accessibility in the design of new solid waste transfer stations or the relocation of existing solid waste transfer stations.](#)

23) Revision to Section 7.2.3 (Complete Closure of Fort St. John Landfill)

6.4.3 Complete Closure of ~~Fort St. John~~ Landfills [at Capacity](#)

Options for the replacement of ~~the Fort St. John~~ [landfills nearing capacity](#) will be explored within the timeframe of ~~Phase 2~~ [this Plan when the remaining life of the landfill approaches 10 years or less. As of May, 2017 there was 18.9 and 23.2 years of life remaining in the Chetwynd Landfill and North Peace Regional Landfill respectively and therefore it is very likely that this evaluation will not be necessary over the timespan of this Plan.](#) Once the preferred option has been identified, it will be necessary to complete final closure of the ~~Fort St. John~~ [landfills site. It is anticipated that final closure activities will involve final capping and re-vegetation of the site](#) in accordance with Ministry of Environment requirements. Post-closure monitoring of environmental parameters will also be required. In the event that there is a transfer station developed at the ~~se~~ [Fort St. John \[landfill site\]\(#\)s, the closure plan and its execution will also take this into account.](#)



24) Revision to Section 7.4 (Triple-Bottom Line Evaluation)

Table 7: Triple Bottom Line Evaluations for Phase 3

TRIPLE-BOTTOM LINE CRITERIA	VALUE
Capital Cost (\$)¹	\$ 576,000 627,782
Annual Operating Cost (\$)¹	\$ 500,000 544,950
Operating Cost per tonne	\$ 177 780
Landfill life cycle cost savings (based on \$ 54 78.60/tonne lifecycle cost)	\$ 37,995 54,941
Approximate Annual Cost¹ per Household	\$ 19.70 21.47/hh
Net Diversion Potential (tonnes)	699
Greenhouse Gas Reduction Potential in CO ₂ /tonne of material	1,686
Equivalent to taking this many Honda Civics off the road for 1 year	296
Landfill space savings² (cubic metres)	1,166 1,037
A volume equal to this many school buses	19.4 17.3
Ability to be equitably implemented across region	Medium
Accessibility and Convenience	Medium - High

¹Cost updated for 8.99% inflation from 2008 to 2016.

²Assumes an airspace utilization factor of 0.674 tonnes/m³.

25) Revision to Section 7.4.1 (Resource Allocations For Feasibility Studies)

No formal triple bottom line was undertaken for these activities, since they are essentially research-based steps rather than actual programs. In terms of resources, the Regional District will provide ~~an allocation of \$50,000 to \$100,000~~sufficient resources depending on the exact scope of the work, to undertake the feasibility assessments.

26) Revision to Section 7.4.2 (Resource Allocations For Disposal Capacity Development in Phase 3)

No formal evaluations of the development of new disposal capacity and the closure of the ~~Fort St. John~~North Peace Regional Landfill were undertaken, as these activities relate only to the management of residual materials and will not contribute to further waste diversion. Detailed budgets for these activities will be prepared closer to the time of actual implementation, to reflect more accurately the current conditions at the time.



27) Revision to Section 9.2.1 (Solid Waste Committee)

The Regional District will maintain a Solid Waste ~~Management~~ Committee, to oversee the implementation and management of the Plan. This Committee will be made up of appointed members of the Regional District's Board of Directors. This Committee will be responsible to make recommendations to the PRRD Board of Directors to support the successful implementation of the Plan.

28) Revision to Section 9.2.3 (Performance Measurement & Reporting)

To build on these steps, the Regional District will develop a standard Report Template that will be used to update the Board, the Plan Monitoring and Advisory Committee and any other stakeholders as to the progress of initiatives. ~~It is suggested that t~~This Report Template will encompass the following information:

- Program within each Phase and Name
- Status of implementation, ~~including a statement of baseline conditions~~
- Expected costs and staffing resource requirements as applicable
- Expected outcomes
- Timelines for implementation
- ~~Supporting policy requirements~~
- ~~Supporting education requirements~~
- ~~Partnership agencies and involvement levels~~
- Region-wide quantity (percentage) of waste diverted in previous year



29) Addition to Section 9.2.3 (Performance Measurement and Reporting)

SOLID WASTE MANAGEMENT PLAN (SWMP) ANNUAL REPORTING FORM						
Date of annual report:		SW disposed in previous year (metric tonnes):		SW diversion for previous year (% of annual tonnes):		
PROGRESS REPORT FOR IMPLEMENTATION OF PHASE 1 OF THE SWMP						
SWMP Phase 1 Program/Task	SWMP Section/Objective	Program/Task Implementation Status	Percent Complete	Target Date for Completion (month/year)	Projected Cost for Completion	Comments
Track Waste Generation Sources	5.2.1 (#1) ^a	Not started ☐ In progress ☐ Completed ☐	000%	00/00		
Conduct Waste Composition Study	5.2.2 (#1) ^a	Not started ☐ In progress ☐ Completed ☐	000%	00/00	\$0,000,000	
Establish Min. Operating Standards For Landfills	5.2.3 (#1) ^a	Not started ☐ In progress ☐ Completed ☐	000%	00/00		
Identify Develop. Needs For Waste Management System	5.2.4 (#1) ^a	Not started ☐ In progress ☐ Completed ☐	000%	00/00		
Continue Development And Operation Of Bessborough Landfill	5.2.5 (#1) ^a	Not started ☐ In progress ☐ Completed ☐	000%	00/00	\$0,000,000	
Standardize Recycling Programs In Regional District	5.3.1 (#2) ^b	Not started ☐ In progress ☐ Completed ☐	000%	00/00	\$0,000,000	
Initiate Upgrades To Transfer Stations	5.3.2 (#2) ^b	Not started ☐ In progress ☐ Completed ☐	000%	00/00	\$0,000,000	
Investigate Replacement Options For Landfills Nearing Capacity	5.3.3 (#2) ^b	Not started ☐ In progress ☐ Completed ☐	000%	00/00	\$0,000,000	
Explore Feasibility Of Partnership With Industry For WTE Facility	5.3.4 (#2) ^b	Not started ☐ In progress ☐ Completed ☐	000%	00/00	\$0,000,000	

^aPhase 1 – Objective #1 – Establish Baseline Set of Practices

^bPhase 1 – Objective #2 – Establish Rural and Urban Levels of Services



PROGRESS REPORT FOR IMPLEMENTATION OF PHASE 1 OF THE SWMP						
SWMP Phase 1 Program/Task	SWMP Section/ Objective	Program/Task Implementation Status	Percent Complete	Target Date for Completion (month/year)	Projected Cost for Completion	Comments
Implement Incentive-Based Tipping Fees	5.4.1 (#3) ^c	Not started ☐ In progress ☐ Completed ☐				
Implement Disposal Bans To Encourage Recycling	5.4.2 (#3) ^c	Not started ☐ In progress ☐ Completed ☐				
Continue Existing Waste Reduction Education Program	5.5.1 (#4) ^d	Not started ☐ In progress ☐ Completed ☐				
Promote/Support Existing Reuse Opportunities	5.5.2 (#4) ^d	Not started ☐ In progress ☐ Completed ☐				
Partner With Retail Sector on Reusable Shopping Bag Program	5.5.3 (#4) ^d	Not started ☐ In progress ☐ Completed ☐				
Develop Yard Waste Drop-Off And Composting Facilities	5.5.4 (#4) ^d	Not started ☐ In progress ☐ Completed ☐				
Lobby Senior Government For Increased Levels of Product Stewardship	5.6.1 (#5) ^e	Not started ☐ In progress ☐ Completed ☐				
Support Existing Stewardship Programs By Round-up Events	5.6.2 (#5) ^e	Not started ☐ In progress ☐ Completed ☐				
Recycling Program For Agricultural Plastics	5.7.1 (#6) ^f	Not started ☐ In progress ☐ Completed ☐				
Explore Specific Education And Training Needs For Different Sectors	5.7.2 (#6) ^f	Not started ☐ In progress ☐ Completed ☐				

^cPhase 1 – Objective #3 – Establish Policy Foundation

^dPhase 1 – Objective #4 – Support and Expand Existing Programs

^ePhase 1 – Objective #5 – Enhance Product Stewardship Access

^fPhase 1 – Objective #6 – Initiate Greater Stakeholder Outreach



PROGRESS REPORT FOR IMPLEMENTATION OF PHASE 1 OF THE SWMP						
SWMP Phase 1 Program/Task	SWMP Section/Objective	Program/Task Implementation Status	Percent Complete	Target Date for Completion (month/year)	Projected Cost for Completion	Comments
Develop C&D Waste Working Group	5.7.3 (#6) ^f	Not started ☐ In progress ☐ Completed ☐				
Develop ICI Waste Working Group	5.7.4 (#6) ^f	Not started ☐ In progress ☐ Completed ☐				
Adopt Green Purchasing Policy For PRRD	5.7.5 (#6) ^f	Not started ☐ In progress ☐ Completed ☐				
PROGRESS REPORT FOR IMPLEMENTATION OF PHASE 2 OF THE SWMP						
SWMP Phase 2 Program/Task	SWMP Section/Objective	Program/Task Implementation Status	Percent Complete	Target Date for Completion (month/year)	Projected Cost for Completion	Comments
Install Share Sheds At Existing Waste Management Sites	6.2.1 (#1) ^g	Not started ☐ In progress ☐ Completed ☐				
Implement Additional Incentive-Based Tipping Fees	6.2.2 (#1) ^g	Not started ☐ In progress ☐ Completed ☐				
Implement Disposal Bans To Encourage Recycling	6.2.3 (#1) ^g	Not started ☐ In progress ☐ Completed ☐				
Implement And Enforce Disposal Quantity Limits	6.2.4 (#1) ^g	Not started ☐ In progress ☐ Completed ☐				
Implement Curbside Recycling In Municipalities	6.2.5 (#1) ^g	Not started ☐ In progress ☐ Completed ☐				
Continue Rural Transfer Station Upgrades And Recycling Services	6.2.6 (#1) ^g	Not started ☐ In progress ☐ Completed ☐				

^f Phase 1 – Objective #6 – Initiate Greater Stakeholder Outreach

^gPhase 2 – Objective #1 – Increase Reuse and Recycling Opportunities



PROGRESS REPORT FOR IMPLEMENTATION OF PHASE 2 OF THE SWMP						
SWMP Phase 2 Program/Task	SWMP Section/Objective	Program/Task Implementation Status	Percent Complete	Target Date for Completion (month/year)	Projected Cost for Completion	Comments
Support Reuse And Recycling of All C&D Material	6.3.1 (#2) ^h	Not started ☐ In progress ☐ Completed ☐				
Develop C&D Material Reuse Capacity	6.3.2 (#2) ^h	Not started ☐ In progress ☐ Completed ☐				
Promote Reuse And Recycling Opportunities For ICI Sector	6.3.3 (#2) ^h	Not started ☐ In progress ☐ Completed ☐				
Continue Working Group Pilot Programs From Phase 1	6.3.4 (#2) ^h	Not started ☐ In progress ☐ Completed ☐				
Identify Strategies For Reducing LFG Emissions	6.4.1 (#3) ⁱ	Not started ☐ In progress ☐ Completed ☐				
Develop Transfer Stations To Replace Closed Landfills	6.4.2 (#3) ⁱ	Not started ☐ In progress ☐ Completed ☐				
Develop Replacement Capacity For Landfills Nearing Capacity	6.4.3 (#3) ⁱ	Not started ☐ In progress ☐ Completed ☐				
Develop Illegal Dumping Strategy	6.4.4 (#3) ⁱ	Not started ☐ In progress ☐ Completed ☐				
PROGRESS REPORT FOR IMPLEMENTATION OF PHASE 3 OF THE SWMP						
SWMP Phase 3 Program/Task	SWMP Section/Objective	Program/Task Implementation Status	Percent Complete	Target Date for Completion (month/year)	Projected Cost for Completion	Comments
Develop C&D Materials Handling Capacity	7.2.1 (#1) ^j	Not started ☐ In progress ☐ Completed ☐				

^hPhase 2 – Objective #2 – Focus on ICI and Construction and Demolition Sectors

ⁱPhase 2 – Objective #3 – Address Waste Management System Capacity Needs

^jPhase 3 – Objective #1 – Continue to Improve Programs and Infrastructure



PROGRESS REPORT FOR IMPLEMENTATION OF PHASE 3 OF THE SWMP						
SWMP Phase 3 Program/Task	SWMP Section/ Objective	Program/Task Implementation Status	Percent Complete	Target Date for Completion (month/year)	Projected Cost for Completion	Comments
Continue Transfer Station Capital Upgrades Program	7.2.2 (#1) ^j	Not started ☐ In progress ☐ Completed ☐				
Complete Closure Of Landfills At Capacity	7.2.3 (#1) ^j	Not started ☐ In progress ☐ Completed ☐				
Investigate Development Of Centralized Material Processing Facility	7.3.1 (#2) ^k	Not started ☐ In progress ☐ Completed ☐				
Investigate Options For Organics Management	7.3.2 (#2) ^k	Not started ☐ In progress ☐ Completed ☐				
Investigate Source Separated Collection Options For Organics And Recyclables	7.3.3 (#2) ^k	Not started ☐ In progress ☐ Completed ☐				
Investigate Waste-To-Energy Options	7.3.4 (#2) ^k	Not started ☐ In progress ☐ Completed ☐				

^j Phase 3 – Objective #1 – Continue to Improve Programs and Infrastructure

^k Phase 3 – Objective #2 – Explore Long-Term Waste Management Options



30) Revision to Section 9.2.5 (Dispute Resolution)

Given the complexity of the Plan, the number of stakeholders and the varying interests addressed in the Plan, the possibility exists that disputes may occur during implementation of the Plan, and through the process of amendments to the Plan that may arise in future. This section establishes a dispute resolution procedure for addressing such issues as disputes arising from administrative decisions made by the Regional District, interpretations of plan activities and services, economics, land tenure, jurisdictional responsibility or other issues. The structure presented below is intended to resolve disputes in a timely and cost-effective manner.

- The parties having a dispute must make all reasonable effort to come to an equitable agreement without outside intervention, before proceeding to the next step.
- Should the parties determine that an agreement is not within reach, the Plan Monitoring and Advisory Committee and/or the Solid Waste ~~Management~~ Committee will then be utilized as a mediator between the parties. Any member of the PMAC or the SWMC directly involved with the parties or in a relationship that may be perceived to be a conflict of interest with regard to the dispute will not be granted voting/motioning privileges, but will remain an active participant in all discussions. All attempts will be made to reach an agreement.
- Should an agreement still not be achievable, the Regional Board will be called upon to act as a mediator. The disputing parties must both agree with referring the dispute to the Regional Board, and agree that the Regional Board's decision will be binding.
- Should the Regional Board be unable to resolve the dispute, an arbitrator may be assigned, the cost to be shared equally between the disputing parties. The reporting materials provided to the PMAC, SWMC and the Regional Board shall be provided to the arbitrator, who will review the report and make any inquiries he/she feels necessary to resolve the dispute. The arbitrator's decision shall be submitted to the Regional Board in writing, and the dispute will be considered resolved when the arbitrator's decision is approved by the Regional Board and the dissenting parties.



31) Revision to Appendix A (Table 1 - Triple Bottom Line Evaluation Criteria)

Table 4: Triple Bottom Line Evaluation Criteria

PARAMETER TYPE	CRITERIA
Financial	Capital Cost (\$)
	Annual Operating Cost (\$)
	Operating Cost per tonne (\$/tonne)
	Approximate Cost per Household (\$/household)
	Landfill cost savings (based on \$5478.60/tonne lifecycle costs)
Environmental	Net Waste Diversion Potential (tonnes)
	Greenhouse Gas Reduction Potential in tonnes of CO ₂ /tonne of waste and equivalent # of Honda Civics taken off the road for 1 year
	Landfill space savings in cubic metres, and equivalent volume in # of school buses
Social	Ability to be equitably implemented across region
	Accessibility and convenience

32) Revision To Appendix A (Approximate Cost per Household)

It was recognized that most residents would be best able to judge the financial implications of a program by considering the “cost per household” rather than an estimate of total costs. To determine this, the PRRD identified the following information:

- For every \$100,000 in funding that the PRRD needs to raise, there needs to be a charge of ~~\$0.01~~\$0.005 per \$1000 of assessment, with the current PRRD tax base
- This is the residential rate, and there ~~may be~~are multipliers applied to this rate for utilities, industry and businesses
- An “average household” assessment value of \$250,000 was used to determine the approximate cost per household.

33) Revision to Appendix A (Lifecycle Landfill Cost Savings)

In order to understand the full implications of diverting waste from the landfill, it was necessary to look at the potential cost savings over the entire life of the landfill. To do this, the following were considered:

- ~~■ Landfill siting, preliminary investigation and public consultation to select a landfill site~~
- ~~■ Landfill construction costs over the whole life of a landfill~~



- Landfill operating costs over the ~~whole~~remaining life of a landfill
- Environmental Monitoring costs per year, for the ~~whole~~remaining operating life of the landfill
- Closure costs at the end of the landfill's life
- Post-closure environmental monitoring costs, for a mandated ~~25~~30-year period following the closure of the landfill
- The ~~total~~remaining capacity of the landfill for waste, as a volume in cubic metres
- The estimated compaction level in the landfill, assumed to be ~~0.6~~0.674 tonnes/cubic metre

The ~~Bessborough~~North Peace Regional Landfill (NPRL) was used as a template for developing these costs, as this landfill has a gas collection and control system (GCCS) for the management of landfill gas (LFG) and the ~~most recent construction and~~remaining landfill life and capacity information is available for this site as of May, 2017. In addition, the duration for the remaining life of NPRL (≈ 20 years) is closer to the timeframe at which this SWMP will require the next review and update compared to Bessborough Landfill (≈ 80 years). The ~~total~~remaining life cycle cost of the landfill was computed, and divided by the ~~total~~remaining capacity in cubic metres to determine a cost per cubic metre, and a cost per tonne using the compaction density. The following were the results:

- Lifecycle Cost per cubic metre = \$~~33~~53/m³
- Lifecycle Cost per tonne = \$~~54~~78.60/tonne

The lifecycle cost per tonne was used to calculate the lifecycle savings achieved by diverting waste from the landfill.



Solid Waste Management Plan Monitoring and Advisory Committee TERMS OF REFERENCE

BACKGROUND

Regional Districts in British Columbia are mandated by the Provincial Environmental Management Act to develop Solid Waste Management Plans that are long term visions of how each regional district manages their municipal and rural solid wastes. The Peace River Regional District's Solid Waste Management Plan, which was last amended in March, 2009, identified the formation of a SWMP Monitoring and Advisory Committee to monitor the implementation and effectiveness of the Plan and identify concerns and issues that have arisen during its implementation that may require changes.

GOAL OF THE COMMITTEE

The Plan Monitoring & Advisory Committee (PMAC) will monitor the implementation and effectiveness of the Solid Waste Management Plan (Plan) for the Peace River Regional District (PRRD).

OBJECTIVES

- To review the status of the Plan as to objectives completed and tasks remaining.
- To identify concerns and issues that may arise in the Plan's ongoing implementation.
- To act as a "sounding board" for the PRRD to review results of pilot programs.
- To make suggestions regarding how programs should be implemented and provide those recommendations to the PRRD Committee of the Whole.
- Provide advice and feedback on consultation activities with the general public.

STRUCTURE OF THE PLAN MONITORING & ADVISORY COMMITTEE

- 1. Members:** The PMAC will be made up of representatives from:
 - Staff from member municipalities.
 - PRRD waste management staff.
 - PRRD waste management contractors or partners.
 - Public agencies.
 - Representatives from First Nations within the region.
 - Private and non-profit sectors.
 - Industry and institutional representatives.
 - Members of the general public (consisting of one member from each Electoral Area).
- 2. Number of Members:** The number of members appointed by the PRRD Board is 26. An alternate may be nominated to attend in lieu of the person appointed to the PMAC.
- 3. Term of Office of Members:** Members will be asked to commit for up to 2 years.

REMUNERATION AND EXPENSES

Membership to the PMAC shall be strictly on a volunteer basis. Compensation from the PRRD for work performed as a member of the PMAC will be provided as follows:

- Per the Regional Board's Financial Policy, mileage will be paid to all volunteer members of the PMAC (except Ministry Staff and paid members of Commissions).
- Refreshments and lunch meal (if required) will be provided at all meetings.

RULES OF PROCEDURE

1. Robert's Rules of Order apply.
2. The PMAC is advisory and all recommendations will be forwarded to the Regional District Committee of the Whole for consideration.
3. The PMAC Chair shall be elected from the membership at the first meeting of each year. In the absence of the Chair, an Acting Chair shall be appointed for that meeting by the members present. The Chair shall be entitled to vote at all meetings. PRRD Board Directors are not eligible for the position of PMAC Chair.
4. **Quorum:** A simple majority, one member more than 50% of appointed members of the PMAC, shall constitute a quorum.
5. **Voting:** All issues that come before the PMAC shall be determined by way of majority vote.
6. **Conflict of Interest:** Contractors sitting as Committee members shall exclude themselves from meetings that may place them in conflict of interest. (directed by Regional Board Aug 25, 2016)

MEETINGS OF THE PLAN MONITORING & ADVISORY COMMITTEE

1. Scheduled Meetings:

- a. Initial meeting scheduled for January 19, 2016
- b. Annual meeting will be tentatively scheduled for Fall of 2016 to resolve any potential outstanding items from the initial meeting and to refine SWMP objectives for 2017.

This schedule is subject to change. All regular agendas and meeting dates shall be arranged by the PRRD in consultation with the PMAC members. All meeting dates will be confirmed at least two weeks prior to the meetings with agendas being provided to the PMAC members and other interested parties at least one week prior to meetings. Agendas will also be posted on the Peace River Regional District website at www.prrd.bc.ca.

2. Minutes:

Notes and action items arising from each meeting will be documented. A synopsis of all meetings shall be posted on the PRRD website at www.prrd.bc.ca.

REPORTING TO THE PRRD COMMITTEE OF THE WHOLE

Recommendations adopted by the PMAC will be presented to the PRRD Committee of the Whole by way of a covering report drafted by PRRD staff.



PEACE RIVER REGIONAL DISTRICT

Expense Statement

Regional District Board approved (volunteer) Committee

Name: _____

Committee Name: _____

Mailing address: _____

Telephone: _____

Date	Destination	Reason	Km	Office Use Only	Expenses (attach receipts)
Sub-total					
Total km _____ x 53¢/km					
Total Mileage & Expenses					
Subtract Travel Advance					()
Subtract Other					()
NET AMOUNT					

I certify that this is a true statement of costs incurred by me while attending a Committee meeting of the Peace River Regional District.

Committee Member Signature:	Department Manager Signature:
Date:	Date:

DISTANCE CHART

(Kilometres)

	Chetwynd	Dawson Creek	Fort Nelson	Fort St. John	Hudson's Hope	Pouce Coupe	Taylor	Tumbler Ridge
Chetwynd		102	566	154	65	110	163	90
Dawson Creek	102		485	75	167	16	61	120
Fort Nelson	566	485		412	501	495	421	656
Fort St. John	154	75	412		89	81	14	195
Hudson's Hope	65	167	501	89		175	98	155
Pouce Coupe	110	8	495	81	175		72	128
Taylor	163	61	421	14	98	72		184
Tumbler Ridge	90	120	656	195	155	128	184	
Prince George	310	412	876	464	375	420	478	400
Prince Rupert	1,031	1,133	1,597	1,185	1,096	1,141	1,194	1,121
Vancouver	1,099	1,201	1,665	1,253	1,164	1,209	1,262	1,189
Grande Prairie	264	132	617	205	299	124	196	145
Edmonton	688	586	1,071	659	753	578	650	599
Calgary	985	883	1,369	956	1,050	875	947	896