



Regional Solid Waste Management Plan Review

October 30th 2018

Advisory Committee Meeting #1

Agenda

-
- Introductions
 - The Planning Process
 - Advisory Committee
 - Highlights of the Existing System Report
 - Key Drivers for Updated SWMP
 - Guiding Principles
 - Next Steps / Wrap Up
-

Project Team

Sperling Hansen Associates:

- **Dr. Tony Sperling**
- **Mairi Dalglish**
- **Scott Garthwaite**
- **Carly Wolfe**

RDEK Support:

- **Kevin Paterson**
- **Jim Penson**
- **Lynne Newhouse**
- **Loree Duczek**



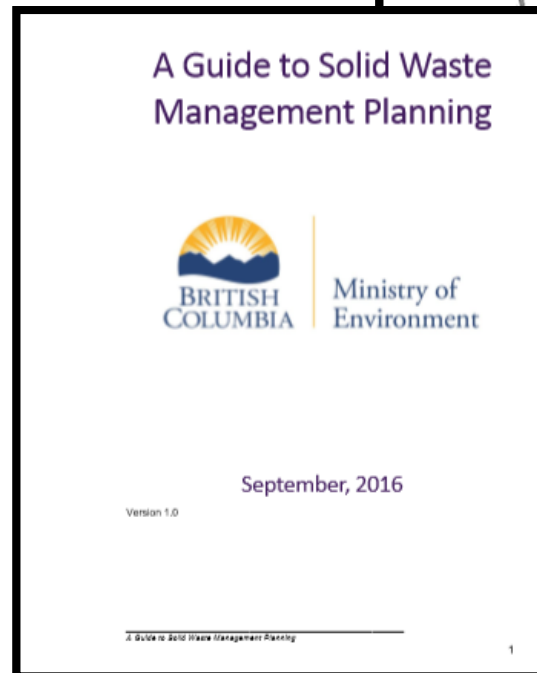


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THE PLANNING PROCESS

Solid Waste Management Plans

- **Comprehensive guide for next 10 years**
- **Vision for next 20-30 years**
- **Provincial approval required:**
 - Authorization to spend funds identified in Plan
 - No need to go to referendum to approve borrowing



Solid Waste Management Planning Process

- **Conducted in 3 phases**
- **Has concurrent technical and consultation processes**
- **Consultation process:**
 - Advisory committee
 - Stakeholder consultation
 - General public consultation



Phase One

Conduct a review of current system

- Review of technical reports and data
- Site visits and contact with stakeholders
- Assessment of the existing solid waste management system

Phase 1 Report (Existing System)

- Description of existing activities
- Implementation status of current Plan
- Baseline for updating the Plan
- Waste Composition Study



Phase Two



- **Identify Opportunities to Increase Waste Diversion**
- **Identify Opportunities to Enhance Residual Waste Management**
- **Identify Financial Implications**
- **Prepare Draft Plan**

Phase Three

- **Community and stakeholder consultation on draft Plan**
- **Finalize content of Plan**
- **Approval by Board**
- **Submission of Plan to Minister of the Environment**
 - Once approved, RDEK has permission to borrow \$ to implement the plan (if needed)

Concurrent Communication and Consultation Program

Phase 1

Establish advisory
committee

Review Existing
System

SWMP
Communications

Phase 2

On-going
advisory
committee
engagement

Community
survey

Update
information on
SWMP webpage

Phase 3

Community and
stakeholder
consultation on
draft Plan

Review input with
advisory
committee

Communication and Consultation Program



Questions? Comments?

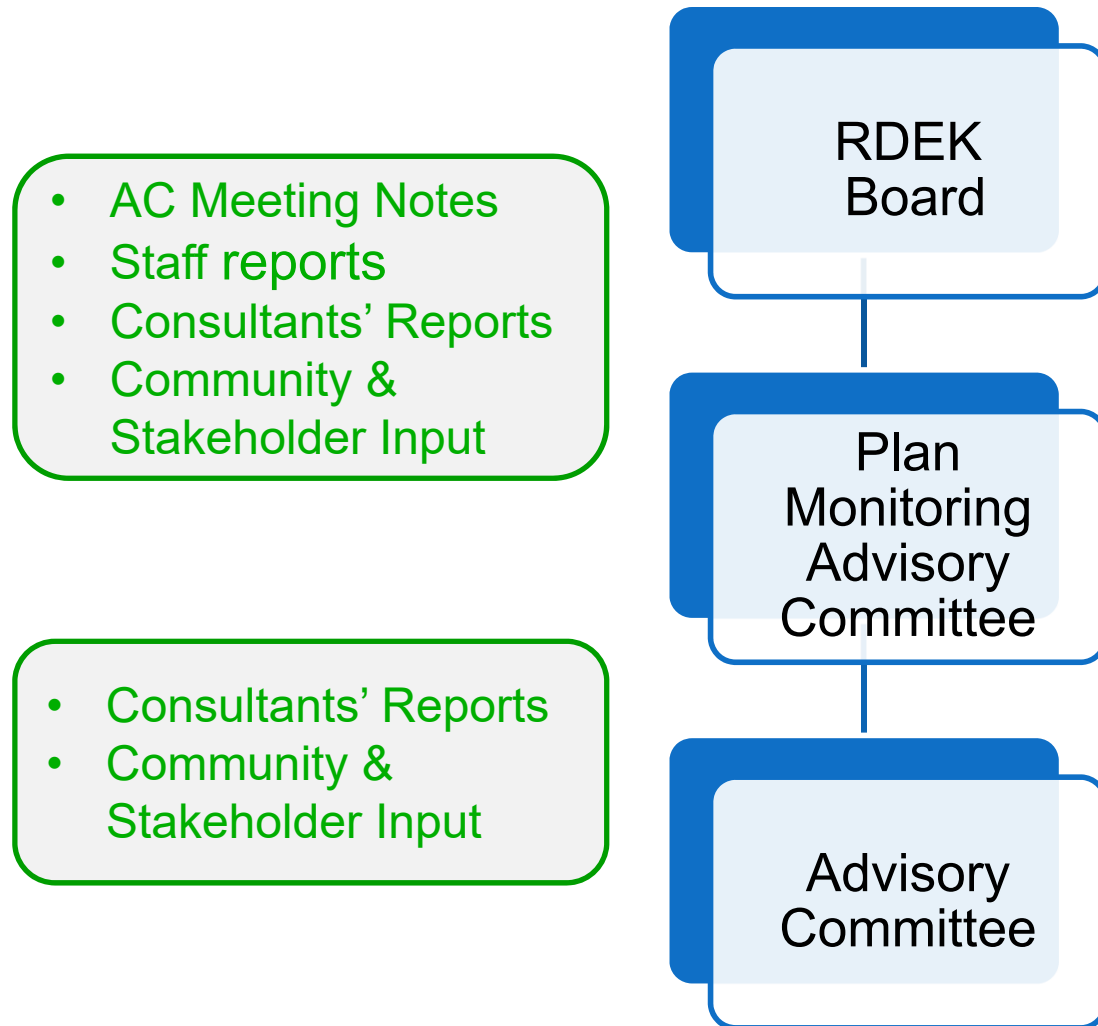




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ADVISORY COMMITTEE ROLES AND RESPONSIBILITY

Reporting Structure



Advisory Committee Meetings

Meeting 2

Waste reduction and diversion

Meeting 3

Policies and bylaws

Meeting 4

Residual waste management

Meeting 5

Financial Implications

Meeting 6

Draft Plan
Review

Community
consultation
program

Meeting 7

Consultation
results

Final Plan

Terms of Reference

Questions? Comments?





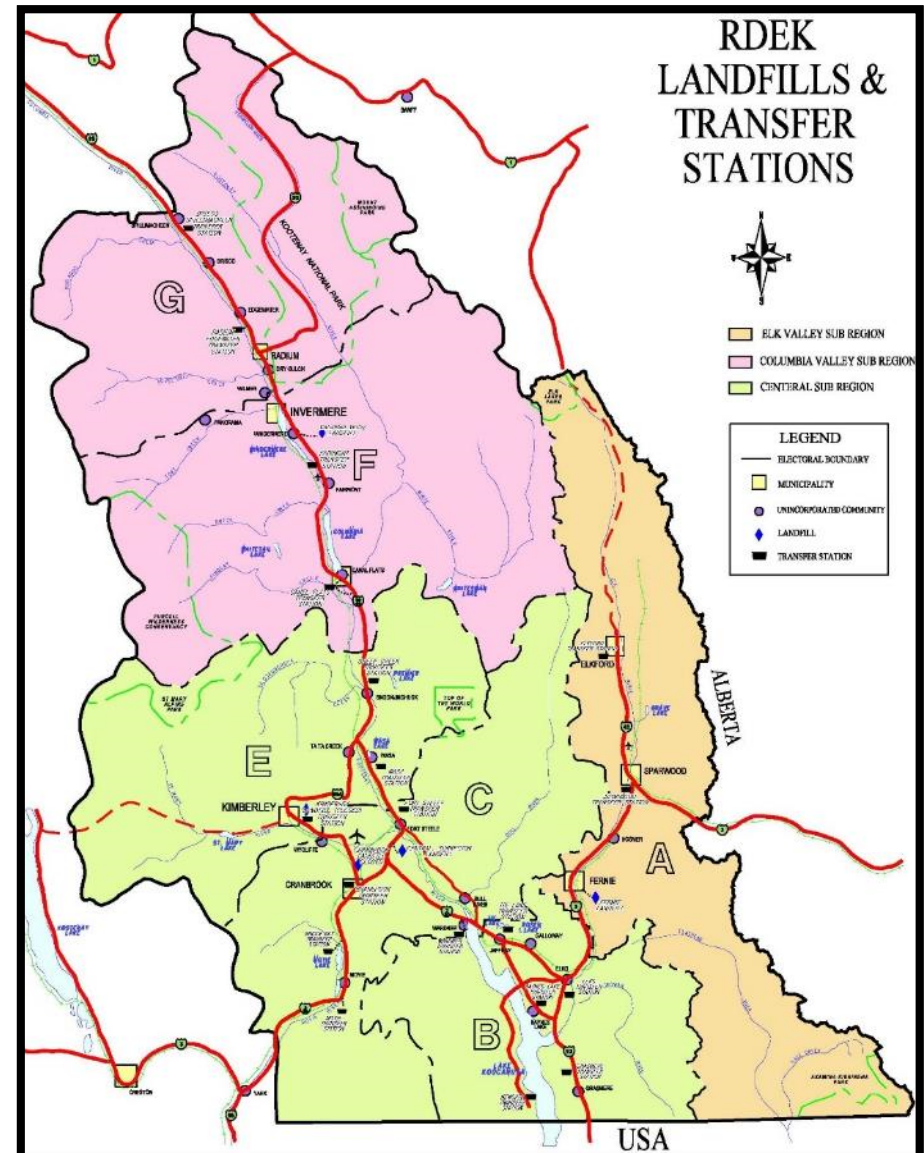
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EXISTING SOLID WASTE SYSTEM REVIEW OF PHASE 1 REPORT

Regional District of East Kootenay

Statistics

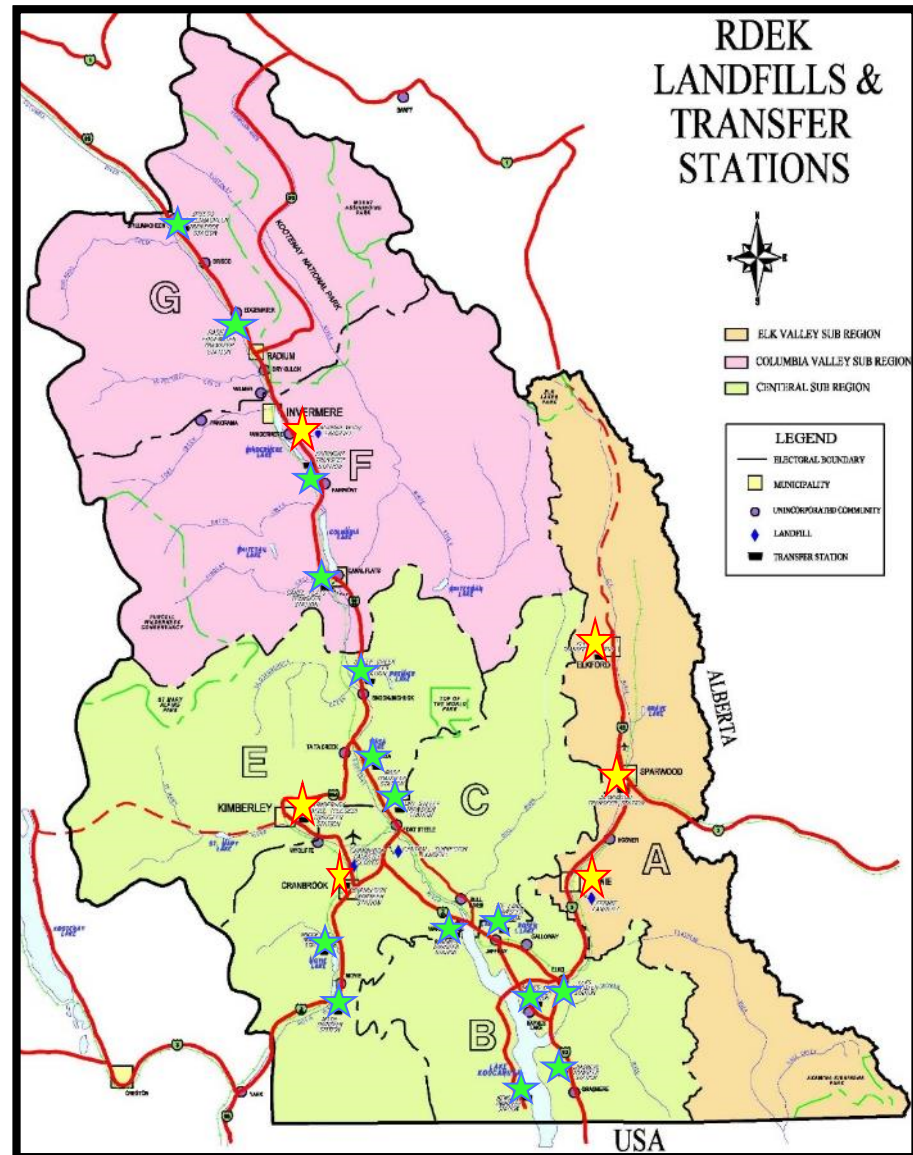
- 27,500 km²
- pop'n 60,400 (2016 Census)
 - 73% Urban
 - 26% Rural
 - 1% First Nations Land
- 8 municipalities
- 6 electoral areas



Current Solid Waste System

Disposal Facilities

- **Elk Valley**
 - 3 Full-Service Transfer Stations (attended)
 - 1 Landfill
- **Central**
 - 2 Full-Service Transfer Stations
 - 11 Rural Transfer Stations (2 Marshalling areas)
 - 1 Landfill
- **Columbia Valley**
 - 4 Rural Transfer Stations (1 Marshalling area)
 - 1 Landfill





Current Solid Waste System

Subregional Landfills (3)

- **Sparwood Landfill**
 - Demolition Waste Only
 - 600 MT per year
 - 10 Years Lifespan (or more)
- **Central Subregion Landfill**
 - 32,000 MT per year
 - 75 Years Lifespan Remaining
- **Columbia Valley Landfill**
 - 10,500 MT per year
 - 35 - 40 Years Lifespan Remaining





Regional District of East Kootenay

Attended Transfer Stations

- Open 6 or 7 days/week
- Supervised disposal and diversion
- Services include:
 - Yellow Bin Recycling
 - Yard waste / wood waste
 - Metal
 - Large Appliances
 - Tires
 - Share shed



Regional District of East Kootenay

Unattended (Rural) Transfer stations

- Open 24/7
- Garbage bin + Yellow Bin
 - 3 Marshalling Areas with Wood & Metal diversion
- Less services than Urban Sites



Recycling & Reuse

- Yellow-bin program
- Marshalling Areas
- Share Shed's
 - **Located at Attended Transfer stations**
- Canadian Diabetes Association Clothing Donation Bins
- Mattress Recycling Pilot Program
- Household Hazardous Waste Round-up
- Batteries
- Extended Producer Responsibility
 - **Ex: Lights, smoke alarms, used oil, small appliances etc**
- Education



Organics Diversion

- Food waste:
 - Backyard Composters (Black Bins)
 - RDEK Pilot Program 2016
- Wood Waste / Yard Waste:
 - Diverted, chipped and used in cogeneration at Skookumchuck Pulp Mill
 - Wood waste reuse program (Kimberley Transfer Station)
 - Open Burning at Marshalling Areas
 - Contamination issues





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QUANTIFYING THE SYSTEM

Definitions

- **Waste Generation Rate:**
 - Includes recycling, diversion and disposal
- **Waste Disposal Rate:**
 - Includes waste buried at the landfill; does not include waste that is reused or recycled.





Diversion is
between
28% - 54%

2016 Disposal Data by Subregion			
Material	Columbia Valley	Central	Elk Valley
WASTE DISPOSED (MT)			
Const. Demo	1,276	768	245
Asphalt	170	-	54
Concrete	-	-	61
Animal Carcass	-	19	
Glass	10	140	
Septic Sludge	0	65	1
MSW	9,047	22,896	8,354
Total Disposed	10,503	23,888	8,715
WASTE DIVERTED (MT)			
Roofing / Shingles	354	925	34
Land Clearing Waste	242	503	26
Green Woodwaste	114	220	-
Yard & Garden Waste	232	3,798	257
Clean Wood Waste	812	2,796	2,219
Scrap metal	179	895	751
White Goods	-	-	-
Contam Soil	12	506	19
Soil or Dirt	83	763	5,281
Gravel	8	5	
Asphalt	-	77	
Concrete	737	281	
Recycling	1,325	3,842	1,442
Total Diverted	4,097	14,610	10,029
Total Waste Generated	14,600	38,499	18,744



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Per Capita Disposal (kg per year)

Waste Disposal Data by Subregion					
Subregion	Population	Total Waste Generated (MT)	Total Diverted (MT)	Total Disposed (MT)	Disposal Rate (kg per capita)
Columbia Valley	9,482	14,600	4,097	10,503	1,108
Central	35,431	38,499	14,610	23,888	674
Elk Valley	15,526	18,744	10,029	8,715	561
RDEK Total	60,439	71,843	28,737	43,106	713

****Based on 2016 Census Population****

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****Based on 2016 Census Population****

BC Waste Disposal Calculator Estimates the Waste Disposal Rate for the RDEK is closer **561 kg** per capita; this is based on a Regional Population of 74,975 to account for Seasonal population increases.

Provincial Average: 472 kg per capita in 2016
Provincial Goal: 350 kg per capita by 2020

New Programs needed to meet provincial goals



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FINANCES

Solid Waste Management Costs in the RDEK

Five Year Financial Plan	Columbia Valley		Central Subregion		Elk Valley	
Revenue	2016 Actual	% of Total	2016 Actual	% of Total	2016 Actual	% of Total
Requisition	\$ 1,020,484	61%	\$ 3,663,193	74%	\$ 2,105,433	68%
Payments in lieu of Taxes	\$ 3,572	0%	\$ 9,144	0%	\$ 22,481	1%
Local Government Grants	\$ 79,615	5%	\$ -	0%	\$ -	0%
Fees and Charges	\$ 344,014	21%	\$ 461,825	9%	\$ 298,415	10%
Interest	\$ 1,000	0%	\$ 6,000	0%	\$ -	0%
Prior Period Surplus	\$ 222,061	13%	\$ 806,956	16%	\$ 647,495	21%
Total Revenue	\$ 1,670,746		\$ 4,947,118		\$ 3,073,824	
Exepnditures						
Legislative	\$ 267	0%	\$ -	0%	\$ -	0%
Salaries & Benefits	\$ 114,579	8%	\$ 229,154	7%	\$ 70,133	4%
Administration	\$ 45,323	3%	\$ 59,865	2%	\$ 42,791	2%
Operations & Maintenance	\$ 1,010,202	66%	\$ 2,537,913	77%	\$ 1,489,469	79%
Vehicle & Hauling	\$ 291,932	19%	\$ 400,667	12%	\$ 148,290	8%
Consulting	\$ 7,233	0%	\$ 9,051	0%	\$ 54,676	3%
Grants	\$ 30,000	2%	\$ -	0%	\$ -	0%
Telephone & Utilities	\$ 5,827	0%	\$ 17,513	1%	\$ 18,355	1%
Interest and Bank Charges	\$ 3,000	0%	\$ 20,534	1%	\$ 62,600	3%
Shared Overhead	\$ 18,517	1%	\$ 30,623	1%	\$ 9,607	1%
Total Expenditures	\$ 1,526,879		\$ 3,305,319		\$ 1,895,921	

Solid Waste Management Costs in the RDEK

Subregion	Annual Disposal Cost	Annual Diversion Cost	Annual Recycling Cost	Approximate Total Annual System Cost
Columbia Valley	\$ 798,476	\$ 363,468	\$ 249,925	\$ 1,411,869
Central	\$ 1,289,531	\$ 1,104,405	\$ 734,399	\$ 3,128,335
Elk Valley	\$ 710,338	\$ 546,785	\$ 278,920	\$ 1,536,043
RDEK Total	\$ 2,798,345.00	\$ 2,014,658.00	\$ 1,263,244.00	\$ 6,076,247.00

Based on 2016 Financial information and Tonnage

Revenue 2016:

Columbia Valley	\$1,670,746
Central	\$4,947,118
Elk Valley	\$3,073,824
Total Revenue	\$9,691,688

Expenditures 2016:

Columbia Valley	\$1,526,879
Central	\$3,305,319
Elk Valley	\$1,895,921
Total Expenditures	\$6,728,119

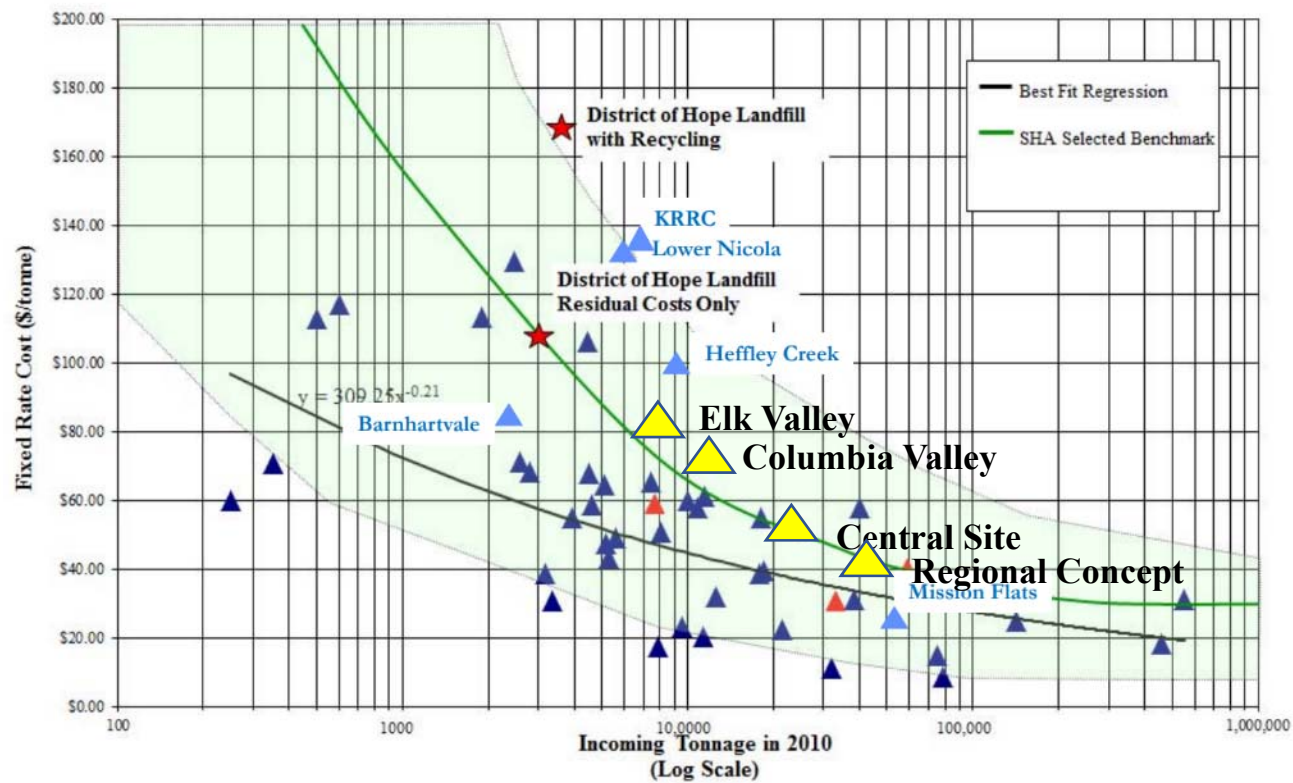
Unit Cost Summary

Subregion	Columbia Valley Subregion	Central Subregion	Elk Valley Subregion
Disposal (\$/Tonne)	\$ 76.03	\$ 53.98	\$ 81.51
Diversiion (\$/Tonne)	\$ 131.09	\$ 102.56	\$ 63.67
Recycling (\$/Tonne)	\$ 188.68	\$ 191.14	\$ 193.47
Total System	\$ 96.70	\$ 81.26	\$ 81.95

Based on 2016 Financial Information and Tonnage

Costs would likely increase if new diversion initiatives
Added to meet provincial waste disposal reduction goals

Regional Landfills - Economy of Scale

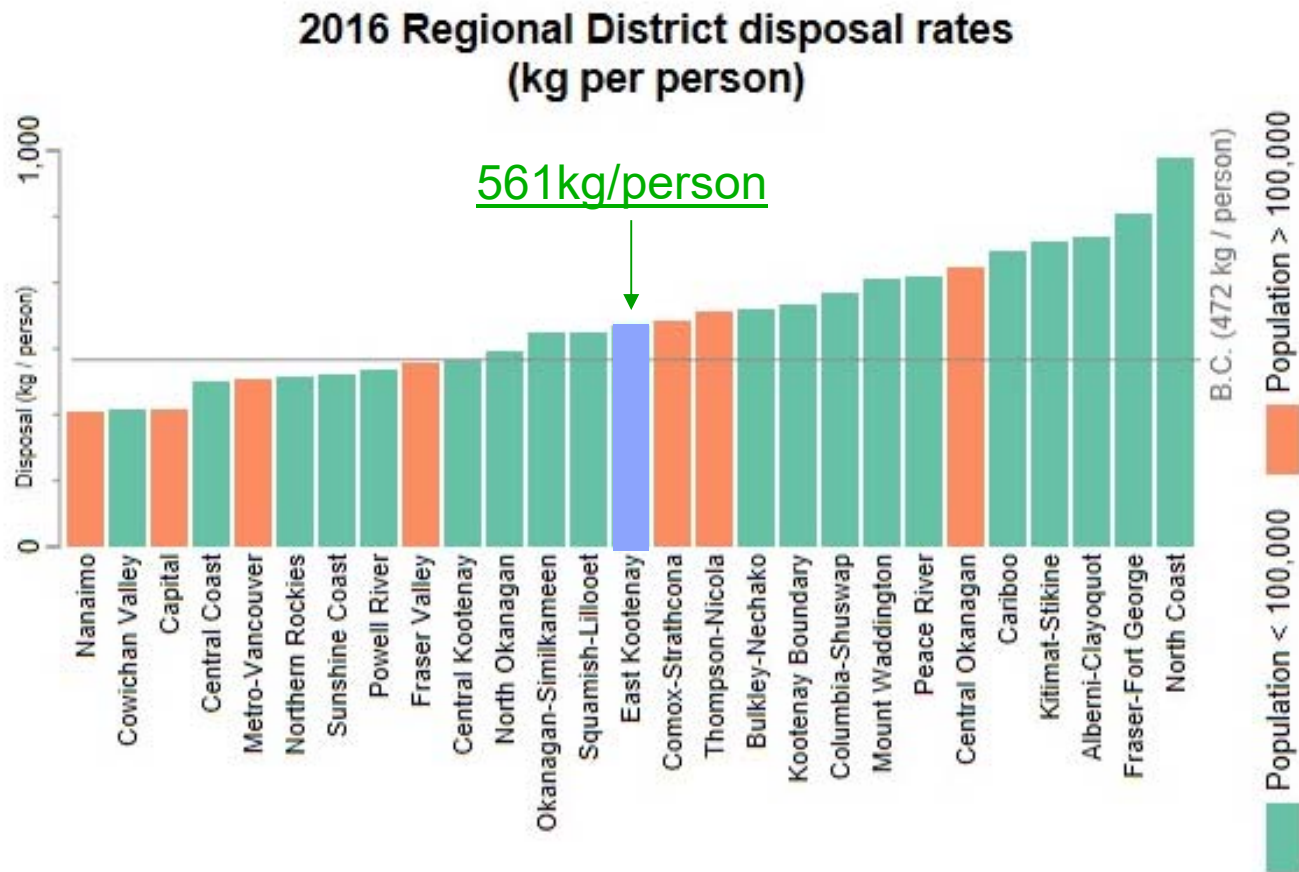




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PERFORMANCE BENCHMARKING

2016 Per Capita Disposal Rates & System Costs



2016 Per Capita Disposal Rates & System Costs

	Service Population	Density	Total MSW Tonnage	Total System Cost	Total System Cost Per Tonne MSW	Total System Cost Per Person	Landfill Cost Per Tonne Landfilled	Recycling Cost Per Tonne Recycled
	persons	persons /km ²	tonnes/yr	\$	\$/tonne	\$/person/yr	\$/tonne	\$/tonne
Regional District of Nanaimo	157,599	72	114,266	\$15,652,000	\$136.98	\$102.62	\$177.35	-
Thompson-Nicola Regional District	129,642	3	120,306	\$17,765,024	\$147.67	\$137.03	\$47.40	-
Regional District of Fraser Fort George	95,216	2	115,074	\$19,329,630	\$167.98	\$203.01	\$180.29	\$27.81
Peace River Regional District	66,504	1	62,903	\$9,023,743	\$192.67	\$135.69	\$59.25	\$306.60
Regional District of East Kootenay	60,439	2	71,843	\$6,076,247	\$84.58	\$100.54	\$64.92	\$114.07
Columbia Shuswap Regional District	51,572	2	57,876	\$4,500,000	\$92.75	\$86.89	\$65.15	\$76.39
Regional District of Kitimat-Stikine	20,120	0	20,120	\$3,077,696	\$152.97	\$152.97	\$42.99	no data
District of Squamish	19,067	182	32,908	\$2,992,368	\$90.93	\$156.94	\$97.17	\$72 - \$130
Regional District of Mount Waddington	11,500	1	11,265	\$1,002,881	\$89.03	\$87.21	\$71.26	\$252.33



Issues and Opportunities

- Unattended transfer stations make it impossible to enforce disposal bans and difficult to encourage separation of divertible materials;
 - Contamination challenges with wood waste and scrap metal
- Alternative form of wood waste diversion may be required if open burning is discontinued;
- Currently little or no incentive to reduce the amount of waste thrown away;
- Tax based fee structure does not incentivize waste reduction;
- RDEK is paying for handling of materials that are covered through Extended Producer Responsibility Programs;
- Public awareness and education could be improved.



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IMPLEMENTATION STATUS OF THE 2003 SWMP



Key Goals of 2003 Plan

- ✓ To minimize, as much as possible, the generation of wastes.
- ✓ To work towards reducing the quantity of waste being disposed of by 30%
- ✓ To manage waste based on the 5 R hierarchy.
- ✓ To manage waste economically and efficiently.
- ✓ To educate citizens and businesses on how to reduce wastes.
- ✓ To strive for annual decreases in per capita waste generation.
- ✓ To provide access to environmentally sound waste diversion and disposal facilities throughout the Regional District.
- ✓ To develop and implement a user-pay system that will encourage people to participate in waste reduction efforts and gradually shift all or a portion of the cost of residual management from the tax base to the user pay system.
- ✓ To co-ordinate and co-operate with neighboring subregions and other Regional Districts on solid waste management.
- ✓ To develop and promote partnerships with senior levels of government by acknowledging a shared responsibility in the protection and enhancement of the environment.

RDEK SWMP 2003 Action Items	Implementation Status
REDUCE	
Public education for all age groups (public and private sectors)	Complete
Prepare a self-audit manual for business.	Incomplete
RDEK & member municipalities will implement waste reduction in daily operations.	Complete
RDEK will administer all common regional programs. Member municipalities will be responsible for cost recovery of their own programs.	Complete
REUSE	
Chip and compost wood waste.	Complete
Consider developing central composting facilities at all landfills. Encourage backyard composting & Develop trial composting programs.	Complete
Designate storage areas at residual facilities for separation of reusable materials.	Complete
Promote and encourage the use of existing programs through the Recycling Council of BC.	Complete

RDEK SWMP 2003 Action Items	Implementation Status
RECYCLE	
Columbia Valley & Central Subregion	
Offer recycling through drop boxes and consider curbside recycling collection	Complete
Provide recycling containers to businesses and institutions	Complete
Promote recycling through education, waste audits, and by implementing disposal bans on products which are recyclable.	Partially Complete
Provide space at its residual management for scrap metal and white goods.	Complete
Ensure that appliances containing Ozone Depleting Substances will be serviced by a qualified person prior to recycling.	Complete

RDEK SWMP 2003 Action Items	Implementation Status
RECYCLE	
Elk Valley Sub Region	
Recycling programs will continue to be operated by private contractors in the districts of Sparwood and Elkford, the City of Fernie, and electoral area A.	Complete
Commercial recycling will continue to provided as long it is required.	Complete
The RDEK will distribute existing educational and promotional material available from the Provincial Government and Federal Government to encourage participation in the recycling program.	Complete
A directory of recycling services will be prepared co-operatively between the subregions.	Complete
RECOVER	
RDEK staff will work with proponents to assist in the development of cogeneration proposals as necessary. (Wood waste)	Complete

RDEK SWMP 2003 Action Items	Implementation Status
RESIDUALS MANAGEMENT	
Central Subregion	
Designated wood waste will be trench burned at the landfill as a means of disposal as a last resort if other options are not viable.	No wood waste is burned at Central
Central Subregion has developed marshalling areas to serve Electoral areas B and E.	Complete
Clean wood waste will be open burned at approved times at Tie Lake and Wasa transfer stations.	Complete
Columbia Valley Subregion	
RDEK will undertake a landfill development process to maximize the life of the existing CVLF.	Complete
The existing transfer stations will continue in operation. The Columbia Valley Subregion will construct additional transfer station if required.	Complete/On-going
Designated clean wood wastes will be open burned on a periodic basis at approved times at the Canal Flats transfer station.	Complete

RDEK SWMP 2003 Action Items	Implementation Status
RESIDUALS MANAGEMENT	
Elk Valley Subregion	
The Elk Valley subregion will develop and operate transfer station in the district of Elkford, District of Sparwood, and in or near the City of Fernie.	Complete
City of Fernie and District of Elkford Landfills are to be closed to the public.	Complete
The Elk Valley Subregion shall develop a marshalling area at the Sparwood Transfer station. Designated clean wood waste will be open burned on a periodic basis.	Complete
Prepare closure plans for all landfills that will cease to operate and submit for approval.	Complete
Encourage the use of existing industry stewardship programs.	Complete
Investigate on a region wide basis alternatives for accepting and treating septic tank sludge and holding tank effluent from facilities approved and inspected by the Ministry of Water Land and Air Protection, and local health societies.	Covered by Different Plan

Septic Sludge Dewatering Facility - Forceman





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KEY CONSIDERATIONS FOR THIS PLAN UPDATE

Key Drivers

Increase Service Levels

- Explore opportunities to **increase service** at small transfer stations
 - Expand diversion programs
- **Consider providing supervision** at unattended transfer stations to **encourage diversion** of recyclable materials
 - **Transfer responsibility for PPP to Recycle BC**



Key Drivers

Reduce Disposal

- Explore opportunities to **provide incentive** for waste reduction (user fee)
- Explore opportunities for organic waste diversion (composting)
 - **Centralized Composting + Backyard Composting**



RDKS Composting Facility – Forceman Ridge



Key Drivers

Increase Efficiency

- Explore Opportunities to enhance the efficiency of the residual waste management system
- Explore addition of full-service transfer station in the Columbia Valley
 - Invermere or Radium Hot Springs



Invermere – Athalmer Site



Radium Site



Key Drivers

Financial sustainability

- Maintaining system cost efficiency
- Avoiding the “death spiral”
 - Providing “free” recycling services is a cost to the system
- Obtaining appropriate levels of funding from product stewardship organizations to provide collection services on their behalf
 - Many programs don’t cover RDEK’s cost to provide the collection service
 - RecycleBC funding could reduce RDEK’s cost to provide residential recycling services of “Yellow-Bin” materials
 - Depot collection system would have to change significantly





Key Drivers

- **Roundtable:**
 - What issues, opportunities or subjects do you think are critical to consider during this planning process?



Exercise

- **Of the issues and opportunities posted on the wall:**
 - Put a “sticky” the ones that you think are the most important / highest priority

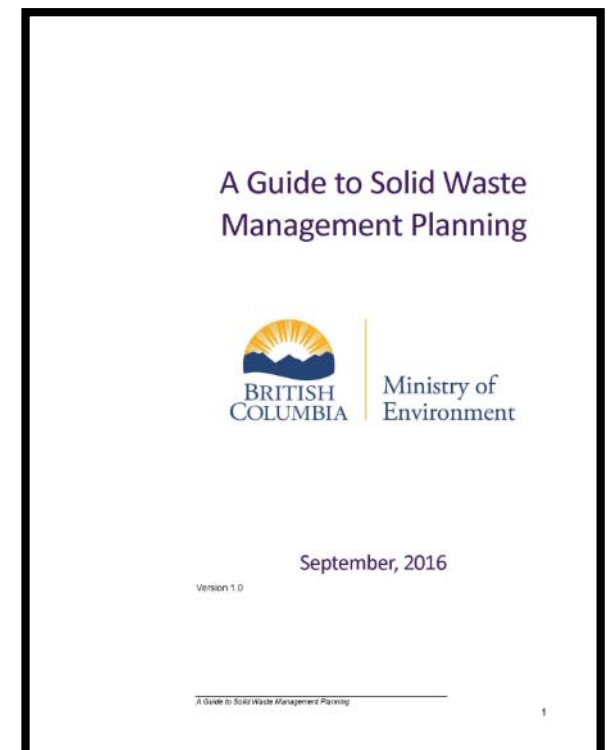


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GUIDING PRINCIPLES

Guiding Principles

- The Province has provided 8 guiding principles for regional districts to follow in developing their solid waste management plan.
- Can add locally-relevant guiding principles
- Can revise/edit – with appropriate rationale



Guiding Principle 1

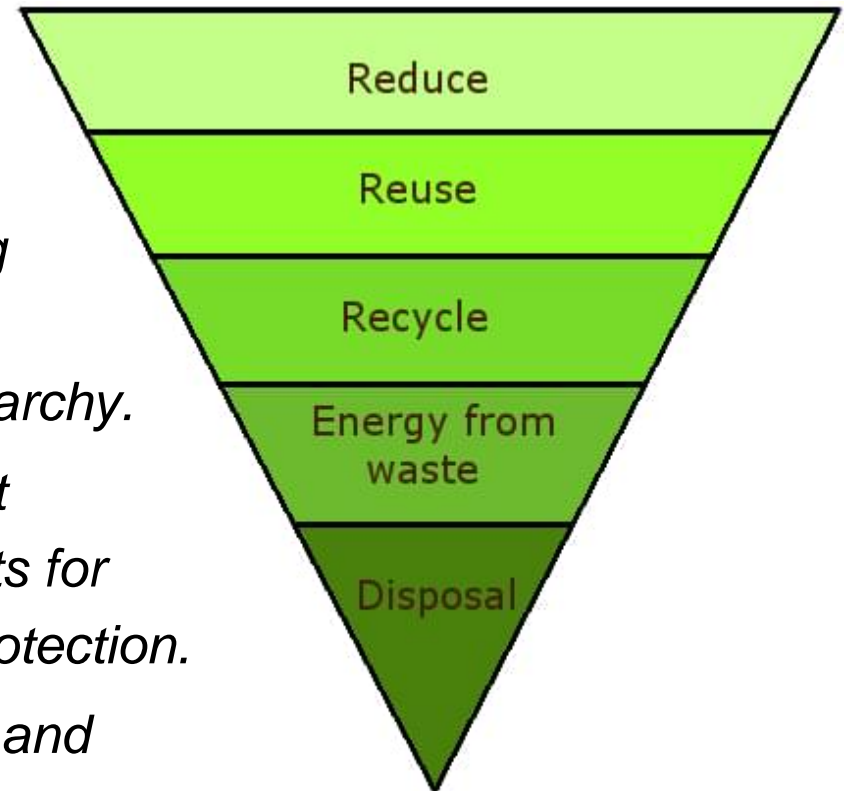
1. Promote zero waste approaches and support a circular economy

- *Encourage a shift in thinking from waste as a residual requiring disposal, to waste as a resource that can be utilized in closed-loop systems.*
- *Zero waste approaches aim to minimize waste generation and enable the sustainable use and reuse of products and materials.*
- *At the local level, look to remove barriers or encourage opportunities that will contribute to towards the establishment of a circular economy.*

Guiding Principle 2

2. Promote the first 3 Rs (Reduce, Reuse and Recycle)

- *Elevate the importance of waste prevention by prioritizing programming and provision of services for the first 3 Rs in the 5 R pollution prevention hierarchy.*
- *Implement programs and services that consider provincial and regional targets for waste reduction and environmental protection.*
- *Encourage investments in technology and infrastructure, and ensure they occur as high up on the hierarchy as possible.*



Guiding Principle 3

3. Maximize beneficial use of waste materials and manage residuals appropriately

- *Technology, best practices and infrastructure investments should continue to develop to recover any remaining materials and energy from the waste stream, and to manage residuals for disposal.*

Guiding Principle 4

4. Support polluter and user-pay approaches and manage incentives to maximize behaviour outcomes

- *Producer and user responsibility for the management of products can be supported through the provision of market-based incentives, disposal restrictions on industry-stewarded products, zoning to support collection facilities, and support for reuse and remanufacturing businesses.*
- *Education and behaviour change strategies aimed at consumers and businesses will help foster further waste reduction, reuse and recycling. For example, user fees can be managed as incentives to increase waste reduction and diversion.*

Guiding Principle 5

5. Prevent organics and recyclables from going into the garbage wherever practical

- *Maintaining a system to prevent organics and recyclables from going into the garbage will provide clean feedstock of greater economic value as well as a potential end product use to the recycling industry, while reinforcing behaviour to reduce, reuse and recycle.*
- *Innovation in separation solutions, establishment and enforcement of disposal restrictions or other creative means will influence this approach.*

Guiding Principle 6

6. Collaborate with other regional districts wherever practical

- *Collaboration on many aspects of solid waste management (e.g., to access facilities and markets, share campaigns and programs) will support the most efficient and effective overall municipal solid waste system.*

Guiding Principle 7

7. Develop collaborative partnerships with interested parties to achieve regional targets set in plans

- *Strengthen partnerships with interested parties to achieve regional targets. All waste and recycling sector service providers, associations, and environmental organizations, product stewardship producers and agencies, and waste generators are key interested parties in achieving these targets.*
- *Cooperative efforts will optimize successful outcomes. Encourage a marketplace that will complement stewardship programs and drive private sector innovation and investment towards achievement of targets.*

Guiding Principle 8

8. Level the playing field within regions for private and public solid waste for solid waste management facilities

- *Solid waste management facilities within a given region should be subject to similar requirements.*
- *A consistent set of criteria should be used to evaluate the waste management solutions proposed by private sector and by a regional district or municipality.*



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NEXT STEPS / WRAP UP

Next Steps / Wrap Up

- **Community Survey**
- **Next AC meeting:**
 - Results of the community survey
 - Waste Composition in the RDEK
 - Waste reduction and diversion opportunities
 - RSWMP Goals and Targets

THANK YOU!



***“Engineering Better Solid
Waste Management Systems
Today for a Cleaner
Tomorrow”***

