



Regional Solid Waste Management Plan Review

April 2nd 2019

Advisory Committee Meeting #5

Dr. Tony Sperling & Mairi Dalglish

Agenda

Welcome & Introductions

Key Drivers & Planning Process

Financial Implications

1. Waste Reduction & Recycling
2. Organics Diversion
3. Residual Waste Management
4. Policies & Bylaws
5. Promotion & Education
6. Plan Monitoring & Measurement

Next Steps & Wrap-up



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INTRODUCTIONS



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PLANNING PROCESS

RDEK SWMP UPDATE

Phase 1

1. Assess existing system
Issues & Opportunities

Establish Technical
Advisory Committee

Phase 2

2. Waste Diversion

3. Residual Waste
Management

4. Policies & Bylaws

5. Financing

Putting it All Together

Phase 3

Community &
stakeholder
consultation

Finalize plan



Key Drivers

- Expand Diversion at small transfer stations.
- Consider adding supervision at transfers stations.
- Consider adding a full service transfer station in Invermere or Radium
- Incentivize waste reduction (consider User-fees).
- Explore opportunities to divert organic waste.
- Maintain financial sustainability.





Key Drivers

What we heard throughout the process so far:

- Make Recycling Easy
- Focus on Reduction
- Explore Organics Diversion
- Explore curbside collection of garbage, recycling & organics
- Provide more education on services available
- Prevent illegal dumping
- Ensure ease of use
- Seasonal users are important part of system
- Keep System Costs Reasonable

Support of Key Drivers

- **Expand Reduction & Reuse**
 - 90% Support or Strongly Support
- **Expand Recycling Access**
 - 92% Support or Strongly Support
- **Composting for Yard Waste**
 - 82% Support or Strongly Support
- **Composting for Food Waste**
 - 78% Support or Strongly Support



Support of Key Drivers

- **Increase Service but Regulate Hours (Rural sites)**

- 64% Support or Strongly Support
- 20% Neutral
- 16% Oppose/Strongly Oppose

- **Close Small Rural Sites**

- 8% Support or Strongly Support
- 27% Neutral
- 65% Oppose or Strongly Oppose

- **Introduce User-Pay**

- 45% Support or Strongly Support
- 9% neutral
- 46% Oppose or Strongly Oppose





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GUIDING PRINCIPLES

BC's Guiding Principles

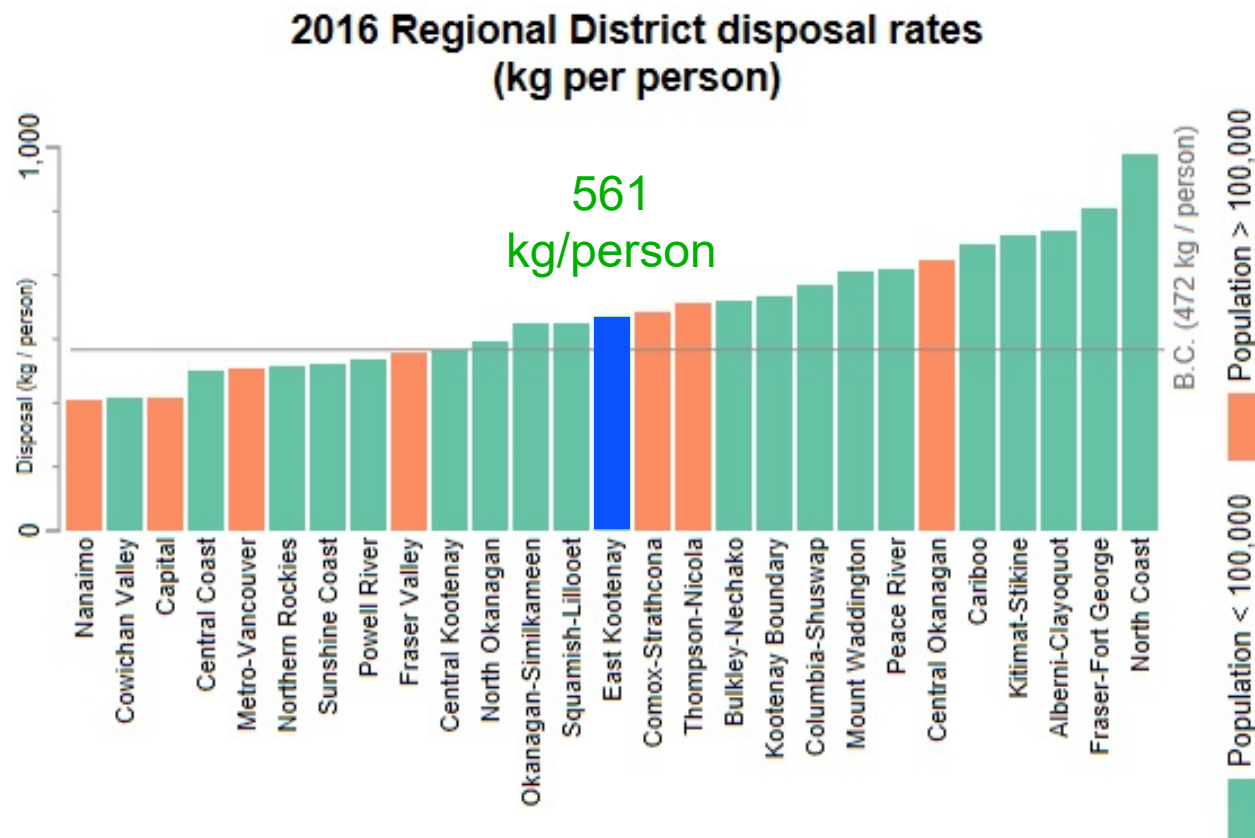
- **1. Promote zero waste approaches and support a circular economy**
- **2. Promote the first 3 Rs (Reduce, Reuse and Recycle)**
- **3. Maximize beneficial use of waste materials and manage residuals appropriately**
- **4. Support polluter and user-pay approaches and manage incentives to maximize behaviour outcomes**

BC's Guiding Principles

- **5. Prevent organics and recyclables from going into the garbage wherever practical**
- **6. Collaborate with other regional districts wherever practical**
- **7. Develop collaborative partnerships with interested parties to achieve regional targets set in plans**
- **8. Structure the system so that private and public solid waste facilities compete on a level playing field.**

Provincial Targets

- British Columbia has set provincial waste disposal targets with a long-term goal of lowering the municipal solid waste disposal rate to 350 kg per person by 2020





Questions & Comments?



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FINANCIAL IMPLICATIONS

Waste Reduction & Recycling

- **Encourage initiatives that support reuse and recycling in the community**
 - Example: Columbia Valley Maker Space Society's Repair Café where attendees learn how to repair household items
 - No new cost



Columbia Valley Repair Café

(www.cvmakerspace.ca/2017/11/21/repair-cafe-is-back/)

Waste Reduction & Recycling

- **Expand EPR Product Recycling at major transfer stations**
 - Offer increased recycling opportunities at transfer stations for lights, paint, electronics etc.
 - Build relationships with stewardship agencies
- Estimated Capital Cost: \$50,000 – 65,000 per site
- Estimated Annual Operating: \$50,000 per site
- Estimated Revenue / Compensation: \$15,000 per year



Waste Reduction & Recycling

- **Expand diversion opportunities for wood waste, yard waste, scrap metal etc. throughout the region**
 - Rural transfer stations do not provide many opportunities for diversion
 - Explore opportunities to divert wood waste, yard waste and scrap metal at small transfer stations
 - Capital Costs: \$ 140,000 to \$ 270,000 per site
 - Operating Costs: \$ 53,000 to \$ 292,000 per site



Waste Reduction & Recycling

- **Ensure consistent signage is used throughout the region to educate users on recycling**
 - Project Cost: \$ 10,000 to develop materials



Waste Reduction & Recycling

- **Complete region-wide strategy for recycling access**
 - Introduction of RecycleBC may shift residential recycling from yellow-bin program to centralized recycling depots. RDEK should look to develop strategy for providing access to mixed recycling throughout the Region.
 - Project Cost: \$35,000 (Consultant Fees)



Waste Reduction & Recycling

- **Establish Bylaw that Mandates Recycling Programs in Commercial Sector**
 - Mandate that all businesses generating recyclable materials have an in-house recycling program, either through a recycling service or self-haul to the depot.
 - Project Cost: \$ 10,000





Questions & Comments?



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ORGANICS DIVERSION

Organics Diversion

- Based on 2018 Waste Composition Study, Compostable Organics make up 30% of the RDEK waste stream
 - **11% Kitchen Waste; 9% Yard and Garden; 7% Backyard compostable food; 2% Clean wood; 1% Other.**



Organics Diversion

- **Develop food-waste reduction education program**
 - Love Food Hate Waste Canada estimates 63% of food thrown away by Canadians could have been eaten
 - 140 kg food waste per household per year
 - Project Cost: \$ 15,000 to develop materials
 - Annual Costs: \$ 2,500 for workshops

Organics Diversion

- **Encourage community initiatives that focus on food waste reduction**
 - Continue to encourage community initiatives that focus on food waste reduction; such as: community gardens, gleaning, xeriscaping etc.
 - No New Costs



Rotary Gardens in Radium Hot Springs

http://kootenaybiz.com/greenscene/article/community_gardens_are_greening_up_the_kootenays

Organics Diversion

- **Continue to promote and provide backyard composting education**

- Continue to provide composting education & sell backyard composters to residents



Students at EK Science Fair learn about Composting from Wildsight

(<https://www.e-know.ca/regions/cranbrook/compost-wildsight-teaches-cranbrook-students/>)

- No new costs are anticipated in association with education programs.
- Composter “Blow-out” Sales @ \$ 3,000 per subregion

Organics Diversion

- **Explore feasibility of Centralized Compost Facility**
 - RDEK working towards BC Organics Infrastructure Program application & is considering 3 subregional facilities (CV, CEN, EV)
 - Exact costs for the proposed facilities are unknown at this time
 - Estimated Capital Costs: \$150,000 to \$200,000 per site
 - Estimated Annual Operating Costs: \$ 150,000 per site

Organics Diversion

- **Provide additional capacity for yard waste diversion in the RDEK**
 - Yard and garden waste can currently be diverted at attended transfer stations in the RDEK
 - **2018 Waste Composition Study found that Yard and Garden waste made up 10-11% of waste stream in Central and Columbia Valley & less than 2% of waste in the Elk Valley.**
 - RDEK should explore ways to increase access to yard & garden waste diversion, such as through additional attended transfer stations or specific yard waste drop-offs



Organics Diversion

- **Continue to Divert Wood Waste From Landfill and expand where possible**
 - Expansion of wood waste diversion could result in additional operating costs of \$25 - \$35 per metric tonne of wood waste.





Questions & Comments?



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RESIDUAL WASTE MANAGEMENT

Residual Waste Management

- **Complete Detailed Rural Transfer Station Optimization Study for CV and CEN**
 - This could include identifying service gaps in rural regions, establishing criteria for travel distances between transfer stations and communities, and considering seasonal or full-time staffing of sites & upgrades.
 - Project Cost: \$70,000
- **Public & Stakeholder Consultation**
 - Engagement with potentially affected residents and communities
 - Project Cost: \$40,000

Residual Waste Management

- **Consider Feasibility of Implementing Transfer Station Changes and Upgrades**
 - Capital Costs: \$ 140,000 to \$ 2,460,000 per site
 - Annual Operating Costs: \$ 53,000 to \$ 292,000 per site



Residual Waste Management

- **Conceptual Scenarios for Budget Purposes**

(as per Transfer Station & Residuals Management Report):

- Columbia Valley System Changes:
 - 1 new full-service site, upgrades to Canal Flats, Continued operation of CVLF
 - Capital Costs: \$2,640,000
 - Annual Operating Costs: \$300,000 (additional to current)
- Central Subregion System Changes:
 - Consolidate Rural System to Four (4) Sites
 - Capital Costs: \$1,000,000
 - Annual Operating Costs: \$500,000 (additional to current)



Questions & Comments?



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POLICIES & BYLAWS

Policies & Bylaws

- **Review user-fee structure and update to encourage waste diversion**
 - User-fees can incentivize waste reduction, by supporting the Polluter Pay System.
 - System would not likely be fully funded by user-fees; but would be split between user-fees and tax requisition
 - Project Cost: \$20,000 for Consultant Review
 - Follow-up Cost \$10,000 after 5-years

Current System Funding (2018 Budget)

	Columbia Valley	Central	Elk Valley	Total
Revenue				
Tax Requisition	1,131,833	3,605,154	2,052,613	6,789,600
Fees & Charges	236,000	689,500	65,000	990,500
Transfers From Reserves	255,000			255,000
Other/Prior Year Surplus	288,575	1,048,841	954,017	2,291,433
	1,911,408	5,343,495	3,071,630	10,326,533
Expenditures				
Operating Expenditures	1,860,088	4,205,654	2,073,441	8,139,183
Debt Principal Payments			614,558	614,558
Capital	15,000	250,000	15,000	280,000
Transfer to Reserves	10,000	818,000	294,614	1,122,614
	1,885,088	5,273,654	2,997,613	10,156,355
Year End Surplus	26,320	69,841	74,017	170,178

Policies & Bylaws

- **Develop region-wide illegal dumping prevention strategy & allocate clean-up funds**
 - Develop a region-wide illegal dumping prevention strategy in advance of any changes to the rural transfer station network or the user-fee structure.
 - This strategy should include collaborating with interested stakeholders such as First Nations, naturalist groups, back-country user-groups, fish and game clubs etc.
 - Strategy Development: \$ 15,000
 - Project Costs: \$ 20,000 per year to support clean-up efforts

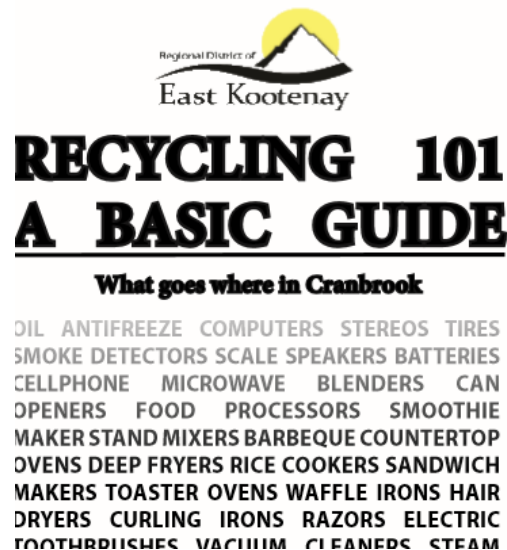


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PROMOTION & EDUCATION

Promotion & Education

- **Increase P&E for EPR Programs**
 - Raise awareness of proper end-of life management for materials managed by these stewardship agencies, and, the locations of EPR drop-off's available to RDEK residents.
 - **Project Costs: \$ 5,000 to update materials**



Promotion & Education

- **Increase P&E for Organics Diversion**
 - This includes continuing to promote and provide education on backyard composting as well as developing a food-waste reduction education program.
 - **Project Costs: \$45,000 split over three years to develop and distribute materials as well as advertise.**



Promotion & Education

- **Promote HHW Drop-off in Cranbrook**
 - Increase promotion efforts for the year-round HHW drop-off in Cranbrook
 - **Communication & Outreach: \$ 5,000**





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PLAN MONITORING & MEASUREMENT

Plan Monitoring & Measurement

- **Establish Plan Monitoring Advisory Committee**
- **Report annually to the BC Waste Disposal Calculator**
- **Five-Year Plan Effectiveness Review**
- **Waste Composition Study Follow-up**
 - Project Cost: \$ 20,000 for Plan Effectiveness Review
\$ 40,000 for follow-up waste composition study



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STAFFING IMPLICATIONS

Staffing Implications

- **Additional Staff Resources Required to:**
 - Liaise with stewardship agencies
 - Manage any solid waste policies & bylaws
 - Provide additional support for education programs
 - 0.25 – 1.25 additional full time equivalent staff required
 - Average 1 additional staff person per year



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FINANCIAL SUMMARY

Financial Summary (New Proposed Expenditures)

FINANCIAL IMPLICATIONS	2020	2021	2022	2023	2024	2025	2026...*
Waste Reduction & Recycling	-	\$ 35,000	\$ 10,000	\$ 10,000	-	-	\$ 2,500
Organics Diversion	\$ 9,000	\$ 615,000	\$ 452,500	\$ 452,500	\$ 452,500	\$ 452,500	\$ 452,500
Residual Waste Management	-	-	-	\$ 90,000	\$ 3,660,000	\$ 800,000	\$ 800,000
Policies & Bylaws	-	-	-	\$ 15,000	\$ 40,000	\$ 20,000	\$ 20,000
Promotion and Education	\$ 10,000	-	\$ 25,000	\$ 10,000	\$ 10,000	\$ 5,000	-
Plan Monitoring and Measurement	-	-	-	-	-	\$ 20,000	-
New Staffing Costs	\$ 22,500	\$ 45,000	\$ 45,000	\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500
TOTAL including Staffing (Annual):	\$ 41,500	\$ 695,000	\$ 532,500	\$ 690,000	\$ 4,275,000	\$1,410,000	\$ 1,387,500
Average Annual Expenditure:							\$ 1,323,650
Total 10 year Expenditure:							\$ 13,236,500

* Table 1 (Report) shows full 10 year summary

Financial Summary of Proposed Strategies

- **Additional Annual Expenditure (based on proposed):**
 - \$ 41,500 to \$ 4,275,000
 - Average: \$ 1,323,650
 - Total: \$ 13,236,500
- **Estimated Additional Cost per Person per Year:**
 - \$ 0.55 to \$ 54.79
 - Average: \$ 16.75

RDEK Financial Plan

Existing Expenditures (2020-2023 Financial Plan) (March 13th 2019)	2020	2021	2022	2023	2024 (Estimated 1.5% increase)	2025 (Estimated 1.5% increase)	2026 (Estimated 1.5% increase)
Columbia Valley Subregion	\$ 1,841,833	\$ 1,872,150	\$ 1,929,240	\$ 2,019,979	\$ 2,050,279	\$ 2,081,033	\$ 2,112,248
Central Subregion	\$ 4,335,733	\$ 4,414,261	\$ 4,381,288	\$ 4,423,982	\$ 4,490,342	\$ 4,557,697	\$ 4,626,062
Elk Valley Subregion	\$ 2,267,826	\$ 2,275,841	\$ 2,288,548	\$ 2,301,492	\$ 2,336,014	\$ 2,371,055	\$ 2,406,620
Total Existing RDEK Solid Waste Expenditures	\$ 8,445,392	\$ 8,562,252	\$ 8,599,076	\$ 8,745,453	\$ 8,876,635	\$ 9,009,784	\$ 9,144,931
New Proposed Expenditures	\$ 41,500	\$ 695,000	\$ 532,500	\$ 690,000	\$ 4,275,000	\$ 1,410,000	\$ 1,387,500
New Total Existing and Proposed Solid Waste Expenditures	\$ 8,486,892	\$ 9,257,252	\$ 9,131,576	\$ 9,435,453	\$13,151,635	\$10,419,784	\$ 10,532,431

* 2023-2023 Expenditures from RDEK Financial Plan; 2024-2029 are estimates



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BENCHMARKING

Benchmarking Analysis

		Regional District of Nanaimo	District of Squamish	Regional District of Fraser Fort George	Peace River Regional District	Columbia Shuswap Regional District	Thompson-Nicola Regional District	Regional District of East Kootenay	Regional District of East Kootenay
		2016	2016	2016	2016	2016	2016	2018	Proposed Ave
Service Population	persons	157,599	19,067	94,506	66,504	52,021	135,074	74,975	78,440
Density	persons/km ²	72	182	2	1	2	3	3	3
Total MSW Tonnage	tonnes/yr	114,266	32,908	115,074	62,903	57,876	120,306	71,843	75,303
Total System Cost	\$	\$15,652,000	\$ 2,992,368	\$19,329,630	\$ 9,023,743	\$ 4,500,000	\$17,765,024	\$ 7,265,693	\$ 10,288,612
Total System Cost Per Tonne MSW	\$/tonne	\$ 136.98	\$ 90.93	\$ 167.98	\$ 143.45	\$ 77.75	\$ 147.67	\$ 101.13	\$ 136.63
Total System Cost Per Person	\$/person/yr	\$ 99.32	\$ 156.94	\$ 204.53	\$ 135.69	\$ 86.50	\$ 131.52	\$ 96.91	\$ 131.01

Cool colours indicate lowest values, warm colours indicate highest values.



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DIVERSION POTENTIAL

Diversion Potential

	Mixed Recycling & EPR	Compostable Organics	Other Diversion Opportunities (Concrete, Asphalt, Textiles, Bulky Waste)
Waste Stream Available (Kg/person)	125.56	167.50	73.18
Participation/Capture Rate	50%	50%	50%
Potential Material Diverted (Kg/person)	62.78	83.75	36.59

Current RDEK Waste Disposal Rate: 561 kg/person/year

Current Provincial Average: 472 kg/person/year

Considering previously outlined strategies & actions, RDEK waste disposal rate could be reduced to 498 – 377 kg/person/year

Target: 480 kg/person/year by 2025 & 390 kg/person/year by 2030



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WRAP UP

Next Steps / Wrap Up

- **Next Meeting:**
 - June 5th (11am – 2pm)
Draft Solid Waste Management Plan



THANK YOU!



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

