



Notice of Meeting and Meeting Agenda Environmental Services Committee

Wednesday, March 29, 2023

9:30 AM

6th Floor Boardroom
625 Fisgard St.
Victoria, BC V8W 1R7

Special Meeting

B. Desjardins (Chair), S. Tobias (Vice Chair), J. Brownoff, J. Caradonna, G. Holman,
D. Kobayashi, D. Murdock, M. Tait, D. Thompson, A. Wickheim, C. Plant (Board Chair, ex-officio)

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We pledge to make our meetings a place where all feel welcome and respected.

1. Territorial Acknowledgement

2. Approval of Agenda

3. Presentations/Delegations

The public are welcome to attend CRD Board meetings in-person.

Delegations will have the option to participate electronically. Please complete the online application at www.crd.bc.ca/address no later than 4:30 pm two days before the meeting and staff will respond with details.

Alternatively, you may email your comments on an agenda item to the CRD Board at crdboard@crd.bc.ca.

[23-258](#)

Delegation - Philippe Lucas; Representing Biosolid Free BC: Re: Agenda Item 4.1.: Long-term Biosolids Planning and Biosolids Thermal Plan Updates

[23-259](#)

Delegation - Jonathan O'Riordan; Representing Peninsula Biosolids Coalition: Re: Agenda Item 4.1.: Long-term Biosolids Planning and Biosolids Thermal Plan Updates

4. Special Meeting Matters

- 4.1. [23-253](#) Long-term Biosolids Planning and Biosolids Thermal Plan Updates
- Recommendation:** The Environmental Services Committee recommends to the Capital Regional District Board:
1. That staff develop a consultation plan for long-term biosolids management for the July Environmental Services Committee meeting, to be implemented in the fall of 2023; and
2. That staff concurrently initiate a Request for Proposals process for a biosolids advanced thermal site trial.
- Attachments:** [Staff Report: Long-term Biosolids Planning & Biosolids Thermal Pilot Updates](#)
[Appendix A: Correspondence from ENV re Biosolids Deadlines & Expectation](#)
[Appendix B: Summary of Short- & Long-Term Biosolids Management Options](#)
[Appendix C: North American Thermal Processing Projects](#)
[Appendix D: Summary of Thermal Options Pilot Program](#)
- 4.2. [23-239](#) Capital Regional District Climate Action Inter-Municipal Task Force
- Recommendation:** The Environmental Services Committee recommends to the Capital Regional District Board:
- That the Terms of Reference for the Climate Action Inter-Municipal Task Force, attached as Appendix A, be approved.
- Attachments:** [CRD Climate Action Inter-Municipal Task Force - Terms of Reference](#)
[Appendix A: Climate Action Inter-Municipal Task Force - Terms of Reference](#)
- 4.3. [23-131](#) Central Saanich Request for CRD Carbon-based Budget Policy
- Recommendation:** The Environmental Services Committee recommends to the Capital Regional District Board:
- That the CRD not adopt a policy of carbon budgeting as part of its budget cycle but continue to monitor progress in carbon budget methodologies and implications on CRD financial planning processes and share learnings with local governments through the CRD Inter-Municipal Working Group and Task Force, as appropriate.
- Attachments:** [Staff Report: Central Saanich Request for CRD Carbon-based Budget Policy](#)
[Appendix A: Central Saanich Letter to CRD Board - November 8, 2022](#)
[Appendix B: Summary and History of Carbon Budgeting](#)
- 4.4. [23-236](#) Solid Waste Advisory Committee Motions of March 3, 2023
- Recommendation:** There is no recommendation. This report is for information only.
- Attachments:** [Staff Report: Solid Waste Advisory Committee - Motions of March 3, 2023](#)

4.5. [23-241](#) Previous Minutes of Other CRD Committees and Commissions for Information

Recommendation: There is no recommendation. The following minutes are for information only.

a) Climate Action Inter-Municipal Task Force - March 2, 2023

b) Solid Waste Advisory Committee Minutes - February 3 and March 3, 2023

Attachments: [Draft Minutes: Climate Action Inter-Municipal Task Force - March 2, 2023](#)

[Final Minutes: Solid Waste Advisory Committee - February 3, 2023](#)

[Draft Minutes: Solid Waste Advisory Committee - March 3, 2023](#)

5. Adjournment

The next meeting is April 19, 2023.

To ensure quorum, please advise Jessica Dorman (jdorman@crd.bc.ca) if you or your alternate cannot attend.

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, MARCH 29, 2023**

SUBJECT **Long-term Biosolids Planning and Biosolids Thermal Pilot Updates**

ISSUE SUMMARY

To provide an update on biosolids long-term beneficial use planning, and the progress of pilot studies to investigate advanced thermal technologies as a long-term biosolids management option.

BACKGROUND

Commissioning of the Core Area Wastewater Treatment Project resulted in new functions for the Capital Regional District (CRD). Residual solids from the McLoughlin Point Wastewater Treatment Plant are now processed at the Residuals Treatment Facility (RTF) into dried pelletized Class A biosolids. The CRD's approved short-term (2021-2025) Biosolids Beneficial Use Strategy, and contingency plan, is transportation and incineration as alternative fuel at the Lafarge cement plant, or incorporation into engineered cover systems at Hartland Landfill when Lafarge is not operating. The CRD Board recently approved an additional contingency of non-agricultural land application to address short-term management challenges. As a condition of provincial approval of the CRD's short-term plans, the Province requires submission of a long-term biosolids management plan by the end of June 2024. Public and First Nations engagement on beneficial use options (inclusive of agricultural and non-agricultural land application) is required as part of the process (see Appendix A).

Biosolids Long-term Planning Update

Staff have engaged a technical consultant (GHD) to review and advise on potential options for long-term management of CRD biosolids. The consultant identified and evaluated more than 30 short- and long-term beneficial use options, including thermal, non-thermal and land application options (see Appendix B). To meet the regulatory requirement for beneficial reuse, and the CRD's need for operational reliability, the consultant is preparing portfolios of options for consideration in long-term planning; multiple options are required to ensure redundancy for when the primary or preferred options are unavailable. Options that don't meet beneficial use criteria will not be included, and staff and the consultant are currently compiling information to support creation of a plan for public and First Nations consultation.

The consultant's review determined that there are no full-scale commercial advanced thermal facilities being used to manage biosolids in North America (see Appendix C). There are two demonstration facilities currently in operation in North America, both of which were included in the CRD's pilot studies, and a third facility has been temporarily shut down to facilitate a move to a new location.

Biosolids Thermal Pilot Update

In July 2020, as part of the CRD's biosolids beneficial use long-term planning efforts, CRD staff issued a Request for Expressions of Interest (RFEOI; No. 40.20.01-02) to determine the viability of advanced thermal technology. This technology generates heat, as well as synthetic gases and/or biochar, which have several potential uses (including land application or industrial

processes), depending on the quality of the residuals. The CRD then developed a series of pilot studies through a Request for Proposals (RFP) process. The Board directed staff to obtain detailed proposals and to enter into negotiations to pursue pilot studies at existing facilities based on summaries provided in a closed session. Two pyrolysis and one gasification facility were chosen to conduct studies utilizing CRD biosolids or representative samples. Not all were able to fully complete the studies as expected, but the results received to date are included as Appendix D. The gasification facility was not operational for the pilot study and could not produce any results. One pyrolysis study indicated success in producing a biochar, as well as some synthetic gas, with a recommendation for further work to quantify the quality of these by-products. The other pyrolysis study successfully pyrolyzed surrogate (non-CRD) biosolids; to date, there is no data on residual concentrations of contaminants of concern, and further analysis is ongoing.

While results are still forthcoming and under review, the advanced thermal pilot outcomes have provided the CRD's technical advisor with valuable insight into the discrete operation of these technologies and the quality of products that can be produced from the CRD's biosolids. However, the thermal pilot results alone are not expected to be sufficient to definitively confirm the viability of onsite advanced thermal processing of CRD biosolids. On this basis, GHD has advised that, should the CRD wish to further pursue advanced thermal processing, an advanced thermal site trial (either pyrolysis or gasification) within the capital region utilizing the CRD's biosolids is recommended to observe key operation criteria. Some of the objectives for an advanced thermal site trial could include:

- Confirming equipment/process reliability over a range of conditions and extended operating periods.
- Confirming operating costs and likely long-term maintenance requirements.
- Confirming volume and mass reduction of biosolids.
- Evaluating the magnitude and quality of flue gases from the process, along with effective treatment options.
- Confirming the quantity and quality of any syngas, biochar and liquids specific to the selected advanced thermal system and CRD biosolids under different conditions. This should include an analysis of the destruction of PFAS and other contaminants of concern. It could also include separately designed field trials on the bioavailability of nutrients and metals in the biochar, as well as other benefits of biochar in specific applications.
- Establishing the net energy balance of the process, including the calorific value of syngas and the potential for waste heat recovery and use (e.g., in drying).
- Identifying opportunities for process optimization, including the optimal mix and quality of end products.
- Evaluating the potential for co-processing of other materials arriving at the landfill and the effects of co-processing on the quantity and quality of products and waste streams.
- Identifying and developing local markets for biochar.
- Confirming carbon sequestration benefits and value.
- Evaluating potential long-term synergies at the Hartland facility, including the RTF dryers and Hartland Renewable Natural Gas upgrading plant.

Based on their preliminary review of pilot studies, the consultant has advised that the advanced thermal technology that appears to be most promising for biosolids (pyrolysis) is not suitable for municipal solid waste. As such, they have advised that planning for co-processing biosolids and municipal solid waste at the same thermal facility is likely not to be recommended based on currently available technologies. This conclusion is consistent with the feedback CRD staff received from the thermal pilot vendors. However, if an on-site advanced thermal trial is pursued, the RFP could be scoped to optionally allow vendors to propose further evaluation of co-processing of other materials arriving at the landfill.

ALTERNATIVES

Alternative 1

The Environmental Services Committee recommends to the Capital Regional District Board:

1. That staff develop a consultation plan for long-term biosolids management for the July Environmental Services Committee meeting, to be implemented in the fall of 2023; and
2. That staff concurrently initiate a Request for Proposals process for a biosolids advanced thermal site trial.

Alternative 2

The Environmental Services Committee recommends to the Capital Regional District Board:

1. That staff develop a consultation plan for long-term biosolids management for the July Environmental Services Committee meeting, to be implemented in the fall of 2023; and
2. That staff defer a Request for Proposals process for a biosolids advanced thermal site trial until after public consultation.

IMPLICATIONS

Regulatory Implications

In BC, municipal wastewater residuals must be beneficially reused in accordance with regulatory requirements. The Province has explicitly prohibited landfilling of biosolids and required consideration of agricultural and non-agricultural land application options as part of the long-term options analysis (see Appendix A). A purpose-built, on-site advanced thermal technology trial would require authorization under the BC *Environmental Management Act*. The anticipated timeline for regulatory approval for an onsite trial (once a thermal technology and vendor are selected) is 1.5 - 2 years.

Social Implications

Staff will need to start preparing scoping documents for consultation as soon as possible to ensure that the subsequent vendor response is available in time to undertake consultation in the fall and to inform development of the draft long-term plan by Q1 2024. The consultation will explore the context for land application options, including in and out of region support, as well as across a range of non-agricultural to agricultural applications. Public engagement will also help inform expectations for an advanced thermal on-site proposal should the Board decide to proceed.

Environmental & Climate Implications

The consultant will be reviewing contaminant monitoring results, including biochar and atmospheric release from the thermal pilot, to determine predicted risk to the environment. These results will be compared to the known low environmental risks of biosolids land application and other non-thermal reuse options and include greenhouse gas implications of the various options.

Intergovernmental Implications

First Nations and local governments will be engaged during the consultation process on beneficial use portfolios and options. If an on-site thermal technology trial is pursued, it will require a separate public and First Nations engagement process.

Financial Implications

Funding for long-term biosolids management planning, including pilot studies, has been taken from the Core Area liquid waste planning operating reserve fund. Future core area liquid waste operational budgets will need to be reviewed to ensure there are sufficient funds to cover the portfolios eventually chosen for long-term biosolids management. Significant additional funding will be required if an on-site advanced thermal trial is undertaken. The total cost to the CRD would be dependent on the technology selected, feedstock characteristics, scope of the study and associated analysis, project development structure, including the ability of the CRD to partner with other entities to offset costs, and the availability of innovation grant funds from senior levels of government. Costs would be confirmed through an RFP process and are expected to be between \$5 million to \$10 million.

CONCLUSION

Long-term biosolids management planning is underway, with external consultants identifying and assessing a variety of beneficial use options. The long-term plan will require a portfolio of options to ensure redundancy and reliability in service delivery. Preliminary evaluation of the available results from the thermal pilot studies indicates that an on-site trial would be beneficial to determine the viability of an advanced thermal technology as an option for the long-term biosolids management. A detailed plan to engage First Nations, local governments and the public will be brought back to the July Environmental Services Committee meeting.

RECOMMENDATION

The Environmental Services Committee recommends to the Capital Regional District Board:

1. That staff develop a consultation plan for long-term biosolids management for the July Environmental Services Committee meeting, to be implemented in the fall of 2023; and
2. That staff concurrently initiate a Request for Proposals process for a biosolids advanced thermal site trial.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

- Appendix A: Correspondence from Ministry of Environmental and Climate Change Strategy regarding Biosolids Planning Deadlines and Consultation Expectations – October 29, 2019 and September 25, 2020
- Appendix B: Summary of Short- and Long-term Biosolids Management Options Available in the Next Five Years
- Appendix C: North American Thermal Processing Projects
- Appendix D: Summary of Thermal Options Pilot Program



Reference: 349364

X-Reference: 10400-60/LWMP CRD Core

OCT 29 2019

Colin Plant, Chair
and Directors
Capital Regional District Board
PO Box 1000 625 Fisgard Street
Victoria BC V8W 2S9

Dear Chair Plant and Directors:

Thank you for the June 21, 2019, submission of the Capital Regional District (CRD) Biosolids Beneficial Use Strategy, in accordance with the conditions of approval of the Core Area Liquid Waste Management Plan (CALWMP) Amendment No.11. The Strategy forms part of the CALWMP and, therefore, requires approval from the Minister of Environment and Climate Change Strategy.

Pursuant to Section 24(5) of the *Environmental Management Act*, I hereby approve the Strategy under the following conditions:

Short Term

- a) The CRD must not landfill biosolids in the event of scheduled cement plant shutdowns.
- b) By April 30, 2020, the CRD must submit for approval an updated Contingency Plan that has more fully assessed options for use of the Class A biosolids in contingency circumstances. This assessment must include scenarios under which land application could be utilized prior to landfilling; information about timing and duration of scheduled cement plant shutdowns; and an estimate of unscheduled shutdown duration and frequency based on operational history is required.
- c) By June 1, 2021, the CRD must submit an updated Net Energy Balance Assessment and Greenhouse Gas Emission Estimate.

Long Term

- a) The CRD must include land application in the options analysis and conduct consultation for the long-term biosolids strategy that is intended to be implemented by January 1, 2025.
- b) Options considered should include a range of beneficial uses including, but not limited to forestry (for example, fertilizer/soil conditioner), reclamation (for example, mines), landfill closure and agriculture.
- c) This consultation process must include citizens, local government and Indigenous communities within the CRD.

...2

The ministry's waste management policy framework is guided by the 5R Pollution Prevention Hierarchy (Reduce, Reuse, Recycle, Recovery and Residuals Management). In accordance with the hierarchy, landfilling should only be considered when all other options are implemented or exhausted. As such, I expect the CRD to continue to look for alternative means of beneficially using biosolids in the short term to accommodate predictable disruptions in the cement plant's ability to use the product. This strategy may include increasing the short-term storage on site or applying biosolids to the land but cannot include disposal or long-term storage in the landfill. It's important that a robust consultation process is undertaken with respect to developing this strategy for the CRD.

The CRD's policy banning the land application of biosolids unnecessarily limits the options available for beneficial use. While respecting the CRD Board's authority to create such a policy, it is the ministry's position that the land application of biosolids, in accordance with the Organic Matter Recycling Regulation (OMRR), will benefit the environment and potentially reduce costs to the taxpayer. The OMRR includes requirements for biosolids treatment, quality testing and the creation of site-specific land application plans, by qualified professionals, to ensure that the land application of biosolids is both safe and beneficial. OMRR also contains specific requirements for providing notification prior to any land application activity and provisions that specify where biosolids can be placed to ensure protection of drinking water and the environment. Land application is widely practiced by other regional districts in British Columbia, in other jurisdictions in Canada and worldwide.

The benefits of land application of biosolids include addition of organic matter and nutrients to the soil to support plant growth (a more sustainable option compared to chemical fertilizers), increased carbon sequestration, decreased greenhouse gas emissions, and increased soil water holding capacity. Examples of beneficial use include, but are not limited to, landfill closure activities, mine reclamation and augmenting soils in our forests to promote regrowth.

The CRD has committed to implement a long-term strategy for biosolids management by January 1, 2025, as part of the CALWMP. The long-term biosolids strategy development process will provide an opportunity for CRD to conduct a full-options analysis of biosolids beneficial uses, including land application. A full-options analysis of costs and benefits will allow CRD to conduct informed public consultation and to meaningfully engage with Indigenous communities.

Please continue to work with staff in the Environmental Protection Division of the Ministry of Environment and Climate Change Strategy on the development of the long-term beneficial use strategy.

Sincerely,



George Heyman
Minister

cc: Cassandra Caunce, Director, Authorizations South, Environmental Protection Division,
Ministry of Environment and Climate Change Strategy



Reference: 357691

September 25, 2020

Colin Plant, Chair
and Directors
Capital Regional District Board
PO Box 1000
625 Fisgard Street
Victoria BC V8W 2S9

Sent via email: crdchair@crd.bc.ca

Dear Chair Plant and Directors:

I am writing in response to the April 30, 2020, submission of the Capital Regional District Short-Term Biosolids Contingency Plan.

The Short-Term Biosolids Contingency Plan is approved pursuant to the requirements of the October 29, 2019 letter from the Minister regarding the Capital Regional District's Biosolids Beneficial Use Strategy.

The Long-Term Biosolids Strategy that the CRD has been directed to implement by January 1, 2025 requires approval of the Director; therefore, please submit this plan for approval by June 18, 2024. Further, I would like to remind you that the CRD is expected to conduct comprehensive public consultation on this plan prior to submission to the ministry.

I wish you success in the development of a long-term biosolids strategy.

With best regards,

Kevin Jardine
Deputy Minister

cc: Office of the Minister of Environment and Climate Change Strategy
Cassandra Counce, Director, South Authorizations, Environmental Protection Division,
Ministry of Environment and Climate Change Strategy
Larisa Hutcheson, P.Eng., General Manager, Parks and Environmental Services, Capital
Regional District

SUMMARY OF SHORT- AND LONG-TERM BIOSOLIDS MANAGEMENT OPTIONS AVAILABLE IN THE NEXT FIVE YEARS

March 2023

Type of Operation	Location	Potential Short-Term/Long-Term Options *
Thermal Technologies		
Combustion/ Incineration	In Region	<p>Potential options:</p> <ul style="list-style-type: none"> As fuel in traditional biomass boilers, either directly or mixed/pelletized with wood. Although possible, a market does not currently exist for use of biosolids as fuel; one potential client has expressed interest. Changes to biomass boiler air permits would be required, potentially with additional stack testing requirements.
	Out of Region	<p>Potential options:</p> <ul style="list-style-type: none"> As fuel in traditional biomass boilers, either directly or mixed/pelletized with wood. Although possible, a market does not currently exist for use of biosolids as fuel. Changes to biomass boiler air permits would be required, potentially with additional stack testing requirements. Co-combustion in cement kilns. Incineration at a waste-to-energy facility. This option would not include beneficial use of ash. Material handling at the facility would need to be developed. Combustion in a thermal desorption unit. This option will not recover heat from thermal processing, and so does not meet Canadian Council of Ministers of the Environment (CCME) beneficial use guidelines, but could be used as a contingency option if biosolids could be included as acceptable material on the Facility's air discharge permit.
Pyrolysis	In Region	<p>Potential options:</p> <ul style="list-style-type: none"> On-Site Pilot - Potential short-term option. Would require the CRD Board to approve land application of biochar. Pyrolysis gas would not be beneficially used in the pilot. Long-term facility - Potential long-term option. Would require significant investment and approval of land application of biochar. Installation of pyrolysis equipment at Hartland and integration with existing infrastructure will also be required for this option.
	Out of Region	<ul style="list-style-type: none"> Not available, except at pilot scale.

Type of Operation	Location	Potential Short-Term/Long-Term Options *
Thermal Technologies (cont'd)		
Gasification	In Region	<p>Potential options:</p> <ul style="list-style-type: none"> On-Site Pilot - Potential short-term option. Would require CRD Board to approve land application of biochar. Syngas would not be beneficially used in the pilot. Long-term facility. This option would require investment into an on-site facility. Installation of gasification equipment at Hartland and integration with existing infrastructure will also be required for this option.
	Out of Region	<ul style="list-style-type: none"> Not available, except at pilot scale.
Landfilling and Storage – NOTE: These options are only for emergencies as they do not meet provincial and federal requirements for beneficial reuse.		
Storage	In Region	<p>Potential options for short-term emergencies when preferred options are unavailable:</p> <ul style="list-style-type: none"> Silo – construct additional silo(s) at Hartland Landfill. Stockpile - stockpiling of biosolids will require blending with sand to safely store. Containment will also be required around the stockpile.
	Out of Region	<ul style="list-style-type: none"> Not Available
Landfilling	In Region	<ul style="list-style-type: none"> Hartland - Landfilling does not meet regulatory criteria and uses air space within the landfill.
	Out of Region	<ul style="list-style-type: none"> Not Available.
Land Application		
Mine/Quarry Reclamation	In Region	<ul style="list-style-type: none"> Not immediately available, but program could be developed.
	Out of Region	<p>Multiple available options:</p> <ul style="list-style-type: none"> Options for quarry reclamation near Nanaimo, BC. Options for mine reclamation on the mainland.
Forest Fertilization	In Region	<ul style="list-style-type: none"> Not immediately available, but program could be developed.
	Out of Region	<p>One available option:</p> <ul style="list-style-type: none"> Biosolids could be mixed with dewatered biosolids from another provider for better application purposes.

Type of Operation	Location	Potential Short-Term/Long-Term Options *
Land Application (cont'd)		
Land Improvement	In Region	<ul style="list-style-type: none"> Not immediately available, but program could be developed.
	Out of Region	<p>One available option:</p> <ul style="list-style-type: none"> Biosolids could be mixed with dewatered biosolids from another provider to mitigate combustion risk. Biosolids will be land applied to promote grass growth, help manage invasive species, and develop the potential for land grazing. This site can accommodate 250 tonnes of biosolids annually.
Biosolids Growing Medium (BGM)	In Region	<ul style="list-style-type: none"> Hartland – currently approved but contingency capacity has already been exhausted.
	Out of Region	<p>Multiple available options:</p> <ul style="list-style-type: none"> Other landfills. Other vendors.
Direct Land Application	In Region	<ul style="list-style-type: none"> Not immediately available, but program could be developed.
	Out of Region	<p>One available option:</p> <ul style="list-style-type: none"> Biosolids could be bagged and sold as a fertilizer product in packages of less than 5 m³. Pilot required to support feasibility.
Composting Prior to Land Application	In Region	<ul style="list-style-type: none"> Not immediately available, but program could be developed.
	Out of Region	<p>Two available options:</p> <ul style="list-style-type: none"> CRD biosolids could be mixed with cured compost prior to land application. CRD biosolids would be composted with other municipal biosolids and applied direct to land for fertilization.

* options are theoretical and have not been secured with other parties

NORTH AMERICAN THERMAL PROCESSING PROJECTS

March 2023

The table below outlines various biosolids innovative thermal processing facilities across North America, the technology implemented, the stage of the project and the commercial status of the facilities.

- Pilot – Operation of a system for a defined period, potentially non-continuous, with a goal of determining technology feasibility
- Demonstration – first commercial installation intended to process biosolids year round and gain operational experience
- Commercial – More than one commercial installation intended to process biosolids reliably year round

Location	Facility Name	Technology	End Products	Project Stage	Commerical Status
Linden, New Jersey, USA	Aries Linden Biosolids Gasification Facility	Gasification (Aries) ¹	Syngas, Biochar	Commissioning	Demonstration
Newark, New Jersey, USA	Aries Newark Biochar Production Facility	Gasification (Aries) ¹	Syngas, Biochar	Feasibility	N/A
Sanford, Florida, USA	Fluidized Bed Biosolids Disposal Gasification Facility	Gasification (Max West/Aries)	Syngas, Biochar	Decommissioned	Demonstration
Kearny, New Jersey, USA	Aries Kearny Biochar Production Facility	Gasification (Aries) ¹	Syngas, Biochar	Feasibility	N/A
Taunton, Massachusetts, USA	Aries Taunton Biosolids Gasification Facility	Gasification (Aries) ¹	Syngas, Biochar	Feasibility	N/A
Lebanon, Tennessee, USA	Aries Lebanon Waste-to-Energy Gasification Plant	Gasification (Aries) ¹	Syngas, Biochar	Decommissioned for biosolids (now operating solely on wood chips)	N/A
Edmonds, Washington, USA	Edmonds Wastewater Treatment Plant	Gasification (Ecoremedy)	Syngas, Biochar	Under construction	Demonstration

Location	Facility Name	Technology	End Products	Project Stage	Commerical Status
Morrisville, Pennsylvania, USA	Ecoremedy Sludge Gasification Pilot Plant	Gasification (Ecoremedy)	Syngas, Biochar	A three-year pilot project (Decommissioned)	Pilot
Derry Township, Pennsylvania, USA	Clearwater Road Wastewater Treatment Facility	Gasification (Ecoremedy)	Syngas, Biochar	Under construction	Commercial
Silicon Valley Clean Water (SVCW), California, USA	SVCW Plant	Pyrolysis (Bioforcetech) ¹	Syngas, Biochar	Operational	Demonstration
Rialto, California, USA	Rialto Bioenergy Facility	Pyrolysis (Anaergia)	Syngas, Biochar	Under construction	Demonstration
Ephrata, Pennsylvania, USA	Ephrata Bioforcetech Pyrolysis Facility	Pyrolysis (Bioforcetech) ¹	Syngas, Biochar	Under construction	Commerical
Niagara Falls, Ontario, Canada	CHAR Technologies' high temperature pyrolysis plant	High Temperature Pyrolysis (HTP) (Chartec) ¹	Syngas, Biochar	Development (relocation from London Ontario) ²	Pilot (Biosolids)

¹ Technology included in the CRD's Biosolids Thermal Pilots

² Pilot facility was operational at the London, Ontario Location

SUMMARY OF THERMAL OPTIONS PILOT PROGRAM

March 2023

The following work has been undertaken to date under the thermal options pilot program:

- **CHAR Technologies:** Bench-scale laboratory testing of CRD biosolids was completed in February 2022. CRD and CHAR then set up a pilot-scale high temperature pyrolysis (HTP) test of 800 kilograms of CRD biosolids to analyze the solid and gas outputs at a pilot scale at CHAR's pilot facility in London, Ontario over two days in October 2022. The CRD received a report on March 3, 2023, and preliminary results indicate the pilot was successfully able to pyrolyze CRD biosolids producing a biochar and syngas, resulting in a total solids mass reduction of 72%. The testing showed that the produced biochar had concentrations below detection limits for all of the PFAS compounds tested, indicating that HTP does effectively treat PFAS in the solid fraction of CRD's biosolids, but likely partitions these contaminants to the syngas output instead. Conversely, some metals were concentrated in the biochar above Class A biosolid land application limits. Further analysis is required to understand the characteristics of the syngas produced. CHAR recommends deploying an on-site HTP demo system with syngas cleaning to provide more accurate gas data necessary to design and ensure robust emissions control for a commercial-scale system. CRD's technical advisor (GHD) is continuing their review of the pilot results.
- **Waste Management:** This pilot study was established to review existing data and information against characteristics of the CRD's biosolids and (pending results) conduct commercial-scale pyrolysis testing using a representative biosolids sample. The facility utilized for the pilot is the Waste Management Bioforcetech pyrolysis facility in Redwood, California (Silicon Valley Clean Water Authority), which hosts an onsite BioForceTech (BFT) pyrolysis. During the data and information review, CRD biosolids were compared against two other North American biosolids samples. For the majority of commonly tested parameters (nutrients, metals, etc.), it was confirmed that the CRD's dried biosolids quality is very similar to the biosolids quality of similarly-sized municipal wastewater treatment facilities with similar process trains. However, further investigation was recommended, and is currently underway, for other compounds of concern, such as PFAS, VOCs, SVOCs, pharmaceuticals and personal care products. Commercial scale pyrolysis testing, including biosolid and air emission testing using the representative sample, is planned; however, this evaluation has been delayed by the vendor and is not yet scheduled. The CRD's technical advisor, GHD, continues their review of the results received to date.
- **Aries Clean Technologies:** Commissioning issues at the new Aries biosolids gasification facility in Linden, New Jersey (Linden Roselle Sewerage Authority) have delayed the pilot testing and the facility was not available for a pilot study. Staff continue to remain in contact with Aries Clean Technologies, and will endeavor to complete the pilot study if and when the facility comes on-line.
- **Integration of Municipal Solid Waste into thermal pilots:** As directed by the Board, staff spoke with each of the vendors in the thermal pilot to understand the potential to integrate municipal solid waste feedstock into the thermal pilots. While vendors indicated it may be technically feasible to thermally treat some types of source-separated, pre-processed municipal solid waste, including clean wood waste, using the technology being applied to

the biosolids, it was determined that due to permitting and logistics, adding additional feedstocks to the biosolids thermal pilot trials was not possible. Based on their preliminary review of pilot studies, the CRD's technical advisor has advised that the advanced thermal technology that appears to be most promising for biosolids (pyrolysis) is not suitable for mixed municipal solid waste. As such, they have advised that planning for co-processing biosolids and municipal solid waste at the same thermal facility is likely not to be recommended based on currently available technologies. If the CRD pursues an advanced thermal processing site trial at Hartland Landfill, the site trial could be scoped to evaluate the potential for co-processing of other source-separated materials arriving at the landfill and the effects of co-processing on the quantity and quality of products and waste streams.

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, MARCH 29, 2023**

SUBJECT **Capital Regional District Climate Action Inter-Municipal Task Force – Terms of Reference**

ISSUE SUMMARY

To provide the Climate Action Inter-Municipal Task Force Terms of Reference for approval.

BACKGROUND

Under the *Local Government Act* and the Capital Regional District (CRD) Board Procedures Bylaw, the CRD Board Chair has the authority to establish standing committees and to appoint members to provide advice and recommendations to the Board.

On December 14, 2022, the Regional Board approved the 2023 Terms of Reference (TOR) for the Environmental Services Committee (ESC). TOR serve to clarify the mandate, responsibilities and procedures of standing committees and to provide a point of reference and guidance for the committees and members. The ESC TOR acknowledge that the Climate Action Inter-Municipal Task Force (Task Force) will report through the ESC.

This year, there were minor changes to the composition and procedures of the Climate Action Inter-Municipal Task Force TOR (see Appendix A), as follows:

- The Manager, Climate Action Programs shall be the staff liaison and Chair of the Task Force.
- Recommendations of the Task Force going to the ESC will require majority of the membership.
- Meeting minutes will be provided to ESC.

The CRD Climate Action Inter-Municipal Task Force reviewed the revised draft TOR at its inaugural meeting on Thursday, March 2.

ALTERNATIVES

Alternative 1

The Environmental Services Committee recommends to the Capital Regional District Board: That the Terms of Reference for the Climate Action Inter-Municipal Task Force, attached as Appendix A, be approved.

Alternative 2

That this report be referred back to staff for additional information.

CONCLUSION

Terms of Reference serve to clarify the mandate, responsibilities and procedures of committees and provide a point of reference and guidance for committees and their members. The Climate Action Inter-Municipal Task Force Terms of Reference have been modified.

RECOMMENDATION

The Environmental Services Committee recommends to the Capital Regional District Board:
That the Terms of Reference for the Climate Action Inter-Municipal Task Force, attached as Appendix A, be approved.

Submitted by:	Nikki Elliott, Manager, Climate Action Programs
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT

Appendix A: Climate Action Inter-Municipal Task Force – Terms of Reference

Terms of Reference



CLIMATE ACTION INTER-MUNICIPAL TASK FORCE

PREAMBLE

The Capital Regional District (CRD) Climate Action Inter-Municipal Task Force is an Advisory Committee established by the CRD Environmental Services Committee (ESC) to support communication and collaboration between municipalities and electoral areas across the capital region, and to provide information and feedback regarding CRD programs and initiatives related to regional climate action.

The Committee's official name is to be:

Climate Action Inter-Municipal Task Force (Task Force)

1.0 PURPOSE

- a) The purpose of the Task Force through the Environmental Services Committee is to:
 - i. Identify emerging climate-related issues and priorities in their communities.
 - ii. Provide input, feedback and recommendations regarding programs, initiatives and service plan priorities under the regional climate action service (see Appendix A) in line with Board priorities, the CRD Climate Action Strategy and operational considerations.
 - iii. Consider issues referred directly from the ESC.
- b) The Committee will also:
 - i. Receive information and updates on climate action related initiatives, community programs and policy endeavors impacting the region.
 - ii. Share information on progress and challenges related to achieving their local government's corporate or community climate action objectives.
 - iii. Share information from the Climate Action Inter-Municipal Task Force meetings with their respective Councils, as required.

2.0 ESTABLISHMENT AND AUTHORITY

- a) Municipal Councils shall appoint a Task Force representative for a four-year term following local government elections. CRD Electoral Area Directors are members for the duration of their term. Should a municipality wish to change its representative during the four-year term, they can do so by contacting the Manager, Climate Action Programs.
- b) Any recommendations of the Task Force will report to the Environmental Services Committee for consideration. The CRD Board is the final decision-making authority.

3.0 COMPOSITION

- a) The Task Force will include representatives from each of the 13 local governments within the capital region, and three electoral areas.

4.0 PROCEDURES

- a) The Manager, Climate Action Programs will act as staff liaison and Chair to the Task Force.
- b) The Task Force shall meet up to four times per year, at the call of the Chair.
- c) The Chair will finalize the agenda. Any Task Force member may make a request to the Chair to place a matter on the agenda by email. Proposed items must be received at least one week in advance of the meeting.
- d) At the request of a Task Force member and with the consent of the Chair, guests or delegations may be invited to attend and participate in the meeting.
- e) A quorum is a majority of the Task Force membership and is required to conduct committee business. Each member of the Task Force will have one vote.
- f) Recommendations of the Task Force going to the Environmental Services Committee will require majority of the membership.
- g) Meeting minutes will be provided to Environmental Services Committee or its equivalent for information.

5.0 RESOURCES AND SUPPORT

- a) The Manager, Climate Action Programs is the liaison to the Task Force and is responsible for administration related to the Task Force.
- b) The Climate Action service will prepare and distribute minutes and agendas.

Approved by CRD Environmental Services Committee on _____

Approved by the CRD Board on _____

CAPITAL REGIONAL DISTRICT CLIMATE ACTION SERVICE BACKGROUND

Under Bylaw 3510, the Capital Regional District (CRD) established a climate action service in 2009 to act as a resource and facilitator for local governments, citizens and organizations in the capital region on energy and climate issues. The service has five major focus areas:

- Provide support to local governments in developing and implementing climate action plans and programs (emissions reductions and climate adaptation) as part of legislative requirements under the *Local Government (Green Communities) Statutes Amendment Act* and voluntary commitments under the *BC Climate Action Charter*.
- Catalyze action through partnerships with public and private sectors, non-governmental organizations and community organizations and increase public awareness of climate change issues.
- Liaise with senior levels of government on climate change related programs, policies and legislation that impact the capital region.
- Provide scientific information, data and indicators related to local and regional greenhouse gas emissions and projected climactic impacts.
- Support the CRD in fulfilling its corporate climate objectives by developing and facilitating implementation of corporate climate action plans, policies, and programs and support execution of climate-related Board strategic priorities.

The service administers two inter-municipal committees, one with elected officials and one with staff, which represent the 13 municipalities and three electoral areas in the region. These committees work in an advisory capacity to the CRD to develop priority objectives and support project delivery with the aim of supporting regional coordination on climate action.

The CRD climate action service is a part of the Parks & Environmental Department. The service reports through the CRD Environmental Services Committee to the CRD Board.

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, FEBRUARY 15, 2023**

SUBJECT **Central Saanich Request for CRD Carbon-based Budget Policy**

ISSUE SUMMARY

To seek direction on adopting a carbon-based budget policy.

BACKGROUND

The District of Central Saanich submitted a letter to the Capital Regional District (CRD) Board requesting, “that the CRD adopt a policy of carbon budgeting as part of its budget cycle, intending to provide CRD member local governments with their estimated annual carbon budgets” (Appendix A).

Carbon budgeting is one way to assess, plan and communicate approaches for reducing greenhouse gas (GHG) emissions. It essentially articulates how much carbon pollution a jurisdiction has left to emit in order to stay within 2C or 1.5C global warming and achieve net-zero targets. This approach was first introduced as part of the United Nations 2015 Paris Accord, and further detailed within the 2018 Intergovernmental Panel on Climate Change’s (IPCC) special report, at the global scale.

Employing a carbon budget at a sub-global scale is a relatively novel exercise. On a national level, the United Kingdom (UK) has used a carbon budget since the 2008 *Climate Change Act* was passed, with broad political support. The budget legally restricts the amount of GHG emissions the UK can emit in a five-year period and influences national policy decisions. On a sub-national scale, the City of Oslo in Norway, and the City of Edmonton have also applied the concept. Oslo's carbon budget was introduced as part of the overall city budget. The City of Edmonton presented a carbon budget alongside its 2022 financial plan. This essentially estimates increased GHG emissions or reductions that will result from proposed projects, programs, initiatives or operating processes. See Appendix B for further information on carbon budgeting.

Neither the CRD nor any local government within the region currently utilize a carbon budgeting framework. Rather, the CRD (and many local governments) have used its emission targets to identify key initiatives that are required to achieve GHG reduction targets in their organizations and across their communities. The CRD produces a regional and local government community GHG inventory every two years to support communities in undertaking this work. Corporately, the CRD is advancing various policies and procedures to embed a climate lens in corporate decision making, in line with its Climate Action Strategy.

Carbon budgeting is an emerging field and local governments across North America are reportedly investigating the application of this accounting framework.

ALTERNATIVES

Alternative 1

The Environmental Services Committee recommends to the Capital Regional District Board: That the CRD not adopt a policy of carbon budgeting as part of its budget cycle but continue to

monitor progress in carbon budget methodologies and implications on CRD planning processes and share learnings with local governments through the CRD Inter-Municipal Working Group and Task Force, as appropriate.

Alternative 2

That this report be referred back to staff for additional information.

IMPLICATIONS

Environmental & Climate Implications

Carbon budgeting is a tool to incorporate GHG emissions implications into administrative decision-making and support sustainable development in the region. Actual GHG reduction results depend on incorporating the proposed programs, initiatives and capital expenditures within the financial plan.

Corporately, key GHG reduction initiatives have been identified through GHG and energy use monitoring and studies and implementation actions have been highlighted in the CRD Climate Action Strategy. Advancement of these initiatives will be considered in future service planning processes. Successfully implementing a carbon budget requires alignment and collaboration with all other levels of government.

Intergovernmental Implications

Setting carbon budgets means making choices: about how much carbon in the atmosphere is too much; about risk tolerance; and about what is our fair share. All examples of carbon budgeting have used the 2018 IPCC Special Report on Global Warming of 1.5C (SR15) as the basis for making those choices. Many local governments in the capital region have targets based on the IPCC's SR15 report, which provides a common basis for calculating a carbon budget, but not all local governments in the region have established targets that align. This means that the CRD would either have to create a common framework that does not align with some local targets, or create a series of budgets that do not align with each other. These questions of fairness and authority over local decisions are challenging and may require significant time to resolve at the regional government level.

Financial Implications

Based on the level of complexity this would introduce into decision making, additional coordination of project information within the CRD and level of integration to member municipalities within the region, staff would need to undertake a business case to better define the financial implications of implementing a carbon budgeting approach at the CRD and on behalf of member municipalities.

Additionally, this would not address the impact and cost to each local government's current decision making and budgeting process to align to their respective carbon budgets.

Service Delivery Implications

The CRD does not have the current staff resources to complete a carbon budgeting exercise like those undertaken in other jurisdictions. Delivering on these commitments would require the CRD to seek external resources to complete the work.

Alignment with Existing Plans & Strategies

The CRD Climate Action Strategy (2021-2025) includes a goal to integrate climate action priorities at all levels of the decision-making process across the organization. It includes actions to operationalize standardized frameworks for climate action planning and evaluation, advancing corporate climate policies, and support staff in capacity building and coordination. While carbon-based budgeting was not explicitly noted as a priority action, it does align with the intentions of this goal area.

CONCLUSION

The District of Central Saanich requested that the CRD adopt a policy of carbon budgeting as part of its budget cycle and provide the region's local governments with their estimated annual carbon budgets. Carbon budgeting is one tool to support climate action focused decision making. Carbon budgeting is an emerging field; as such, it would require additional resources for the CRD, and support from local governments to implement at this time. As more jurisdictions across North America advance carbon budgeting, staff will continue to stay apprised of these frameworks and work with local government staff to consider how this may be best utilized within the CRD and across the region.

RECOMMENDATION

The Environmental Services Committee recommends to the Capital Regional District Board:
That the CRD not adopt a policy of carbon budgeting as part of its budget cycle but continue to monitor progress in carbon budget methodologies and implications on CRD planning processes and share learnings with local governments through the CRD Inter-Municipal Working Group and Task Force, as appropriate.

Submitted by:	Nikki Elliott, Manager, Climate Action Programs
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

Appendix A: Central Saanich Letter to CRD Board – November 8, 2022
Appendix B: Summary and History of Carbon Budgeting

Good afternoon,

Please find attached a letter from the District regarding a Council motion on carbon based budgeting.

Regards,

Emilie Gorman (she/her)
Director of Corporate Services/Corporate Officer
District of Central Saanich
250.544.4202 | CentralSaanich.ca



We gratefully acknowledge that the ancestral land on which we work are within the traditional territories of the W̱SÁNEĆ peoples: W̱JOŁEŁP (Tsartlip), BOKÉĆEN (Pauquachin), S̱ÁUTW (Tsawout), W̱SIKEM (Tseycum) and MÁLEXEŁ (Malahat) Nations.

The information contained in this transmission may contain privileged and confidential information of the District of Central Saanich. It is intended for review only by the person(s) named above. Dissemination, distribution or duplication of this communication is strictly prohibited by all recipients unless expressly authorized otherwise. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message. Thank you.



November 8, 2022

File No. 0400-60/22

Kristen Morley
Corporate Officer/General Manager, Corporate Services
Via email: kmorley@crd.bc.ca

Dear Ms. Morley:

Re: Request for CRD Carbon Based Budgeting Policy

At the Council meeting of October 3, 2022, the District of Central Saanich passed the following motion:

WHEREAS the City of Edmonton is showing leadership by integrating carbon budgeting into their budget cycle;

WHEREAS both Central Saanich Council and the CRD declared a climate emergency, showing the highest level of concern about climate change;

WHEREAS the CRD Climate Action Inter-Municipal Task-Force has deliberated and voted on asking the CRD to investigate carbon budgeting; and

WHEREAS this resolution from Central Saanich to the CRD board is to have the CRD pursue a process of quantifying and tracking a carbon budget for each CRD municipality.

THEREFORE BE IT RESOLVED that the District of Central Saanich Council submit the following motion to the CRD board for its deliberation: "That the CRD adopt a policy of carbon budgeting as part of its budget cycle, intending to provide CRD member local governments with their estimated annual carbon budget."

Should you have any questions with respect to the above, please do not hesitate to contact the undersigned by phone at 250-544-4202 or by email at Emilie.Gorman@csaanich.ca.

Regards,

Emilie Gorman
Director of Corporate Services/Corporate Officer

Cc: Christine Culham, Chief Administrative Officer, Central Saanich

SUMMARY AND HISTORY OF CARBON BUDGETING

February 2023

The concept of a carbon budget is linked to the United Nations 2015 Paris Accord and was further detailed by the 2018 Intergovernmental Panel on Climate Change's (IPCC) Special Report on Global Warming of 1.5C (SR15). The SR15 estimated that for a 50% chance of avoiding global warming of 1.5 Celsius, the global community would need to limit remaining emissions to 580 gigaton of carbon dioxide (GtCO₂), which was equivalent of 14 years of emissions. However, because of persistently high emissions, the global carbon budget as of 2023 was 380 GtCO₂, with a 50% chance of avoiding 1.5 Celsius increase in temperatures.

The idea that the global community only has a limited budget of carbon that we can collectively emit has been utilized by a handful of jurisdictions around the world to support decision making on climate action. On a national scale, the United Kingdom has employed a carbon budget since the 2008 *Climate Change Act* was passed with broad political support. On a sub-national scale, the City of Oslo (Oslo) in Norway, and the City of Edmonton (Edmonton) have also applied the concept.

City of Oslo

Oslo's carbon budget (that it calls a 'Climate Budget') was introduced as an "integral component" of the overall city budget. Oslo creates the climate budget alongside its capital budget to identify the impact of different projects, as well as the national and regional measures that directly contribute to emission reductions. The 2022 Oslo Climate Budget outlined aggressive reductions that go beyond the reductions the SR15 estimates required "to do more than their fair share", according to Oslo Governing Mayor, Raymond Johansen. The Oslo Climate Budget sets an annual "cap" on emissions and commensurate funds to pay for reductions. Oslo's ability to implement an ostensibly effective carbon budget is partly thanks to favourable conditions and governance structures. Local governments are the only subnational level of government in Norway and can collect direct and indirect taxes.

Find the City of Oslo's 2022 Climate Budget here:

[https://www.klimaoslo.no/collection/oslos-climate-budget-2022/#:~:text=The%20Climate%20Budget%20presents%20reduction,\(proposition%20109%2F20\)](https://www.klimaoslo.no/collection/oslos-climate-budget-2022/#:~:text=The%20Climate%20Budget%20presents%20reduction,(proposition%20109%2F20))

City of Edmonton

Edmonton recently employed a carbon budget framework for the years 2023-2026 and introduced it along with its 2022 financial plans. Edmonton has used the "Convergence and Contraction" theory of global emission reduction, which considers responsibility, capacity and equality. Under this theory, wealthier cities are responsible for more historical emissions and are thus responsible for more per capita emission reductions, whereas developing cities are responsible for less. This influences the per capita emissions target under the carbon budget, with an overall target to converge at 3.2 tonnes per person by 2030. From 2030, all cities target to decrease emissions until 2050 to a per capita emissions rate of 0 tonnes. For reference, the capital region per capita emissions in 2020 were 4.2 tonnes per person/year. Edmonton's per capita emissions were approximately 15 tonnes per person/year in 2020.

In Edmonton's case, all capital and operating service budget requests were assessed for both qualitative carbon inputs and detailed quantitative carbon impacts, where possible. It also includes unfunded budget items noted within its energy transition strategy and recognizes these GHG emissions will need to be included in future carbon budget reporting once project details progress.

The impact of Edmonton's capital budget is significant, with a projected emissions reduction of 140,000 tonnes over the next four years. Despite this, Edmonton forecasted an annual carbon budget deficit of 12.95 Megatonnes of carbon dioxide by 2050. The City of Edmonton, as a Canadian local government, is more limited than Oslo in terms of revenue generation. For example, Oslo has broader tax and regulatory authorities, similar to Canadian provincial governments. Edmonton noted in its 2022 Carbon Budget report that "municipal funding will have limited impact to meet community emissions targets".

The cost of implementing a carbon budget in Edmonton was significant. For a city of just over one million people, Edmonton staff estimated that the carbon budget required four-five full-time equivalents for a period of six months to complete.

Edmonton is one of the first municipalities in Canada to incorporate a carbon budget into its financial planning process. Edmonton acknowledges that the effort will evolve as staff apply learnings and the organization's process matures.

Find the City of Edmonton's Carbon Budget 2023-2026 here:
<https://pub-edmonton.escribemeetings.com/filestream.ashx?DocumentId=168092>.

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, MARCH 29, 2023**

SUBJECT **Solid Waste Advisory Committee – Motions of March 3, 2023**

ISSUE SUMMARY

To present the motions that were made by the Solid Waste Advisory Committee on March 3, 2023.

BACKGROUND

At its March 3, 2023 meeting, the Solid Waste Advisory Committee reviewed results of the 2022 Solid Waste Stream Composition Study and, in response, passed the following three motions:

1. *The Solid Waste Advisory Committee recommends to the Environmental Services Committee to recommend to the Capital Regional District Board:
That staff be directed to explore mandatory curbside organics collection from the municipalities around the region.*
2. *The Solid Waste Advisory Committee recommends to the Environmental Services Committee to recommend to the Capital Regional District Board:
That staff be directed to develop and implement policies around diversion programs on wood and wood products, and construction and demolition waste diversion.*
3. *The Solid Waste Advisory Committee recommends to the Environmental Services Committee:
That staff be directed to prioritize the reduction and reuse categories in the Solid Waste Management Plan to assist in reaching the waste disposal goals.*

CONCLUSION

In response to the 2022 Solid Waste Stream Composition Study, the Solid Waste Advisory Committee made three motions for consideration by the Environmental Service Committee. Two of the motions – prioritizing reduction and reuse in line with the waste reduction hierarchy, and implementing/accelerating policy around reduction of wood, wood products and construction and demolition waste – align with the Solid Waste Management Plan and existing and upcoming activities of the solid waste service. The first motion, mandating region-wide curbside organics, is not included within the Solid Waste Management Plan; however, if directed, staff could investigate the initiative and return to the committee later in 2023 with a feasibility report.

RECOMMENDATION

There is no recommendation. This report is for information only.

Submitted by:	Russ Smith, Senior Manager, Environmental Resource Management
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

Capital Regional District

Meeting Minutes

Climate Action Inter-Municipal Task Force

Thursday, March 2, 2023

1:00 PM

Room 488/Teams
625 Fisgard St.
Victoria, BC V8W 1R7

Present:

Councillor S. Riddell (Central Saanich), Councillor D. Grove (Colwood), Councillor D. Cavens (Esquimalt), Councillor A. Baird (Highlands), Councillor M. Wagner (Langford), Councillor S. Gray (Metchosin), Councillor C. Smart (Oak Bay), Councillor S. Duck (Sidney), Councillor T. St-Pierre (Sooke), Councillor A. MacKenzie (View Royal)

Electronic Participation: Director G. Holman (SSI), Director P. Brent (SGI), Councillor J. Brownoff (Saanich), Director A. Wickheim (JdF)

Staff: N. Elliott (Manager, CRD Climate Action Programs), L. Hutcheson (General Manager, Parks & Environmental Services, M. Rowe (CRD Climate Action Program Assistant; Recorder)

Regrets: Councillor M. Gardiner (Victoria), Mayor P. Jones (North Saanich)

The meeting was called to order at 1:10 pm.

1. Territorial Acknowledgement

- N. Elliott provided a Territorial Acknowledgment.

2. Welcome and Introductions

- A round of introductions were made by Task Force members and CRD staff.

3. Task Force Terms of Reference

- N. Elliott provided an overview of the draft Task Force Terms of Reference, including role, authority, and procedures.
- Discussion related to opportunities for the CRD to further influence and support local climate policy.
- Terms of Reference will be provided to the Environmental Services Committee for approval on March 29, 2023.

4. Other Local Government Climate Action Committees/Groups

- N. Elliott provided a list of local government climate action committees and groups for both elected officials and local government staff, respectively. There was discussion

surrounding which members are currently involved with which groups, such as Association of Vancouver Island and Coastal Communities – Climate Leadership Plan ([AVICC-CLP](#)), [Climate Caucus](#), [BC Climate Leaders](#).

- Staff groups include CRD Climate Action Inter-Municipal Working Group (IMWG), various BC Hydro and Community Energy Association Peer Networks (i.e., Community Energy Managers, retrofit, Step Code, electric vehicle, circular economy) and Vancouver Island and Coastal Communities Climate Action Network (VICCAN). CRD Climate staff attend and share pertinent information to IMWG.

5. CRD Climate Action Service Overview

- N. Elliott provided background information and updates for the CRD Climate Action Service, including:
 - Context and roles of the service.
 - CRD Climate Action Strategy, including overarching goals and targets.
 - Current major projects, including the Home Energy Navigator regional building retrofit program, BC Energy Step Code policy support, Charge Your Ride e-mobility campaign, heat vulnerability mapping, updating regional climate projections, corporate projects and policies.
 - Discussion related to CRD Climate Action Service staff capacity and support services, opportunities for local governments to leverage, active partnerships, past and current collaborative policy endeavors, regional grant opportunities and successes to date.

6. Municipal Roundtable

- Attendees provided brief updates regarding current projects and areas of interest in their respective municipalities and electoral areas. Topics included: climate action planning, land use planning, low carbon development and retrofits, various active transportation projects, data collection and modelling, local food security, composting and soil preservation, community engagement and climate action kits, and sea level rise planning. Discussion related to making the business case for climate action, increasing community capacity building and balancing multiple or competing priorities.
- Councillors identified two opportunities for municipal advocacy: PACE legislation, West Coast Environmental Law's Sue Big Oil campaign.
- Councillors advised that the CRD consider:
 - Supporting Highland's draft Local Area Plan (A. Baird, Highlands)
 - Expanding community supports through a train-the-trainer program for home retrofits (T. St-Pierre, Sooke)
 - Galloping Goose extensions to Jordan River (T. St-Pierre, Sooke)
 - Support for Lochside trail enhancements (S. Riddell, Central Saanich)

7. Future Meeting Topics

- Attendees noted that they would prefer in-person meetings, with the option for hybrid.
- Potential topics for future discussion include: regional transportation networks, local food/farmlands trust, transportation related data collection, and electrification of transportation.
- Due to limited discussion time, staff will request members provide additional meeting topics.

8. Task Force SharePoint Site

- Item differed.

- Staff will send out login instructions in the near future.

9. Upcoming CRD Staff Reports

- Item differed.

10. Adjournment

- Meeting adjourned at 3:15 pm.

New Actions	Responsibility	Timeline
To connect with City of Victoria for bike lane study approaches and provide to Task Force.	Staff	ASAP
To provide members with login information for the Task Force SharePoint collaboration site.	Staff	ASAP
To send out a poll for the next meeting date.	Staff	ASAP
To provide future meeting topic requests to Manager, Climate Action Programs.	IMTF	Ongoing
Members are encouraged to look at the collaborative site for useful resources. If you need assistance accessing the collaborative site, please contact staff.	IMTF	Ongoing

Capital Regional District

Meeting Minutes

Solid Waste Advisory Committee

Friday, February 3, 2023

12:30 PM

CRD Boardroom
625 Fisgard Street
Victoria, BC V8W 2S6

PRESENT: F. Baker, C. Blanchard, M. Coburn, J. Collins, B. Desjardins (Chair), S. Gose (EP), M. Kurschner (EP), E. Latta (EP), N. Macdonald (EP), M. McCullough (EP), D. Monsour, R. Newlove, J. Oakley (EP), R. Pirie, J. Shaw, K. Siefried, D. Thran, R. Tooke (Vice-Chair), S. Young Jr.

STAFF: A. Chambers (Recorder), W. Dunn, L. Ferris, A. Gilmour Ford, K. Masters, A. Panich (EP), R. Smith, T. Urquhart

REGRETS: J. Rintoul

GUEST: M. O'Gorman (DND)

EP - Electronic Participation

The meeting was called to order at 12:30 pm.

1. Territorial Acknowledgement

2. Introductions

A round of introductions were made.

3. Approval of Agenda

Agenda for the February 3, 2023 Solid Waste Advisory Committee meeting.

MOVED by J. Shaw, SECONDED by M. Coburn
That the agenda be approved as circulated.
CARRIED

4. Adoption of Minutes

Minutes from the July 8, 2022, Solid Waste Advisory Committee meeting.

MOVED by D. Monsour, SECONDED by R. Tooke
That the minutes of the July 8, 2022, Solid Waste Advisory Committee meeting be adopted as circulated.
CARRIED

5. Chair's Remarks

Welcome back to the committee, looking forward to being your Chair again this year.

6. Election of Vice Chair

B. Desjardins called for nominations of Vice-Chair for the Solid Waste Advisory Committee.

M. Coburn nominated R. Tooke and this was seconded by D. Monsour. Rory accepted the nomination.

B. Desjardins called for nominations a second time.

Voting commenced around the table and virtually.

B. Desjardins declared R. Tooke Vice Chair of the Solid Waste Advisory Committee.

7. Committee Business

- a. Solid Waste Advisory Committee Terms of Reference Overview.

The Terms of Reference were provided to the group for information (Appendix A). As the Solid Waste Advisory Committee turns into a monitoring function, staff will bring forward (in spring 2023) a Workplan associated with implementation of the Solid Waste Management Plan to the group.

- b. 2022 Solid Waste Stream Composition Study – Results and Discussion

A. Gilmour Ford presented on the 2022 waste composition study. The full report will be going to the Environmental Services Committee on February 15, 2023. The presentation is attached as Appendix B. The full report will be brought to the Solid Waste Advisory Committee at its March meeting. A discussion ensued on the following:

- Waste composition studies have been done since 1990 and are typically every 5-years.
- The next waste composition study will be done in 2026.
- Study included materials brought to the active face only.
- Further discussion will be had on the waste composition study at the March Solid Waste Advisory Committee meeting.

- c. Actual and Projected Monthly Refuse Tonnages at Hartland Landfill (standing item)

W. Dunn spoke to the graph. The tonnage graph is included below:

<https://www.crd.bc.ca/about/data/hartland-landfill-tonnage>

8. Correspondence

There was no correspondence.

9. Next Meeting

The next Solid Waste Advisory Committee meeting will be March 3, 2023.

9. Closing Comments

There were no closing comments.

10. Adjournment

The meeting was adjourned at 14:14.

**MOVED by D. Thran, SECONDED by D. Monsour
That the Solid Waste Advisory Committee be adjourned.
CARRIED**

Capital Regional District

Meeting Minutes

Solid Waste Advisory Committee

Friday, March 3, 2023

12:30 PM

CRD Boardroom
625 Fisgard Street
Victoria, BC V8W 2S6

PRESENT: C. Blanchard, M. Coburn, J. Collins (EP), B. Desjardins (Chair), S. Gose, M. Kurschner, E. Latta (EP), M. McCullough (EP), D. Monsour, J. Oakley (EP), J. Shaw, K. Siefried (EP), R. Tooke (Vice-Chair),

STAFF: A. Chambers (Recorder), L. Ferris, A. Gilmour Ford, K. Masters (EP), A. Panich (EP), R. Smith, T. Urquhart, T. Watkins (EP)

REGRETS: F. Baker, N. Macdonald, R. Newlove, R. Pirie, J. Rintoul, W. Stevens, D. Thran, S. Young Jr.

GUEST: M. O'Gorman (DND)

EP - Electronic Participation

The meeting was called to order at 12:30 pm.

1. Territorial Acknowledgement

2. Approval of Agenda

Agenda for the March 3, 2023 Solid Waste Advisory Committee meeting.

MOVED by D. Monsour, SECONDED by S. Gose
That the agenda be approved as circulated.
CARRIED

3. Adoption of Minutes

Minutes from the February 3, 2023, Solid Waste Advisory Committee meeting.

MOVED by J. Shaw, SECONDED by R. Tooke
That the minutes of the February 3, 2023, Solid Waste Advisory Committee meeting
be adopted as circulated.
CARRIED

4. Chair's Remarks

- Reinhard Trautmann and Dave Paul Jr. have resigned from the committee.
- Welcome to Wendy Stevens from HL Disposal who has been appointed as the *Owners/operators of Private Waste Management Facilities* representative on the Solid Waste Advisory Committee.
- CRD staff advertised for the three vacancies (*First Nations x 2 and Public Representative x 1*) on the committee and are reviewing applications received.
- Staff will be seeking input for the 2023 Solid Waste Management Plan Report
- Two houses set for demolition were instead given to the Songhees Nation

5. Committee Business

- a. Update on Coast Waste Management Association (CWMA) *Simple in Theory: Preservation, Recycling and Reuse in the Built Environment*.

A. Panich provided a brief overview on the CWMA workshop. The presentation is attached as Appendix A. The annual CWMA conference will be held in Delta October 25-27, 2023.

- b. 2022 Solid Waste Stream Composition Study

A. Gilmour Ford presented on the 2022 Solid Waste Stream Composition Study. The presentation is attached as Appendix B. The following three motions were passed and will be sent through the Environmental Services Committee.

The Solid Waste Advisory Committee recommends to the Environmental Services Committee to recommend to the Capital Regional District Board:

That staff be directed to explore mandatory curbside organics collection from the municipalities around the region.

**MOVED by R. Tooke, SECONDED by C. Blanchard
CARRIED**

The Solid Waste Advisory Committee recommends to the Environmental Services Committee to recommend to the Capital Regional District Board:

That staff be directed to develop and implement policies around diversion programs on wood and wood products, and construction and demolition waste diversion.

**MOVED by J. Shaw, SECONDED by D. Monsour
CARRIED**

**The Solid Waste Advisory Committee recommends to the Environmental Services Committee:
That staff be directed to prioritize the reduction and reuse categories in the Solid Waste Management Plan to assist in reaching the waste disposal goals.**

**MOVED by K. Siefried, SECONDED by R. Tooke
CARRIED**

- c. Actual and Projected Monthly Refuse Tonnages at Hartland Landfill (standing item)

The tonnage graph is included via this link: <https://www.crd.bc.ca/about/data/hartland-landfill-tonnage>

6. Correspondence

There was no correspondence.

7. Next Meeting

The next Solid Waste Advisory Committee meeting will be April 21, 2023.

8. Closing Comments

There were no closing comments.

9. Adjournment

The meeting was adjourned at 14:10.

**MOVED by J. Shaw, SECONDED by D. Monsour
That the Solid Waste Advisory Committee be adjourned.
CARRIED**



**Overview of
Coast Waste Management Association
February 16, 2023 Presentation**

***Simple in Theory:
Preservation, Recycling, and Reuse in the Built Environment***

Presented to Solid Waste Advisory Committee

March 3, 2023

Overview of Coast Waste Management Association

The logo for the Coast Resource District (CRD) is located in the top right corner. It consists of the letters 'CRD' in a white, stylized font, set against a teal background with wavy lines.

Member based : 170 organizations

Private sector, local and regional governments, non-profit organizations

Activities: recycling, composting, deconstruction, extended product stewardship, policy development and analysis, waste disposal, environmental education and consulting, solid waste facility management

Annual conference-hybrid event October 25-27, 2023

Events throughout the year



CWMA Presentations & Panel Discussion

Simple in Theory: Preservation, Recycling, and Reuse in the Built Environment

As always, CWMA Virtual events include time for discussion with a goal to inform each other about initiatives and provide an opportunity to discuss challenges and opportunities.

Built Environment defined: The built environment touches all aspects of our lives, encompassing the buildings we live in, the distribution systems that provide us with water and electricity, and the roads, bridges, and transportation systems we use to get from place to place. In this case, we will include discussion on development, construction, salvage, building material recycling and deconstruction.

– DETAILS –

Thursday, February 16, 2023 | 10:00 AM – Noon PST | Virtual Event

It seems simple to just use what already exists from demolishing or when building: to salvage, reuse, and recycle materials, and to preserve existing structures... but is it simple?

Let's hear from organizations working to overcome barriers, build the processes and motivation in BC for preservation, recycling, and reuse in the built environment — then let's discuss together what we can all be doing better or differently to move from theory to everyday practice...

- Perspective: The big picture — Let's have a broad view of the obstacles and current trends (Light House Sustainability Society)
- Perspective: Preservation — Relocating homes and extend their life (Renewal Home Development)
- Perspective: Recycling — Using recycled aggregate in local projects (Lehigh Hanson/ Heidelberg)
- Perspective: Salvaging — Salvaging and distributing materials for reuse. (The ReUse People Canada)
- Perspective: Construction Industry — Current adoption and future outlook. (Vancouver Island Construction Association)
- Perspective: Yours — Have something to add to this conversation? (research, new ideas, future plans, etc) email us to be added to the facilitated discussion!

Simple in Theory:

Preservation, Recycling, and Reuse in the Built Environment Summary



Light House Sustainability Society:

- Vancouver based, specialize in regenerative built environments
- Estimate ~2500 home demolitions in Metro Vancouver/year
~20% eligible for home relocation (500)

Renewal Home Development:

- Partner with Nickel Brothers to relocate and repurpose high value homes in the Pacific Northwest
- Home Donation Model
- Build policies around triaging demo

Heidelberg Materials:

- Recycle concrete aggregate for road/sub-base
- Cost of raw materials reduced
- Less processing and transportation - energy reduction

The ReUse People:

- Salvage and distribute materials for reuse
- 30%-35% of embodied carbon is in lumber

Vancouver Island Construction Association:

- Serves the industrial, commercial and institutional and multi-family construction sectors
- Early incentive to unbuild/deconstruct

Questions?

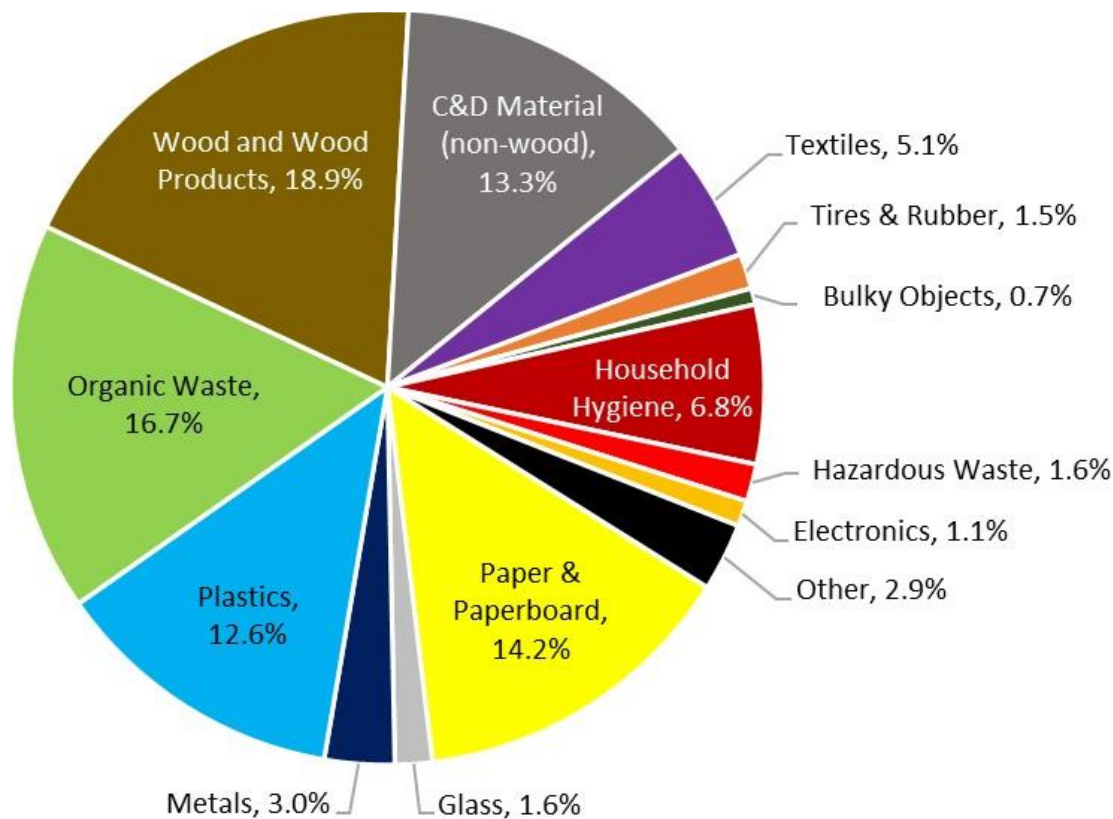


2022 Solid Waste Composition Study

Presented to Solid Waste Advisory Committee

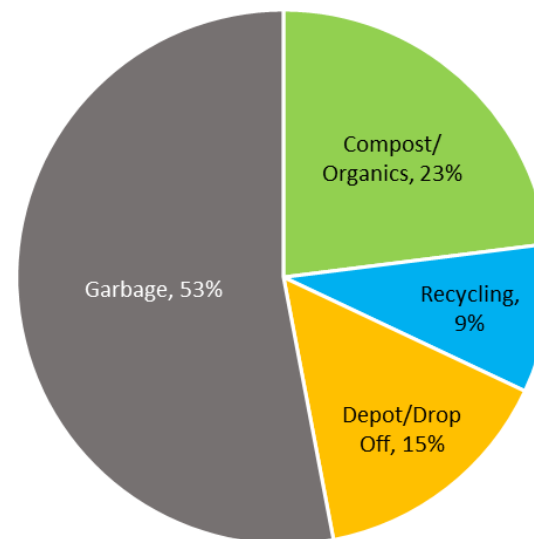
March 3, 2023

Combined Results



Composition of the Overall Garbage Stream

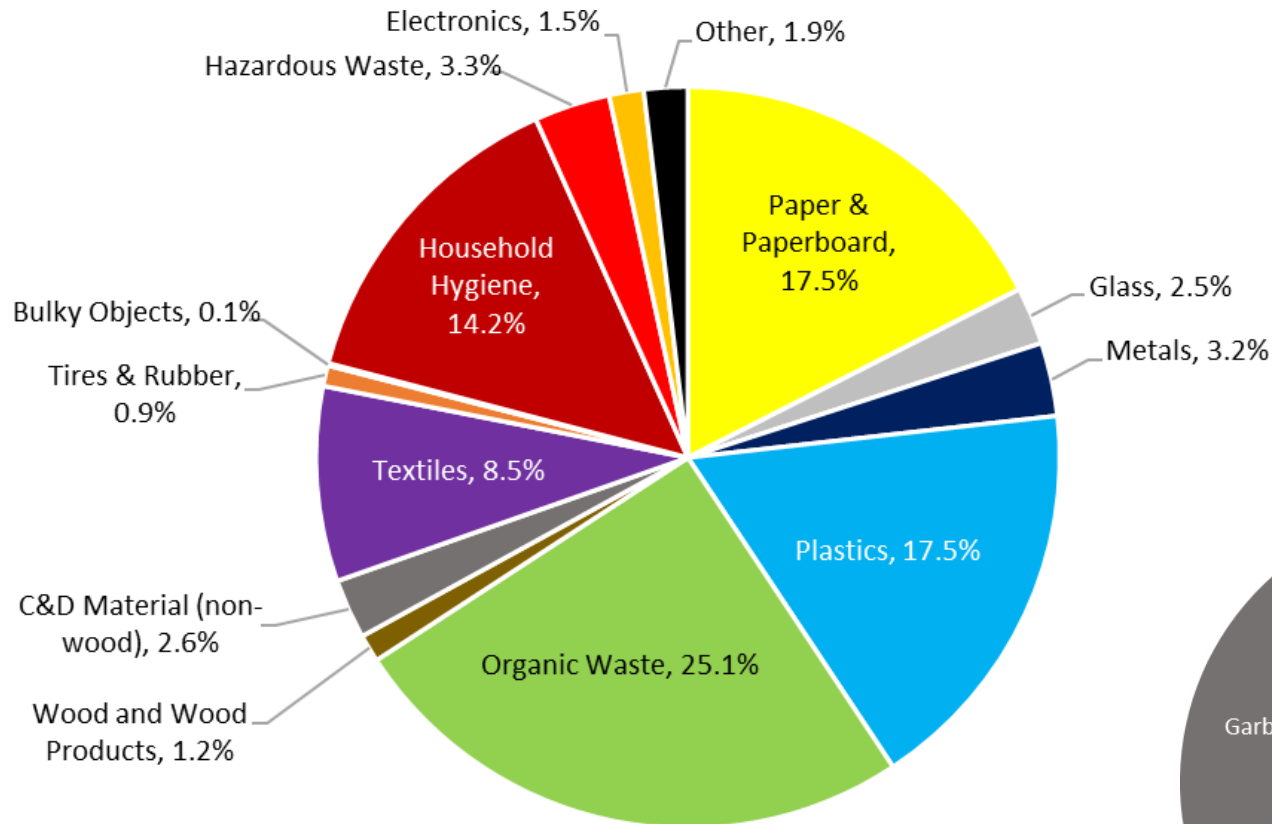
Sector	Proportion of Waste Disposed
Single Family (SF)	24.2%
Multi-Family (MF)	13.4%
Industrial, Commercial, Institutional (ICI)	35.8%
Drop Off (DO)	3.9%
Construction & Demolition (C&D)	22.7%



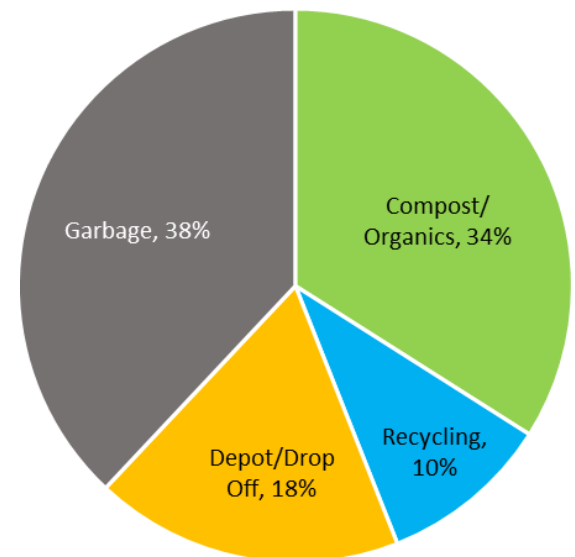
Diversion Potential of the Overall Garbage Stream

Single-Family Results

CRD



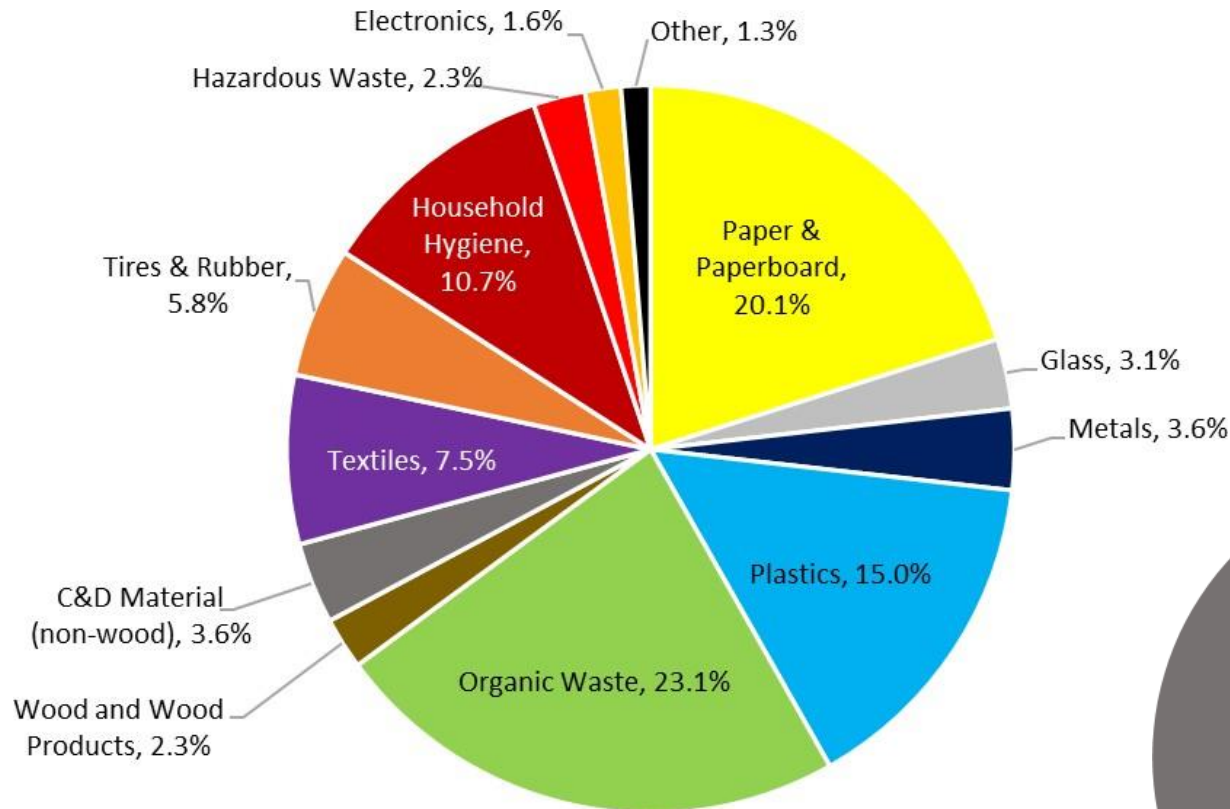
Composition of the SF Garbage Stream



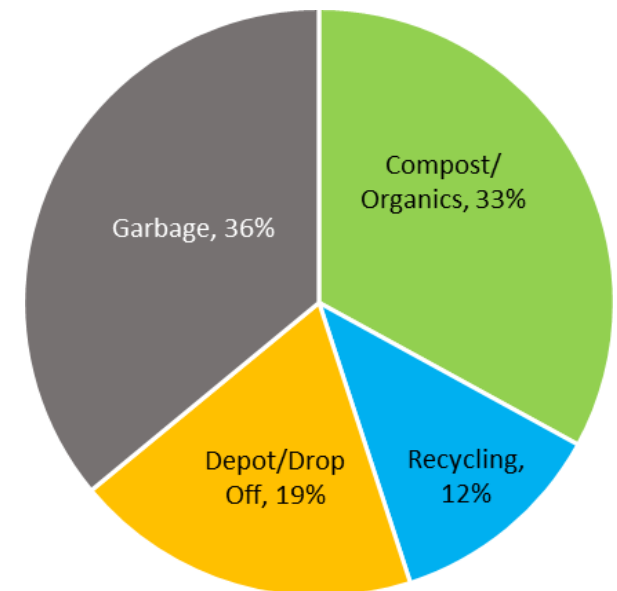
Diversion Potential of the SF Garbage Stream

Multi-Family Results

CRD

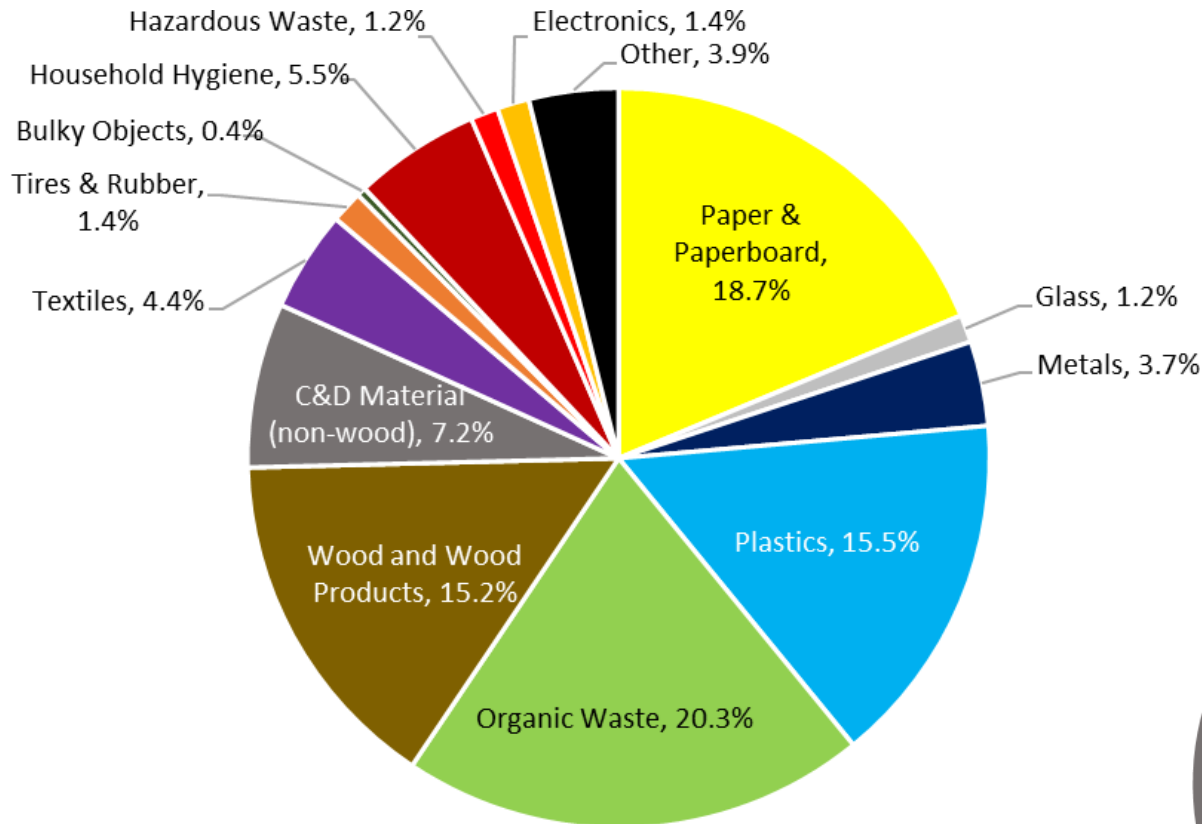


Composition of the MF Garbage Stream

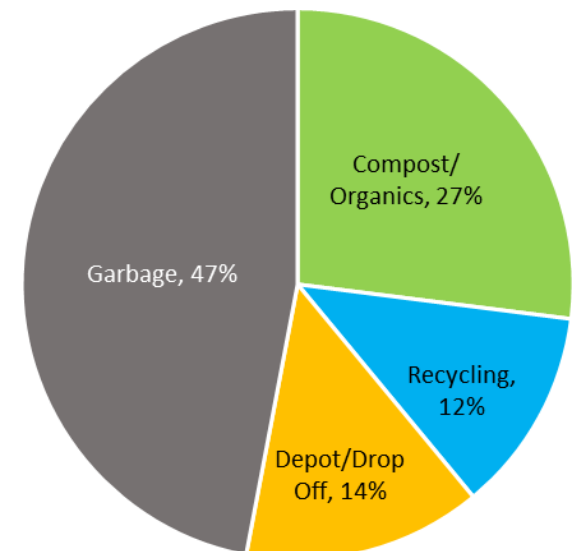


Diversion Potential of the MF Garbage Stream

Industrial, Commercial, Institutional (ICI) Results



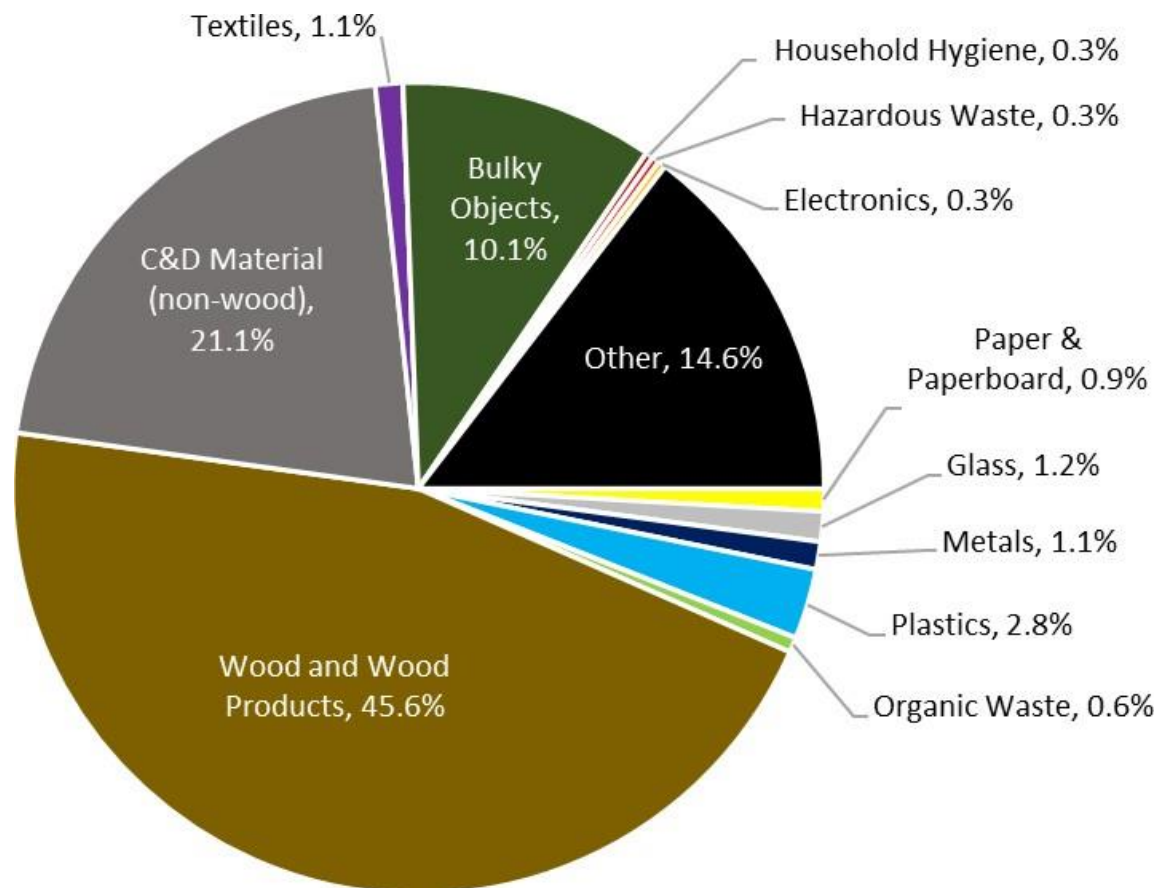
Composition of the ICI Garbage Stream



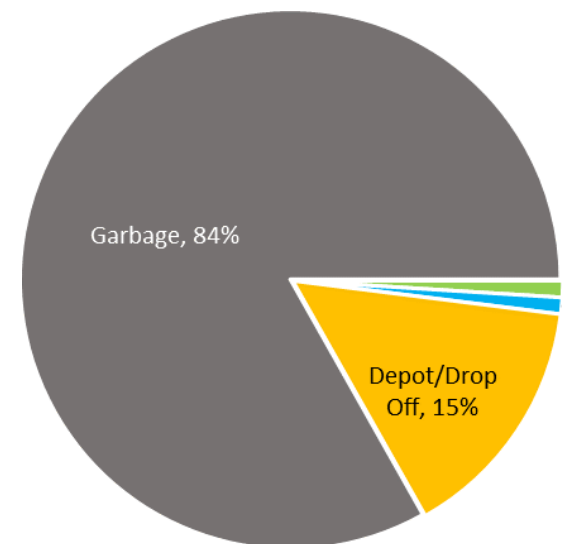
Diversion Potential of the ICI Garbage Stream

Public Drop Off Results

CRD



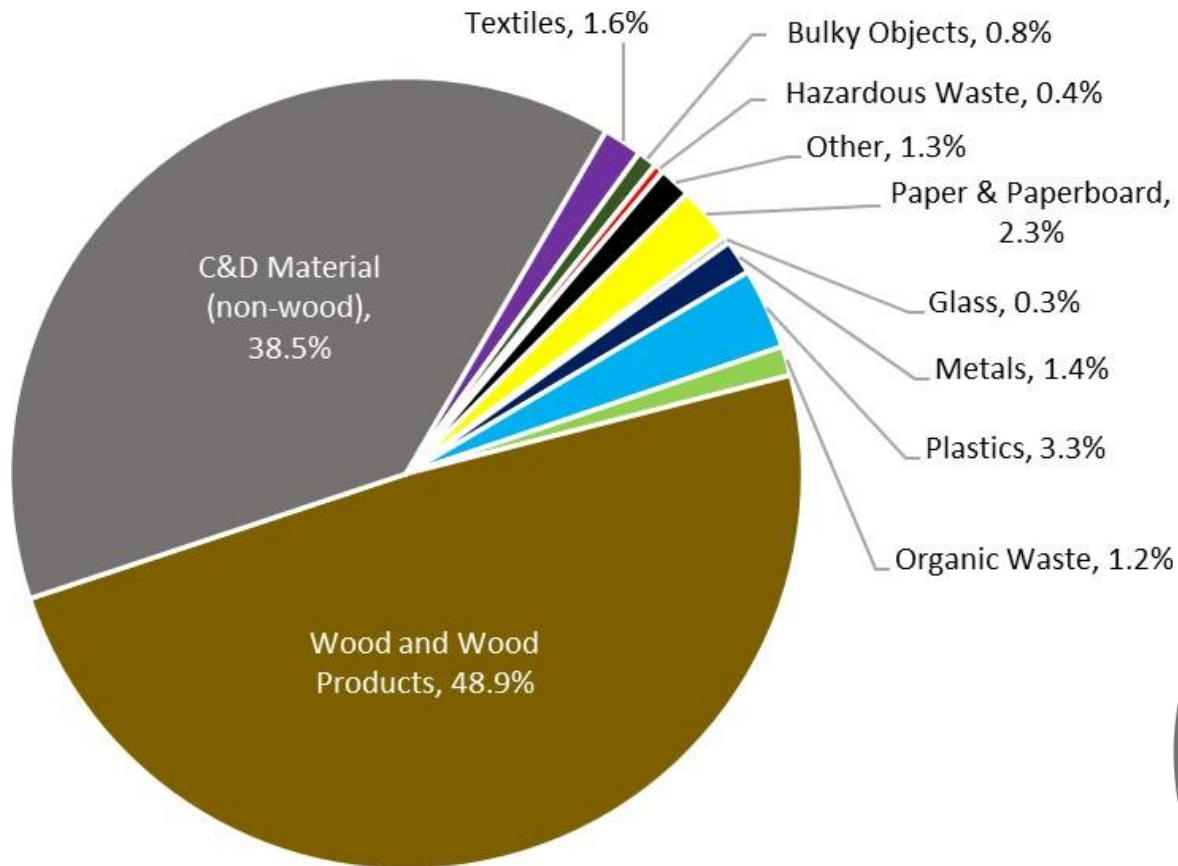
Composition of the DO Garbage Stream



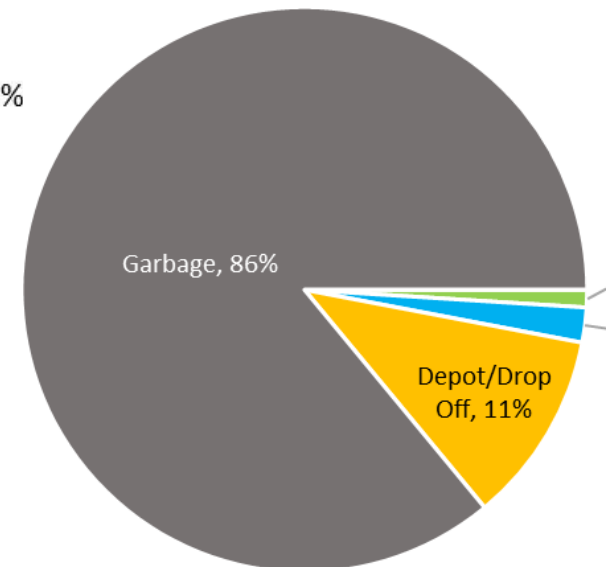
Diversion Potential of the DO Garbage Stream

Construction & Demolition Results

CRD



Composition of the C&D Garbage Stream



Diversion Potential of the C&D Garbage Stream

Historic Waste Composition Comparison



Primary Category	2009/2010 ¹	2016	2022	Change (2016 to 2022)
	Weighted Average Composition (%)			
Paper and Paperboard	15.5%	15.4%	14.2%	-1.2%
Glass	1.9%	1.7%	1.6%	-0.1%
Ferrous Metals	2.3%	1.8%	0.3%	-1.5%
Non-ferrous Metals	0.6%	0.7%	2.7%	2.0%
Plastics	12.5%	14.3%	12.6%	-1.7%
Organics	27.7%	21.1%	16.7%	-4.4%
Wood and Wood Products	12.2%	17.0%	18.9%	1.9%
C&D (non-wood)	7.4%	6.7%	13.3%	6.6%
Textiles	5.3%	5.9%	5.1%	-0.8%
Tires	0.7%	0.8%	1.5%	0.7%
Bulky Objects	0.6%	1.3%	0.7%	-0.6%
Household Hygiene	8.9%	6.9%	6.8%	-0.1%
Hazardous Wastes	0.7%	1.8%	1.6%	-0.2%
Electronics	1.8%	1.8%	1.1%	-0.7%
Other	1.9%	2.7%	2.9%	0.2%

Organics Material Category Analysis



Historic comparison of the estimated tonnes and kg/capita of organics from all sectors landfilled from the 2010, 2016 and 2021 waste composition studies.

	2010	2016	2021	Change 2010-2021 (%)	Change 2016-2021 (%)
Population	369,791	378,232	432,062	16.8%	14.2%
Organics Landfilled (tonnes)	46,592	28,485	28,872	-38.0%	1.4%
Organics Landfilled (kg/capita)	126	75	67	-47.0%	-11.3%

Organics Material Category Analysis by Sector



Historic comparison of the estimated tonnes of organics landfilled by sector from the 2016 and 2021 waste composition studies.

Sector	Landfilled (tonnes)		Change (2016-2022)
	2016	2022	
Single-Family	9,518	10,460	9.9%
Multi-Family	5,458	5,352	-2.0%
ICI	12,897	12,564	-2.6%
Drop Off (DO)	567	40	-92.9%
C&D	43	471	990.1%
Overall	28,485	28,872	1.4%

Historic comparison of the estimated kg/capita of organics landfilled by sector from the 2016 and 2021 waste composition studies.

Sector	Landfilled (kg/capita)		Change (2016-2022)
	2016	2022	
Single-Family	25.2	24.2	-3.8%
Multi-Family	14.4	12.4	-14.2%
ICI	34.1	29.1	-14.7%
Drop Off (DO)	1.5	0.1	-93.8%
C&D	0.1	1.1	854.3%
Overall	75.3	66.8	-11.3%

Solid Waste Management Plan



Goals

Have informed citizens who participate effectively in proper waste management practices

Surpass the provincial per capita waste disposal target

Extend the life of Hartland Landfill to 2100 plus

Ensure that the CRD's solid waste services are financially sustainable

Strategies

REDUCTION & REUSE

1. Continue and Enhance Education Programs
2. Encourage Waste Prevention
3. Support Reduction of Avoidable Food Waste
4. Support Reuse Activities in the Region
5. Support Local Governments in Working Towards Zero Waste and a Circular Economy
6. Continue and Enhance Policy Development

RECYCLING

7. Increase Residential Diversion
8. Increase Multi-Family Diversion
9. Increase Industrial, Commercial and Institutional Diversion
10. Support Existing and New Extended Producer Responsibility Programs
11. Increase Organics Diversion and Processing Capacity
12. Increase Construction, Renovation, and Demolition Material Diversion
13. Encourage Proper Public Space Waste Management Activities

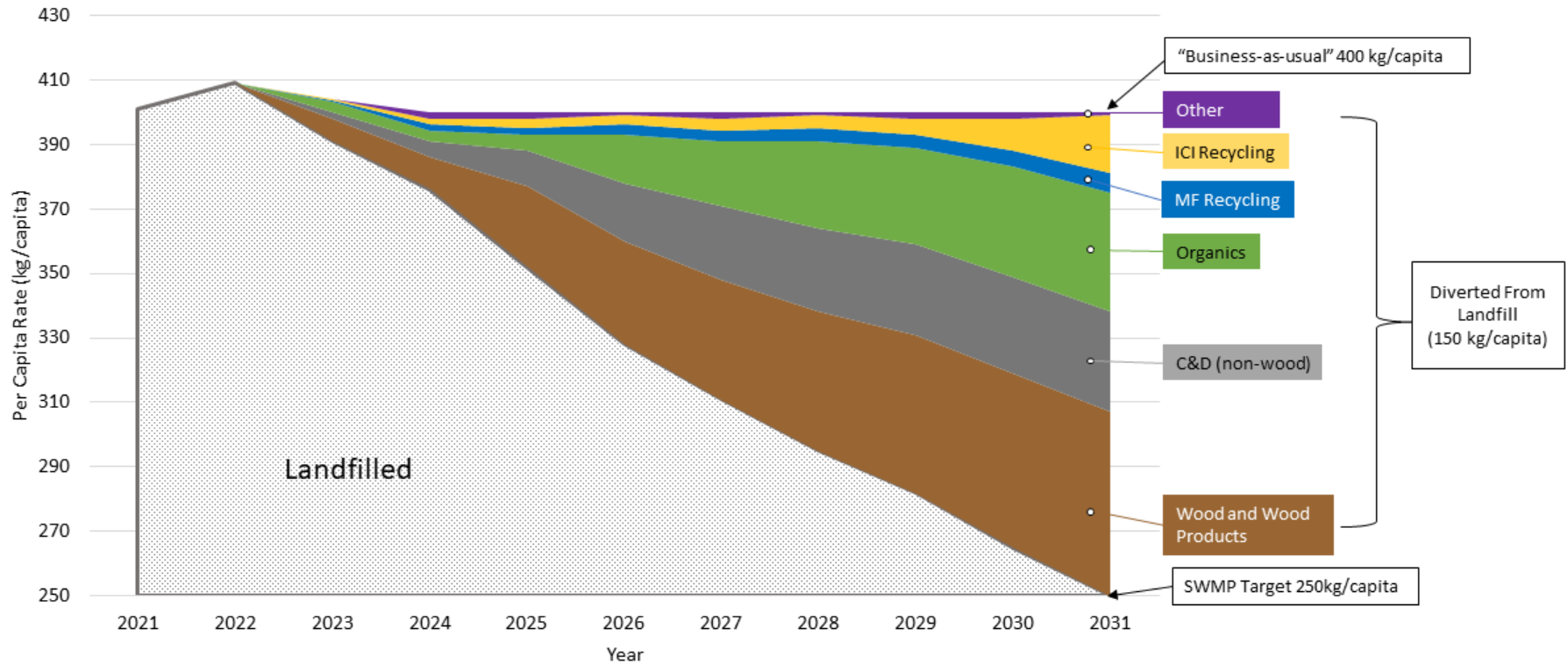
RECOVERY & RESIDUALS MANAGEMENT

14. Optimize Landfill Gas Management
15. Enhance Hartland Disposal Capacity

Pathway to 250 kg/capita

CRD

Conceptual Pathway to Regional Waste Disposal Rate of 250 kg/capita



Questions?