APPENDIX B

Making a difference...together

Long-Term Biosolids Management Plan

First Nations Engagement What We Heard Report

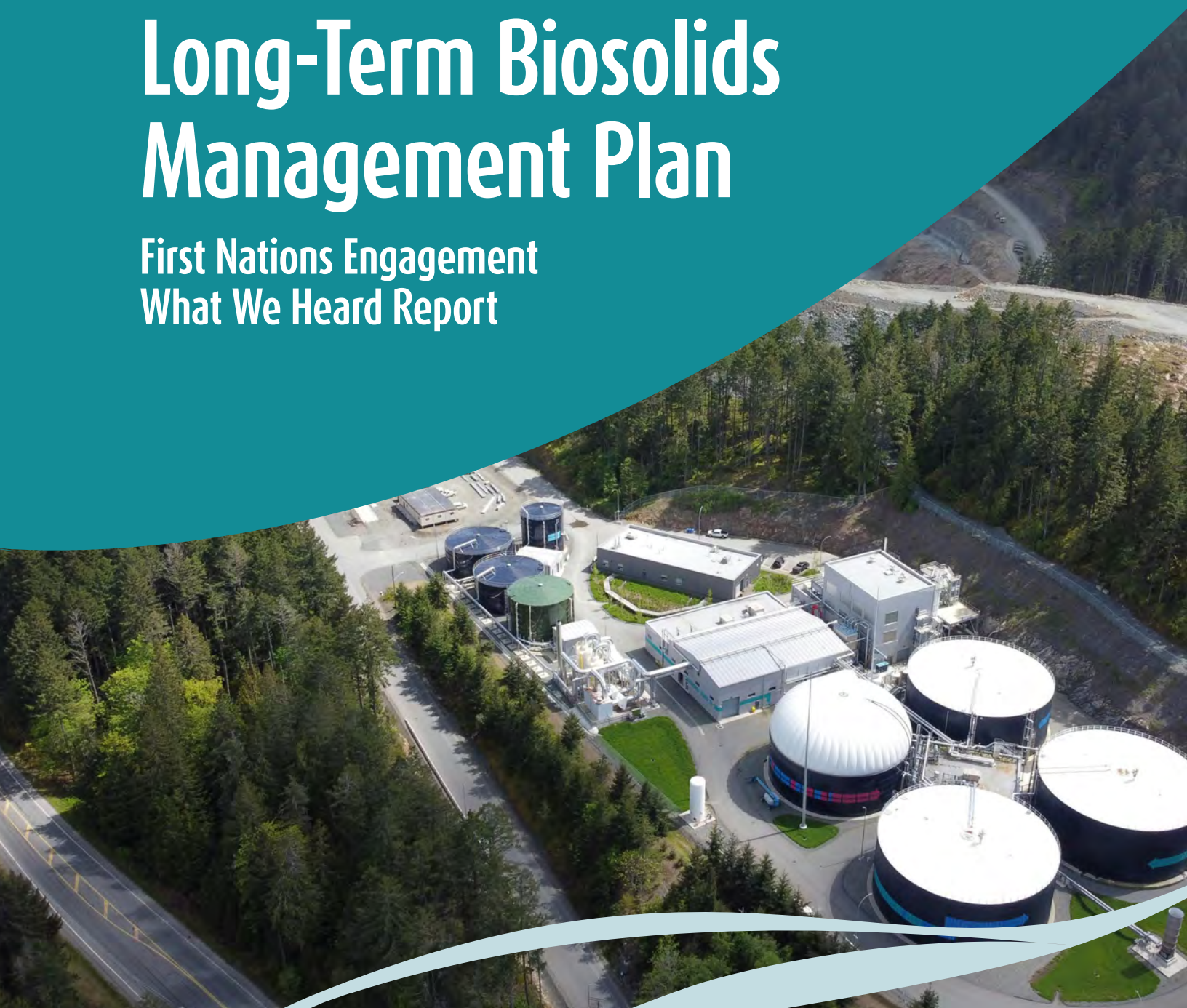
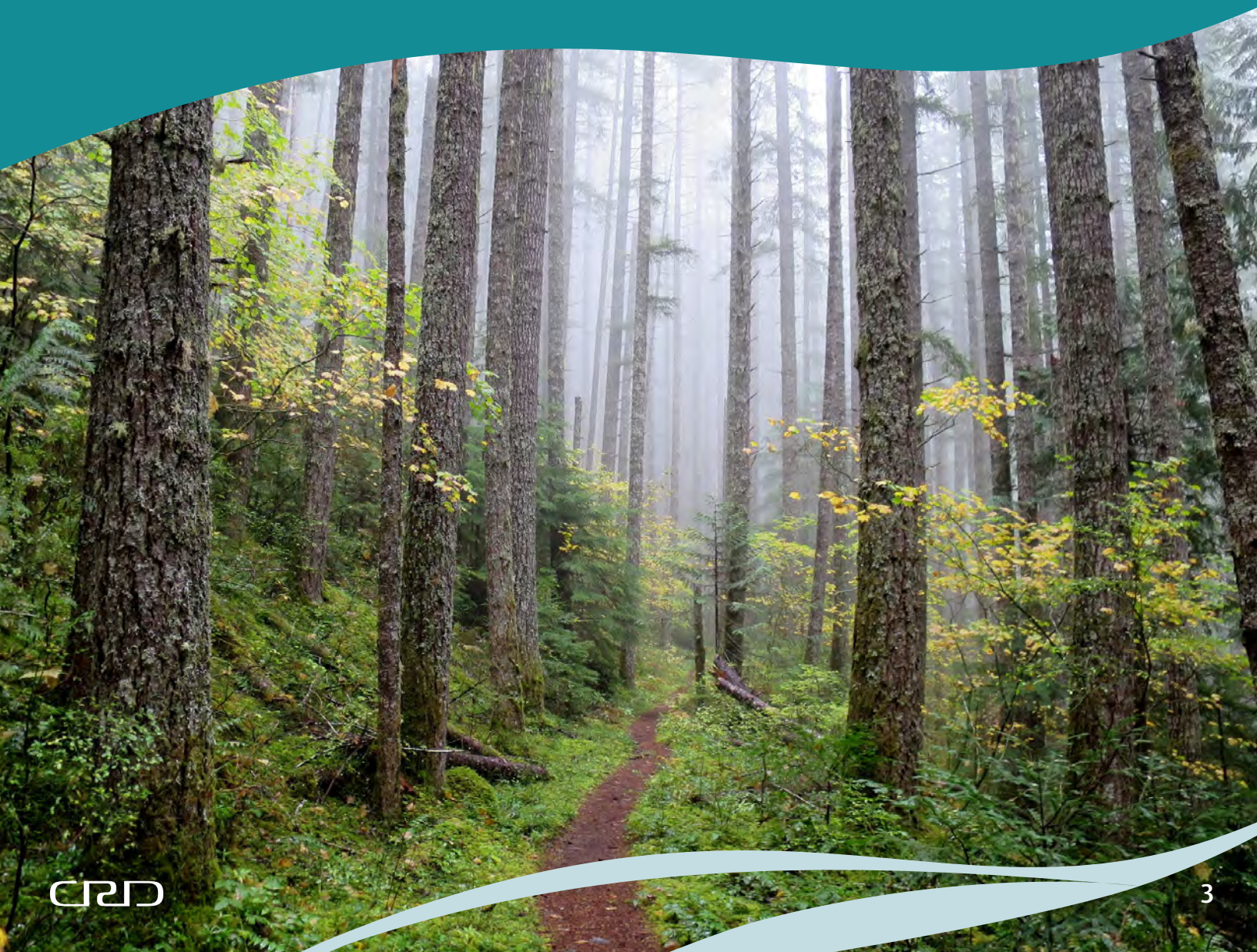


Table of Contents

Territorial Acknowledgement

The Capital Regional District conducts its business within the traditional territories of many First Nations, including but not limited to BOḰEĆEN (Pauquachin), MÁLEXEŁ (Malahat), Paa?čiid?atx̣ (Pacheedaht), Pune'laxutth' (Penelekut), Sc'ianew (Beecher Bay), Songhees, SṮÁUTW̱ (Tsawout), T'Sou-ke, W̱JOŁEŁP (Tsartlip), W̱SIKEM (Tseycum) and xʷsepsəm (Esquimalt), all of whom have a long-standing relationship with the land and waters from time immemorial that continues to this day.



Executive Summary

The Capital Regional District (CRD) is exploring options and technologies to harness the benefits of biosolids, the by-product of wastewater treatment. Short-term plans regarding biosolids management were put in place when the CRD first introduced wastewater treatment in 2020. However, despite best efforts, the region's biosolids are largely being landfilled under emergency measures.

The Province of BC requires the CRD to submit a *Long-Term Biosolids Management Plan* by **June 2024**. This plan must consider a wide variety of management options, including various land application scenarios in addition to incineration and advanced thermal options. The long-term beneficial use options under consideration include: fertilizer for agriculture; industrial land reclamation; forest fertilization; wholesale fertilizer for landscaping; bagged fertilizer for residential use; fuel for incineration/combustion; and pyrolysis or gasification technology to create biochar/gas.

The purpose of this phase of the engagement process is to effectively communicate and engage with First Nations whose traditional territories span portions of the region in the development of a definitive (long-term) biosolids management plan for the Capital Regional District. From **February 28, 2024, to April 19, 2024**, the CRD sought feedback from First Nations leadership on the direction of which long-term uses of biosolids would best serve their Nation.

Introduction

Biosolids are the by-product of wastewater treatment, containing nutrients, such as nitrogen, phosphorus, calcium, sulphur and iron, energy and organic matter that can be recycled and used in various ways. The most common use of this material is as fertilizer to promote tree and plant growth and as a soil additive to restore degraded industrial lands. However, there are other options, such as harnessing energy through thermal (heating) processes to use as an alternative fuel.

During the treatment process, the liquids and solids are separated, and the solids are then treated to produce a dark coloured, dry granular pellet. Biosolids produced by the CRD surpass standards set out in the Organic Matter Recycling Regulation, due to the high quality of sewage treatment and robust source control programs aimed at preventing metals and other contaminants from entering the wastewater system.

Biosolids can be used as:

A nutrient-rich fertilizer. This organic material improves soil conditions, promotes plant growth, increases crop yields and improves water retention.

An alternative fuel source through burning biosolids to supply heat energy at incineration to facilities to reduce reliance on fossil fuels.

An alternative energy source through pyrolysis and gasification technologies, that creates biochar/synthetic gas, which is then burned to produce heat or electricity.

The CRD has been responsible for the beneficial use of Class A biosolids produced at the Residuals Treatment Facility since the commissioning of the core area wastewater treatment project in 2020.

Currently, the CRD is operating under a Short-term Biosolids Management Plan (2020-2025), with the primary beneficial use options being incineration as an alternative fuel in a cement manufacturing plant in Richmond, BC, and integration with landfill cover systems as contingencies. When neither of these options are available, landfilling biosolids at Hartland Landfill has been the only alternative.

In 2011, the CRD Board passed a resolution to ban the land application of biosolids from CRD facilities; however, in 2023, given the operational and logistical challenges with the short-term plan, the CRD Board amended its position to allow limited non-agricultural land application of biosolids as a contingency option. The CRD has secured the use of biosolids for industrial land reclamation at a quarry near Cassidy, BC, and continues to seek additional short-term beneficial use contingency options, in order to limit or avoid landfilling of biosolids when the other options are not available.

To support transportation, the CRD partnered with the W̱SÁNEĆ Leadership Council in the creation of K'ENES Transportation, a First Nation-owned and operated trucking company. However, regular shipments of biosolids to the cement plant have been challenged by a wide variety of logistical and operational issues.

Purpose of Engagement

This engagement process intends to gather feedback from local First Nations and ensure they are well-informed about the potential long-term uses of biosolids.

The responses received during this phase will inform the development of the *Long-Term Biosolids Management Plan* that will outline the CRD's approach to managing biosolids in the future. This report summarizes insights gained through an online survey and virtual engagement session with First Nation representatives.

Engagement Process and Activities

Committed to gathering diverse feedback, the CRD's objectives were as follows:

Gather feedback from First Nations with territory within the region to help inform the *Long-Term Biosolids Management Plan*.

Ensure that First Nations and all residents within the CRD are well-informed about the potential long-term uses of biosolids.

Seek to identify a long-term biosolids option that maximizes benefits for the communities in the CRD.

A number of resources were developed to support outreach and engagement.

A handout was created, providing frequently asked questions on one side and a description of the seven long-term use options on the other. Throughout the document, useful resources were accessible through a QR code, such as regulatory requirements, biosolids in BC and the CRD's Biosolids Beneficial Use Strategy. An online survey was also developed, asking respondents for their feedback about the use of biosolids in the region and how they want to see them utilized.

Long-term options for biosolid use in the CRD

Scan the QR code to view the biosolids fact sheet.

Fertilizer for Agriculture
The nutrient-rich organic material can improve soil conditions to promote plant growth and increase crop yields. It can also improve water retention to reduce water usage as well as reduce reliance on synthetic fertilizers.
Timeline: Immediate
Cost: Less than $500/tonne

Industrial Land Reclamation
Biosolids can be applied to disturbed and degraded soils to replenish organic matter and essential nutrients, improving soil fertility, soil structure and increasing water retention. They can be applied directly or blended with compost, soil or wood chips.
Timeline: Immediate
Cost: Less than $250/tonne

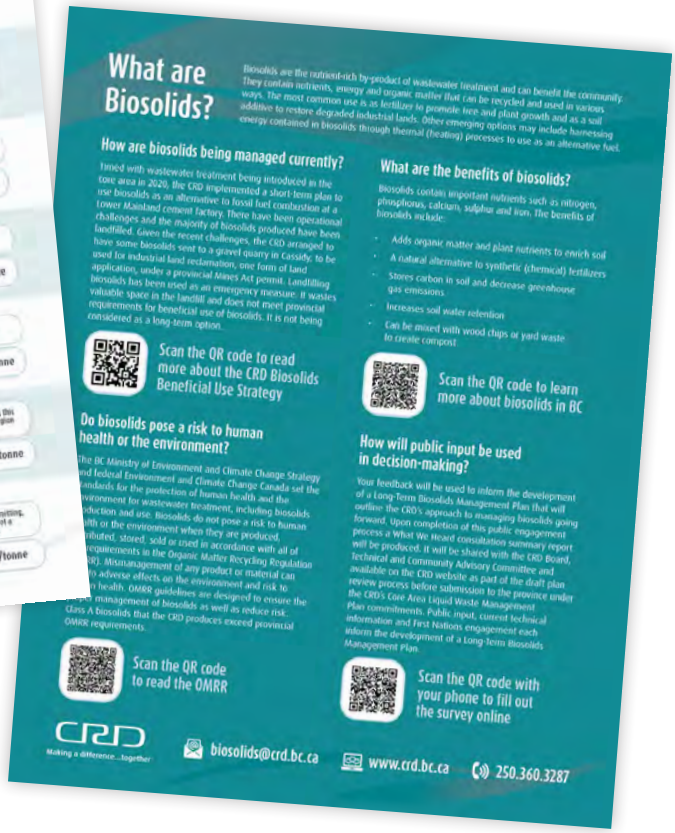
Forest Fertilization
Biosolids can help improve soil fertility, prevent erosion and accelerate plant and tree growth. After a wildfire, biosolids can help forests regenerate, increasing water retention and providing essential nutrients and organic matter to promote plant and tree growth.
Timeline: Immediate
Cost: Less than $400/tonne

Wholesale Fertilizer for Landscaping
The nutrient-rich organic material can improve soil conditions to promote lawn and plant growth. Uses include lawns, boulevards, golf courses.
Timeline: Immediate
Cost: Less than $500/tonne

Bagged Fertilizer for Residential Use
The nutrient-rich organic material is bagged and distributed as fertilizer or blended with soil, compost or wood chips and made available for residential use.
Timeline: Immediate
Cost: Less than $500/tonne

Fuel for Incineration/Combustion
Biosolids are burned or used as an alternative fuel to power facilities, such as cement kilns and pulp mills, reducing reliance on other non-renewable sources like coal or natural gas.
Timeline: CRD currently utilizes this technology in Richmond. In-region options not available.
Cost: Less than $500/tonne

Pyrolysis or Gasification Technology to Create Biochar/Gas
Biosolids are heated to make a gas or "biochar," which can be used to produce heat or electricity. Biochar is a type of charcoal that is made from organic material. It can be used as a soil additive to improve soil fertility and enhance water retention.
Timeline: 7-10 years for permitting, siting and construction of a permanent facility.
Cost: $500-$4500/tonne



What are Biosolids?

Biosolids are the nutrient-rich by-product of wastewater treatment and can benefit the community. They contain nutrients, energy and organic matter that can be recycled and used in various ways. The most common use is as fertilizer to promote tree and plant growth and as a soil additive to restore degraded industrial lands. Other emerging options may include harnessing energy contained in biosolids through thermal (heating) processes to use as an alternative fuel.

How are biosolids being managed currently?

Timed with wastewater treatment being introduced in the core area in 2020, the CRD implemented a short-term plan to use biosolids as an alternative to fossil fuel combustion at a Lower Mainland cement factory. There have been operational challenges and the majority of biosolids produced have been landfilled. Given the recent challenges, the CRD arranged to have some biosolids sent to a gravel quarry in Cassidy, to be used for industrial land reclamation, one form of land application, under a provincial Mines Act permit. Landfilling biosolids has been used as an emergency measure: it wastes valuable space in the landfill and does not meet provincial requirements for beneficial use of biosolids. It is not being considered as a long-term option.

Scan the QR code to read more about the CRD Biosolids Beneficial Use Strategy

Do biosolids pose a risk to human health or the environment?

The BC Ministry of Environment and Climate Change Strategy and federal Environment and Climate Change Canada set the standards for the protection of human health and the environment for wastewater treatment, including biosolids production and use. Biosolids do not pose a risk to human health or the environment when they are produced, distributed, stored, sold or used in accordance with all of requirements in the Organic Matter Recycling Regulation (OMRR). Mismanagement of any product or material can have adverse effects on the environment and risk to human health. OMRR guidelines are designed to ensure the safe management of biosolids as well as reduce risk. Class A biosolids that the CRD produces exceed provincial OMRR requirements.

Scan the QR code to read the OMRR

What are the benefits of biosolids?

Biosolids contain important nutrients such as nitrogen, phosphorus, calcium, sulphur and iron. The benefits of biosolids include:

- Adds organic matter and plant nutrients to enrich soil
- A natural alternative to synthetic (chemical) fertilizers
- Stores carbon in soil and decrease greenhouse gas emissions
- Increases soil water retention
- Can be mixed with wood chips or yard waste to create compost

Scan the QR code to learn more about biosolids in BC

How will public input be used in decision-making?

Your feedback will be used to inform the development of a Long-Term Biosolids Management Plan that will outline the CRD's approach to managing biosolids going forward. Upon completion of this public engagement process a What We Heard consultation summary report will be produced. It will be shared with the CRD Board, Technical and Community Advisory Committee and available on the CRD website as part of the draft plan review process before submission to the province under the CRD's Core Area Liquid Waste Management Plan commitments. Public input, current technical information and First Nations engagement each inform the development of a Long-Term Biosolids Management Plan.

Scan the QR code with your phone to fill out the survey online

CRD Making a difference...together
biosolids@crd.bc.ca
www.crd.bc.ca
250.360.3287

The CRD scheduled two engagement sessions to hear feedback: an in-person gathering on **March 25, 2024**, in Victoria, and virtually on **March 27, 2024**.

An invitation to these sessions was distributed to an established contact list of people in leadership roles at 19 First Nations on **February 28, 2024**.

The contact list included:

- BOḰEĆEN (Pauquachin) First Nation
- MÁLEXEŁ (Malahat) Nation
- Paa?čiid?atx̣ (Pacheedaht) First Nation
- SȾÁUTW̱ (Tsawout) First Nation
- Scia'new (Beecher Bay) First Nation
- Songhees Nation
- Spune'luxutth (Penelakut) Tribe
- T'Sou-ke Nation
- W̱JOŁEŁP (Tsartlip) First Nation
- W̱SIḴEM (Tseycum) First Nation
- Xʷsepsum (Esquimalt) Nation
- Cowichan Tribes
- Halalt First Nation
- Lyackson First Nation
- sc̓əwaθən məsteyəxʷ (Tsawwassen) First Nation
- Semiahmoo First Nation
- Stz'uminus (Chemainus) First Nation
- Ts'uubaa-asatx Nation

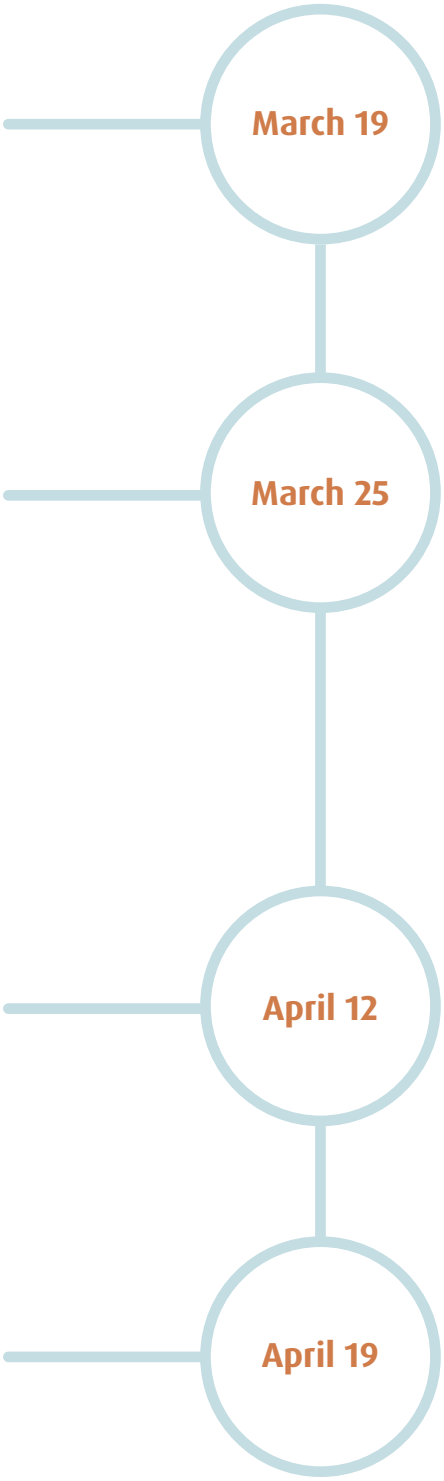
There were no responses to the initial invitation so, on **March 19, 2024**, a personalized follow-up email was sent to each contact, inviting them to attend one of the two engagement sessions. The CRD then reached out by phone to each First Nation on the contact list to ensure they had received the invitation and to create an RSVP list for the in-person and online engagement sessions. There was some interest expressed, but no confirmations for the RSVP list.

On **March 25, 2024**, the CRD sent out a third email to the contact list as a reminder of the in-person engagement session that evening, as well as the virtual session two days later. An online survey was also linked in the email to invite feedback not only from those on the contact list, but also from their colleagues and those they might share it with. There were no participants in either session, despite initial interest in attending the virtual engagement session.

However, Paaʔčiidʔatx̣ (Pacheedaht) First Nation and T'Sou-ke Nation expressed interest in providing feedback to the CRD in the near future.

A final follow-up email was distributed to the First Nation contact list on **April 12, 2024**. In this email, the CRD provided the link to the online survey as well as a link to the district's "Get Involved" landing page that details the information about the long-term options for biosolid use.

It also noted the **April 19, 2024**, deadline to have feedback included in the report to the Province of BC.



What We Heard

From **February 28, 2024, to April 19, 2024**, the CRD sought feedback from First Nations leadership on the direction of which long-term uses of biosolids would best serve their Nation.

The CRD reached out to 19 First Nations, through email and phone calls, as well as provided an online survey as an alternative way to provide their comments or questions. The district hosted three virtual formal consultation meetings, with BOḰEĆEN (Pauquachin) First Nation, Paa?čiid?atx̱ (Pacheedaht) First Nation and T'Sou-ke First Nations staff, regarding the beneficial use of biosolids. Pacheedaht First Nation encouraged the CRD to continue consultation regarding the forestry fertilization management option and T'Sou-ke Nation would like to be consulted on the specific details on any project under consideration within its territory.

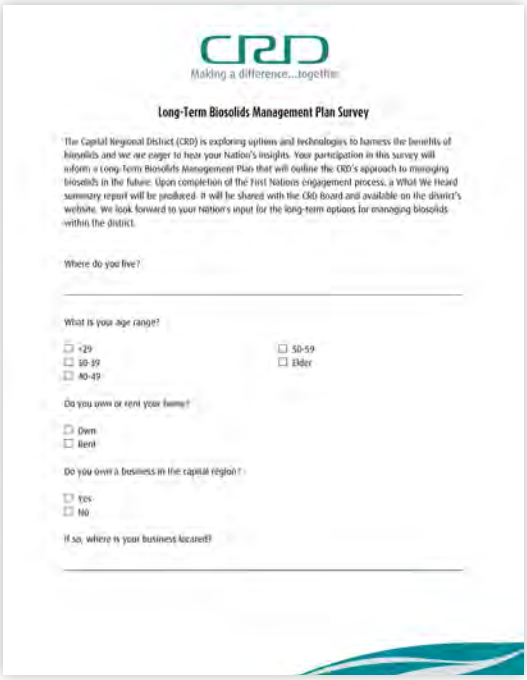
Summary

The CRD is exploring options and technologies to harness the benefits of biosolids, the by-product of wastewater treatment and sought the insight of First Nation leadership on the potential long-term uses available to the region.

The feedback gathered from this group would help to inform a Long-Term Biosolids Management Plan to fulfill provincial requirements. Over the course of two months, the CRD would take part in outreach to 19 First Nations that span portions of the region. While the CRD is required to submit a plan to the provincial government by June, the district will continue to receive feedback from First Nation leadership and will provide an update to the plan at a later date.

Appendix

Survey



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Long-Term Biosolids Management Plan Survey

The Capital Regional District (CRD) is exploring options and technologies to harness the benefits of biosolids and we are eager to hear your Nation's insights. Your participation in this survey will inform a Long-Term Biosolids Management Plan that will outline the CRD's approach to managing biosolids in the future. Upon completion of the First Nations engagement process, a What We Heard summary report will be produced. It will be shared with the CRD Board and available on the district's website. We look forward to your Nation's input for the long-term options for managing biosolids within the district.

Where do you live?

What is your age range?

- ☐ <29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ Elder

Do you own or rent your home?

- ☐ Own
- ☐ Rent

Do you own a business in the capital region?

- ☐ Yes
- ☐ No

If so, where is your business located?

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How familiar are you with the following topics?

CRD wastewater treatment system

- ☐ Very unfamiliar
- ☐ Unfamiliar
- ☐ Somewhat familiar
- ☐ Familiar
- ☐ Very familiar

Biosolids

- ☐ Very unfamiliar
- ☐ Unfamiliar
- ☐ Somewhat familiar
- ☐ Familiar
- ☐ Very familiar

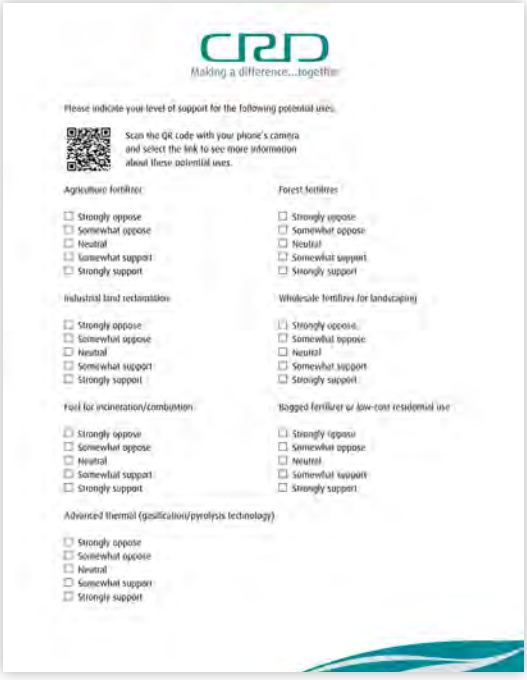
How important is it to you how biosolids are maximized for community benefit?

- ☐ Not at all important
- ☐ Unimportant
- ☐ Neutral
- ☐ Important
- ☐ Very important

Please explain why you chose that level of importance.

When planning for the beneficial uses of biosolids, how important are the following considerations to you? Please rank in order of importance
(1 being most important – 4 being least important)

- _____ Costs
- _____ Environmental impacts (ex. water and soil contaminants)
- _____ Climate/greenhouse gas emissions
- _____ Community impacts (truck traffic, odour and noise emissions, dust, etc.)



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Please indicate your level of support for the following potential uses.

Scan the QR code with your phone's camera and select the link to see more information about these potential uses.

Agriculture fertilizer

- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neutral
- ☐ Somewhat support
- ☐ Strongly support

Forest fertilizer

- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neutral
- ☐ Somewhat support
- ☐ Strongly support

Industrial land reclamation

- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neutral
- ☐ Somewhat support
- ☐ Strongly support

Wholesale fertilizer for landscaping

- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neutral
- ☐ Somewhat support
- ☐ Strongly support

Fuel for incineration/combustion

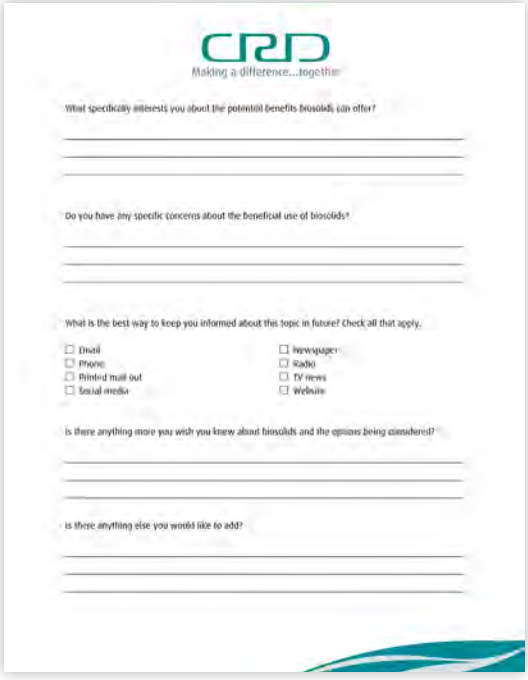
- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neutral
- ☐ Somewhat support
- ☐ Strongly support

Bagged fertilizer or low-cost residential use

- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neutral
- ☐ Somewhat support
- ☐ Strongly support

Advanced thermal (gasification/pyrolysis technology)

- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neutral
- ☐ Somewhat support
- ☐ Strongly support



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What specifically interests you about the potential benefits biosolids can offer?

Do you have any specific concerns about the beneficial use of biosolids?

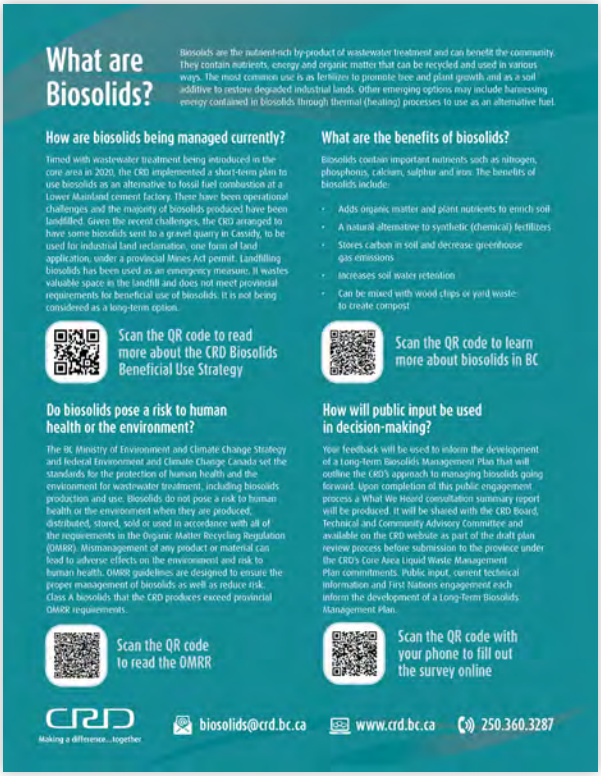
What is the best way to keep you informed about this topic in future? Check all that apply.

- ☐ Email
- ☐ Phone
- ☐ Printed mail out
- ☐ Social media
- ☐ Newspaper
- ☐ Radio
- ☐ TV news
- ☐ Website

Is there anything more you wish you knew about biosolids and the options being considered?

Is there anything else you would like to add?

Handout



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How are biosolids being managed currently?

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Scan the QR code to read more about the CRD Biosolids Beneficial Use Strategy

What are the benefits of biosolids?

Biosolids contain important nutrients such as nitrogen, phosphorus, calcium, sulphur and iron. The benefits of biosolids include:

- Adds organic matter and plant nutrients to enrich soil
- A natural alternative to synthetic (chemical) fertilizers
- Stores carbon in soil and decrease greenhouse gas emissions
- Increases soil water retention
- Can be mixed with wood chips or yard waste to create compost

Scan the QR code to learn more about biosolids in BC

Do biosolids pose a risk to human health or the environment?

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Scan the QR code to read the OMRR

How will public input be used in decision-making?

Your feedback will be used to inform the development of a Long-Term Biosolids Management Plan that will outline the CRD's approach to managing biosolids going forward. Upon completion of this public engagement process a What We Heard consultation summary report will be produced. It will be shared with the CRD Board, Technical and Community Advisory Committee and available on the CRD website as part of the draft plan review process before submission to the province under the CRD's Core Area Liquid Waste Management Plan commitments. Public input, current technical information and First Nations engagement each inform the development of a Long-Term Biosolids Management Plan.

Scan the QR code with your phone to fill out the survey online

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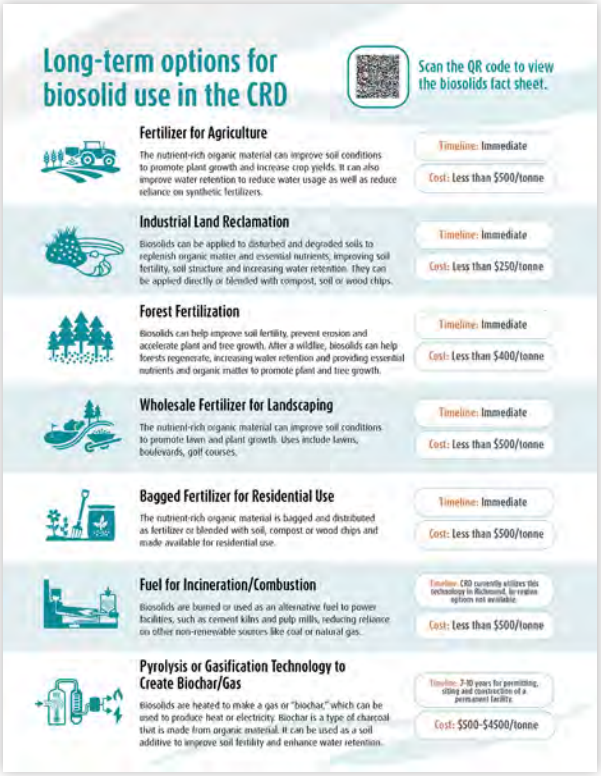

Long-term options for biosolid use in the CRD

Scan the QR code to view the biosolids fact sheet.

Fertilizer for Agriculture

The nutrient-rich organic material can improve soil conditions to promote plant growth and increase crop yields. It can also improve water retention to reduce water usage as well as reduce reliance on synthetic fertilizers.

Timeline: Immediate
Cost: Less than $500/tonne

Industrial Land Reclamation

Biosolids can be applied to disturbed and degraded soils to replenish organic matter and essential nutrients, improving soil fertility, soil structure and increasing water retention. They can be applied directly or blended with compost, soil or wood chips.

Timeline: Immediate
Cost: Less than $250/tonne

Forest Fertilization

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Timeline: Immediate
Cost: Less than $400/tonne

Wholesale Fertilizer for Landscaping

The nutrient-rich organic material can improve soil conditions to promote lawn and plant growth. Uses include lawns, boulevards, golf courses.

Timeline: Immediate
Cost: Less than $500/tonne

Bagged Fertilizer for Residential Use

The nutrient-rich organic material is bagged and distributed as fertilizer or blended with soil, compost or wood chips and made available for residential use.

Timeline: Immediate
Cost: Less than $500/tonne

Fuel for Incineration/Combustion

Biosolids are burned or used as an alternative fuel to power facilities, such as cement kilns and pulp mills, reducing reliance on other non-renewable sources like coal or natural gas.

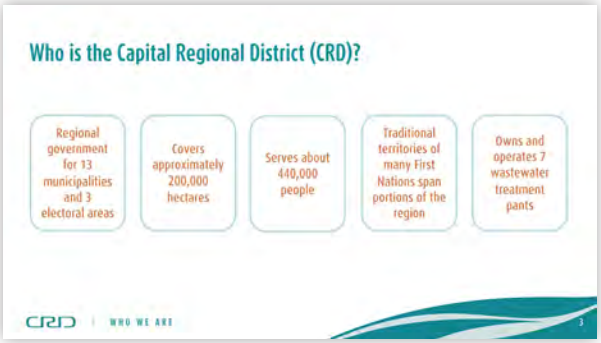
Timeline: CRD currently utilizes this technology in Richmond, so region options not available
Cost: Less than $500/tonne

Pyrolysis or Gasification Technology to Create Biochar/Gas

Biosolids are heated to make a gas or "biochar," which can be used to produce heat or electricity. Biochar is a type of charcoal that is made from organic material. It can be used as a soil additive to improve soil fertility and enhance water retention.

Timeline: 7-10 years for permitting, siting and construction of a permanent facility
Cost: $500-$4500/tonne

Presentation



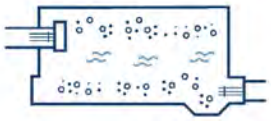
What Are They?

Biosolids are the nutrient-rich by-product of wastewater treatment. They contain nutrients, energy and organic matter that can be recycled and used in various ways. Common uses include:

How are Biosolids Created?

1. Conveyance System

Water that goes down the drain from a house or business is considered wastewater.
It enters the wastewater system carrying organics, and items such as toilet paper and food.



How are Biosolids Created?

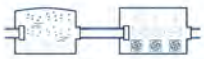
2. McLoughlin Point Wastewater Treatment Plant

During the wastewater treatment process at the McLoughlin Point Wastewater Treatment Plant, the solids (sludge) are separated and conveyed to the Residuals Treatment Facility at Hartland Landfill for further processing.

How are Biosolids Created?

3. Residuals Treatment Facility

Here the solids (sludge) undergo anaerobic digestion in which microorganisms break down biodegradable material in the absence of oxygen and produce biogas. The water is removed, and the solid materials are heated to a very high temperature creating the highest standard of biosolids for use as fertilizer or energy generation.



Benefits of Biosolids

Biosolids contain important nutrients such as nitrogen, phosphorus, calcium, sulphur and iron.

Benefits include:

- Adds organic matter and plant nutrients to enrich soil
- A natural alternative to synthetic (chemical) fertilizers
- Stores carbon in soil and decrease greenhouse gas emissions
- Increases soil water retention
- Can be mixed with wood chips or yard waste to create compost
- Can be used to create alternate fuel

Do biosolids pose a risk to human health or the environment?

Biosolids **do not** pose a risk to human health or the environment when they are produced, distributed, stored, sold or used in accordance with all of the requirements in the Organic Matter Recycling Regulation.

What is the Organic Matter Recycling Regulation?

The Organic Matter Recycling Regulation (OMRR) regulates the production and land application of compost and biosolids.

Class A biosolids that the CRD produces exceed provincial OMRR requirements.

Short-Term Biosolids Beneficial Use Strategy

Definitive Plan

- Developed in early 2019, before wastewater treatment began.
- Strategy consistent with the CRD policy restricting land application of biosolids.
- Planned to ship biosolids to a cement plant in Richmond, BC, to be incinerated in their cement process.
- Conditionally approved by the Ministry of Environment in October 2019.

- The CRD partnered with WSÁNEĆ Leadership Council in the creation of K'ENES Transportation, a new First Nation-owned and operated trucking company.
- K'ENES Transportation transports all of the CRD's biosolids to their destinations.
- Regular shipments of biosolids has been challenging.

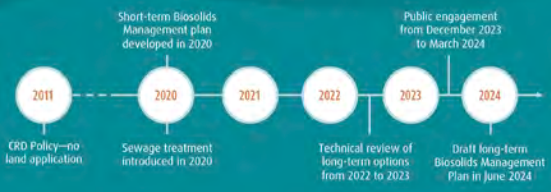
Contingency Plan

- Staff recommended, and the Board approved, the use of biosolids at Hartland Landfill, being mixed with sand and wood chips and applied to closed areas of the landfill to support vegetation regrowth and reduce methane emissions.
- All available space was used in 2022.

Alternative Contingency Plan and Landfilling

- A new contingency plan was adopted to use biosolids at a gravel quarry near Nanaimo to re-establish vegetation on closed parts of the quarry.
- The quarry's immediate needs were met in 2023, but they will continue to accept biosolids in the future as new areas of the quarry are reclaimed.
- An emergency plan was implemented, landfilling biosolids.
- Landfilling is not a beneficial use and has been prohibited by the province.

Timeline



Long-term Use Options

Land Based

Fertilizer for Agriculture

The nutrient-rich organic material can improve soil conditions to promote plant growth and increase crop yields. It can also improve water retention to reduce water usage as well as reduce reliance on synthetic fertilizers.

Timeline:	Cost:
Immediate	Less than $500/tonne

Industrial Land Reclamation

Biosolids can be applied to disturbed and degraded soils to replenish organic matter and essential nutrients, improving soil fertility, soil structure and increasing water retention. They can be applied directly or blended with compost, soil or wood chips.

Timeline:	Cost:
Immediate	Less than $250/tonne

Forest Fertilization

Biosolids can help improve soil fertility, prevent erosion and accelerate plant and tree growth. After a wildfire, biosolids can help forests regenerate, increasing water retention and providing essential nutrients and organic matter to promote plant and tree growth.

Timeline:
Immediate

Cost:
Less than $400/tonne

CRD | LAND BASED LONG-TERM USE OPTIONS

Wholesale Fertilizer for Landscaping

The nutrient-rich organic material can improve soil conditions to promote lawn and plant growth. Uses include lawns, boulevards, golf courses. It can also improve water retention to reduce water usage as well as reduce reliance on synthetic fertilizers.

Timeline:
Immediate

Cost:
Less than $500/tonne

CRD | LAND BASED LONG-TERM USE OPTIONS

Bagged Fertilizer for Residential Use

The nutrient-rich organic material is bagged and distributed as fertilizer or blended with soil, compost or wood chips and made available for residential use. Biosolids can also be blended with soil, compost or wood chips and made available for residential use.

Timeline:
Immediate

Cost:
Less than $500/tonne

CRD | LAND BASED LONG-TERM USE OPTIONS

Long-term Use Options

Thermal Based

Fuel for Incineration/Combustion

Biosolids are burned or used as an alternative fuel to power facilities, such as cement kilns and pulp mills, reducing reliance on other non-renewable sources like coal or natural gas.

Timeline:
Limited facilities available with no in-region options. The CRD currently utilizes this technology at a plant in Richmond.

Cost:
Less than $500/tonne

CRD | THERMAL BASED LONG-TERM USE OPTIONS

Pyrolysis or Gasification Technology to Create Biochar/Gas

Biosolids are heated to make a gas or "biochar," which can be used to produce heat or electricity. Biochar is a type of charcoal that is made from organic material. It can be used as a soil additive to improve soil fertility and enhance water retention.

Timeline:
7-10 years for permitting, siting and construction of a permanent facility. Advanced thermal technology is not currently used for processing biosolids in Canada.

Cost:
$500-$4,500/tonne

CRD | THERMAL BASED LONG-TERM USE OPTIONS

How will public input be used in decision-making?

Your feedback will be used to inform:

- The development of a Long-Term Biosolids Management Plan
- A What We Heard consultation summary report

CRD | HOW YOUR INPUT IS USED

Are there any questions?

Additional Engagement Meeting Notes

Pacheedaht Meeting Notes

April 11, 2024

Kristine Pearson, Pacheedaht First Nation
Erin Bildfell, CRD
Glenn Harris, CRD
Peter Kickham, CRD
Hannah Keene, 50th Parallel PR

CRD staff met with a representative of the Pacheedaht First Nation and provided a brief presentation and overview of the wastewater treatment project and resulting requirement to beneficially use biosolids. Staff presented the full suite of available options for biosolids management including various land application scenarios, incineration, and advanced thermal treatment. Staff also highlighted the concern raised by several groups regarding land application of biosolids.

The Pacheedaht representative asked several questions, including:

- the CRD's current practices under the Short-term Biosolids Beneficial Use Strategy, and why the CRD has not been able to ship any significant amount of product to the cement kiln,
- How biosolids are used in mine/quarry reclamation projects,
- Whether wastewater residuals from Port Renfrew would or could be incorporated under the long-term strategy, and whether there is an opportunity to work with the CRD regarding wastewater treatment infrastructure upgrades.

The Pacheedaht representative also suggested the CRD approach their private forestry partner to discuss using biosolids for forest fertilization, however highlighted a need to explore this potential carefully. Concerns from members of the nation would have to be carefully considered, with an explanation of potential risk factors from working with biosolids in comparison to the synthetic fertilizer products currently in use.

T'Sou-ke Nation

T'Sou-ke Meeting Notes

April 26, 2024

Sam Coggins, T'Souke Nation
Erin Bildfell, CRD
Peter Kickham, CRD
Stephanie Hagenaars, 50th Parallel PR

CRD staff met with a representative of the T'Souke First Nation and provided a brief presentation and overview of the wastewater treatment project and resulting requirement to beneficially use biosolids. Staff presented the full suite of available options for biosolids management including various land application scenarios, incineration, and advanced thermal treatment. Staff also highlighted the concern raised by several groups regarding land application of biosolids.

The T'Souke representative asked several questions, including:

- What is the contaminant profile for CRD biosolids,
- Industrial inputs to the CRD wastewater system (e.g., biomedical waste from hospitals),
- Potential sites within the T'Souke traditional territory where the CRD is considering land application,
- How to manage potential overland flow and impact to aquatic receiving environment,
- Scenario of a motor vehicle accident resulting in a spill of biosolids into a creek,
- Availability of CRD monitoring reports on biosolids,
- How biosolids are managed in other jurisdictions, and where to find monitoring information from other regional districts.

The T'Souke representative did not have formal comments beyond setting an expectation that the T'Souke Nation be engaged further in the event the CRD considers land application (be it a pilot or full scale) of biosolids anywhere in their traditional territory.

Pauquachin First Nation Meeting Notes

April 29, 2024

Octavio Cruz, Pauquachin First Nation
Peter Kickham, CRD
Stephanie Hagenaars, 50th Parallel PR

CRD staff met with a representative of the Pauquachin First Nation and provided a brief presentation and overview of the wastewater treatment project and resulting requirement to beneficially use biosolids. Staff presented the full suite of available options for biosolids management including various land application scenarios, incineration, and advanced thermal treatment. Staff also highlighted the concern raised by several groups regarding land application of biosolids.

The Pauquachin representative asked several questions, including:

- Whether the CRD had received comments or feedback from other First Nations,
- Whether the CRD had considered export options out of the region or province (e.g., to an area where there is high agricultural output and need for fertilizer).

The Pauquachin representative stressed the importance of engagement on any specific (future) land application projects the CRD considers in the territory of the Pauquachin Nation. The concern is not only environmental, but also cultural, as potential impact to harvesting of traditional plants for food or medicinal use is of the utmost importance. They also recognized that potential application of biosolids is only one of many activities that may impact traditional harvesting activities.

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