COLUMBIA SHUSWAP REGIONAL DISTRICT
Solid Waste Management Public and Technical Advisory Committee Meeting
AGENDA

Date: Thursday, May 2, 2024
Time: 11:00 AM
Location: CSRD Boardroom
555 Harbourfront Drive NE, Salmon Arm

Pages

1. Land Acknowledgement

We acknowledge that we are meeting in service to the Columbia Shuswap Regional District which is on the traditional and unceded territories of the Secwepemc, Syilx Okanagan, Sinixt and Ktunaxa Nation. We are privileged and grateful to be able to live, work and play in this beautiful area.

Declaration on the Rights of Indigenous Peoples Act
Article 45:

Nothing in this Declaration may be construed as diminishing or extinguishing the rights indigenous peoples have now or may acquire in the future.

2. Call to Order

3. Adoption of Agenda

Motion
THAT: the Solid Waste Management Public and Technical Advisory Committee meeting agenda be adopted.

4. Meeting Minutes

4.1 Adoption of Minutes

Motion
THAT: the minutes attached to the Solid Waste Management Public and Technical Advisory Committee meeting agenda be adopted.

4.2 Business Arising from the Minutes

5. Plan Review Process Overview

Summary of Plan Review Process to date provided by Veronica Bartlett, Senior Solid Waste Planner, Morrison Hershfield.

6. Facility Focused Options 1

Presentation by Veronica Bartlett, Senior Solid Waste Planner, Morrison Hershfield.

7. Next Meeting

TBD.

8. Adjournment

Motion
THAT: the Solid Waste Management Public and Technical Advisory Committee meeting be adjourned.

MEMORANDUM

MORRISON HERSHFIELD

TO:	Ben Van Nostrand Columbia Shuswap Regional District	**FROM:**	Veronica Bartlett Morrison Hershfield Limited
RE:	Potential Facility-Focused Options for the CSRD's SWMP Update	**PROJECT NO.:**	2202768.00
		DATE:	April 24, 2024

\\EGNYTEDRIVE\MH CLOUD\PROJ\2022\220276800-CSRD SWMP REVIEW AND UPDATE\08. WORKING\MEMO 3 - FACILITY ISSUES\2024-04-24_CSRD_FACILITYOPTIONSMEMO_FINAL.DOCX

1 BACKGROUND

Under the Environmental Management Act, regional districts are required to have a solid waste management plan (SWMP, or the Plan), which must be developed following the solid waste management planning guidelines provided by the Ministry of Environment and Climate Change Strategy (the MoE) for content and process.

The Columbia Shuswap Regional District (CSRD) is in the process of developing a new SWMP. The planning process was initiated in 2022 resulting in the formation of the Public and Technical Advisory Committee (PTAC) in April 2023, the assessment of the current system as well as the development of the communication and engagement plan in June 2023. The current system and the engagement approach were discussed at the PTAC meeting on June 21, 2023.

A list of issues and opportunities is summarized in the memo titled, "Emerging Issues and Opportunities – What we have heard from the Public and Technical Advisory Committee and the Committee of the Whole." In addition, an online survey on community priorities for the SWMP update was available from August 15th to October 16th, 2023, and the results were summarized in the memo titled, "Public feedback gathered August 15 – October 16, 2023, to inform the CSRD's SWMP update." The combined feedback documented in these two memos will be considered as part of developing an updated SWMP.

This is the third technical memo in a series of four or five, each presenting potential management options on key solid waste related topics. This memo covers options to regionalize the CSRD's landfills and improve the transfer station network.

The content of each memo will be presented and discussed with PTAC. The feedback on the memo content will be considered in the development of the final memo outlining Preferred Strategies and Options to be included in the new draft SWMP brought to the public for consultation.

2 POTENTIAL STRATEGIES TO IMPROVE CSRD'S SOLID WASTE FACILITIES

The review of the current system identified a range of emerging issues and opportunities in the region. This list was supplemented with input from PTAC, Committee of the Whole members and the public. The public was invited to respond to a brief online survey during a 9-week period, from August 15, 2023 – October 16, 2023[1].

Four potential strategies for waste prevention and diversion were presented in the first memo, and two in the second memo. This memo provides three additional strategies that relate to

[1] In this memo referred to as the 2023 public survey on the SWMP update.

CSRD's facilities (refer to Figure 1 for an overview). Each potential strategy is discussed in terms of: Why is this issue important? Are there relevant examples of successful strategies/ actions from elsewhere? What would the strategy involve?

The potential impacts of each strategy are identified at a high-level in Section 3.

Figure 1 Overview of Potential Diversion Strategies

Context: CSRD's Solid Waste Management Facilities

The CSRD covers an area of almost 30,000 square kilometers and serves more than 57,000 people. The region's population is serviced by a network of solid waste and recycling facilities, including four landfills and eight transfer stations operated by the CSRD, as well as privately run depots. These facilities shown in the map in Figure 2.

The recycling of residential Packaging and Paper Product (PPP) is undertaken in partnership with the stewardship agency (Recycle BC). There are 18 recycling depots, which are registered as Recycle BC depots. Some of the recycling depots are located at a disposal location (e.g., a

landfill, transfer station or stand-alone recycling depots), while others can be found at private recycling facilities (e.g., Bill's Bottle Depot in Salmon Arm, Sicamous Recycling Depot, Golden and Revelstoke Bottle Depots), where PPP is collected on behalf of the CSRD.

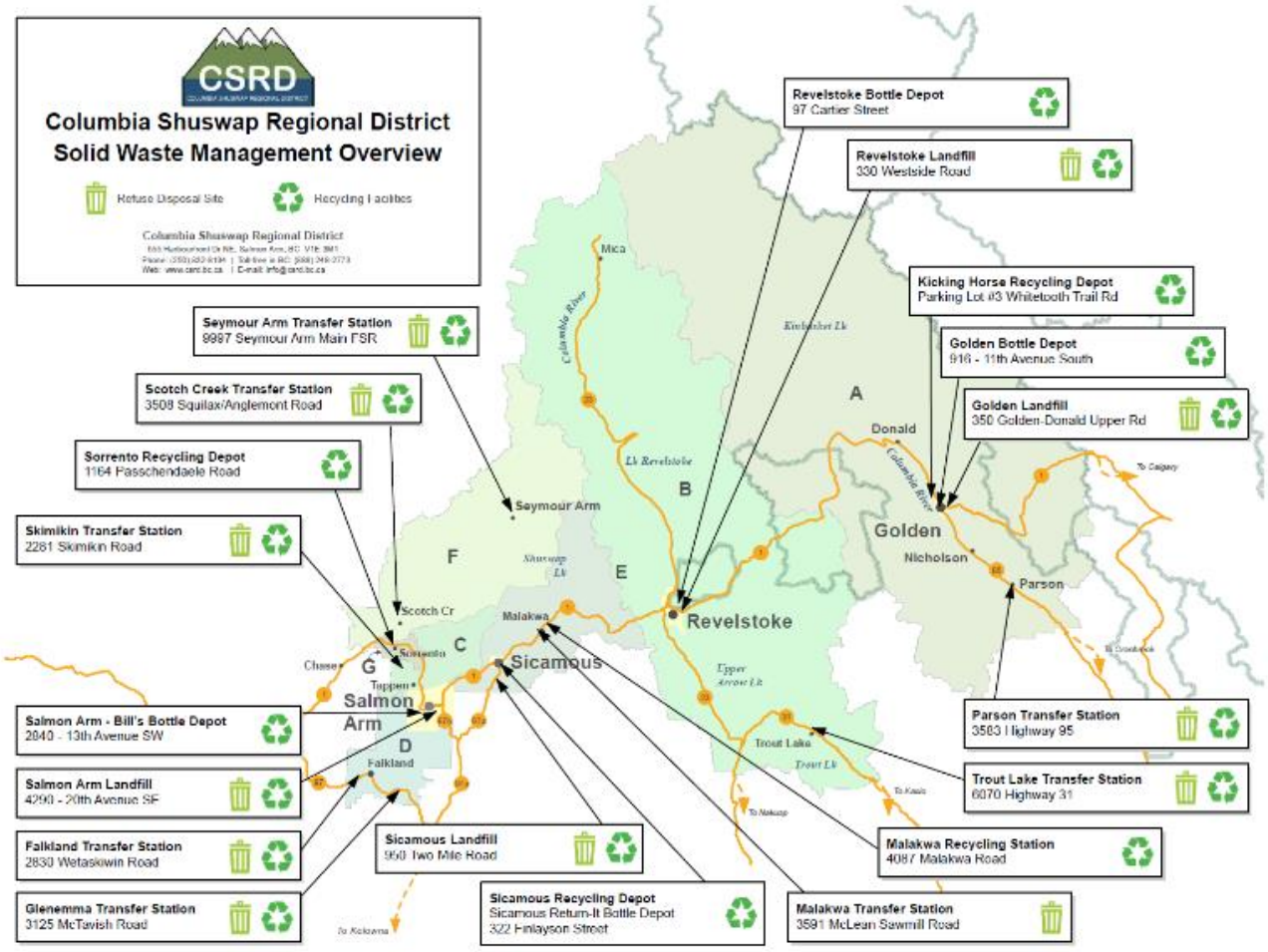

Figure 2: Map of Solid Waste Management Facilities with the CSRD

The CSRD's transfer stations are located across four different waste sheds with one landfill servicing each waste shed. Table 1 outlines the main characteristics of each waste shed.

Residents within the CSRD who do not receive curbside collection must self-haul the material to a nearby transfer station or landfill, where residents pay tipping fees. Fees are applied at all landfills and transfer stations.

The eight transfer stations operated by the CSRD accepts residual waste. The residual waste accepted at the transfer stations is transferred to the nearest landfill.

Table 1: CSRD's Four Waste Sheds

Waste Shed	Characteristics
Golden	▪ Servicing approximately 7,300 people. ▪ Includes the Golden Landfill and one unscaled transfer station (Parson Transfer Station).
Revelstoke	▪ Servicing approximately 8,900 people, however the population fluctuates due to tourism. ▪ Includes the Revelstoke Landfill and one unscaled transfer station (Trout Lake Transfer Station).
Salmon Arms	▪ Servicing approximately 36,400 people. ▪ Includes the Salmon Arm Landfill, two scaled transfer stations (Skimikin, Scotch Creek) and four unscaled transfer stations (Falkland, Glenemma, Malakwa, and Seymour Arm).
Sicamous	▪ Servicing approximately 3,400 people. The waste shed sees a large increase in summer-time population (often tripling). ▪ Includes the Sicamous Landfill.

Strategy 7: Regionalize the CSRD Landfills

The CSRD has experienced ongoing compliance issues at its landfills over recent years. One significant compliance issue that applies to all four landfills is exceedances of groundwater quality limits at or beyond the landfill property boundaries. The Golden, Revelstoke and Sicamous Landfills are all natural attenuation sites, and this is not an uncommon issue for natural attenuation (unlined) landfills.

In the short term, the CSRD is working to improve monitoring through the use of additional offsite groundwater monitoring wells. Regional district staff will collaborate with the MoE to find solutions for compliance issues related to natural attenuation landfills.

In the long term, the CSRD would likely require major capital upgrades to convert these sites to engineered (lined) landfills. New regulatory standards in the updated Landfill Criteria for Solid Waste issued in 2016 require new landfills to be lined. Lining landfills incurs new and significant capital costs as well as new and ongoing operational costs to treat the leachate that is collected by the liner systems. Often these costs are too high for smaller and remote landfills, resulting in their eventual closure with transfer to larger facilities.

To improve environmental protection, the updated Landfill Criteria contains recommendations to improve the performance of these sites.

The updated Landfill Criteria identifies the installation of an engineered liner and leachate collection system for any of the following scenarios:

- A new landfill,
- Lateral expansion of an existing landfill beyond the approved waste permit, or
- A new landfill phase the extends the limit of waste within the approved waste footprint.

Compliance Issues at CSRD's Landfills

Table 2 summarizes landfill types, timing of the conformance reviews for each landfill, status of the Design and Operations Plan (DOCP) and Operational Certificate (OC), and remaining landfill capacity.

In addition to groundwater exceedances, the CSRD has received several "out of compliance" notices for the Golden and Revelstoke landfill sites from the MoE. The most noteworthy OC contravention relates to the "Nuisance Clause of the Operational Certificates for the Landfills", specifically: "the operational certificate holder must ensure that the Facility does not cause a nuisance including with regard to birds, rodents, insects, odour, noise, dust, litter, vector and wildlife attraction."

In August 2023, the CSRD applied to amend the OCs for Golden and Revelstoke landfills to change the wording or remove several sections that would allow the landfills to operate in compliance. To date the CSRD has not received feedback on the OC amendment applications. Regional district staff have emphasized the need to standardize requirements on landfills in BC (e.g., litter control, wildlife management) as the enforcements of regulatory requirements appear to be inconsistent between different regions.

In December 2023, the CSRD was notified that administrative penalties were being considered, and although the CSRD took advantage of an Opportunity to be Heard, on February 27, 2024, the MoE determined that an administrative penalty of $934 would be levied against the CSRD for both the Golden and Revelstoke landfill sites. The CSRD has no plans to appeal the decision.

The CSRD is facing significant cost increases, either through increasing fines from the MoE, costs to address compliance issues or future engineering and design requirements for landfill expansions.

As part of the SWMP renewal the CSRD is needing to consider which landfills will continue operating and explore options for regional landfills that may be more sustainable (financially and environmentally). Options to assess in more detail include:

- Upgrading existing landfills to fully engineered landfills, or
- Closing one or more landfills, converting these to transfer stations and hauling waste to larger engineered landfills within reasonable hauling distance.

The CSRD will need to assess which engineered landfills are accessible within reasonable hauling distance of a potentially closed landfill, and if any of its landfills can provide enough capacity to accept waste from closed facilities (e.g., Salmon Arm which will reach design

capacity in 2095 after a series of engineered phases). There is also an opportunity to discuss the role of waste-to-energy in managing residual waste. The fundamental model of having landfills in the four waste sheds should be revisited.

The section following Table 2 outlines specific future considerations for the landfills in Golden, Revelstoke and Sicamous. No significant changes are considered for the Salmon Arm Landfill.

Potential Actions

- 7A: Collaborate with the MoE to find solutions for compliance issues related to natural attenuation landfills.
- 7B: Lobby the MoE to standardize requirements on landfills in BC (e.g., litter control).

Table 2: Compliance Status of CSRD's Landfills

Landfill	Landfill Type	Conformance Review	Current DOCP	Current OC	Planned Closure/Landfill Capacity
Golden	Natural Attenuation	Completed Dec 2019 by Golder	Amendment approved May 2020. DOCP is being updated in 2024.	OC 17006 (issued May 5, 2003, updated June 30, 2021). OC amendment requests submitted to the MoE in August 2023.	Phase 1 in 2027. The other phases provide 59 years with all phases.[2] DOCP proposes engineered Phase 2.
Revelstoke	Natural Attenuation	Completed Jan 2019 by XCG	Completed and submitted Jan 2019. MoE acknowledged receipt in the 2021 OC Amendment. DOCP is being updated in 2024.	OC 15821 (issued Dec.24, 1998, updated Sept.19, 2021). OC amendment requests submitted to the MoE in August 2023.	Phase 2 Closure in 2026. Phase 3 to close in 2067 (43 years left).[3]
Salmon Arm	Natural Attenuation & Engineered Landfill[4]	Completed Oct 2019 by Sperling Hansen Associates	Amendment approved Jan 2021.	OC 5479 (issued July 25, 1979, updated Dec.19, 2006). OC application submitted in 2020. OC amendments is expected in April 2024.	2095 (71 years left).
Sicamous	Natural Attenuation	Completed Dec 2017 by XCG	Completed and submitted Dec 2023.	OC 514 (issued Aug.23, 1971, updated June 6, 2021).	2062 for all phases, but the DOCP identifies an option to close in 5 years (2029) and save landfill for emergency events only (refer to section below).

[2] To be reviewed in 2024.
[3] To be reviewed in 2024.
[4] Phase 1 (about 5.0 Ha) is a natural attenuation landfill. Phase 2 is an engineered landfill with a liner and leachate collection, which is closed with intermediate cover. Phase 3 is fully engineered, which is active.

Golden Landfill

The following main issues have been identified for Golden Landfill:

- Community concerns regarding ongoing operation of the Golden Landfill (complaints regarding nuisance such as noise and litter). to the CSRD has implemented a litter, drainage, and wildlife management plan that includes measures such as improved litter fencing, application of sufficient intermediate landfill cover, bird control and monitoring.
- Neighboring developments and subdivisions, adjacent to the Golden landfill are currently in the planning stages. Inevitable conflicts are likely, given the inherent nuisances created by a landfill operation.
- Groundwater quality at the property boundary exceeds the regulated guidelines however, water quality improvement plans have been approved by the Ministry to monitor and continue landfilling operations.

For the Golden Landfill, the current Phase 1 fill area is expected to hit capacity before 2027. Following the closure of Phase 1, the 2019 DOCP recommends that the CSRD plan for future development phases with an engineered liner and leachate collection system. The DOCP provides preliminary cost estimates for the Phase 1 closure ($1.3 Million in 2019 dollars) and for Phase 2 expansion ($1.8 Million in 2019 dollars). The 2024 DOCP review may lead to alternatives for expansion requirements.

Due to community concerns regarding ongoing operation of the Golden Landfill and the cost of meeting the new Landfill Criteria, the CSRD is reviewing future options with respect to expanding the landfill or transferring waste to another location.

An assessment of the future of the Golden Landfill was completed by Golder in 2020 and is being reviewed in 2024. The 2020 assessment resulted in five scenarios for the decommissioning of Phase 1 and moving forward. These scenarios included:

1. Keep the Golden Landfill open and implement the recommendations of the most recent DOCP (approved by the MoE on May 4, 2020)
2. Close the Golden Landfill, develop a transfer station on the site and haul Municipal Solid Waste (MSW) to the Revelstoke Landfill.
3. Close the Golden Landfill and develop a new landfill within Area A. Develop a transfer station on the Golden Landfill property and haul MSW to the new landfill.
4. Close the Golden Landfill and develop a Waste-to-Energy (WTE) facility at the Salmon Arm Landfill.

The study also looked at the fifth scenario to keep the Golden Landfill open but transfer ownership and operational responsibility to the Town of Golden, but this was not regarded as a feasible option.

Table 3 below provides a cost summary of each scenario.

Table 3: Cost Summary of the Different Scenarios for Golden Landfill, from Golder 2020[5]

Scenario	Increase to Annual Systems Cost ($/Year) [6]	Waste Managed (Tonnes)	Increase to Annual Unit Cost ($/Tonne)	Increase Tipping Fee ($/Tonne)	Increase in Annual GHG Emissions (Tonnes CO_2e/Year)
1. Continue Operations	$285,000	5,100	$56	$136	N/A
2. Close Landfill & Haul MSW to Revelstoke	$1.1M	5,100	$215	$295	79
3. Close Landfill & Haul MSW to New Landfill in Electoral Area A	$2.87M	5,100	$560	$640	40
4. Close Landfill & Develop a WTE Facility	$18.7M	50,000	$375	$455	253

The scenarios 3 and 4 involving a new engineered landfill and a WTE facility, respectively, present the highest costs.

Scenario 4 assumes that a WTE facility would need to service the entire region and not only Golden Landfill. All four landfills were assumed to undergo closures and that a WTE facility would be located on the Salmon Arm Landfill site. Transfer stations were assumed at all landfills and the WTE would still be required to import additional MSW to reach the minimum practical capacity of 50,000 tonnes per year. The 2020 scenario assessment refers to a Stantec 2011 report for capital and operating costs for small-scale waste incineration facilities. Based on MH's knowledge7, there is currently no suitable proven WTE technology that would be suitable for CSRD's size. With much landfill capacity still available across the region, it is unlikely that the economics of a new WTE will make sense. Utilizing existing landfill capacity for as long as possible is likely to be the most economical and low risk solution.

The 2020 scenario assessment for Golden Landfill presented the annual GHG emissions associated with the increased transportation of waste from the different scenarios (see Table 4).

Table 4: GHG Emissions Associated with Scenarios 2, 3, and 4

Scenario	Annual CO2e (Tonnes)[8]
2	79
3	40
4	253

[5] These costs come from the Golder DOCP conducted in 2020 and do not account for inflation.
[6] Costs includes annualized capital expenditures and operating costs.
[7] In 2023, Environment and Climate Change Canada published the "Study of Waste to Energy Approaches for Processing Residual Municipal Solid Waste in Canada". Morrison Hershfield was retained to undertake the study on WTE Approaches in a Canadian context. The study aimed to collect information on WTE technologies and operations and looked at the WTE industry trends in Canada and internationally.
[8] Based on truck transport emission factor of 0.0009 tonnes CO2e per km (Golder's Alternative Options Report for Golden landfill, 2020)

Waste hauling is likely insignificant in the context of residuals management and landfilling. Typically, GHGs from hauling aren't the deciding factor for managing residuals. Overall GHG impacts also relates to how landfill gas is captured and managed at a landfill. The CSRD has infrastructure to capture biogas at the Salmon Arm Landfill, where it is upgraded by FortisBC to pipeline-quality natural gas. A landfill gas collection system was also installed at the Revelstoke Landfill in 2023.

The CSRD may want to revisit the costs developed in the 2020 options assessment and consider overall system costs and funding implications if other landfills are also closed. For example, cost impacts if Revelstoke Landfill is also closed and hauling distances changes.

Revelstoke Landfill

The CSRD is also experiencing exceedances of ground or surface water quality limits at or beyond the landfill property boundary at the Revelstoke Landfill, as well as issues with litter from the landfill operation.

The Revelstoke Landfill consists of two separate properties—the North Site and the South Site. The 2019 DOCP indicates that the North Site will reach design capacity in late 2038. At present, there are no leachate controls at this site. As the North Site will continue operating within the existing waste footprint (i.e., without lateral expansion) and there is a lack of municipal infrastructure to support leachate collection (nearby sanitary sewer), the 2019 DOCP recommends that the site continue operating as a natural attenuation landfill, with the primary focus being on source control/surface water management to reduce leachate generation potential. If the South Site is developed as a landfill in future, it is anticipated that it will be an engineered landfill with a base liner and leachate collection system.

The 2019 DOCP for the Revelstoke Landfill also includes a long-term capital plan for the development of the Site. This plan outlines the key infrastructure projects associated with implementation of the DOCP for the site. This long-term capital plan provides cost estimates for capital projects to develop the North Site within the existing limit of waste, which has capacity for 20 years. The CSRD established a landfill gas (LFG) collection system at the Revelstoke Landfill as part of the $1.5m Phase 1 closure of the North Site in 2022.

The CSRD has not yet assessed some of the main options for Revelstoke Landfill. An assessment would need to consider aspects such as addressing current issues, identify costing, emergency management, and more. Costs will need to cover capital costs for a transfer station, and operating costs (hauling and transfer station operations costs). The CSRD is in a better position to determine the future of the Revelstoke Landfill after the 2024 DOCP review when landfill costs are identified.

Sicamous Landfill

The main issue identified for Sicamous Landfill is the exceedance of ground water quality limits at the property boundary.

A consultant completed an update to the DOCP, which was submitted to the Ministry in December 2023. The updated DOCP resulted in the following three options for solid waste disposal in Sicamous:

1. Full vertical build-out of the site until approximately 2062.

2. Early landfill closure in approximately 5 years (2028) if that is an outcome of the updated SWMP.
3. Early landfill closure and keeping the site available as a contingency landfill available for waste generated by a significant area redevelopment project or as a consequence of an environmental event such as wildfire.

Table 5: Cost Summary of the Three Different Scenarios for Sicamous Landfill

Scenario	Total Cost	Cost Per M^2
1. Full Build-Out & Closure (2062)	$3.04M	$85
2. Short Term Closure	$911,807	$30
3. Progressive Closure	$287,417	$52

Closing the Sicamous Landfill and opening a transfer station can provide the opportunity to move the transfer station to a more centralized location, where the CSRD can provide better service the residents.

It will be important to consider potential changes to user demand if landfill closure and conversion to a transfer station is considered. When curbside collection is introduced in the District of Sicamous, there will be less need for residents to self-haul waste materials to the landfill (or a transfer station). The Sicamous Landfill is currently used by some small commercial businesses, but the site is mainly used by residents self-hauling waste materials.

Need to Assess Impacts on all Regional Landfills

The future of Golden, Revelstoke and Sicamous landfills are uncertain. The decision to close any of these landfills will be based on remaining landfill lifespan, and the cost of expansion or closure, transfer station construction and operation, and hauling of waste.

The CSRD will need to determine the future of its four landfills and consider the context of the entire solid waste system. Overall system costs and funding implications are important to understand if the CSRD also wants to close some of the CSRD landfills over the next decade.

Strategy 8: Improve Transfer Station Network to Increase Operational Efficiency & Level of Service to Users

A solid waste survey was developed by the CSRD to gather feedback from the public and other interested parties on their priorities for managing waste in the next 5-10 years. The survey was made available over an eight-week period in summer/fall of 2023, allowing the public to provide feedback and voice concerns around the current waste management system. A significant number of the comments by the public reflected wanting better access to waste facilities in the region. Many comments related specifically to hours of operations, inconsistent hours between facilities and not being accessible due to not being open after work hours or on Sundays.

Other suggested improvements included:

- Better signage at facilities.
- Higher levels of service, such as:
  - Acceptance of a wider range of materials, e.g., recycling, and composting services.
  - Improved operational hours.

Residents also voiced concern around space constraints in facilities, stating that some facilities, notably Scotch Creek and Skimikin (Tappen) were often full, preventing residents from being able to drop-off their waste. The CSRD has had to close these two transfer stations often during the summer months due to the high waste volumes that require management. Skimikin is closed on average one to two days a week while Scotch Creek is closed on average one or two days a month during the summer.

The CSRD would like to see changes to its transfer station network to manage waste materials more efficiently and enhance services to facility users. Capacity of transfer stations and the network will experience impacts based on the various scenarios for the future of the landfills. Improvements to the transfer station network should consider impacts from potential landfill closures.

Opportunity to Improve the Transfer Station Network

The following improvements have been identified so far at facilities all located Salmon Arm Waste Shed:

- Areas C and G have growing populations in areas such as White Lake. The closest transfer station in the area is Skimikin, which is operating over capacity and often forced to close one or two days a week in the summer.
- There is opportunity to develop a “one-stop-drop” facility to replace facilities including the Skimikin Transfer Station, Sorrento Recycling Depot, and Tappen Co-Op Recycling Depot. A new site can be more centrally located, offer more services, have increased operating hours, and provide more capacity for management of waste and recycling.
- The unscaled transfer stations in Falkland and Glenemma (Area D residents) are in close proximity to each other and the CSRD may want to find one site for a scaled facility with improved services that can replace both facilities.
- Area E residents have access to Malakwka Recycling Depot and Malakwa Transfer Station, which are located within a 3-minute drive of each other. These sites both have attendants, which is costly for the CSRD. An option is to consolidate the sites into an upgraded transfer station with improved services. This would help to reduce staffing costs and improve services for residents by having a one-stop-drop facility.
- The Scotch Creek Transfer Station serving Area F is often operating over capacity in the summer and has to close one or two days per month to manage the additional waste materials. This facility could be upgraded to a larger “one-stop-drop” site with more services offered.

Example of a One-Stop-Drop Facility – The South Thompson (Pritchard) Eco-Depot

The Thompson-Nicola Regional District's (TNRD's) South Thompson (Pritchard) Eco-Depot accepts many materials, such as yard/garden waste, construction, and demolition waste, separated wood waste and asphalt shingles, household hazardous waste (HHW), major appliances (EPR program), large items such as mattresses, and more. Other beneficial features of this large site include:

- Covered building where waste materials can be loaded into B-trains for effective hauling.
- Materials that have no charge are collected before the scale.

Figure 3: TNRD South Thompson (Pritchard) Eco-Depot[9]

A comprehensive transfer station review can help to assess the costs and implications of establishing new facilities and amalgamating some of the current sites. The review can identify hauling and operational efficiencies, as well as the improvements to improve services available for site users.

The CSRD should be mindful to strike a balance between providing facilities for easy accessibility and the level of services provided at these facilities. Some potential benefits of amalgamating transfer stations include:

- Having 'one stop drop' transfer stations with increased services.

[9] Photo from Solid Waste Site Locations - Thompson-Nicola Regional District (tnrd.ca)

- Having an impact on illegal dumping by making facilities more accessible through increase services and hours of operations to meet the demands.
- Reducing costs by having fewer transfer stations, but with more services.
- Improved traffic controls (in bound and out bound scales).
- Improved hours of operation.

As well, if more communities introduce curbside collection, the demand for transfer stations may decrease. For example, Electoral Area C and G residents in the Salmon Arm waste shed, would be less reliant on its transfer station if curbside collection is implemented.

An assessment of the transfer station is needed to inform future planning and siting of amalgamated sites. In the short-term, the CSRD can help to address seasonal fluctuations in facility users by increasing operating hours or the number of operating days per week. The operational hours and days can be adjusted at specific facilities to ensure the facility capacity matches the demand.

Improving access to facilities can have an impact on illegal dumping by making facilities more accessible.

Potential Actions

- 8A: Assess user demands at all facilities and increase operational hours at selected sites to improve access and meet seasonal demand.
- 8B: Conduct a transfer station assessment with siting and design options for sites that justify being amalgamated into centralized upgraded transfer station facilities.

Strategy 9: Continue to Subsidize Recycling Services in the CSRD Where Appropriate

The cost of recycling and hauling of materials regulated under the provincial Recycling Regulation, and managed under EPR, exceeds the revenue collected by the CSRD through tipping/user fees and funding received from stewards. As a result, the region's taxpayers are subsidizing the recycling of EPR materials, which is not aligned with the intent of the Recycling Regulation.

Extended Producer Responsibility (EPR) is an approach to recycling that requires producers, such as manufacturers, distributors, and retailers to take responsibility for the life cycle of the products they sell, including collection (e.g., curbside collection or depots), and recycling.

The Recycling Regulation aims to shift the responsibility from local and Indigenous governments and taxpayers to the producers and consumers of products.

The CSRD has been very progressive in developing partnerships with stewardship agencies to be able to offer recycling options for a wide suite of regulated EPR products and materials. The CSRD is currently offering recycling services for EPR materials as well as many materials that are not yet covered by EPR programs, such as used clothing, books, mattresses, and children's car seats at many of CSRD's facilities.

Access to recycling services has long been a focus of the CSRD, even though some of the services have not been fully subsidized by the stewardship agencies. The Recycle BC Packaging and Paper Products (PPP) program has been subsidized by the CSRD from the beginning (starting in 2015). The 18 depots that the CSRD operates on behalf of Recycle BC do not generate enough revenue to cover the costs of operating the depot. As an example, the CSRD is funding Bill's Bottle depot (Salmon Arm) at a cost of approximately $100,000 in 2023, however funding of $87,000 came from stewards to cover the recycling costs. The CSRD also provides recycling services at the Salmon Arm Landfill, which is only a 15-minute drive from Bill's Bottle Depot.

The CSRD estimates that the costs to manage PPP and household hazardous waste at the transfer stations/depots is costing the regional district $300,000 - $400,000 per year which is not covered by funding from the stewards. The depots taking household hazardous waste are forced to accept more than the regulated materials, but there is only compensation for regulated products.

Opportunity to Advocate for Better Support from EPR Stewards

The CSRD is a member of the BC Product Stewardship Council, a body that advocates on behalf of local government for effective EPR programs. Regional district staff also regularly engage with stewardship agencies to discuss how access to their recycling programs can be improved in the region. The CSRD also advocates for additional funding for existing programs and services, and it is good to acknowledge their commitment to continuing to build collaborations with the stewards and to advocate for cost recovery by the producers.

In 2001, the Skwlax te Secwepemc Band signed a service agreement with the CSRD that outlines how the Band operates the recycling depot as a satellite location for recyclables to CSRD's facility in Scotch Creek. This services both the Band and off-reserve residents in Area F.

In 2023, this on-reserve depot burned down in forest fires. Moving forward, the CSRD, in partnership with the Band and Recycle BC, must decide how a new depot will be established. The CSRD has been advocating for Recycle BC to support the Band and establish a new depot with no or limited involvement.

Potential Actions

- 9A: Continue to support recycling depots through subsidies.
- 9B: Continue to offer current or improved recycling services at CSRD's facilities, where appropriate.
- 9C: Advocate for increased stewardship support to improve accessibility to recycling and cover recycling costs.

3 POTENTIAL IMPACTS

We have identified the high-level impacts from the proposed strategies included in this memo. The waste diversion impact refers to how a strategy can reduce the disposal rate when considering waste materials targeted, current waste composition data and a best guess as to how successful the proposed strategy will be to divert waste. The table also identifies the potential high-level costs of implementing a strategy. These include operational costs (e.g., staffing) and capital costs.

Table 6: Anticipate Impact Related to the Identified Strategies.

No.	Strategy	Potential Actions	Costs	Staffing	Waste Hierarchy	Diversion Potential
7	Regionalize the CSRD Landfills	7A: Collaborate with the MoE to find solutions for compliance issues related to natural attenuation landfills. 7B: Lobby the MoE to standardize requirements on landfills in BC (e.g., litter control).	High	Low-Medium	Residuals Management	Low
8	Improve Transfer Station Network	8A: Assess user demands at all facilities and increase operational hours at selected sites to improve access and meet seasonal demands. 8B: Conduct a transfer station assessment with siting and design options for sites that justify being amalgamated into centralized upgraded transfer station facilities.	High	Medium -High	Recycling & Residual Management	Medium
9	Continue to Subsidize Recycling Services	9A: Continue to support recycling depots through subsidies. 9B: Continue to offer current or improved recycling services CSRD's facilities, where appropriate. 9C: Advocate for increased stewardship support to improve accessibility to recycling and cover recycling costs.	Low-Medium	Low-Medium	Recycling	Medium

4 NEXT STEPS

MH staff will present to the PTAC on May 2, 2024, about the potential strategies that are highlighted in this Memo. There will be an opportunity to provide feedback to ensure that all feasible options have been explored and that we discuss the suitability of these potential strategies with PTAC members. Furthermore, given the significant costs associated with this Facility Options memo, it is the intent of CSRD staff to present a summary of this memo, along with feedback from the PTAC, at the CSRD's next Committee of the Whole meeting in June 2024 to update the Directors.

This Memo has only addressed some of the issues and opportunities that were identified by the Current System report, PTAC and through Engagement Period 1. The following are the remaining issues and opportunities which PTAC will have time to discuss in upcoming meetings:

- Illegal dumping
- Emergency debris management
- Recovery of energy/heat from waste for useful purposes
- Cost reduction and system funding

The strategies that are favoured by PTAC will be part of a final memo of all Preferred Strategies, which will be drafted later in 2024/early 2025 for the Committee's consideration. Committee members will then have another chance to review and finalize the list of preferred strategies. This process will inform the content of the updated Draft SWMP, which will be brought to the Public for consultation.

5 CLOSING

The Columbia Shuswap Regional District retained Morrison Hershfield to conduct the work described in this report, and this report has been prepared solely for this purpose.

This document, the information it contains, the information and basis on which it relies, and factors associated with implementation of suggestions contained in this report are subject to changes that are beyond the control of the author. The information provided by others is believed to be accurate and may not have been verified.

Morrison Hershfield does not accept responsibility for the use of this report for any purpose other than that stated above and does not accept responsibility to any third party for the use, in whole or in part, of the contents of this document. This report should be understood in its entirety, since sections taken out of context could lead to misinterpretation.

We trust the information presented in this report meets Client's requirements. If you have any questions or need addition details, please do not hesitate to contact one of the undersigned.

Morrison Hershfield Limited

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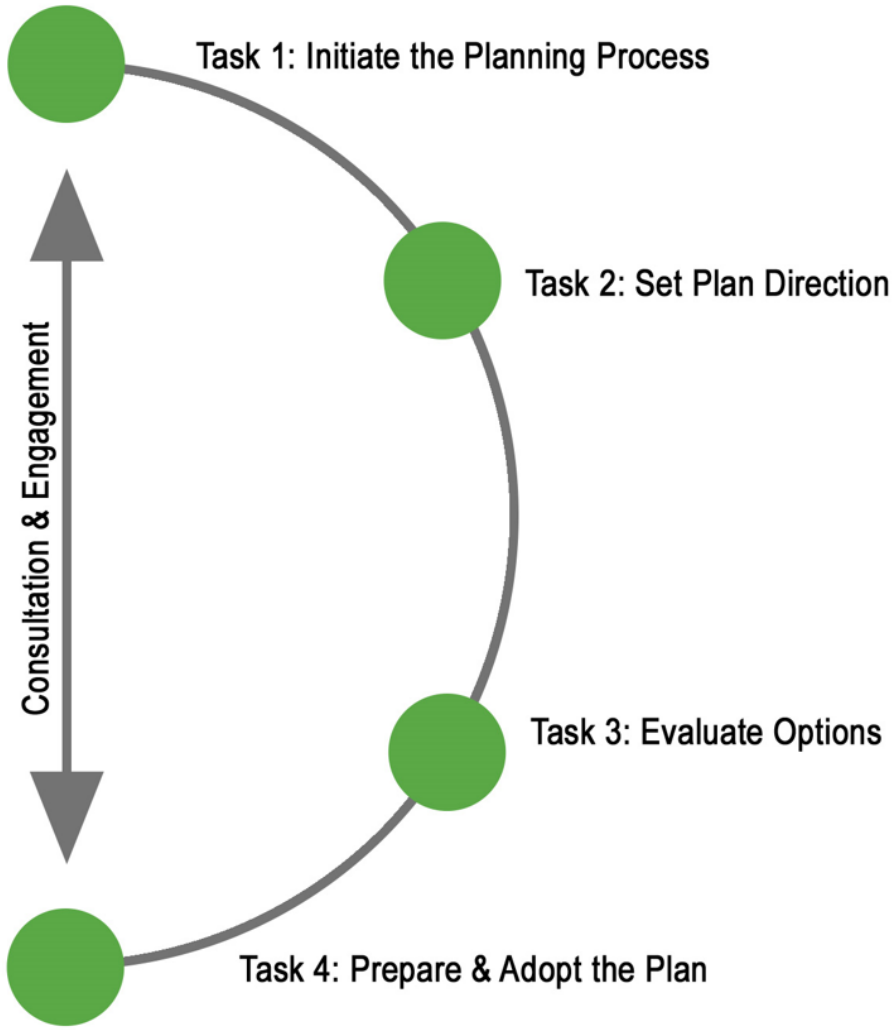
MORRISON HERSHFIELD

Facility Focused Opportunities/Issues for the CSRD's SWMP Update

Presentation to PTAC on May 2, 2024

Plan Update Process



Meeting Outline

- Plan update process *(<5 min)*
- Review ‘what we have heard’
  - *Identified Opportunities/Issues (15 min)*
- Facility Focused Options *(60-80 min)*
  - *Discussion on potential options and actions*
- Potential impacts *(5 min)*
- Next steps *(5 min)*

After Meeting:
Follow-up survey to gauge your priorities and any additional feedback

CSRD
COLUMBIA SHUSWAP REGIONAL DISTRICT

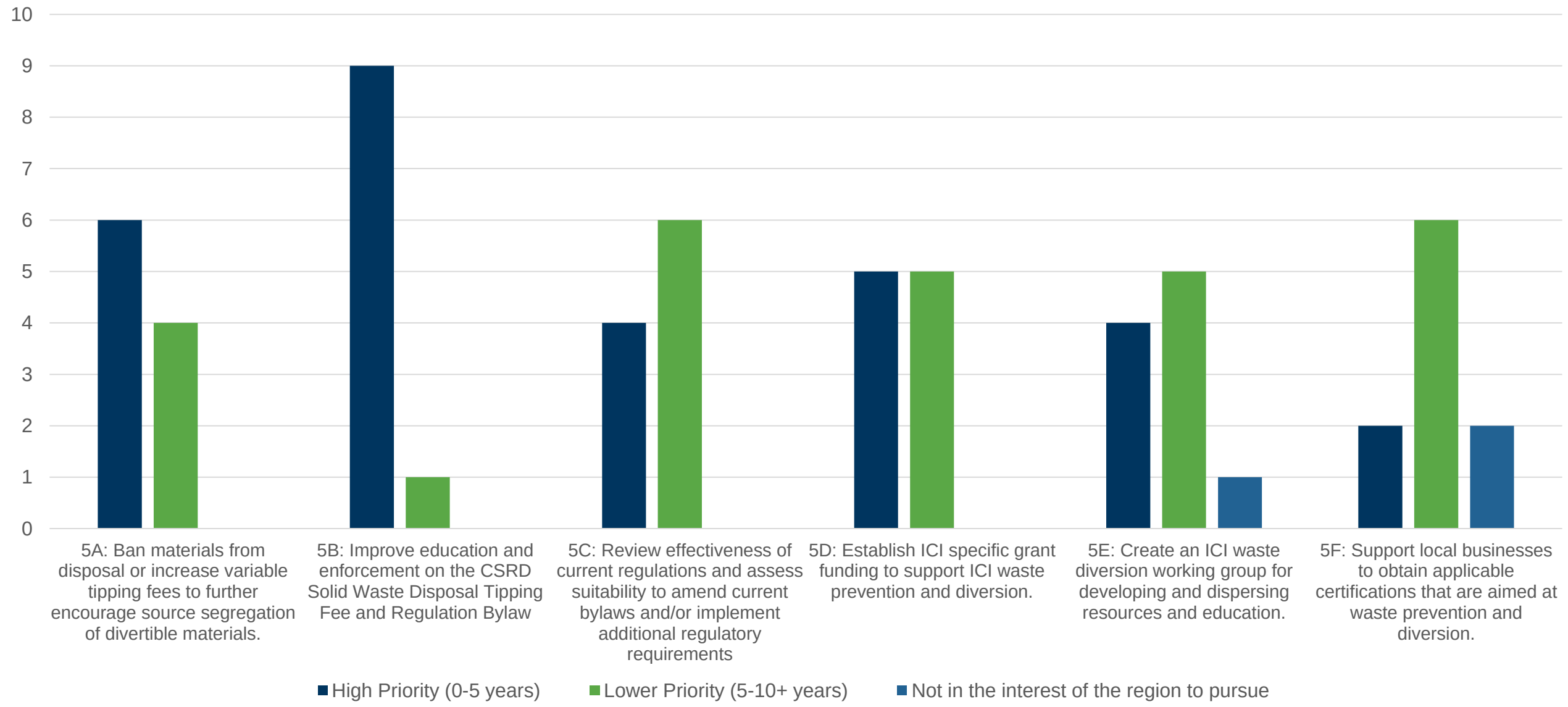
Strategy Overview - What we have heard

1. Improve Waste Prevention (Memo 1)
2. Improve Access to Three-Stream Curbside Collection (Memo 1)
3. Improve Organics Diversion (Memo 1)
4. Improve Education and Enforcement (Memo 1)
5. Improve ICI Waste Diversion Through Regulatory Requirements and Education (Memo 2)
6. Improve C&D Waste Diversion (Memo 2)

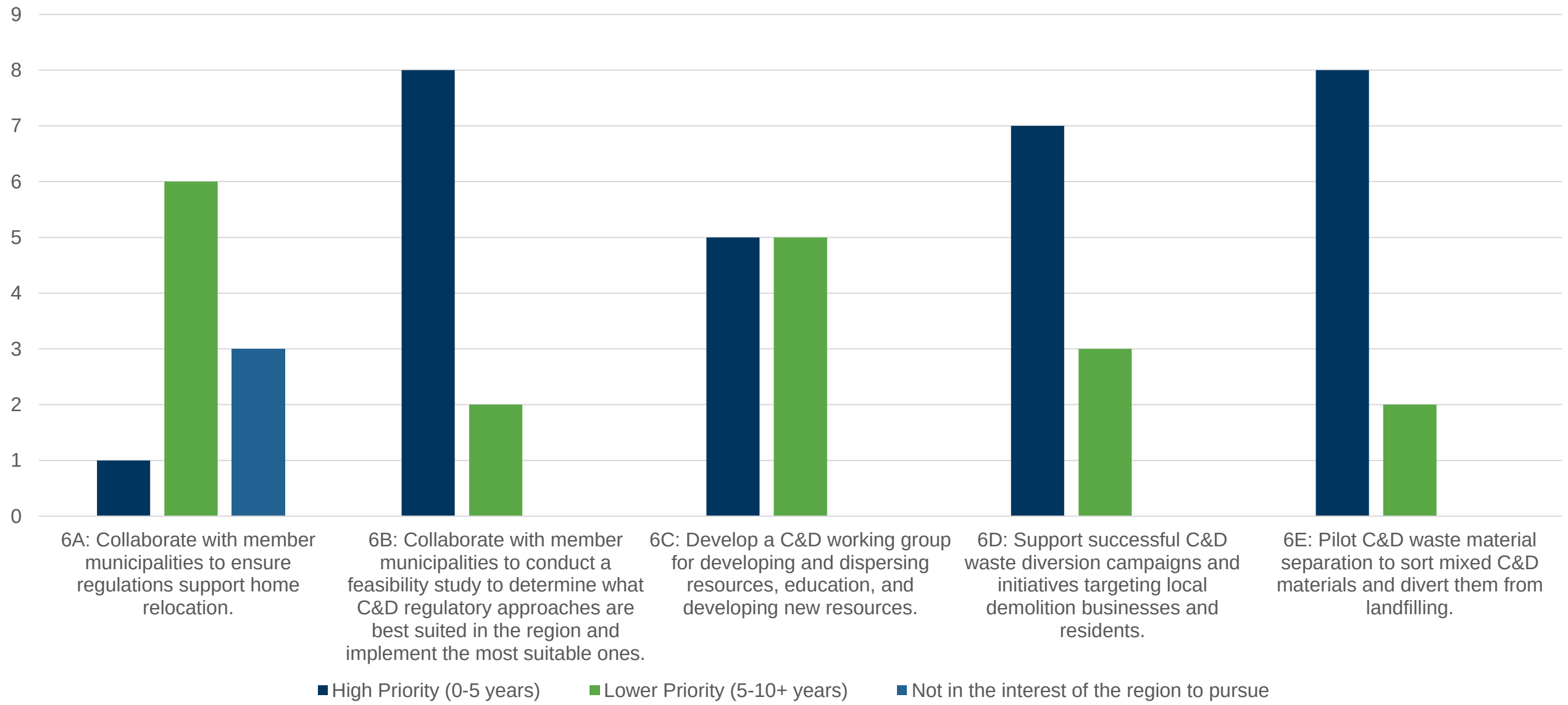
ICI and C&D Waste Reduction

PTAC Priorities and Feedback on Strategies 5&6

Priorities – Strategy 5: ICI Waste Diversion



Priorities – Strategy 6: C&D Waste Diversion



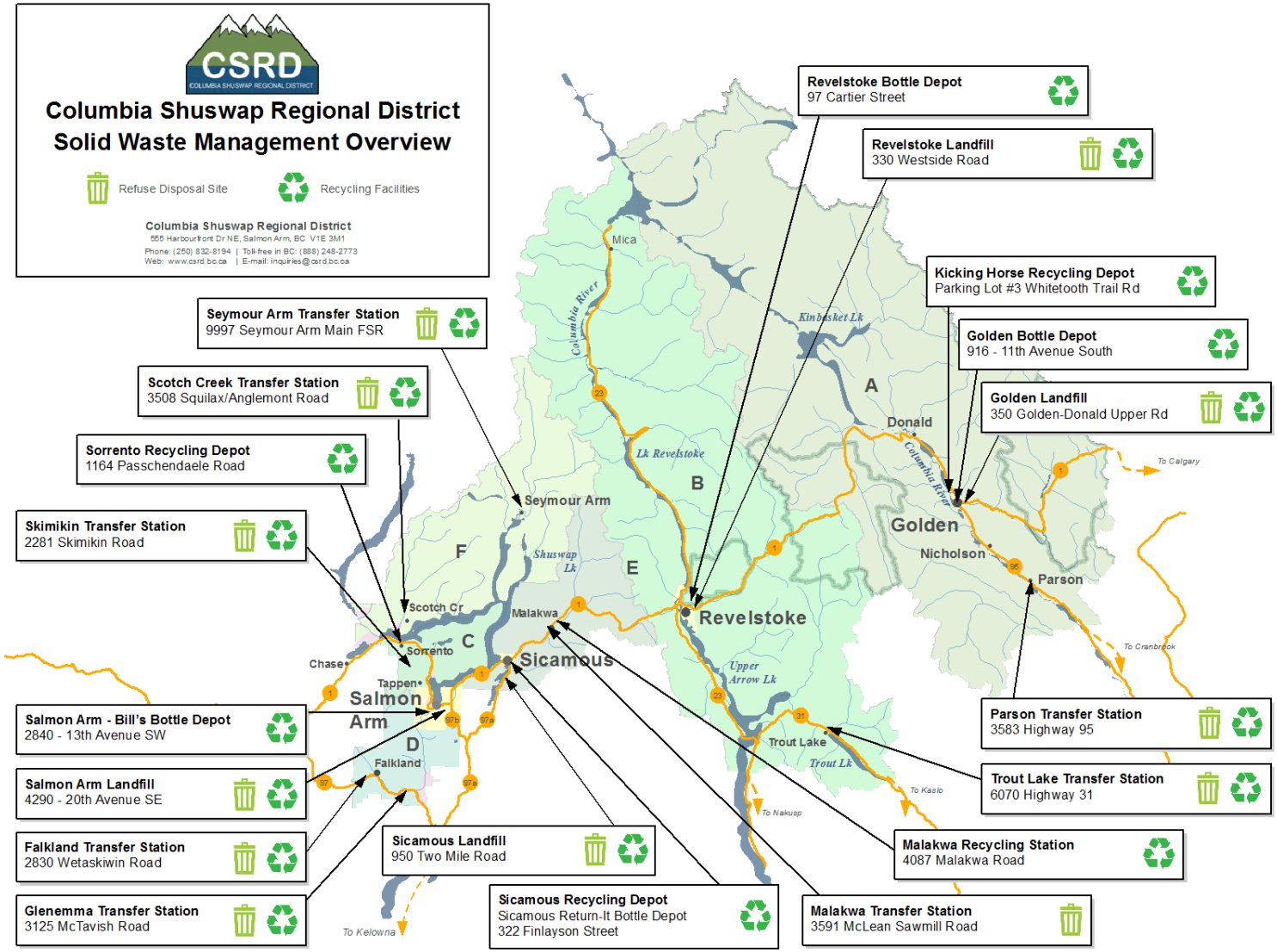
Questions/Feedback?

Overview of Potential Facility Focused Strategies

7	Regionalize the CSRD Landfills	30 min
8	Improve Transfer Station Network to Increase the Operational Efficiency and Level of Service to Users	20 min
9	Continue to Subsidize Recycling Services in the CSRD Where Appropriate	15 min

Facility Focused Options

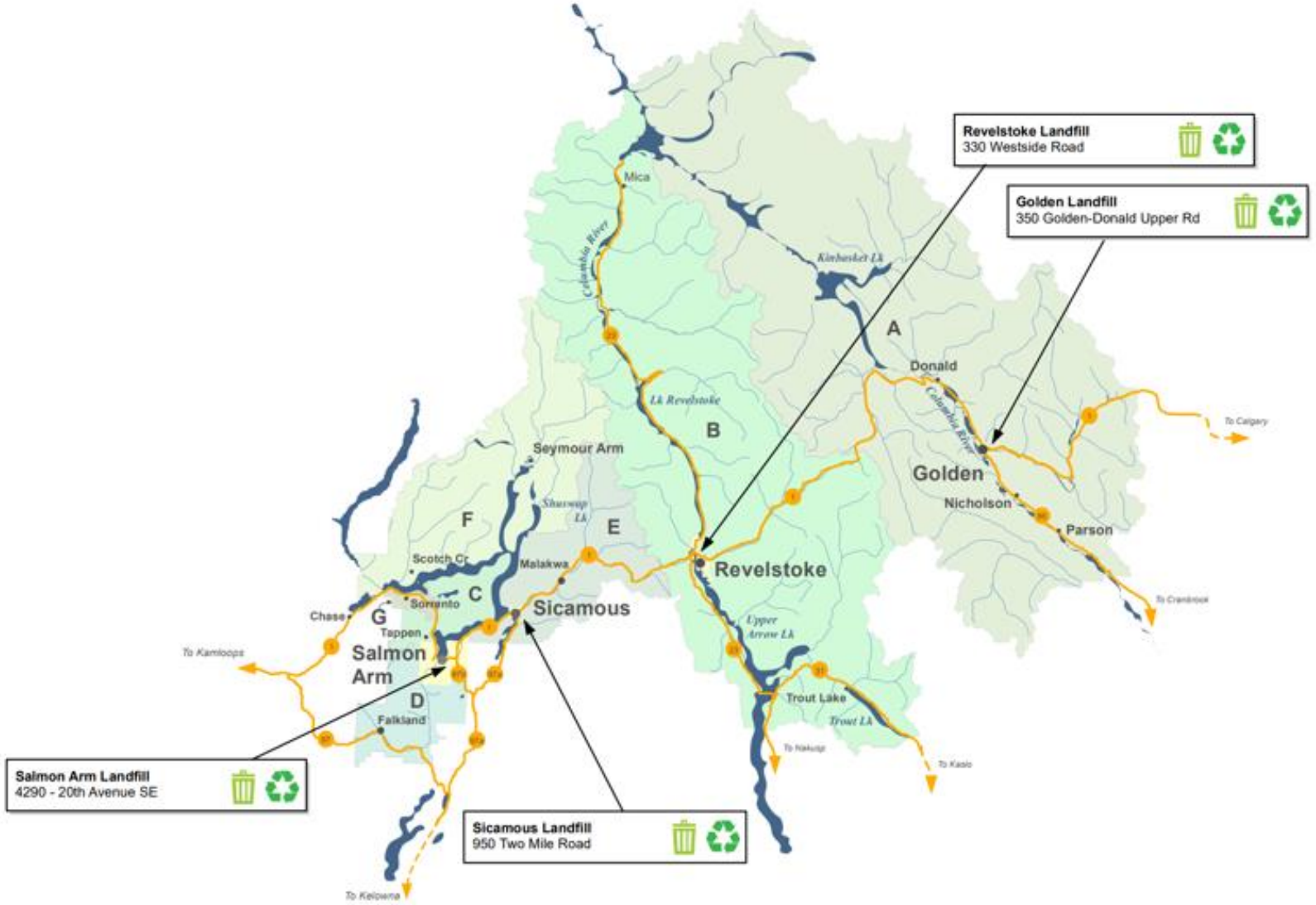
Strategies 7- 9



Context:

- 18 facilities
  - 4 landfills
  - 8 transfer stations
  - 3 private depots

The CSRD Landfills



The CSRD Wastesheds

Golden	▪ Servicing 7,300 people ▪ Golden Landfill and one unscaled transfer station (Parson Transfer Station)
Revelstoke	▪ Servicing 8,900 people (population fluctuates due to tourism) ▪ Revelstoke Landfill and one unscaled transfer station (Trout Lake Transfer Station)
Salmon Arm	▪ Servicing 36,400 people ▪ Salmon Arm Landfill, two scaled transfer stations (Skimikin, Scotch Creek) and four unscaled transfer stations (Falkland, Glenemma, Malakwa, and Seymour Arm)
Sicamous	▪ Servicing 3,400 people (population fluctuates due to tourism) ▪ Sicamous Landfill

The CSRD Wastesheds

% Waste in Year per Wasteshed	
Golden **11%**	▪ Servicing 7,300 people ▪ Golden Landfill and one unscaled transfer station (Parson Transfer Station)
Revelstoke **16%**	▪ Servicing 8,900 people (population fluctuates due to tourism) ▪ Revelstoke Landfill and one unscaled transfer station (Trout Lake Transfer Station)
Salmon Arm **66%**	▪ Servicing 36,400 people ▪ Salmon Arm Landfill, two scaled transfer stations (Skimikin, Scotch Creek) and four unscaled transfer stations (Falkland, Glenemma, Malakwa, and Seymour Arm)
Sicamous **7%**	▪ Servicing 3,400 people (population fluctuates due to tourism) ▪ Sicamous Landfill

Potential Facility Focused Strategies

Strategy 7: Regionalize the CSRD Landfills

7A: Collaborate with the MoE to find solutions for compliance issues related to natural attenuation landfills

7B: Lobby the MoE to standardize requirements on landfills in BC (e.g., litter control)

Golden Landfill

Compliance Issues for the CSRDs Landfills

- Ongoing compliance issues at the landfills
- Only Phase 2 of Salmon Arm Landfill is an engineered landfill
- All four CSRD landfills are natural attenuation landfills

What Does This Mean?

- Significant cost increases through either fines (MoE), costs to address compliance, or future landfill expansion.
- Three of the four landfills will need major capital upgrades.

Options:

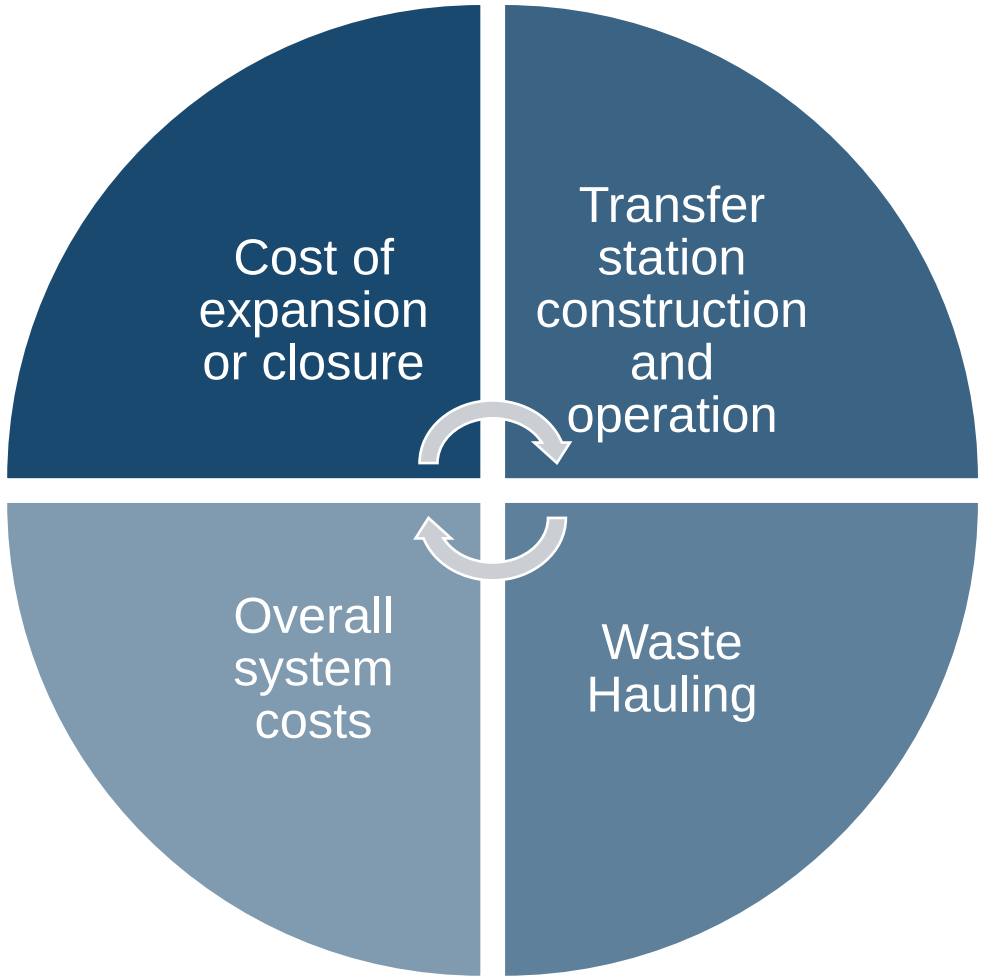
- Upgrading existing landfills to engineered landfills
- Choosing one or more landfills and converting them to transfer stations

Overview of CSRD's Landfills and Potential Options

Landfill	Type	Capacity	Potential Options
Golden	Natural attenuation	Phase 1 = 3 years (2027) Other phases = 59 years	1. Continue operations with engineered phase 2. Close and haul waste 3. Close and develop new landfill 4. Close and build WTE facility
Revelstoke	Natural attenuation	Phase 2 Closure in 2026 Phase 3 = 43 years	Options not yet assessed
Salmon Arm	Natural attenuation and engineered landfill	All phases = 71 years	No options considered - continue operation
Sicamous	Natural attenuation	All phases = 40 years	1. Vertical build-out 2. Short-term closure 3. Progressive closure

Next Steps to Determine Future of CSRD's Landfills

- Assess impacts on all regional landfills in the context of the entire solid waste system



Comments/ Questions on Strategy 7

Strategy 7: Regionalize the CSRD Landfills

7A: Collaborate with the MoE to find solutions for compliance issues related to natural attenuation landfills.

7B: Lobby the MoE to standardize requirements on landfills in BC (e.g., litter control).

Potential Facility Focused Strategies

Strategy 8: Improve transfer station network to increase the operational efficiency and level of service to users

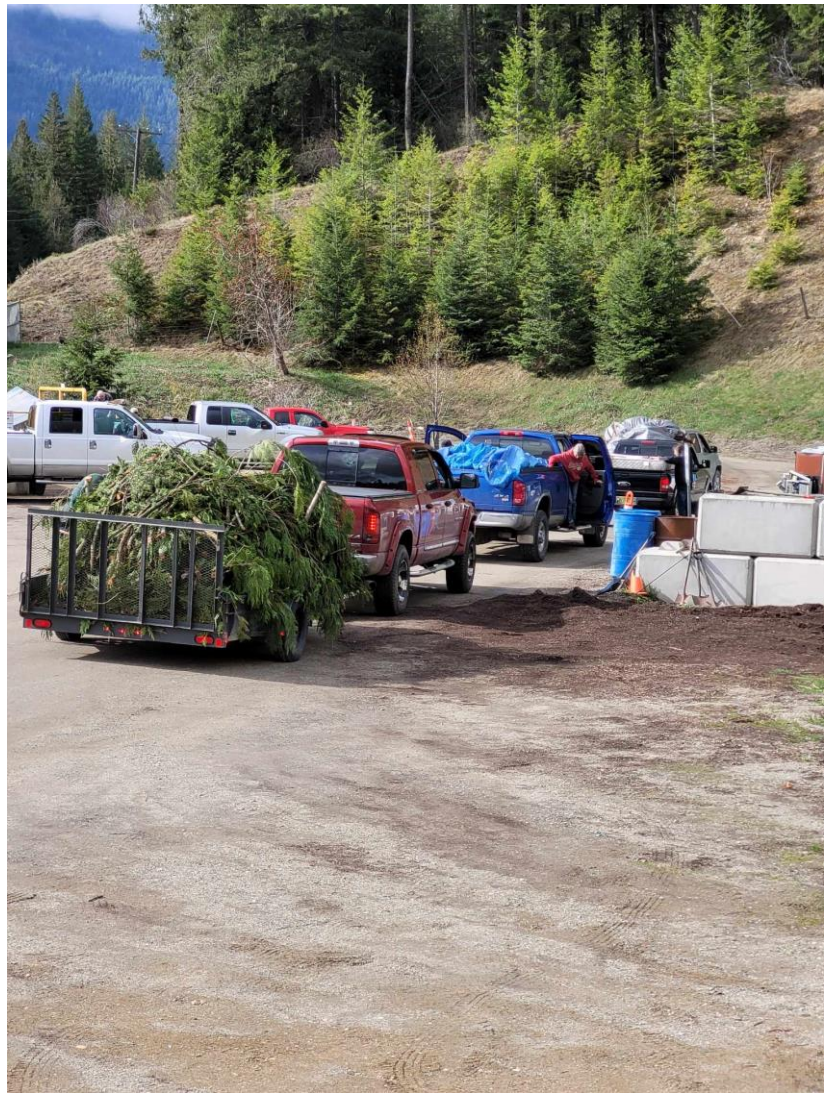
8A: Assess user demands at facilities and increase operational hours at selected sites to improve access and meet seasonal demands.

8B: Conduct a transfer station assessment with siting and design options for sites that justify being amalgamated into centralized upgraded transfer station facilities.

Skimikin Transfer Station: customer lineup

Feedback from Residents about Transfer Stations

- Higher levels of services
  - Acceptance of a wider range of materials (composting, recycling)
  - Improved operational hours
  - Increase in facility capacity: Scotch Creek and Skimikin
- Better signage at facilities



Skimikin Transfer Station: customer lineup

Potential Improvements in the Salmon Arm Wasteshed

- Opportunity for developing to “one-stop-drop” facilities:
  - Unscaled transfer stations in Falkland and Glenema
  - Skimikin Transfer Station, Sorrento and Tappen Co-Op Recycling Depots
  - Malakwa Recycling Depot and Malakwa Transfer Station
  - Scotch Creek Transfer Station
  - Skimikin Transfer Station serving

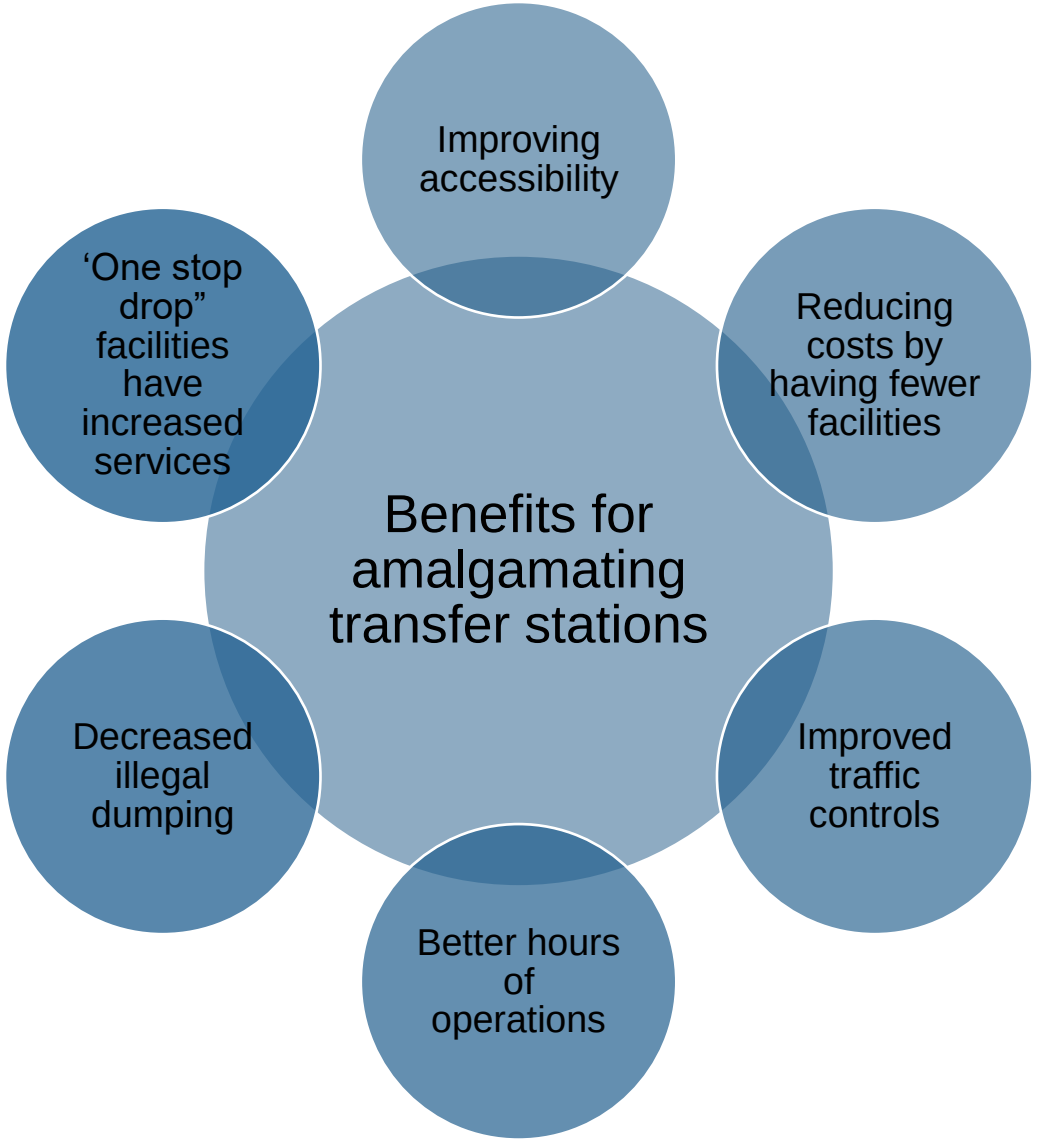
One-Stop-Drop Facilities Example

The South Thompson (Pritchard) Eco-Depot

- Accepts materials (yard/garden waste, C&D waste, household hazardous waste, major appliances, mattresses, etc.)
- Materials that have no charge are collected before the scale
- Covered building where waste materials can be loaded for hauling

Opportunity to Improve the Transfer Station Network

- Complete a transfer station review to determine costs and implications of building new facilities and amalgamating current sites



Comments/ Questions on Strategy 8

Strategy 8: Improve transfer station network to increase the operational efficiency and level of service to users

8A: Assess user demands at facilities and increase operational hours at selected sites to improve access and meet seasonal demands.

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Potential Facility Focused Strategies

Strategy 9: Continue to Subsidize Recycling Services in the CSRD Where Appropriate

9A: Continue to support recycling depots through subsidies.

9B: Continue to offer current or improved recycling services at CSRD's facilities, where appropriate.

9C: Advocate for increased stewardship support to improve accessibility to recycling and cover recycling costs.

EPR Programs

- The cost to recycle and haul materials regulated under EPR exceeds revenue and funds from EPR.
- Partnerships with stewardship agencies offers recycling options beyond materials covered in EPR
- These services costs an extra $300,000-$400,000 per year to manage PPP and HHW.

Advocating for Better Support for EPR Management

- CSRD is already member of the BC Product Stewardship Council
- Continue to engage with stewardship agencies to discuss how access can be improved
- Continue to advocate for additional funding for existing programs and services

Comments/ Questions on Strategy 8

Strategy 9: Continue to Subsidize Recycling Services in the CSRD Where Appropriate

9A: Continue to support recycling depots through subsidies.

9B: Continue to offer current or improved recycling services at CSRD's facilities, where appropriate.

9C: Advocate for increased stewardship support to improve accessibility to recycling and cover recycling costs.

Potential Impacts from Strategies

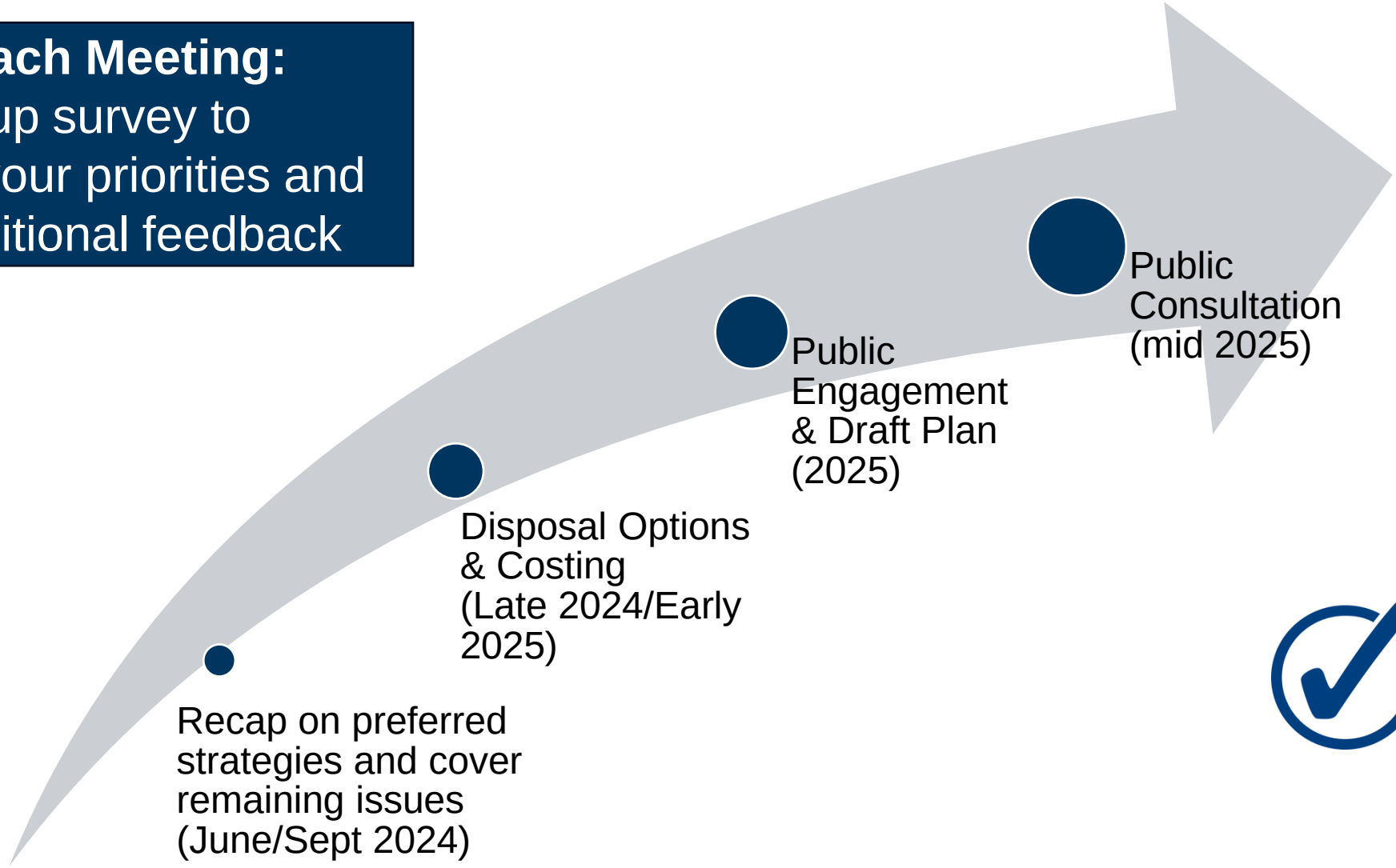
Potential Impacts from Strategies

Strategy #	Strategy Theme	Costs	Staffing	Waste Hierarchy	Diversion Potential
7	Regionalize the CSRD Landfills	High	Low- Medium	Residuals Management	Low - High
8	Improve Transfer Station Network	High	Medium-High	Residuals Management & Recycling	Medium
9	Continue to Subsidize Recycling Services	Low-Medium	Low-Medium	Recycling	Medium

Next Steps

Next Steps – Future PTAC Meetings

After Each Meeting:
Follow-up survey to gauge your priorities and any additional feedback



By end of 2025

- Board Approval
- Submit to MOE

Questions/Feedback?

Thank you!

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People • Culture • Capabilities