Solid Waste Management Plan Update

Options Analysis Phase
Process and Criteria

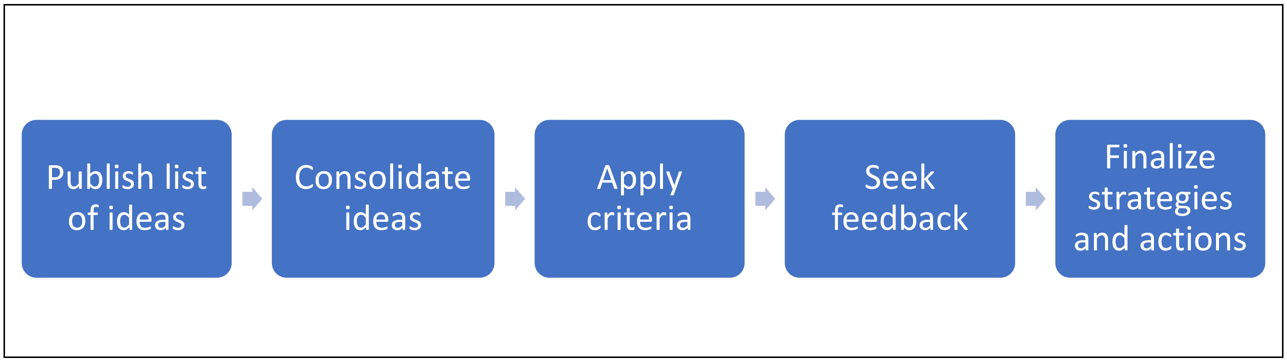
The Options Analysis phase involves assessing consolidated ideas against a set of criteria for the purpose of generating a draft list of strategy and action options for an updated plan.

During the Visions and Guiding Principles and Idea Generation phases for an updated solid waste management plan, Metro Vancouver received almost 3,000 pieces of feedback, which included more than 2,000 ideas. Many ideas were the same or similar, so individual input was consolidated to about 200 unique options. These have been further organized into strategies and actions.

To further refine the options, an "Options Analysis Criteria" and rubric were developed to allow for assessment of the options. In developing the criteria, the following elements were considered:

- Vision and Guiding Principles
- Goals and Hierarchy
- 2022-2026 Metro Vancouver Board Strategic Plan
- A Guide to Solid Waste Management Planning, Government of BC September 2016
- Options analysis process and criteria used in other leading jurisdictions
- Input from Stantec, Metro Vancouver's consulting team for the solid waste management plan update
- Input from committees:
    - The Regional Engineers Advisory Committee, Solid Waste Subcommittee with representation from municipal solid waste management staff
    - The Solid Waste Management Plan Public/Technical Advisory Committee
    - The Industry Advisory Committee

Summary of Options Analysis Process



Stantec consulting team used the Options Analysis Criteria to assess each option against the 17 defined criteria (rubric) as shown below.

Options Analysis Criteria

<table>
<tr><th colspan="3">General</th></tr>
<tr><td colspan="3">• Practicality of implementation
• Accountability
• Transparency
• Consistency/harmonization
• Collaboration
• Resilience</td></tr>
<tr><th>Economic</th><th>Environment</th><th>Social</th></tr>
<tr><td>• Affordability
• Economic prosperity
• Innovation</td><td>• Circularity
• Waste reduction
• Greenhouse gas emissions reduction
• Environmental stewardship</td><td>• Inclusion
• Convenience
• Community participation
• Supports waste prevention habits and actions</td></tr>
</table>

The detailed definitions of each criteria are outlined below.

Economic Criteria

- **Affordability** – potential to reduce costs incurred by residents or sector(s) targeted by the action
    - High – expected to result in a cost reduction
    - Medium – expected to result in no change in cost
    - Low – expected to result in a cost increase

- **Economic prosperity** – potential to support Metro 2050 goals of creating jobs and increasing regional GDP
    - High – expected to increase jobs and prosperity
    - Medium – expected to maintain jobs and prosperity
    - Low – expected to decrease jobs and prosperity

  Reference: Metro 2050 Goal 2: Support a Sustainable Economy | Metro Vancouver

- **Innovation** – potential to introduce a new or updated approach in Metro Vancouver that could unlock/accelerate ability to meet goals
    - High
        - Expected to significantly improve potential to meet goals (e.g. transition to reusable systems, create new or more circular business model, or use technology such as AI to reduce contamination)

          and/or

        - Potential to stimulate a competitive market where industry is motivated to develop circular solutions to waste management problems

    - Medium
        - Expected to improve processes or services resulting in incremental progress toward goals (e.g. adding additional EPR materials to recycling and waste centres)

          and/or

        - Potential to improve existing waste management practices and policies (e.g. supporting business to transition away from compostable plastic cutlery which is banned in BC)
    - Low
        - Expected to remain status quo

Draft Environment Criteria Defined

- **Circularity** – level of hierarchy that the option applies to (higher levels of the hierarchy are associated with higher waste and embodied carbon waste reduction potential)
    - High – Rethink/Reduce/Reuse
    - Medium – Recycle
    - Low – Recover/Dispose

- **Waste reduction** – potential to reduce material currently going to disposal.
    - High – Targets high tonnage material and has potential to a reduce large percentage of remaining waste

High Tonnage Material by Sector based on 2023 Waste Composition

SF **(140k tonnes)**	**MF** **(250k tonnes)**	**CI** **(400k tonnes)**	**Small load** **(120 k tonnes)**	C&D **(370 k tonnes)**
-Organics (24%) - food waste, small yard waste **-Plastic (20%**) - flexible plastic, clothing/household textiles, durable plastic products **-Paper (16%**) - office paper/envelopes, coffee cups	**-Organics (28%) - food waste** **-Plastic (20%**) - flexible plastic, clothing/household textiles, durable plastic products **-Paper (16%)** - office paper/envelopes, junk mail, coffee cups, box material (cereal box)	**- Non-compostable organics (21%)** - pressure treated wood, finished wood/furniture -**Compostable organics (20%) -food waste** **-Plastics (17%)** - durable plastic products **-Paper (15%)** - cardboard, waxed cardboard, coffee cups, box material (cereal box)	**-Non-compostable organics (21%),** pressure treated wood, finished wood/furniture **- Organics (19%) -** yard waste, wood furniture, other wood, food waste **-Building Material (16%) -** carpet, underlay, masonry **Plastic (15%)** -film plastics, durable plastic products, clothing/household textiles, foam	**-Wood (48%)** painted/treated dimensional lumber wood, clean dimensional lumber, plywood, particle board etc.) **-Plastics (10%)** - PVC siding and pipes, vinyl flooring, plastic wrap, foam)

- Medium – targets medium tonnage material and has potential to reduce a large percentage of the remaining waste

Medium Tonnage Material by Sector based on 2023 Waste Composition

SF (140k tonnes)	MF (250k tonnes)	CI (400k tonnes)	Small load (120 k tonnes)	C&D (370 k tonnes)
-Household Hygiene (14%) **-Non-compostable organics (9%)** - clothing/household textiles **-Metals (4%)**	**-Household Hygiene (9%)** **-Non-compostable organics (9%)** - clothing/household textiles **-Metals (6%)**	**-Building Materials (8%)** - carpet, masonry, drywall **-Metals (5%)** -**Bulky objects (4%)**	**-Bulky Objects (6%)** **-Metal (5%)** **-Paper (6%)**	**-Asphalt (6%)** - shingles and tar/gravel roofing **-Misc Building Material (6%)** (carpet underlay flooring) **-Rubble/Soil (6%)**

- Low – targets other materials that are low tonnage in the waste stream (i.e. not included in the tables above)

- **Greenhouse gas emissions reduction** – potential to reduce greenhouse gas emissions (mitigation) to achieve Climate 2050 targets (scope 1 and 2)
    - High – expected to reduce large amount of organics to landfill (prevents methane emissions).
    - Medium – expected to reduce anthropogenic emissions (e.g. targets plastics or replaces coal); has potential to reduce process emission and transport emissions; if energy recovery, overall net GHG reductions when compared to burning of fossil fuels; or status quo
    - Low – increase emissions (e.g. Increases hauling distances or switches from electric to regular gas)

- **Environmental stewardship** – potential to result in environmental benefits beyond waste and GHG emissions reductions
    - High – likely to result in demonstrable improvements in environmental performance (e.g. conserves water, addresses invasive species, reduces oceans plastics, removed harmful chemicals in products, reduces littering or illegal dumping of materials in natural environments)

- Medium – any emissions to the environment are expected to be within current regulatory limits
- Low – potential to degrade environment (e.g. odour causing, light pollution)

Social Criteria

- **Inclusivity** – Potential to remove systemic barriers that may cause or aggravate disparities experienced by different groups and/or give more people access to the service or program
  - High – demonstrable improvements to removing systemic barrier and/or increases access to service for a group experiencing barriers are expected (e.g. assisted set out of containers, bins designed for accessibility, access to affordable food)
  - Medium – no changes expected to barriers or access
  - Low – expected increased barriers and/or gives less people access to service/program

- **Convenience** – potential to make it easier to participate in solid waste management services and programs
  - High – demonstrable improvements in convenience are expected (e.g. provide more services at recycling and waste centers, increase number of repair and reuse events)
  - Medium – no changes in convenience expected
  - Low – likely to decrease convenience

- **Community participation** – potential to connect people through services and programs delivered
  - High – demonstrable improvements to community building, social connection and peer-to-peer learning are expected
  - Medium – no changes expected to community building, social connection and peer-to-peer learning
    Low – likely to decrease community building, social connection or peer-to-peer learning

- **Supports waste prevention habits and actions** – potential to change current behaviour to support goals.
  - High – demonstrable ability to shift behaviour to meet goals is expected
  - Medium – no anticipated long-term changes in behaviour
  - Low – could result in behaviours that prevent or decrease progress toward goals

General Criteria

- **Practicality of Implementation** – potential speed/ease of implementation in the region based on current resources, expected stakeholder buy-in, current available technologies and regulatory authority
  - High – expected to be relatively easy to implement in the next 5 years
  - Medium – expected to require moderate changes to existing system and could be implemented in the next 5-10 years
  - Low – expected to require significant changes to existing system and/or expected to require over 10 years to implement

- **Accountability** –ability to hold actors responsible for the action option to achieve goals
  - High – expected demonstrable improvements to accountability
  - Medium – no changes to accountability are expected
  - Low – expected to decrease accountability

- **Transparency** – potential to provide more information about what happens to materials and/or aspects of the solid waste management system in the region
  - High – demonstrable improvements to transparency are expected
  - Medium – no changes to transparency are expected
  - Low – expected to decrease transparency

- **Consistency/harmonization** – potential to increase similarity of services and policies in the region to reduce confusion for residents and businesses
  - High – demonstrable improvements to consistency/harmonization are expected
  - Medium – no changes to consistency/harmonization are expected
  - Low – expected to decrease consistency/harmonization

- **Collaboration** – potential to work with and develop partnerships with external organizations or Metro Vancouver departments
  - High – likely to increase collaboration and the number of partnerships with external organizations or other Metro Vancouver departments
  - Medium – no changes to collaboration are expected
  - Low - likely to decrease collaboration/reduce the number of partnerships with external organizations or other Metro Vancouver departments

- **Resilience** – potential ability to absorb shocks (e.g. infrastructure disruption, natural disasters, pandemic) and stresses (e.g. aging infrastructure and increased demand for services) to the system.
  - High
    - expected to increase capacity of and diversity of waste management infrastructure, services and markets in a way that will support the plan goals and increased population in the long term

and/or

- significantly increases (potential of connecting most of the infrastructure) connectedness of resources and infrastructure so that excess demand can flow to other connected option (eg. food recovery network)

- Medium
  - incremental improvement on existing infrastructure to support a growing population is expected
  - expected to provide only temporary or a short-term solution to issues that are unlikely to serve growing population
  - expected to result in no change

- Low
  - Likely to decrease resiliency