Climate Caucus

Handbook

A Toolkit For Local Elected Climate Action



Key Resource

Zero Waste & The Circular Economy

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Introduction

This Zero Waste and Circular Economy Handbook is a living document, which means we will be adding your successful motions as they happen, and it provides an up-to-date, real-time guide to the change being driven by Climate Caucus members from coast to coast to coast.

Are we missing any key resources? Submit it here or email us!

Context

Collectively, our consumption patterns have created unsustainable levels of resource usage. How materials are harvested, mined or produced has impacts on habitat and species loss, soil quality, energy use, water use, greenhouse gas emissions and other forms of pollution as well as creating waste. There are also social implications with these systems as well.

Symptoms of a Wasteful System

Climate change, Waste, Soil nutrient loss, Pollution, Habitat loss and degradation, Inequalities, Species overexploitation and extinctions, Human health risks, Injustices

Since the 1970s humans have had an ecological footprint of over one planet's worth of land to provide the resources and absorb the wastes. We have been in an ecological deficit (using resources and producing waste more quickly than supplies are replenished and wastes absorbed). This is primarily due to energy production and use that have generated greenhouse gasses but land uses and other activities have significantly increased during our incoming 'age of the Anthropocene'. Every product and material has a greenhouse gas footprint resulting in 45% of GHGs emissions coming from their production and consumption. North American societies have disproportionately high resource use so it is incumbent on us to set a better example for others who seek similar lifestyles, and to use a more equitable share of the resources.

Zero Waste and the Circular Economy are concepts developed to show how to reduce our throughput of materials.

According to the Zero Waste International Alliance, Zero Waste is "the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health."

Circular Economy is defined by the Ellen McaArthur Foundation as a system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting. The circular economy tackles climate change and other global challenges, like biodiversity loss, waste, and pollution, by decoupling economic activity from the consumption of finite resources.

It can be understood with reference to the Circular Economy principles for managing materials and waste in local government planning:

- Eliminate waste and pollution
- Circulate products and materials
- Regenerate nature

Underpinned by a transition to renewable energy and materials, the circular economy is a resilient system that is good for business, people, and the environment.

Communities are using terms Zero Waste, Circular Economy, or Zero Waste/Circular Economy. The terms are not exactly the same, and the Circular Economy principles are catching up to the requirements for Zero Waste. However, some communities may find the term Zero Waste intimidating but it is about the goal and journey to get there, not an absolute.. Communities will know best which term to use, and this handbook will use the term Zero Waste/Circular Economy throughout.

Approach

Pursuing these goals aligns with the UN Sustainable Development Goal 12: Responsible Production and Consumption. Even so, actions and solutions will likely help address

multiple Sustainable Development Goals. For too long, we have asked the question “what can we do with this wasted material?” which has led us to solutions based at the bottom of the Zero Waste Hierarchy but the questions we should be asking are “why was this material or product wasted?” and “what can meet this need in a waste-free model?" to get to the roots of the problem and work at the top of the hierarchy.
Think practically. Every good, well-executed plan starts with a clear goal and a strategy to get there. Plans go nowhere unless there is the ongoing commitment and the resources dedicated to enacting them. A dedicated committee or working group not only helps to develop actions relevant to the location but can help to implement them or ensure they are implemented.

Do not lose valuable time

Time can be lost reinventing the wheel or looking for the best wheel. Build on work done by others. Share work with other local governments and make plans to collaborate. Do not waste time investigating new technologies to “get rid of” waste - better solutions will prevent waste in the first place and are likely to involve policy, systems, behaviour change and community engagement rather than complex, new technology. They are more likely to have other benefits as well.

Benefits

Municipally, pursuing a zero waste and/or circular economy strategy can align with a community’s desire for timely leadership on sustainability, help to meet goals set by larger jurisdictions, utilize the unique tools that local governments have and work to align with other environmental, social and economic objectives.

Circular economy actions can support multiple goals at once. It can be looked at through lenses of affordability and economic development, as well as waste. Reducing consumption and extending the use of existing products can have climate benefits when considering upstream emissions and actions on this can often be more tangible and social than other climate actions.

Some examples of benefits of Zero Waste/Circular Economy initiatives include:

- Sustainable procurement practices ensure purchasing decisions consider broader environmental impacts and strengthen the social and economic resilience of local communities, rather than focusing solely on the traditional considerations of price, quality and ability to meet technical requirements.
- Sharing, reuse and repair reduces the environmental impact of the goods and has social benefits of building capacity and community as well as providing jobs.
- Reduction of single use items can reduce the amount of toxins and microplastics in our bodies and the environment.
- Shifting to a construction system with reuse/preservation principles, design for disassembly, and a priority of deconstruction will increase the resiliency of buildings in our community and spur the local economy through increased employment and a skilled workforce.

Circular Economy, the minimalist movement, Zero Waste, or whatever your goal is, this is about trying to decrease our footprint and mirror what nature does, and nature does not have waste. Overconsumption and waste concerns every person everywhere, and addressing it ultimately means keeping more money in the local economy and trying to build a better future by leveling the playing field as opposed to the western concept of always needing more or competing with the neighbours. Ultimately, this builds a better and more inclusive community that is better for everyone, not just marginalized communities.

ZW/CE Initiatives

Climate Caucus has ranked the following initiatives from beginner to expert, based on Complexity to implement, Staff time & expertise, and Political capital. Please note, these rankings are our own best judgements.

- Green Square = Beginner
- Blue Square = Intermediate
- ◆ Black Diamond = Advanced
- ◆◆ Double Black Diamond = Expert

CATEGORY	DESCRIPTION	LINK TO FURTHER INFORMATION
COMMITMENT TO ZERO WASTE AND CIRCULAR ECONOMY 	Two guiding frameworks that are being adopted by local governments nationally and internationally to help organize action to address the waste crises are Zero Waste and the Circular Economy. This Initiative is a resolution to make a commitment to zero waste and the circular economy.	MORE HERE
DEVELOP A ZERO WASTE OR CIRCULAR ECONOMY PLAN 	Municipally, pursuing a zero waste and/or circular economy strategy can align with a community's desire for timely leadership on sustainability, help to meet goals set by larger jurisdictions, utilize the unique tools that local governments have and work to align with other environmental, social and economic objectives.	MORE HERE

STRONGER EPR	Extended Producer Responsibility (EPR) is an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle.[1]	MORE HERE
SHARE, REUSE, REPAIR	Sharing, reusing, and repairing reduces environmental impacts and extends the lifespan of goods we use.	MORE HERE
SUSTAINABLE PROCUREMENT	Careful consideration of what goods are really needed, how best to access the service of the good, the broader impacts of the product and producer, and helping to support the market for better products and services are key elements of sustainable procurement.	MORE HERE
REDUCE PLASTICS AND SINGLE-USE ITEMS	Plastics are becoming more and more ubiquitous in our daily lives and the environment. With a lack of restrictions on the types and materials of plastics, the different plastics are proliferating faster than any solutions to avoid waste.	MORE HERE
FOOD WASTE REDUCTION AND COMPOSTING - ♦	In Canada, 5.6 million tonnes of organics are generated annually and of that, 4.3 million tonnes are disposed of in landfills and incinerators. Avoiding food waste can have four times the emissions reductions impact as changing to composting from landfilling of organics.	MORE HERE

[1] OECD EPR definition. https://www.oecd.org/env/tools-evaluation/extendedproducerresponsibility.htm

FROM CONSTRUCTION AND DEMOLITION TO PRESERVATION AND DECONSTRUCTION **-** ♦	Construction and Demolition waste make up about 1/3 of municipal solid waste, much of which could be reused or recycled. Construction and renovations often occur before the materials and buildings have finished their useful lives. This wastes not only the materials but the embodied energy it took to make them.	MORE HERE

Town of Rocky Mountain House Pilot, AB

Rocky Mountain House (RMH) is a town in west-central Alberta, with a population of approximately 6,750 residents. Climate Caucus partnered with RMH for a pilot project, implementing our revitalized Zero Waste and Circular Economy Handbook in 2024. In response to reading our handbook, the town of Rocky Mountain House staff decided to focus on share, re-use and repair projects, and food waste reduction and composting (organics waste diversion).



Headed by the Town's communication staff, they held three in-person events at the Town's Marketplace on Main (an open-air market held every Thursday evening in summer). Two 'Sort It Right' events focused on making sure residents were sorting their recycling into the correct bins. Staff demonstrated, through the Town's waste diversion audit results, material that gets placed in Blue Bins gets recycled into many uses rather than being sent to landfill. One 'Store It Right' event was about minimizing food waste by teaching residents to store food properly. All events were a great success, with overall positive feedback. There were activities, attendee giveaways, and a draw for a countertop bin which resulted in terrific engagement. In preparation for this event they created materials they could present to people in person. The presentation materials they created can easily be recreated for a social media campaign. Staff also wore lime green shirts with the tag phrase "Reuse Rocky" on them to capture the attention of market goers, and ensured residents understood the focus of this outreach from the Town.



Main Challenges and Suggestions

As a small town with very limited staff capacity, this pilot project demonstrated the need for community organization support to take on event management, such as a repair cafe. When possible, a community could seek out a non-profit, school or a library, to host a 'fix-it' event sponsored monetarily by the municipality (see repair cafe examples here).

Zero waste and circular economy initiatives require cross-departmental collaboration. Forming a committee or task force of staff from different departments, including operational and engineering support, is important to prevent zero waste from being the sole responsibility of one department, or worse, one individual. Departmental champions play a key role, and operational and engineering support is important.

Annual monitoring of waste streams is also key to evaluating success of programs. Council support is critical but this is a long-term goal, so don't feel discouraged if progress is slow.



Image Description: Laura Button, Town of Rocky Mountain House Communications Coordinator holding up pictures of waste items to sort through

Case Studies of Alberta Communities

There are many actions that communities across Alberta are taking that will move towards zero waste and a circular economy; click here to read more. The focus in this document is on the smaller communities, though the work happening in Edmonton and Calgary is also impactful and meaningful.

Planetary Health Evaluation

The Planetary Health Framework is a conceptual approach for designing and evaluating interventions. It asks a series of questions (a "dialogic approach") based around natural and human systems dimensions.

Key observations to think about when implementing:

- Benefits to the ecosystem from reduced waste are clear and include:
    - reduced methane from landfill and reduced emissions from incinerators
    - reduced dumping and litter
    - less land used for waste disposal
    - fewer adverse impacts on wildlife e.g. bear conflicts
    - fewer upstream impacts such as pollution, climate change, biodiversity loss, habitat loss and others

- The group observed that while the Zero Waste/Circular Economy plan effectively addresses environmental sustainability, there is a need to focus on equity at the local level. For example:
    - User pay approaches that support the environment may unfairly penalize low income groups.
    - Low income people who rely on cans and bottles for their livelihoods may be hurt.
    - Close down harmful waste facilities and ensure new polluting production or disposal facilities are not built, especially in equity-deserving communities.
    - Developing systems to share items can be a way to ensure access to services but care must be taken to build equity into those systems.

- There is also scope for equity improvements at the upstream level where people have been harmed by pollution and loss of access to land or traditional foods through extractive processes, as well as experiencing the results of climate change. Downstream, impacts to other communities and their economies can be minimized by ensuring wastes are not exported to communities that do not want them or are harmed by them.

- There are opportunities in implementing these programs to relocalize supply chains providing local jobs, especially to those who are sometimes marginalized. Because circularity works best regionally, there is an opportunity to increase regional economic development opportunities, shifting some of the international economic activity back to regional nodes.

- Zero Waste/Circular Economy measures can also provide greater well-being and quality of life, e.g. social connection of repair cafes. Doughnut economics considers both planetary limitations as well as equity needs.

Glossary of Abbreviations

ICI - Industrial, commercial and institutional sector
MF - Multifamily residential sector
SF - Single family residential sector
EPR - Extended Producer Responsibility
C&D, CRD, DLC - construction and demolition sector (or construction, renovation and demolition; or demolition, land clearing and construction)
WTE - Waste to energy (WTE) is the thermal treatment of waste that destroys the materials and includes mass burning, incineration, plasmification, pyrolysis and gasification. It is not part of zero waste nor a circular economy.

Additional Resources:

Useful Tools:

- Zero Waste Canada – the website has the definition, hierarchy and tools for reducing waste
- Zero Waste High-Rise Project : Online Program - The Toronto Environmental Alliance (TEA) shares inspiring success stories, guides and resources to share what we've learned with high-rise residents and staff to help more Toronto high-rises become zero-waste buildings.
- Zero Waste Europe's Zero Waste Cities Masterplan
- National Zero Waste Council is also developing policies and advocating for Zero Waste
- Ellen MacArthur Foundation – website has a lot of resources for developing a circular economy. Also The circular economy: a missing piece in city climate action plans?
- Canadian Circular Cities and Regions Initiative -this network for municipalities and regions offers support to help create circular economy strategies. Information is available to members only but check out member cities' strategies.
- Circular Cities Initiative - Creating Circular Economy Roadmaps for Stronger Communities
- Recycling Council of Alberta -Circular Communities project
- Zero Waste BC Municipal Toolkit
- Circular Innovation Council -the former Recycling Council of Ontario is supporting a circular economy including through procurement.
- SITRA -Finnish Circular Economy
- GAIA - website has resources outlining why waste-to-energy (incineration) is a waste
- Green Municipal Fund (FCM) has many resources including funding options.
- Federation of Canadian Municipalities Solid Waste Management in Canadian Municipalities (2019)

- Stop Trashing the Climate - report showing why Zero Waste is needed and 12 priority policies for local governments.
- Closing the Loop -Reducing Greenhouse Gas Emissions and Creating Green Jobs Through Zero Waste in BC -report noting benefits of pursuing Zero Waste and policy recommendations.
- Jurisdictional Scan for Circular Economy (BC Ministry of Environment, 2017).
- BC Municipal Zero Waste Planning Toolkit -A living document maintained by Zero Waste BC
- Alberta Municipal Zero Waste Planning Toolkit - maintained by the Recycling Council of Alberta

Climate Caucus Resources

- Climate Caucus Municipal Grants List - detailed list of relevant municipal grants
- Policies and Resources Library - list of motions, bylaws, council reports and briefing notes

Appendix

Who is doing What? Zero Waste and Circular Economy in Canada

This is a living document to share what organizations are working in which jurisdiction, and in what areas.