



To: Public Works and Transportation Committee

Date: February 1, 2019

From: Tom Stewart, AScT.
Director, Public Works Operations

File: 10-6370-01/2018-Vol
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Re: 2018 Zero Waste Conference Update

Staff Recommendation

1. That the report regarding “2018 Zero Waste Conference Update” dated February 1, 2019, from the Director, Public Works Operations be received for information.
2. That letters be sent to the Board Chair of Metro Vancouver and the Minister, Environment and Climate Change, requesting their leadership in advancing the circular economy agenda under a broad-based approach.
3. That staff participate in regional and provincial forums relating to the circular economy agenda and report back at appropriate intervals.

Tom Stewart, AScT.
Director, Public Works Operations
(604-233-3301)

Att. 2

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: CS
APPROVED BY CAO	

Staff Report

Origin

At their November 21, 2018 meeting, Public Works and Transportation Committee passed the following referral motion:

“That staff prepare a report reviewing the 2018 Zero Waste Conference and report back with recommendations.”

This report responds to this referral and proposes next steps for advocating development of a circular economy agenda under a broader approach, specifically at the regional and provincial government levels.

Analysis

National Zero Waste Council Zero Waste Conference 2018 Overview

Metro Vancouver and the National Zero Waste Council presented their “2018 Zero Waste Conference: A Future Without Waste: The Journey to a Circular Economy” on November 8-9, 2018. The conference, which was held at the Vancouver Convention Centre, was attended by over 500 registered individuals, comprised of academia, local government, other government, first nations, individuals, non-profits and the private sector.

The annual Zero Waste conference has been held for the last 10 years and is designed to highlight emerging trends, opportunities and insights designed to stimulate innovation and creative ideas to disrupt typical approaches to managing waste. This annual conference includes leading edge ideas from academia, business and governments from around the world with a focus on new approaches toward waste elimination.

This year’s theme focused on the circular economy. A circular economy is one where the typical approach to draw on natural resources under a ‘take-make-dispose’ approach for economic and societal purposes is transitioned into approaches where materials and resources are ‘repurposed, renewed and regenerated’. Doing so eliminates or significantly reduces the need to draw on natural resources and the resulting negative impacts when items are introduced back into the environment as waste. Items disposed in landfills or incinerators cause impacts which can be avoided by reintroducing materials back into the economic cycle through deconstructing and re-engineering them into new products. A circular economy focuses on positive society-wide benefits by decoupling economic activity from the consumption of finite resources (the ‘linear economy’), and designing waste out of the system (the ‘circular economy’).

The circular economy approach includes changes in not only mindsets but also the entire approach to the development of products, from design to construction to renewed uses at end of life. To facilitate this change, new business models, approaches and attitudes will be needed and driven through the adoption of government policies, at all levels, and through business innovation. To help facilitate and advance the concept, the 2018 Zero Waste Conference included a variety of topics and speakers including presentations relating to:

- New thinking needed to move toward circular economies and capture the potential benefits of technology;
- A technology innovation panel;
- Materials and design innovation;
- Transformational leadership;
- A design portfolio competition;
- Sustainable innovation and change management;
- Business model transformation;
- A zero waste cooking demonstration;
- Food waste reduction;
- Systems mapping;
- Plastics innovation forum;
- A showcase relating to resource-efficient, lifecycle management of plastics; and
- A panel of members from the Circular Economy Leadership Coalition, a national alliance of institutional and corporate leaders committed to advancing a circular economy in Canada.

A more detailed overview of the presentations and presenters is included in Attachment 1.

Conference Overview – Staff Summary:

Staff's overall summary view is that the conference highlighted:

- emerging issues relating to the harmful effects of increasing quantities of waste in our environment;
- the missed opportunities in reducing waste and/or capturing this waste for regeneration;
- the need to 'retool' current practises and business models to trend away from the continued use of finite resources; and
- the need for widespread engagement and actions, both at the individual community, national and international levels, in order to effect meaningful change.

Without change, the current overdraft approach to the world's finite natural resource bank will mean a lack of ability to support future population growth in a sustainable manner. Current practices relating to the use of fossil fuels are also contributing to complications from climate change. The public is looking to its political leaders to address these issues using holistic, well-planned and considered approaches rather than sole-purpose reactions to topical issues. This is evidenced by the number of commitments at various government levels relating to zero waste, effective resource management, ocean plastics and other issues. A summary of Related Circular Economy Commitments and Initiatives is included in Attachment 2.

Advancing the circular economy requires taking the discussion beyond those programs directly controlled by the City. While the City has advanced a number of impactful and leading sustainability based programs and initiatives (discussed below), a broader approach will be required to build the needed momentum among businesses, industry, academia, institutions, the general community, and other levels of government. Leadership at the provincial and regional levels of government is an important starting point to help drive the wave of change needed to develop and advance a circular economy strategy.

Summary of Richmond's Current Actions as it Relates to the Circular Economy Approach

The City undertakes a number of services, programs and initiatives which directly align with the circular economy agenda. In fact, the City has been recognized as a leader in many areas that support the path toward a circular economy. A sample of some City programs and outcomes include:

- **Diversion:** The City's current solid waste and recycling programs are arguably among those leading the region, with 78% waste diversion achieved for single-family residential waste. Residents in multi-family developments also receive comprehensive recycling programs from the City, including Blue Cart and Green Cart/organic recycling services. In the commercial sector, the City began a pilot program starting in 2015, which provides optional services for organics, recycling and garbage collection on a request basis. Currently, service is provided to 35 businesses.
- **Recycling Depot:** The City continues to introduce new services and programs as part of our goal to achieve 80% waste diversion by 2020, such as the most recent expansion of materials accepted at the City's Recycling Depot, which commenced in January, 2019.
- **Building Demolition:** The City has established a demolition recycling bylaw that requires 70% recycling of waste from single-family home demolitions.
- **House Moving and Salvage Program:** The City promotes house moves by providing an inventory listing to promote re-use connections/opportunities.
- **Waste Heat Recovery:** The City currently operates sewer heat recovery equipment at the Gateway Theatre and aims to expand this approach through the Lulu Island Energy Company's Oval Village District Energy Utility. The new Minoru Centre for Active Living recovers heat from the pool facilities for heating community use space within the building.
- **Resource Recovery:** The City worked with Metro Vancouver to complete an Integrated Resource Recovery Strategy for the Lulu Island Wastewater Treatment Plant to assess available resources, such as heat and nutrients that can be economically recovered.
- **Gravel and Asphalt Recycling:** Richmond is leading, in partnership with the National Zero Waste Council, a pilot certification program for asphalt and concrete pavement products as a tool to build confidence in product quality.

Approach to a Developing a Circular Economy Strategy

Background – the Economic Case for a Circular Economy:

Global demand for limited finite natural resources (e.g. biomass, fossil energy and many metals) is expected to reach as much as 130 billion tons by 2050, up from 50 billion tons in 2014. This is equal to more than 400 percent overuse of Earth's total capacity, known as 'overshoot', a feat that is physically impossible. The goal of a circular economy, which aims to de-couple growth from the consumption of natural resources, is to shape the next industrial revolution where an

economic shift equal to \$4.5 trillion globally by 2030 is predicted by Accenture, a leading economic research firm commissioned by the National Zero Waste Council's Circular Economy Working Group. The Circular Economy presents a vision for change to address not just mounting waste problems, but resource supply and price volatility, growth in global population and the generational challenge of climate change. A circular economy approach will require participation at all levels of government.

Developing a Circular Economy Strategy:

The City is a recognized leader in many sustainability-focused arenas ranging from a robust waste management program, to leading district energy initiatives, and greenhouse gas emissions reduction programs designed to achieve carbon neutral operations. The move toward a circular economy is broader than municipal service and will require a robust, planned and consultative approach to maximize both corporate and community opportunities and would be far reaching across the City and the Metro Vancouver Region.

Considered the global lead in helping and supporting governments' transition toward a circular economy, the Ellen MacArthur Foundation (EMF) was launched in 2010. The EMF Ellen Circular Economy 100 (CE100) is an innovation program designed to help governments and others realize their circular economy ambitions faster and in a unique multi-stakeholder platform. There are a number of opportunities that can be explored with the support of the EMF to help develop a circular economy strategy. There are various membership models available to engage with the EMF and Metro Vancouver began a three year membership in 2019. Staff expect this membership will foster growing opportunities at the regional level to advance a circular economy strategy. Ongoing participation in regional committees where these discussions are held is just one way that Richmond can remain connected, advocate and learn more about advancing the circular economy.

Further impetus at the provincial government level will also be needed and should be pursued to create the necessary momentum to foster a groundswell approach to widespread adoption of the circular economy. As noted, the City of Richmond is going in the right direction with many of its programs and initiatives that nicely dovetail with the circular economy. However, to independently pursue the circular economy more fully at this time would be premature given the level of financial commitment required and the low impact this would have compared to a broader-based approach.

Recommended Approach:

The greater the scale and scope of a circular economy, the greater benefit it will deliver. In addition, many of the players in a circular economy, such as senior governments and multi-national corporations, operate across local jurisdictional boundaries. In Canada, the provincial scale would be a scale of a circular economy that could be resourced and regulated to maximum benefit. At the regional level, there are many opportunities to influence plans and policies, particularly in the waste management arena (e.g. solid and liquid waste management plans). Therefore, advocating leadership at the provincial and regional levels is recommended. Richmond staff can continue to participate and advocate the circular economy agenda through participation in regional committees and provincial forums, in addition to continuing

Richmond's already progressive approach to bringing forward leading edge programs and services that support the circular economy.

Financial Impact

None.

Conclusion

The 2018 Zero Waste Conference highlighted the importance of moving from a linear to a circular economy to preserve finite resources and sustainably steward those resources for a growing population.

The approach outlined in this report recommends urging leadership at the regional and provincial government levels to facilitate broader and more impactful change to foster the circular economy agenda.



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SJB:

Att. 1: Summary of "2018 Zero Waste Conference: A Future without Waste: The Journey to a Circular Economy"

Att. 2: Related Circular Economy Commitments and Initiatives

Attachment 1

Summary of 2018 Zero Waste Conference

A Future without Waste: The Journey to a Circular Economy

Presented by: Metro Vancouver and the National Zero Waste Council (NZWC)

Date: November 8-9, 2018

Key Highlights:

- A total of 501 registered attendees (Academia 6%, Individuals 7%, Local Government 18%, Other Government & First Nations 8%, Not for Profit/NGOs 20%, Private Sector 41%)
- Hosted by Malcolm Brodie (Chair, NZWC and Metro Vancouver Zero Waste Committee), Emceed by Vanessa Timmer (Executive Director, One Earth), with a video welcome from Prime Minister Justin Trudeau, and over 40 other speakers, panelists and moderators including:
 - A keynote presentation from Swiss Futurist and Humanist Gerd Leonhard on how new thinking by individuals and moving to more circular economies is needed to capture the potential benefits of technology.
 - A Technology Innovation panel with representatives from OPTTEL, Accenture Strategy & IBM, moderated by Smarter Sorting.
 - A Materials and Design Innovation presentation from Arthur Huang, founder of Miniwiz, which upcycles consumer and industrial waste into low carbon footprint products, and a panel discussion with IDEO & Closed Loop Partners, moderated by Cascades Recovery.
 - A panel on transformational leadership in the circular economy focusing on the role of government, featuring representatives from international leaders: Sitra (the Finnish Innovation Fund), Zero Waste Scotland, and the Netherlands
 - Announcement of the entrants into the NZWC's Design Portfolio – an online celebration of Canadian products and packaging in market that demonstrate the application of design principles and systems thinking to minimize waste.
 - A keynote presentation from Professor Wayne Visser of the Antwerp Management School on Sustainability Innovation & Change Management.
 - A panel on Business Model Transformation associated with moving to a circular economy with representatives from Eileen Fisher Renew, IKEA Canada, three local entrepreneurs from FoodMesh (B2B food marketplace), ChopValue Manufacturing (furnishings and materials from recycled chopsticks), Nada (zero waste supermarket), a policy entrepreneur and moderated by Fairware (sustainable promotional merchandise).
 - A zero waste cooking demonstration with Bob Blumer, host of Food Network's The Surreal Gourmet using food scraps to create a pizza.

Attachment 1 (cont'd)

- A panel on Canadian leaders in reducing food waste, with Agriculture and Agri-Food Canada, Walmart Canada, Second Harvest, Provision Coalition, and the NZWC.
- A keynote from designer and educator Dr. Leyla Acaroglu (Unschool) on Disrupting the Status Quo through design and collaborative action based on systems mapping.
- A second day video welcome from George Heyman, BC Minister of Environment & Climate Change Strategy and a keynote from Dr. Stephen Lucas, Deputy Minister, Environment and Climate Change Canada.
- A Plastics Innovation Forum with Cheslea Rochman from the University of Toronto and a panel including representatives from Ellen MacArthur Foundation, Circle Cities Programme, and Think Beyond Plastic™ moderated by the Recycling Council of Alberta.
- A Canadian Innovation Showcase featuring initiatives consistent with resource-efficient, lifecycle management of plastics in the economy per the G7 Ocean Plastics Charter.
- A panel including members of the Circular Economy Leadership Coalition, a national alliance of institutional and corporate leaders committed to advancing a circular economy in Canada. Speakers included those from the NZWC, IKEA Canada, The Natural Step Canada, Smart Prosperity Institute, Loblaws, and NEI Investments.

Attachment 2**Related Circular Economy Commitments and Initiatives**

There are a number of calls to action at international, national and local levels which target responsible resource use and waste diversion. These commitments serve to highlight the growing and widespread harmful impacts of waste, and in particular plastic waste, on the natural environment. Recent commitments include:

- **Group of Seven:** On September 20, 2018, the Group of Seven (G7) meeting, which groups Canada, France, the United States, the United Kingdom, Germany, Japan, Italy and the European Union, endorsed an Ocean Plastics Charter launched by Canada as part of its 2018 G7 presidency.
- **Canadian Council of Ministers of Environment:** On November 23, 2018 the Canadian Council of Ministers of Environment (CCME) agreed to work collectively toward a common goal of zero waste. The CCME endorsed a Canada-wide waste reduction goal to encourage and highlight waste reduction progress in Canada. In 2014, each Canadian generated an average of 706 kg of all types of waste (as per Statistics Canada). The Canada-wide target is to reduce this number to 490 kg per person (a 30% reduction) by 2030, and to 350 kg per person (a 50% reduction) by 2040. The agreement further added: *“In moving to a circular economy for plastics with this collaborative approach, Canada will be positioning itself as a leader in forward-looking and innovative waste prevention and management solutions.”*
- **The Circular Economy Leadership Coalition:** The National Zero Waste Council helped to found the Circular Economy Leadership Coalition (CCLC). The CCLC is a national alliance of Canadian leaders working together to eliminate waste and accelerate the reduction of carbon emissions from the Canadian economy through the advancement of a circular economy. The CELC identified that *“An opportunity for governments to increase companies’ competitiveness with better policy and regulatory tools: Canadian businesses understand the need for innovation to stay competitive in the global economy. Building a Circular Economy requires policies at every level of government to encourage and reward firms that invest in new technologies and processes, protect and remediate our natural resource wealth, use those resources efficiently and eliminate waste.”*
- **Metro Vancouver:** Metro Vancouver’s Zero Waste Challenge states that *“The challenge for Metro Vancouver, which manages the region’s waste, is to increase awareness that reducing and reusing waste are a priority to managing waste sustainably. This requires advocating policies and regulations to reduce waste, opening discussions on the approach to consumer goods to include more durable, repairable and recyclable goods, and encouraging citizens to act.”* Metro Vancouver aims to work with other governments, Federation of Canadian Municipalities, and businesses to advocate increased reduce and reuse initiatives and provide tools such as an online recycling database, promote best practices for business, and strengthen the market for recyclable materials.