CITY OF VANCOUVER | GREENEST CITY

ZERO WASTE 2040

WORKSHOP CONSULTATION SUMMARY

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OVERVIEW

The City of Vancouver is currently developing Zero Waste 2040, a long-term strategy to guide the decisions and waste management investments that are needed for Vancouver to achieve its zero waste goal. The Zero Waste 2040 strategy will provide a framework for Vancouver to reduce and ultimately eliminate waste disposed to landfill and incinerator.

In late 2016, residents, businesses, non-profit organizations, and other levels of government were invited to four Zero Waste 2040 workshops to provide industry expertise and public input. The input received from the workshops is currently being used alongside technical research and information from other public and stakeholder participation to inform the development of the Zero Waste 2040 strategy.

WORKSHOP SUMMARY

Over 230 people participated in four Zero Waste 2040 workshops to provide expertise and public input. The input received from residents, businesses, non-profit organizations and other levels of government during the workshop series is summarized in this document and will be used to inform the development of the Zero Waste 2040 Strategy.

The workshops covered four key systems that contribute to solid waste disposed to landfill and incinerator:

1. **Products:** consumer goods and associated packaging
2. **Food:** raw, processed and cooked food and associated packaging
3. **Buildings and Assets:** construction, building resources and municipal infrastructure
4. **Waste Management:** resources managed after the point of disposal in the systems above

The City hosted an additional workshop as part of the development of a Single Use Item Strategy. A summary of that workshop can be found at **vancouver.ca/zerowaste**.

WORKSHOPS

DATE	TOPICS	NUMBER OF PARTICIPANTS
September 23, 2016	**PRODUCT WASTE** Packaging, household appliances, clothing, household hygiene, and electronics	60
September 30, 2016	**FOOD WASTE** Food production, manufacturing, distribution, sales, and consumption	65
October 7, 2016	**BUILDING AND ASSET MANAGEMENT WASTE** Buildings and municipal infrastructure (roads, pipes, etc.)	55
October 14, 2016	**WASTE MANAGEMENT** Various streams of material with a post-consumer focus	54

Purpose

The purpose of the workshops were to:

- Develop a shared understanding of the current state of each system and their impact on solid waste
- Develop a high level vision for zero waste by 2040
- Identify challenges and opportunities to achieving zero waste by 2040
- Identify and share priorities and actions for how to achieve zero waste by 2040
- Invite participants to take a role in a zero waste community and future initiatives

Approach

The workshops were designed around a "now, wow, how" planning framework blended with systems thinking methods. The approach and activities in the workshops focused on:

1. System Mapping: What is the current state of waste generated in each system?
2. Visioning: What could a zero waste Vancouver look like in 2040?
3. Action Planning: How can we achieve zero waste by 2040?

WHAT WE HEARD

In the workshops, we heard healthy debate and discussion on many zero waste topics. Participants discussed a vision of what Vancouver could look like as a zero waste community by 2040, guiding principles that will shape our thinking for getting to zero waste, opportunities and challenges we may face along the way, and key priorities and actions to move forward with. Overall, seven themes emerged across all four workshops and systems.

1. TAKE A COLLABORATIVE SYSTEMS-WIDE APPROACH

Achieving zero waste is complex. It involves change through multiple layers of stakeholders, across organizational boundaries, and is beyond the ability of any one organization to effectively address it by themselves. Problems and opportunities related to zero waste require total systems changes, including collaboration between those who act locally and are impacting change globally. Participants told us that the Zero Waste 2040 Strategy needs a collaborative approach, engaging with and building on the capacity of people and organizations across key systems to collectively solve problems, pursue opportunities and transition to zero waste by 2040.

2. FOSTER A ZERO WASTE CULTURE

Vancouver is defined by its residents and their diversity, values, norms, lifestyles and ability to adapt, look forward, and be involved in shaping the city. Participants recognized the importance of these traits as both barriers to and opportunities for achieving zero waste. Participants told us that achieving zero waste will require people to be more considerate of their waste impacts and shift away from disposable consumption to a "lighter" footprint culture. Everything we need comes from the planet and the amount of productive land and resources we use to meet our needs is called our "ecological footprint". A "lighter footprint" is about living within our ecological limits, treating waste as a resource, enhancing social equity and addressing climate change.

3. TRANSITION TO A STRONG CIRCULAR ECONOMY

Transitioning to the circular economy may be one of the biggest opportunities for re-shaping how we organize production and consumption and achieve zero waste. The circular economy represents a new way of looking at the relationships between policy, markets, people and resources. Participants in every workshop identified the need for a strong local circular economy to shift us to zero waste by 2040. A circular economy is one that values waste as a resource, is restorative and regenerative by design, keeps products, components and materials at their highest utility and value at all times, and considers social equity, affordability, accessibility and convenience in accessing circular products and services.

4. FOSTER ZERO WASTE INNOVATION

Zero waste is a philosophy, visionary goal and also an innovation. Participants recognized the need to foster innovation by enabling unconventional solutions that challenge current business models. They identified the need to create policies, services, programs, infrastructure and technology through unconventional solutions that would be effective at achieving zero waste. Participants discussed the need for us to support innovation in a wide range of sectors, including the design and management of eliminating or reducing toxic waste, increasing opportunities to conserve or recover resources, and creating solutions that don't require us to bury or burn materials.

5. SUPPORT ZERO WASTE INFRASTRUCTURE & TECHNOLOGY

New and updated government policies, programs and business models can offer options for embracing the circular economy. But as participants recognized in every workshop, it will not be possible to achieve zero waste without the necessary infrastructure, services, and information available for public and private sector use. Participants identified the need for infrastructure and technology to consider social equity, affordability, neighbourhood accessibility, and convenience.

6. DEVELOP SUPPORTIVE AND ENABLING ZERO WASTE POLICY & REGULATION

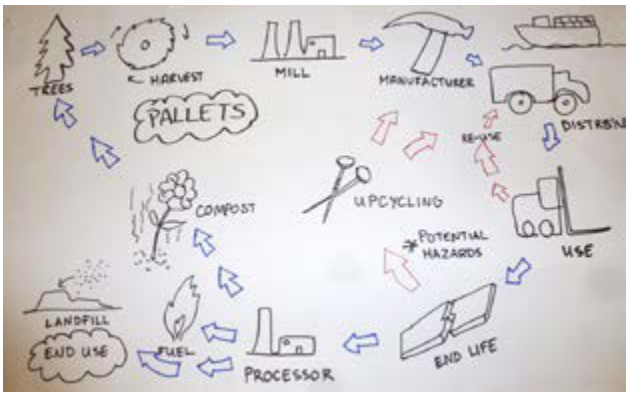
Governments have an important role to play in the shift towards zero waste. Participants expressed interest in every workshop for government policy and regulation to be streamlined and harmonized across governments, to support the transition to zero waste and local circular economies, and to balance the protection of the environment while enhancing human health and safety.

7. IMPROVING DATA COLLECTION, RESEARCH & ACCESSIBILITY

Accessible data about waste and a materials life cycle will continue to be a valuable resource in helping others to understand the importance of working towards zero waste. Participants identified the need to improve access to better information on a materials life cycle and waste to be able to better understand and then build public awareness about how to achieve zero waste. Participants told us that more comprehensive data on solid waste would help to support informed, cost-effective solutions for policies, programs and initiatives. Specifically, participants discussed the importance of improving data collection, research and information sharing on the composition, use and life cycle of materials and the measurable data that can monitor the zero waste progress made by policies, programs and services over time.

INSIDE LOOK: SYSTEMS MAPPING

To spark discussion about reducing and eliminating waste from each system, workshop participants created a system map for particular resources or materials. Each system map included the life cycle of the given resource or material, the sources of solid waste, the players in the system and levers for change. This activity allowed participants to better understand the current state of waste in each system before visioning and planning for a zero waste future.



WHAT WE HEARD

VISION OF A ZERO WASTE FUTURE

Participants were asked to envision what a zero waste Vancouver would look like in 2040.

Workshop participants provided over 100 ideas and the feedback gathered through the visioning exercise is summarized across the emerging seven key themes from all Zero Waste 2040 workshops below.

VANCOUVER WILL HAVE A COLLABORATIVE SYSTEMS-WIDE APPROACH TO ZERO WASTE
• Waste policies, programs and services are cohesive and streamlined across all governments
• Business community, residents, non-profit organizations and governments work together to take action
• Systems-wide collaboration and coordination
• People are connected to every stage of the food, product, and building cycle
VANCOUVER WILL HAVE A ZERO WASTE CULTURE
• The public are empowered by City and community led initiatives to take action towards zero waste
• Effective marketing, technology and infrastructure enables people to eat, buy, move and live in a lighter way
• Zero waste principles are integrated into all levels of public education
• People are empowered to shop differently, use reusable materials , to consume and waste less.
VANCOUVER WILL HAVE A STRONG CIRCULAR ECONOMY
• Organizational supply chains have evolved from the 'take, make, dispose' model to something circular
• "a reusable world" without single use disposable materials
• manufacturers use, design and produce only recyclable and reusable items
• Packaging for products are standardized and reusable/recyclable
• Planned Obsolescence is obsolete
• Extending the life of products
• A thriving repair, sharing and reuse economy with involvement of the whole city and new technology to support it
• The most affordable, cost effective products and services are zero waste
VANCOUVER WILL HAVE EFFECTIVE ZERO WASTE INFRASTRUCTURE AND TECHNOLOGY
• Digital innovations such as cloud computing, modular design technologies, and machine to machine
• communication have dematerialized many of todays wasted resources
• Advanced trace, return and recycling infrastructure and technology diverts any remaining material disposed from landfill and incinerator
VANCOUVER WILL HAVE SUPPORTIVE AND ENABLING ZERO WASTE POLICIES & REGULATIONS
• Extended Producer Responsibility programs are established for all material types requiring industry to account for their solid waste impact
• Local incentives are established which promote circular economy behaviour and the elimination of waste
• Enable local government to produce goods and services in a zero waste manner
• Material standards on zero waste that businesses adhere to i.e. the same procedures or product specifications to ease logistics, standardized packaging across product lines, standards to facilitate reuse and recycling etc.
VANCOUVER WILL HAVE CLEAR, ACCESSIBLE AND TRANSPARENT DATA COLLECTION AND RESEARCH SYSTEMS
• A labeling system indicate the composition of a material, component, process or service, its compliance with a zero waste standard and a symbol of the reuse / recycling stream in which it belongs
• Technologies enable communities, businesses and governments to monitor, analyze data and share information with the public
• Consumers understand how and where to dispose of an item and the implications of that decision

WHAT WE HEARD

GUIDING PRINCIPLES FOR ZERO WASTE

The City's mission statement is "to create a great city of communities that cares about its people, its environment, and the opportunities to live, work, and prosper." To guide the development of the Zero Waste 2040 Strategy, the City prepared preliminary Guiding Principles for pursuing zero waste in a sustainable manner across three pillars:

1	**PEOPLE**
1.1	Work collaboratively to connect and support people and achieve circular networks amongst businesses, institutions and communities
1.2	Support positive cultural changes and shared values to build a zero waste community
1.3	Engage, build awareness and educate all generations
1.4	Develop systems that are mindful of and include planning to meet the needs of all groups, including Vancouver's most vulnerable
2	**PROSPERITY**
2.1	Create Green Jobs and strive to become a global hub for zero waste innovation
2.2	Maintain affordability of services
2.3	Support circular economic systems and markets that 'close the loop' on wasteful systems, are restorative and regenerative by design.
2.4	Support sustainable business opportunities to eliminate, reduce and repurpose waste as resources
3	**ENVIRONMENT**
3.1	Give priority to waste prevention and reduction over recycling and disposal
3.2	Value waste as a resource and manage to its highest best use, and with consideration to life-cycle impacts
3.3	Consider global impacts due to local changes
3.4	Strive to manage waste locally
3.5	Protect the environment by preventing and reducing harmful environmental impacts
3.6	Support actions which achieve a lighter ecological footprint

There was robust discussion by participants' in each workshop when asked to provide ideas, input and feedback on the Guiding Principles. We collected over 100 comments for consideration including the following common concepts:

- Treat waste as a resource
- Net positivity over zero waste
- Systems thinking
- Culture shift and education
- Empowering the entire community, including all ages, generations, diverse groups, and visitors, to take action
- Indigenous inclusion and reconciliation
- Social equity and fairness
- Balance practical and ambitious circular economy opportunities
- Accessibility, affordability and convenience
- Transparent policies, programs and services
- Precautionary principle
- Protect and enhance public health, safety and the environment
- Mitigate climate change
- Adaptable and resilient policies, programs and services
- Accountability, compliance and enforcement

We are continuing to analyze and incorporate these comments into the final Guiding Principles that will be included in the Zero Waste 2040 Strategy.

WHAT WE HEARD

PRODUCT WASTE

CURRENT STATE OF PRODUCT WASTE

Products, such as toys, packaging, paper, textiles and electronics are everywhere. Product designers, manufacturers and retailers are continuously evolving their products or product offerings to meet consumer needs. When consumers are done with a product, these products are either distributed for reuse, repaired or recycled and are often disposed of as garbage.

The Recycling Regulation under authority of the Environmental Management Act sets out the requirements for Product Stewardship and Extended Producer Responsibility (EPR) in British Columbia. Over the past two decades, B.C. has introduced EPR programs for beverage containers, electronics, paint, used oil, tires, batteries, and more recently packaging and printed paper from the residential sector. In each of these EPR programs, companies are required to set up and pay for recycling programs for the products and packaging they make and sell.

Product waste makes up about 24 per cent of waste that is recycled in the region. Thirty five per cent of recycled product related waste are captured by EPR programs, 46 per cent are from institutional, commercial and industrial sector recycling, and 19 per cent are from residential and recycling depot drop offs. Of all product waste disposed to landfill and incinerator, the majority is paper (13 per cent), plastic (13 per cent) and a diversity of other materials.

CURRENT ZERO PRODUCT WASTE INITIATIVES

- Local business partnership that collects, processes, and recycles textiles locally, with a goal to have no textiles disposed of to the landfill
- Sharing businesses like tool libraries
- Coffee bag take back program
- Take-out container exchange program

HOW CAN WE GET TO ZERO PRODUCT WASTE BY 2040?

Challenges

- Consumer drive for the latest goods, technologies and products that are designed with planned obsolescence
- Current regional economy does not include all aspects of a products life cycle which is important for a circular economy
- Lack of regional economy that includes all parts of a products life cycle
- Knowledge disconnect between designers, producers and waste managers
- Gaps in zero waste business investment and innovation
- Disconnect exists between the current infrastructure and technology to dispose of materials and the upstream development of products

Opportunities

- Foster a zero waste culture that includes rethinking waste and changing behaviour
- Support regional circular economy and local businesses that include all parts of a product's life cycle (Silicon Valley of Zero Waste)
- Close the loop by connecting designers with disposal
- Foster zero waste business investment and innovation through collaborative approaches and partnerships
- Address the "inconvenience" of zero waste by investing in infrastructure and technology to make zero waste accessible for all
- Create or update regulations and policies that incentivize zero waste, reuse and recycling businesses, services and programs
- Gather clear and comprehensive data on products and product waste to be shared as a multi-lingual resource with consumers and businesses

PRODUCT WASTE: PROPOSED OBJECTIVES AND PRIORITIES

1	**TAKE A SYSTEMS WIDE APPROACH THAT ENABLES COLLABORATIVE GOVERNANCE MODELS AND WASTE REDUCTION**
1.1	Set up accountable governance systems to support zero waste policy and regulations
1.2	Foster innovation through collaborative models of planning and communication
2	**SUPPORT ZERO WASTE CULTURE & COMMUNITY TO DRIVE BEHAVIOR CHANGE**
2.1	Set clear principles
2.2	Create zero waste and waste reduction strategy
2.3	Support zero waste product manufacturing systems
2.4	Develop integrated communications strategies across local, regional and provincial governments
2.5	Connect like-minded groups; promote and fund local zero waste initiatives
2.6	Incentivize and educate local businesses on zero waste culture to spark a shift in practices and products
2.7	Connect consumers with easily accessible information about the natural resources used to create products, and their ultimate environmental impact.
3	**STRENGTHEN LOCAL CIRCULAR ECONOMY**
3.1	Foster social innovation and pilot programs to enable the circular economy
3.2	Broaden the types of EPR programs to include all materials
3.3	Provide employment/ entrepreneurial opportunities for vulnerable and low income communities
3.4	Support product sharing and re-use (i.e. the "sharing economy)
3.5	Additional support and relaxation of rules for small scale manufacturing operations
3.6	Review, update and educate businesses on the reduction of packaging waste
3.7	Increase demand for local and reused materials and products
4	**CONNECT DESIGNERS TO DISPOSAL TO CLOSE THE LOOP**
4.1	Support the development of a closed loop system with local designers and manufacturers
4.2	Build an understanding and share information on the impact of material and product waste
4.3	Create financial incentives for closed loop products
4.4	Create closed loop diversion programs that are tailored to specific waste streams
4.5	Develop standards, labels, certifications and regulations for closed loop manufacturing of products and packaging

PRODUCT WASTE: PROPOSED OBJECTIVES AND PRIORITIES

5	**FOSTER ZERO WASTE INNOVATION**
5.1	Create zero waste hub and community that shares information, communicates with public and collaborates on innovative solutions
5.2	Foster innovation through programs and initiatives that incubate and scale up new solutions
5.3	Set zero waste policies for government and businesses to support/enable/incentivize zero waste practices
5.4	Build an understanding and share information on the impact of material and product waste
5.5	Foster recognition and celebration of innovation, innovators and zero waste leaders
6	**INCREASE COLLECTION THROUGH ZERO WASTE INFRASTRUCTURE AND TECHNOLOGY**
6.1	Identify infrastructure needs and areas to be developed
6.2	Create systems to transfer knowledge between producers and consumers
6.3	Collaborate on local and non-local non-profit zero waste initiatives
6.4	Review and improve building codes, design and bylaws
6.5	Create shared infrastructure that is public and private, centralized and decentralized
6.6	Invest in research and development for new zero waste products
6.7	Develop education programs for K-12 schools
7	**ENABLING ZERO WASTE SUPPORTIVE POLICY AND REGULATION**
7.1	Accountable governance where government and industry work together
7.2	Product manufacturer EPR – Strengthen regulations to enforce and produce intended outcomes
7.3	Support healthy family policies that encourage zeri waste actions
7.4	Review policies and regulations which could require food packaging materials to be recyclable or compostable
7.5	Review and improve land use policies
7.6	Work across diverse populations to enable zero waste
7.7	Pre-plan: map systems in depth and work with other orders of government on new policies
8	**PROVIDE CLEAR & ACCESSIBLE INFORMATION TO ENABLE ZERO WASTE DECISIONS**
8.1	Use digital tools and innovations to track, trace and recycle products
8.2	Develop education strategies and programs for businesses and consumers on best practices, how-to's, etc.
8.3	Provide incentives for consumers to reduce and ultimately eliminate their product waste
8.4	Establish transparency on the life cycle of products and communicate how to get to or achieve zero waste
8.5	Review and update regulations on product packaging labeling, standards and health and safety

WHAT WE HEARD

FOOD WASTE

CURRENT STATE OF FOOD WASTE IN VANCOUVER

On many levels, Vancouver's food system is very robust. The City, in partnership with the Vancouver Food Policy Council and countless community organizations, has been working to create a just and sustainable food system for the past decade.

From a waste perspective, food scraps have been banned from disposal as garbage since 2015 and all properties in Vancouver are required under by-law to have an organics diversion plan in place. Participation in the City's Green Bin food scraps program and compliance with the disposal ban is generally high. Still, nearly 16% of all material disposed of at the landfill or incinerator is food waste, demonstrating that there is still a lot of room for improvement to reduce food waste in general and to ensure that when food is no longer edible, that it is properly disposed of.

CURRENT ZERO FOOD WASTE INITIATIVES

- K-12 educational courses on local and sustainable food, food waste reduction, and food recycling
- Business Improvement Area (BIA) efforts to engage restaurants in zero waste initiatives through the Metro Vancouver Zero Waste Challenge
- Urban farms and food distributors linking retailers and consumers with local and sustainable food suppliers
- Technological improvements to composting methods to reduce associated odour and increase general use in homes and for businesses
- Businesses using on-site composters
- Organics waste disposal ban, the City's Green Bin program and numerous private waste hauling businesses now offering food scraps collection for composting

HOW CAN WE GET TO ZERO FOOD WASTE BY 2040?

Challenges

- A grab-and-go and ready-made culture that increases the use of single service containers, plastic wrap, dishware, etc.
- Lack of knowledge on how to reduce food waste
- Global food markets result in a disconnect between consumers and the life cycle of foods

- Gaps in zero waste business investment and innovation
- Lack of adequate infrastructure and technology to support zero food waste initiatives
- Inconsistent and costly regulations and policies across governments
- Lack of clear and comprehensive information on our food systems and their contributions to food related waste

Opportunities

- Foster a zero waste culture that includes rethinking waste and changing behaviour
- Increase knowledge and capacity for zero waste amongst all generations and all sectors
- Connect communities with every aspect of the life cycle of food
- Foster business investment and innovation
- Invest in local infrastructure and technology to make zero wasted food the new norm
- Collaborate on new and updated regulations and policies, such as Packaging and Food Safety Regulations, that incentivize zero waste and consider social and economic costs to residents and businesses
- Develop clear and comprehensive data research, collection and sharing systems on food and food waste

FOOD WASTE: PROPOSED OBJECTIVES AND PRIORITIES

1	**SHIFT CULTURE AROUND FOOD AND FOOD WASTE**
1.1	Instill a sense of ownership in food systems through programs, services and businesses
1.2	Develop education strategies to create empathy and action amongst all generations
1.3	Develop marketing and communications strategies for zero waste values and lifestyles
1.4	Take a collaborative approach to shifting culture
2	**CONNECT THE COMMUNITY WITH EVERY ASPECT OF FOOD**
2.1	Support community composting initiatives
2.2	Expand education for children and youth
2.3	Develop food nutrition literacy programs
2.4	Review and expand food assets and recovery infrastructure to improve access to food
2.5	Connect people to food systems through the economy, jobs and community food assets
3	**CREATE EDUCATION SYSTEMS THAT VALUE FOOD**
3.1	Collaborate with academia and businesses to foster innovation and action
3.2	Review and expand sharing economy businesses, programs and services
3.3	Support behaviour change initiatives through education programs in schools
3.4	Develop awareness and behaviour change campaigns
3.5	Celebrate and encourage champions
4	**STRENGTHEN LOCAL CIRCULAR FOOD ECONOMY AND INFRASTRUCTURE**
4.1	Review and improve food redistribution systems and infrastructure
4.2	Support local food economy throughout its life cycle in the region
4.3	Experiment with decentralized community food assets and zero waste infrastructure
4.4	Research the life cycle of food and waste streams
4.5	Create regulations that support zero waste standards for food and food packaging
5	**DRIVE BUSINESS INNOVATION**
5.1	Create a zero waste certification program for food related businesses
5.2	Identify and support opportunities for collaboration and business incubation
5.3	Research best practices and share across the business community
5.4	Develop a multi-sector Advisory Committee to inform zero waste strategies and solutions
6	**REVIEW AND IMPROVE REGULATIONS AND POLICIES**
6.1	Update health and safety policies related to food and food packaging to support zero waste initiatives
6.2	Review and update building and land use policies to support local food systems and zero waste initiatives
6.3	Research regulations from other North American cities to create recommendations for improvement
6.4	Research and develop incentive based systems that support zero waste policies
6.5	Explore options to support zero waste policies through new enforcements systems
7	**REVIEW AND UPDATE PACKAGING AND FOOD SAFETY REGULATIONS**
7.1	Review expiry date regulations and provide recommendations
7.2	Develop packaging policies that focus on waste reduction, promote reuse and protect health and safety
7.3	Collaborate with regulatory bodies to create policies, guidelines and best practices that balance food safety with the reduction of food waste
7.4	Introduce region-wide innovative policies that support the reduction of packaging waste
7.5	Create a plan to reduce packaging and single use item waste
8	**IMPROVE DATA AND INFORMATION SYSTEMS**
8.1	Gather and share data on the status of food waste at every stage of life cycle
8.2	Partner with the community and academics on research
8.3	Make information and research accessible to businesses and public through publications, certification systems, labels etc.
8.4	Collect data from businesses on the amount of waste generated

WHAT WE HEARD

BUILDING AND ASSET WASTE

CURRENT STATE OF BUILDING AND ASSET WASTE IN VANCOUVER

As new buildings and infrastructure are constructed and the old are demolished, maintained or renovated, resources are left unutilized afterwards. Many of these resources are reused or recycled on other projects, but a portion is disposed to landfill and incinerator. There are many different types of wasted resources generated from these activities, including concrete, bricks, gypsum, wood, glass, metals, plastic, asbestos and excavated soil.

Demolition, land-clearing and construction (DLC) waste accounts for approximately 32 per cent of all waste disposed to landfill and incinerator and 58 per cent of all waste recycled in Vancouver. In 2015, Metro Vancouver and member municipalities, including the City of Vancouver, introduced the new Clean Wood Disposal Ban. The City also introduced a Green Demolition Permit Program with minimum reuse and recycling requirements for demolition waste on houses built before 1940 and opt-in requirements on houses built in or after 1940.

CURRENT ZERO BUILDING AND ASSET WASTE INITIATIVES

- Reclamation of wood in building demolition
- Promoting sustainability through the use of reclaimed materials in new building design and construction
- Use of European technology for life cycle assessments of building performance and waste implications, and technology for the separation and recovery of construction and demolition waste is well established
- Regional government targeting 100% diversion of clean wood waste with Clean Wood Waste Ban
- City of Vancouver Green Demolition Program

HOW CAN WE GET TO ZERO BUILDING AND ASSET WASTE BY 2040?

Challenges

- Lack of consumer knowledge and trade capacity to support zero waste buildings
- Lack of robust regional markets for the reuse and recycling of materials from demolished buildings

- Expensive land, resources and processes to build buildings and assets
- Lack of land and resources available to collect, store, reuse, remanufacture and resell building materials
- Lack of information on building waste and how to reduce /eliminate building waste in design, operations and deconstruction

Opportunities

- Establish collaborative governance models and capacity building programs through oversight bodies, industry stewardship groups, researchers and educational institutions
- Shift culture by valuing reusable, recyclable materials and creating consumer demand for sustainable construction and deconstruction
- Build capacity in key players, such as architects, designers, developers and real estate agents, to support, design and construct zero waste buildings
- Support zero waste building through policies, funding, programs and services
- Establish standards that support building disassembly and the reuse or recycling of building materials
- Develop research and information systems that can be used to communicate how to create zero waste buildings for all trades

BUILDING AND ASSET WASTE: PROPOSED OBJECTIVE AND PRIORITIES

1	**TAKE SYSTEMS-WIDE COLLABORATIVE APPROACH TO BUILD CAPACITY FOR ZERO WASTE IN PRIVATE SECTOR**
1.1	Create standardized policy across all levels of government that enable zero waste initiatives
1.2	Build partnerships, infrastructure and capacity for industry to work together to close the loop
1.3	Support the adoption of alternative material sourcing to connect construction to deconstruction
1.4	Create industry-wide collaborative that shares best practices, standardizes practices, and implements new C&D processes
1.5	Work to introduce the zero waste cultural shift with the labour force
2	**FOSTER ZERO WASTE CULTURE AND COMMUNITY SO THAT THERE IS A DEMAND FOR ZERO WASTE**
2.1	Support initiatives that value reduction and reuse over recycling and disposal
2.2	Support zero waste corporate leadership and policies
2.3	Educate the public and trades on zero waste building culture and initiatives
2.4	Develop policy that requires zero waste designs and C&D practices
2.5	Create clear zero waste targets, indicators and measurement tools and implement with certification systems, incentives and labeling
3	**FOSTER STRONG CIRCULAR ECONOMY THAT VALUES MATERIALS AS A RESOURCE**
3.1	Update business and public procurement policies
3.2	Review building code and use forward thinking certification systems like the Living Building Challenge
3.3	Provide incentives for architects, designers, and manufacturers to maximize the lifespan of built assets while valuing the re-usability of materials at the end of a buildings life
3.4	Create zero waste construction policies that encourage more sourcing of reused/recycled materials
3.5	Create collaborative for development and deconstruction research
3.6	Review and update local, provincial and federal policies on EPR, hazardous materials and deconstruction
3.7	Develop zero waste education strategies and programs for trades
3.8	Fund Cradle to Cradle research, training and development
3.9	Provide space and facilities for local manufacturing and deconstruction
4	**ZERO WASTE INNOVATION SUPPORTS BUILDINGS THAT CAN BE FULLY DISASSEMBLED AND PARTS REUSED**
4.1	Develop standards and certification systems for mechanical connections and other building parts in construction to enable modular systems, safe adhesives and easier deconstruction
4.2	Create standards for building components to be reused and recycled such as solar panels
4.3	Research and develop clear design disassembly policy that can be integrated into the building code and rezoning policies
4.4	Support disassembly through market levers like take back programs, EPR, and circular business models
4.5	Research and educate trades on “construction to assemble”
4.6	Enable the preservation of existing quality housing stock to reduce waste from redevelopment
4.7	Explore incentives and disincentives to support buildings that can be easily disassembled such as FSR exclusions, fees, bans, etc.
5	**ZERO WASTE TECHNOLOGY AND INNOVATION USED FOR BUILDING DECONSTRUCTION**
5.1	Review and improve permitting process to incentivize/disincentive deconstruction
5.2	Work with industry to expand land access, facilities and infrastructure for deconstruction
5.3	Integrate zero waste considerations into planning policies and bylaws
5.4	Support research on deconstruction, training and monitoring of waste reduction
5.5	Support market mechanisms that increase deconstruction including labeling of building materials, rating systems for materials based on recyclability/deconstructability, public procurement policies and incentives
6	**BUILDING OPERATIONS SUPPORT ZERO WASTE**
6.1	Review and update building planning and design requirements for new buildings
6.2	Engage industry and the public on the amount of waste created throughout a buildings life cycle
6.3	Create clear targets and evaluation and monitoring systems to track waste along the life cycle of a building
6.4	Provide incentives to go zero waste
6.5	Review and update purchasing policies

WHAT WE HEARD

WASTE MANAGEMENT

CURRENT STATE OF WASTE MANAGEMENT IN VANCOUVER

Vancouver is part of a regional waste system managed by Metro Vancouver, under Provincial regulation that combines private and public haulage and disposal. Residential waste collection and disposal in Vancouver is managed in part by the City through its own collections and the City's Vancouver Landfill in Delta, with private haulers playing an important role in the collection, processing and disposal of materials primarily from the multi-family, commercial and institutional sectors. In 2015, Vancouver's residents, businesses, organizations and government disposed of approximately 370,000 tonnes of material to landfill and incinerator.

CURRENT ZERO WASTE INITIATIVES

- National Zero Waste Council
- Regional and Provincial collaborated Extended Producer Responsibility programs
- Master Recycling Program educates Vancouverites to become master recyclers who then educate their community on how they can increase recycling rates
- The Binners' Project supports socially inclusive waste diversion programs
- Mobile Application to educate and help navigate the complexity of the waste management system (e.g. Waste Wizard)
- Advances in mechanical sorting technologies at landfill and recycling facilities to reduce contamination

HOW CAN WE GET TO ZERO WASTE IN VANCOUVER'S WASTE MANAGEMENT SYSTEMS BY 2040?

Challenges

- A culture that sees garbage as an inevitable part of our lives and does not view garbage as wasted resources
- Wasteful 'take, make, dispose' economic model that reaches beyond Vancouver and spans the globe
- Industries and technologies that support greater material diversion and reuse are still maturing

- Lack of neighbourhood based facilities and depots to make reuse, repair, sharing and recycling materials convenient, affordable and accessible
- Disconnect between material design and disposal technology, with no national standardization in the industry
- The costs associated with current waste prevention, reduction and recycling processes

Opportunities

- Foster social and cultural shift towards zero waste through education, capacity building around reuse, repairing and remanufacturing
- Support regional circular economy business models, practices and services that illustrate economic feasibility of waste to resources and material recovery
- Invest in innovations that grow local green and zero waste industries and drive job creation locally while demonstrating leadership internationally
- Establish neighbourhood centres, depots or hubs that make reuse, repair, sharing and recycling materials convenient, affordable and accessible
- Support new reuse and recycling infrastructure and technology through financial incentives for local businesses
- Review and update policies and incentives / disincentives that maximize and expand Extended Producer Responsibility Programs and integrate zero waste into material designs

WASTE MANAGEMENT: PROPOSED OBJECTIVES AND PRIORITIES

1	**FOSTER ZERO WASTE CULTURE & COMMUNITY THROUGH EDUCATION AND POLICY**
1.1	Support public education strategies that use innovative tools and techniques (i.e. digital innovations, pilot programs, school competitions, landfill visits)
1.2	Support industry education strategies that increase waste diversion and circular practices, such as workshops, incentives, waste audits, tracking systems to monitor and evaluate industry progress
1.3	Collaborate with private industry to research and implement best practices in waste elimination
1.4	Research and update policies that make individuals and industry accountable for waste including bans, fees and incentives
1.5	Explore grassroots community action to educate consumers on the importance of treating waste as a resource and shift consumption behaviours
1.6	Engage diverse communities to better understand how to align values with zero waste culture
1.7	Create K-12 education programs on cause and effect of what we waste
1.8	Develop public "Carrot education" with clear labeling and rating systems on recyclability of products and packaging
1.9	Develop clear communications strategy to educate public in different languages about how to properly sort and dispose of waste
2	**SUPPORT A SHIFT IN CULTURAL MINDSET TO CREATE CAPACITY AND DEMAND FOR ZERO WASTE**
2.1	Support initiatives that value reduction and reuse over recycling and disposal in messaging
2.2	Support leadership of organizations using and providing zero waste services and products
2.3	Research and update policies to require recycling of all materials
2.4	Create clear steps to effect change: set targets, create measurement tools, implement change through standards, labels, certification systems and other visual aids
3	**THROUGH INNOVATION, FOSTER A ZERO WASTE INDUSTRY THAT DRIVES JOB CREATION AND CAN BE SHARED GLOBALLY**
3.1	Create a local/global zero waste certification system that would acknowledge and challenge companies, cities and regions to achieve zero waste
3.2	Support research that helps to identify the current situation of waste, barriers to waste reduction and opportunities for increased diversion
3.3	Review and update regulations and policies to foster innovation through incentives, local land use planning, and business licensing
3.4	Provide financial levers to enable innovation in the circular economy through grants, awards, competitions, investments etc.
3.5	Collaborate with industry to develop certification, labeling systems and awards for zero waste and circular economy initiatives
3.6	Partner with education institutions to provide curriculum and programs on the circular economy
3.7	Create forums for collaboration between academia, industry and government
3.8	Set up innovation incubation programs such as mentorship programs for start-ups, allocating space at the landfill for a research and material recovery facility, and innovation hubs
3.9	Through the circular economy consider opportunities to address issues of social inequity, affordability, accessibility and convenience

WASTE MANAGEMENT: PROPOSED OBJECTIVES AND PRIORITIES

4	**SUPPORT DEVELOPMENT OF LOCAL ZERO WASTE INFRASTRUCTURE AND TECHNOLOGY**
4.1	Update or create policies that support community based zero waste infrastructure, such as re-use and recycling days pick-up services for special items, building codes that enable these facilities, etc.
4.2	Support zero waste activities through incentives or disincentives, such as charging for garbage collection by weight and tax breaks for zero waste infrastructure
4.3	Invest in zero waste companies, research, infrastructure and transportation networks
4.4	Use digital technologies, labeling and certification systems, competitions and city-to-city partnerships to educate the public and businesses on zero waste
4.5	Review current waste management physical infrastructure in region and improve through different strategies such as innovation hubs, upgraded reuse and recycling infrastructure in community and at landfill and distribution networks to get recyclables back into market
4.6	Research and develop technology that vertically integrates recycling processes, standardizes plastics for recycling and expands ways to convert waste to new materials
4.7	Create a collaborative task force that will review the challenges with our current waste system and enable technology that addresses those challenges
5	**ALIGN POLICIES AND INCENTIVES TO INITIATIVES THAT ELIMINATE BARRIERS TO ACHIEVING ZERO WASTE**
5.1	Develop policies that promote and regulate source separation, reduce public confusion and keeps waste in the region for reuse/recycling
5.2	Evaluate and update EPR programs
5.4	Foster zero waste innovation and practices through cost structures, rebate programs, grants, etc.
5.5	Create financial incentives and disincentives to promote zero waste business including tax breaks, fees for non-compliance, and investment in research and development on products that can be reused / recycled
5.6	Develop clear communications strategy to educate public in different languages about how to properly sort and dispose of waste
5.7	Establish clear measurement tools to audit and track waste reduction at city, business and resident level and enforce violations
5.8	Review and update policies on zero waste infrastructure, facilities, technology and transportation systems, as well as measurement, tracking and benchmarking tools
5.9	Provide incentives for industry that are responsive to zero waste strategy targets, such as investing in new projects, tax breaks, rewards for innovators, access to infrastructure to collect/recycle materials

WORKSHOP PARTICIPANTS

Here is a list of organizations who had a representative present at one or more of the four workshops. There were also other members of the general public in attendance.

1-800-GOT-JUNK?
Action Environmental Services Inc
Adaptation to Climate Change Team (SFU)
ARA Mental Health
Aramark Canada Ltd.
Aslin Canada Trading
Atira
BC Bottle and Recycling Depot Association
BC Housing
BCIT
Be The Change Earth Alliance
Binners Project
Bioland Environmental Solutions
Biomass supply chain consulting co.
Bokoeco
BOMA BC
BSI Biodegradable Solutions
Buy-Low Foods / Associated Grocers
Canadian Diabetes Association
Cascades Recovery Inc.
CESA
Chambar Restaurant
ChopSwap
City of Vancouver Board of Parks and Recreation
Clean It Recycling Solutions Inc.
Climate Smart
Cloverdale Fuel
Club Monaco
Concert Properties
Cork It Manufacturing Inc.
Creative Energy
Dillon Consulting Limited
Discovery organics
DTES Kitchen Tables, Potluck Cafe Society
Earnest Ice Cream
Eclipse Awards
EcoSafe
Ecowaste Industries Ltd.
Edible Canada
Elements Society
Emily Carr University
Encorp Pacific Canada
Enviro Smart Organics Ltd.
Fairware
Fernwood Neighbourhood Resource Group
FiFo Dot Enterprises
Food Connections / Feeding the 5000
Food Lens Consulting
FPInnovations
Fraser Health Authority
Fraser Valley Regional District
Free Geek Vancouver
Gente Strategies Inc.
Greater Vancouver Food Bank
Green
Green Bricks Education Society
Green century enterprises.
Green Demo Inc.
Growing City
Habitat For Humanity Greater Vancouver
Harvest Power
Hastings Community Association
Homestead Junction
IKEA
Institute for Sustainable Food Systems / Vancouver Food Policy Council
Kendor Textiles
Keystorm Solutions
Kwanten Polytechnic University
Lafarge Homes
LaneFab
Light Touch Energy Healing
Litchfield
Marcon Construction Ltd.
Mattress RecyclingTM
MEC
Merlin Plastics
Mesh Food Exchange
Metro Vancouver
Mosaic Homes
Mount Pleasant Neighbourhood House
Multi-Material BC (MMBC)
Naturally Crafted
Nature's Path Foods
Net Zero Waste
New West Gypsum
Nexterra Systems Corp.
Northwest Hydraulic Consultants
Ocean Wise/Vancouver Aquarium
Octiscapes
Overwaitea Food Group
Pac Recycling
Potluck Cafe Society
Product Care
Progressive Waste Solutions
Project4 Living Systems
Quupe
Ramsay Worden Architects
Recycling Council of BC
Recollective Consulting
RecSquared
Recycling Alternative
Recycling Council of BC
Repurpose
Revolution Health
Revolution Resource Recovery
Salvation Army
Self-employed
Simon Fraser University
Sodexo Canada
South Hill Business Association
South Vancouver Neighbourhood House
SPEC
Sustainable Food, Attainable Health
Tetra Tech Canada
The Binners' Project
The District of Squamish
The Launch Box
Tourism Vancouver
Trans-Continental Textile Recycling Ltd.
Translink
UBC Botanical Garden
UBC/ SPEC
University of Alberta
University of British Columbia
University of British Columbia & Qu Biologics
Upcycle Obsessions
Uproot
Urban Development Institute
Urban Impact Recycling Ltd
Vancouver Aquarium Marine Science Centre
Vancouver Board of Parks and Recreation
Vancouver Coastal Health
Vancouver School Board
VIVE Collective
Walas Concepts
Waste Management Association of BC
Wild Mama
Wilson School of Design
Women's and Children's Hospital
XeroWaste Solutions Inc.
YVR
Zero Waste Market