



PUTTING CIRCULAR ECONOMY CONCEPTS INTO ACTION



IDENTIFYING OPPORTUNITY AND AMBITION

Monday, 30 November, 2020 11:30 a.m. – 1 p.m.







CIRCULAR IN

BACKGROUND

- Established in 1978 as Recycling Council of Ontario with a focus on solid waste
- Instrumental in facilitating partnership between government and municipalities to create the Blue Box program
- Unique membership: spans entire value and supply chains
 - government, industry producers, sellers, collectors, processors, educators, academia, researchers
- Policy and Advocacy | Resources and Services | Programs and Pilots









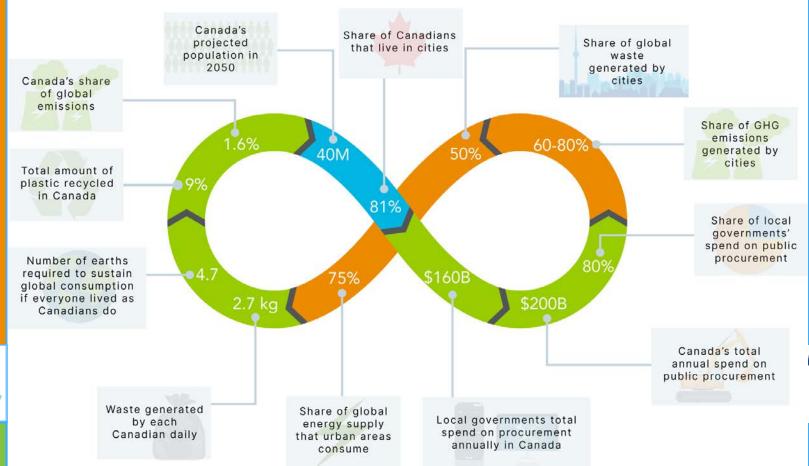






Council of Ontaric

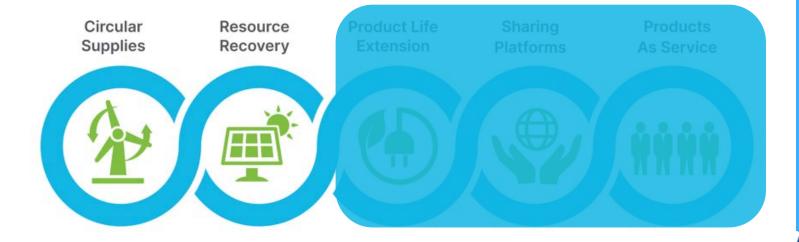
CONSUMPTION STATISTICS





CIRCULAR BUSINESS MODELS







Recycling Council of Ontario

OUR FOCUS

Driving greater recognition of circular economy and its benefits

 Advancing the circular economy linking it to current objectives

 Putting circular economy concepts into action



Develop markets for recycled material



CIRCULAR

COUNCIL

INNOVATION

Recycling

Council of Ontaric









BENEFITS

Environmental



Economic



Social



- Reduced reliance on virgin materials
- Better efficiency of existing resources
- Create market demand increased for recycled materials and content
- GHG / waste / water usage reduction
- Limit single-use where possible

- Local employment opportunities
- Innovation is stimulated
- New revenue streams created
- Improved fiscal responsibility and economic growth
- Avoidance of purchase or maintenance
- Savings on disposal and management

- Local employment opportunities
- Overcome barriers to employment
- Gender equity
- Engage marginalized communities
- Fosters unique public and private partnerships







Monday, 30 November 2020

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Implenting a circular public procurement approach

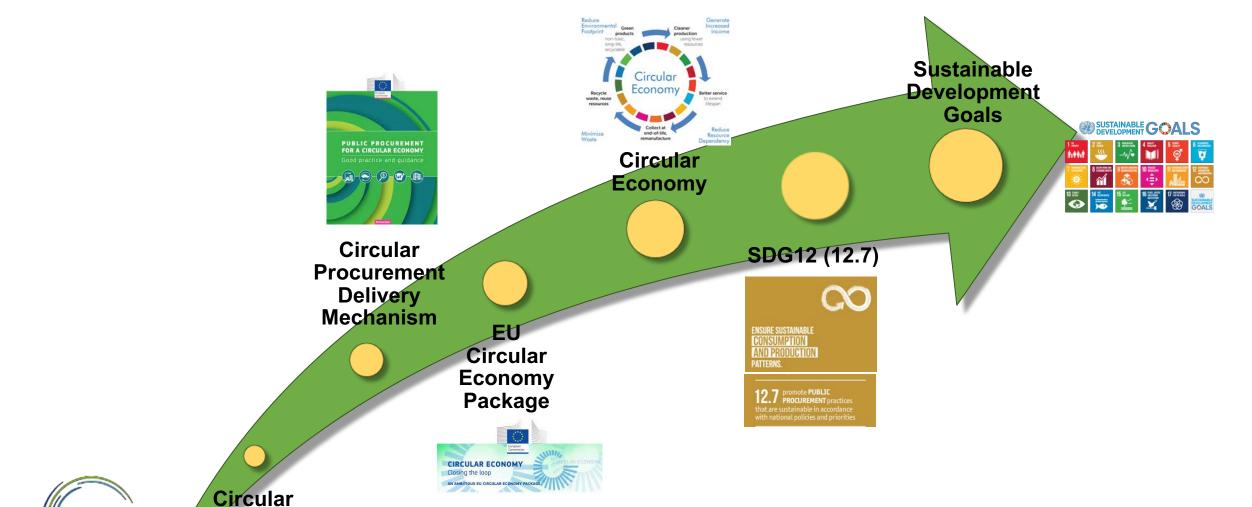
Circular Procurement Virtual Series 2020 30 November 2020

Dr Mervyn Jones Sustainable Global Resources

SDGs, circular economy & procurement

Circular Procurement • ·

tender



Definition: circular procurement is...

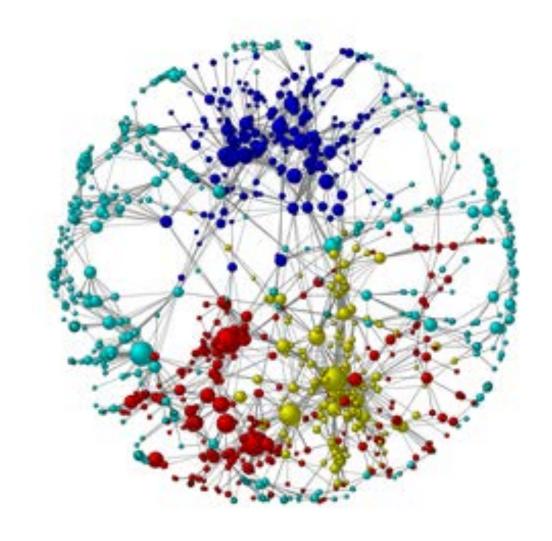
... an approach to delivering sustainability goals that recognises the role that organisations can play in supporting the transition towards a circular economy.

... the process by which public authorities purchase works, goods or services that seek to contribute to closing energy and material loops within supply chains, whilst minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle.

an evolving Procurement is a system

- The procurement cycle is a system.
- Life cycle thinking is helpful in a public procurement process to evaluate the inputs, outputs and potential environmental impacts of purchasing a particular product throughout its lifecycle

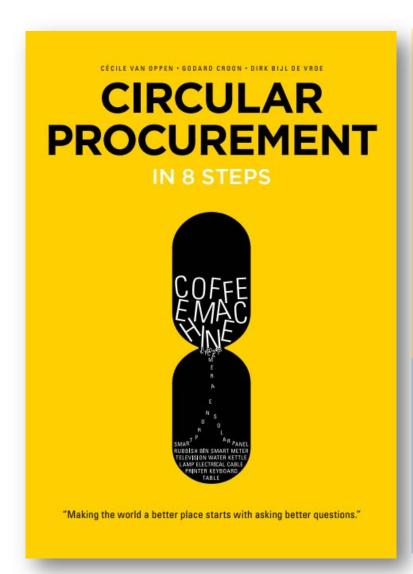
you will have to procure, and pay for, waste services at some stage!



Circular clients

Circular procurement depends on policy translated into practice through clients and budget holders Circular procurement needs circular clients!

Circular Procurement in 8 steps



- 1. From definition to ambition
- 2. Internal organisation
- 3. Defining your need
- 4. Business models
- 5. Market collaboration
- 6. Tender procedure
- 7. Measuring and awarding
- 8. Contract management

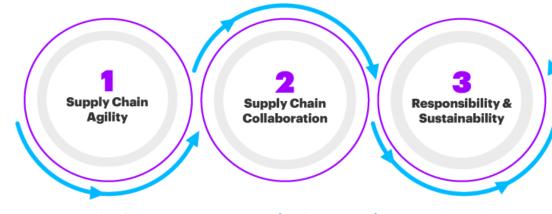
https://www.copper8.com/wp-content/uploads/2018/10/Circular-Procurement-in-8-steps-Ebook.pdf

Getting started

- Define your contribution to a 'circular economy'
- Identify ambitions & policies
- Select a suitable product group
- Collaborate
 - involve internal stakeholders
 - work with suppliers not against them
- Do something different
- Measure impact, communicate success and learn from mistakes

3 levels of collaboration

- Internally
 - A procurement lifecycle approach involves a wide variety of internal stakeholders
 - Change management involves everyone
- With public sector bodies and customers
 - Collective responses to climate emergency
 - Collective responses to COVID-19 recovery
 - Collective approach to suppliers
- With the suppliers
 - Collective responses to climate emergency
 - Collective responses to COVID-19 recovery
 - Collective approach to suppliers



Cardiff Council, Wales - aggregated spend areas 2019-20

Spend Area	CPV Codes	Spend Value
Building Services	50000000-5	value
Transport	34000000-7	52%
Construction	45000000-7	
Waste Management	90500000-2	11%
ICT	30200000-1	8%
Infrastructure	44113000-5	8%
Events	79952000-2	6%
Food & catering	15000000-8	3.4%
Consumables & Equipment	30000000-9	3%
M&E services	51100000-3	2%
Facilities Management	79993000-1	2%
Parks & Maintenance	77313000-7	1.4%
Furniture	39000000-2	1.2%
Plant & Equipment	31000000-6	<1%
Cleaning	39800000-0	<1%
Sub-total		£185 million
Total spend:		£426 million

Cardiff Council policy priorities

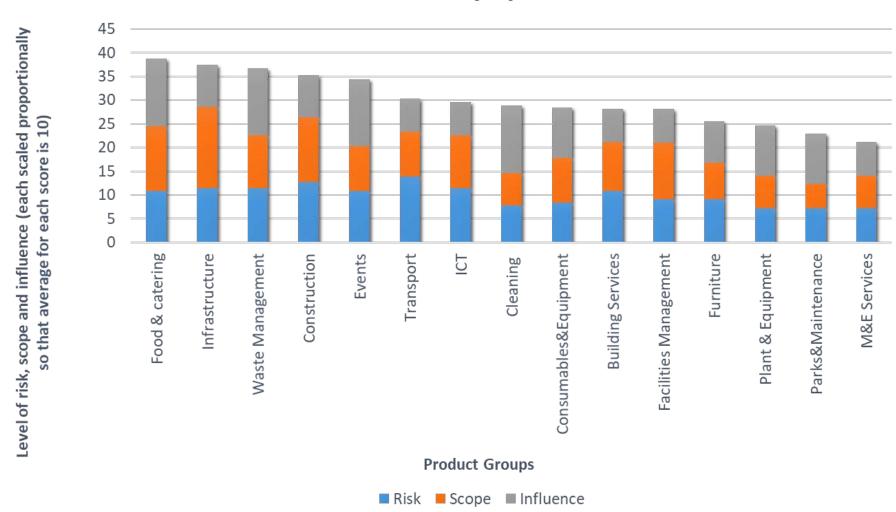
Priority issues	Issue type	
CO2 & Carbon (OPC)	Environmental	
CE Actions - reuse & recycling	Environmental	
Waste to landfill	Environmental	
Energy Efficiency	Environmental	
Transport	Environmental	
Well-being (WBFG)	Social	
Local employment & training	Social	
Community Benefits	Social	
Ethical Employment	Social	
Value for Money	Economic	
Green Growth	Economic	

11 priority issues identified in:

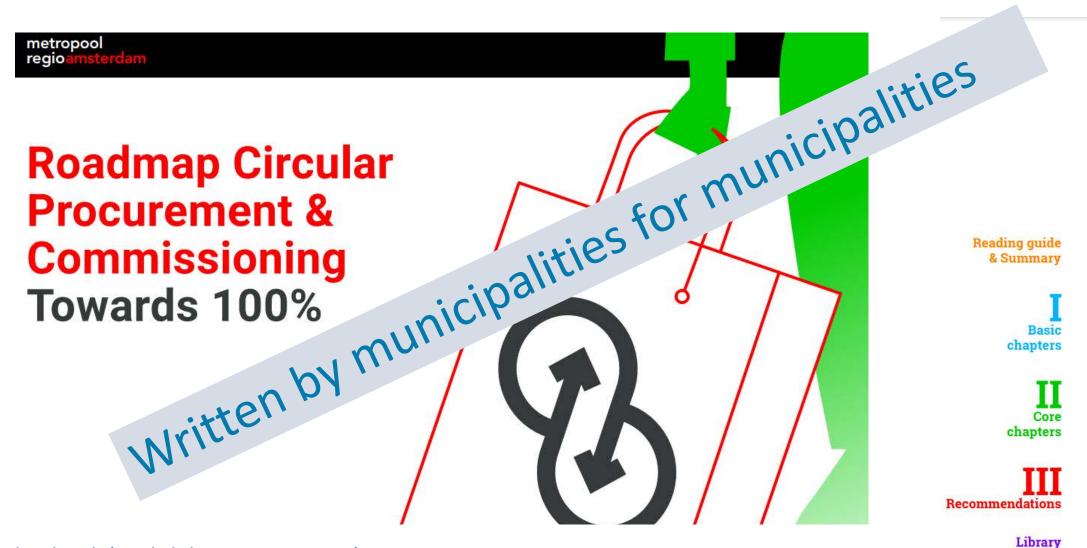
- One Planet Cardiff strategy 2013
- Cardiff Procurement Strategy2017-2020
- Cardiff Council Socially
 Responsible Procurement Policy
 2018

Cardiff Council spend priorities

Overall Priority Spend Areas



CP approach



Reading guide

Summary

H1 Introduction

> H2 Start

Actions

H3 10-Step plan

H4 Measuring

Timetable and actions

H5
A ready

Timetable and actions

H6 Ownership and communication

communication
Timetable and

H7 Recommen-

dations

Instruments

Examples

Main takeaways

- Use procurement as a strategic instrument to deliver circular, whole life benefits
- Procurement is not just about sourcing but also use and disposal
- Circular procurement involves many stakeholders so collaborate
- Measure your progress, recognise success and accept this may not happen straight away



Thank you



Mervyn Jones | Sustainable Global Resources

mervyn@sustainableglobalresources.co.uk



NEXT STEPS FOR MEETING ZERO WASTE

Sinéad Murphy Business Account and Project Delivery Manager November 2020



OUR VISION

WRAP's vision is a world in which resources are used sustainably.

OUR MISSION

Our mission is to accelerate the move to a sustainable resource-efficient economy through:

- Re-inventing how we design, produce and sell products
- Rethinking how we use and consume products
- Re-defining what is possible through re-use and recycling.



WRAP LEVERS OF CHANGE

- Policy and Technical Support
- Business Voluntary Agreements
- Financial Instruments
- Citizen Behaviour Change





FOOD WASTE PREVENTION

- Target Measure Act Food Waste Reduction Roadmap
- Voluntary Agreement (Courtauld 2025)
- Resource Action Fund & COVID-19 Emergency Surplus Food Grant
- Love Food Hate Waste & Guardians of Grub





WALES CIRCULAR ECONOMY PROGRAMME

To drive supply and demand of recycled materials through:

- Collaborative Change Programme
- Market Development
- Circular Economy Investment Fund
- Green Public Procurement



GREEN PUBLIC PROCUREMENT

To make the procurement of reused and remanufactured goods and products containing recycled content the new normal. Public sector guidance on the procurement of plastics

September 2019



SUPPORT OFFER

- Strategic support
 - Policy and process, spend analysis and prioritisation, training
- Individual procurements
 - Planning, measuring and monitoring
- Specific category/ sector support
 - Addressing knowledge gaps, barriers
- Tools for behaviour change
 - Case studies and guidance

SUPPORT EXAMPLES

NHS Wales Shared Services Partnership

- Policy support and training
- Spend analysis and prioritisation

Natural Resources Wales

- Tree procurement and packaging options
- Early market engagement

Caerphilly County Borough Council

- Single use plastics strategy
- All Wales Food Framework



TOOLS AND RESOURCES

Case Studies

- Public Health Wales
- Swansea City Council
- Pembrokeshire Milk Packaging
- Welsh Government
- NPS
- Guidance
 - Plastics procurement
- Available at: <u>www.wrapcymru.org.uk/public-</u> sector







Delivering Well-being goals through procurement

Summary

In 2017 the National Procurement Service (NPS) started to refresh its national food and drink services framework, which makes the supply of food services available to more than seventy public sector organisations across Wales

Driven by commitments set out in the Well-being of Future Generations Act and the Welsh Government Towards Zero Waste Strategy, the NPS have worked in partnership with WRAP to embed sustainability requirements in the tender specification, evaluation and contract management process.

This case study shows how the carefully considered NPS procurement strategy will improve the sustainability of food and drink services used by the public sector in Wales.



Source: Shutterstoo

Key Facts

- The Welsh public sector spends an estimated £74m per year on food and drink services.
- Each tonne of food waste typically costs a business an average of
 62,800.
- Reducing the impacts of food waste is a key priority of the Towards Zero Waste Strategy and the Well-being of Future Generations Act.
- Framework performance indicators were aligned to Wellbeing indicators, including carbon and waste reduction.
- Framework providers will be expected to take steps toward supplying sustainable food packaging options.

Comparing Milk Packaging Options for Primary Schools



Source: Shutterstor



September 2019



CONTACT US

WRAP Cymru
Carlyle House
5-7 Cathedral Road
Cardiff
CF11 9HA

www.wrapcymru.org.uk sinead.murphy@wrap.org.uk Sinéad has been with WRAP since 2016 and is a Business Account and Project Delivery Manager working on WRAPs green public procurement support programme. She also leads the re-use and recycling work stream on the Sustainable Clothing Action Plan, WRAPs UK wide voluntary agreement for the clothing sector.

Prior to joining WRAP Sinéad worked in consultancy, advising on planning and sustainable design aspects of large masterplan development projects in the UK and internationally.



Circular Economy Ambitions and opportunities

Tor Gausemel Kristensen

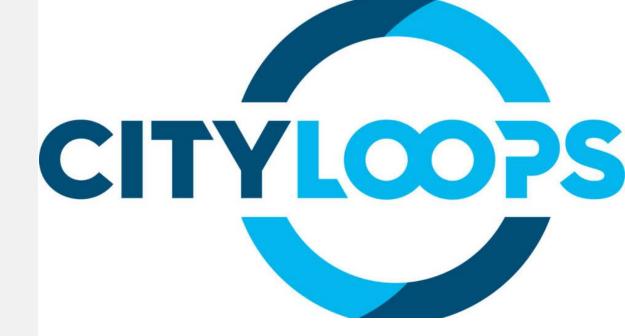
Nov. 30th 2020



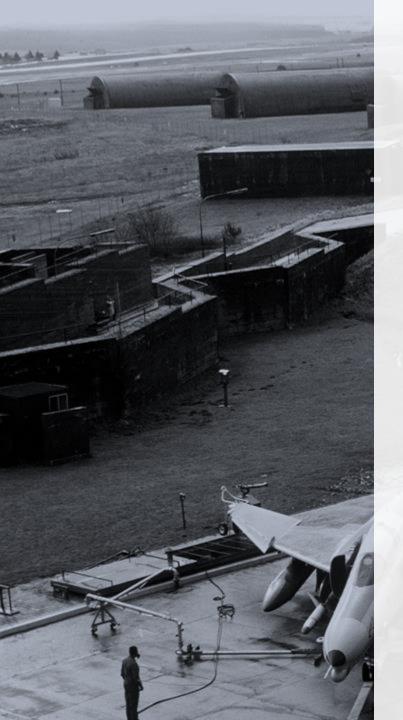
OOOOO KOMUNE



CityLoops



- International research project
 - Horizon 2020
- 7 cities i EU
 - Different challenges, same goal increased circularity in society
- Technology & innovation
- 3 phases: research, demonstration, replication



CityLoops in Bodø



What

Demolition of military airport, building of new airport, developing a new part of the city



Opportunities

- 1. Procurement (our focus today!)
 - 2. Business models
- 3. Tools, methods & technology



Ambition

Bodø municipality shall be a pioneer in climate and energy work - a smart, green, futureoriented and sustainable society

Are we headed this way?





1. Procurement

A **powerful** strategic instrument for greener practise in society

17% GDP

Opportunities for making a difference





How to improve? Getting the facts straight



How's the state now?



Analyzes

Spend analysis
Tender analysis
Sector analysis
Best practise



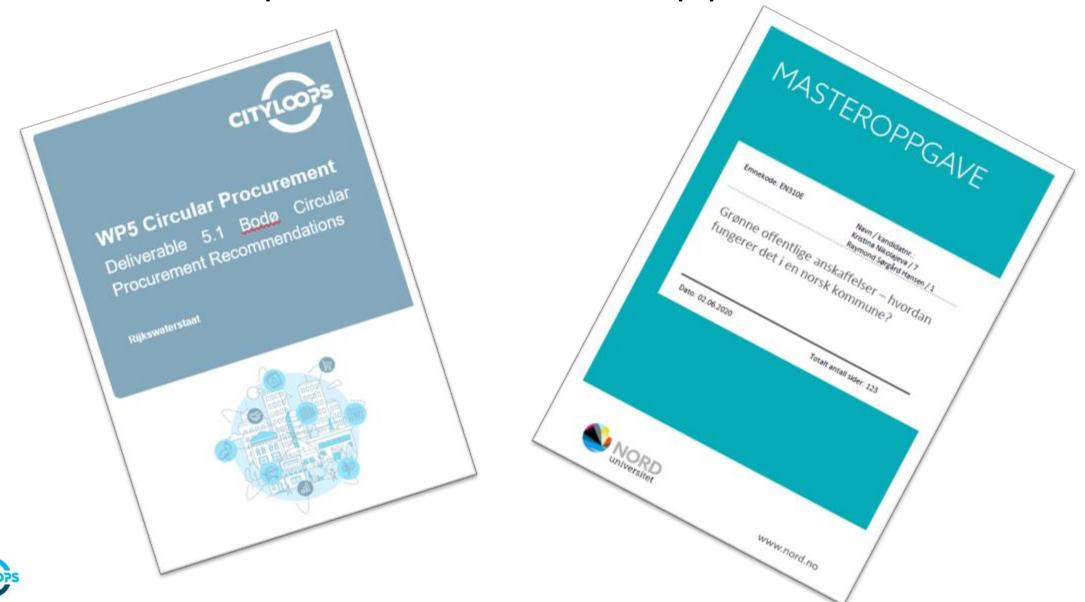
Where should our focus be?



Improvement actions



Academic productions to support us



Spend analysis

Spend data

Qualitative data from workshops





Some findings from workshop



Somewhat pessimistic to own performance



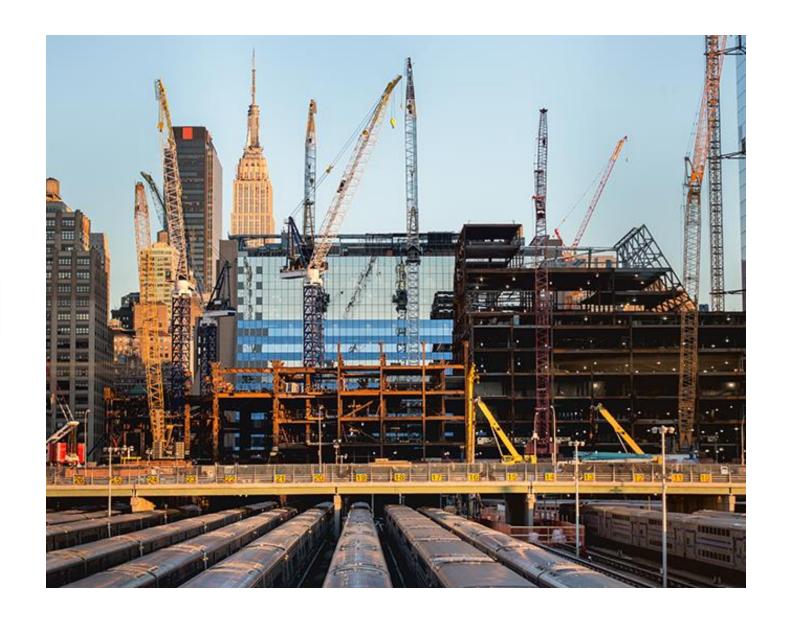
Agreement that routines for green procurement are important for New City New Airport Project (8/9)



Spend data findings

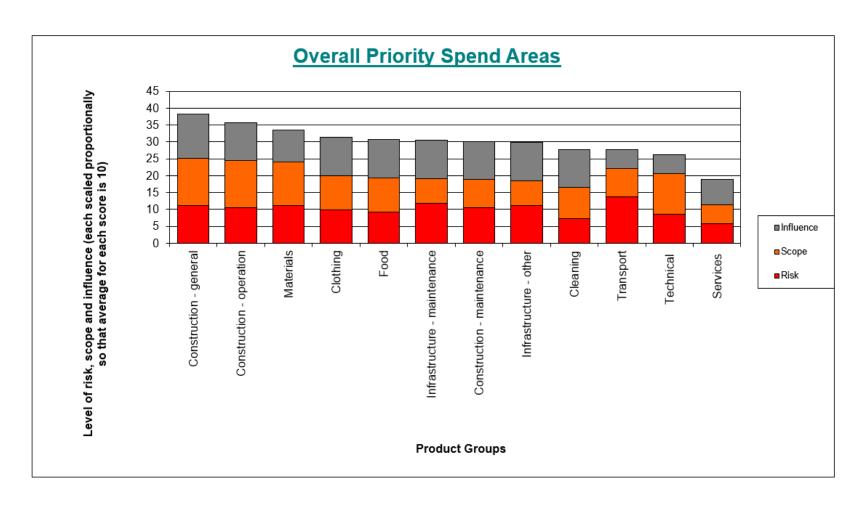
41% is related to construction and infrastructure

So this is obviously focus-worthy





Where should we keep our focus?

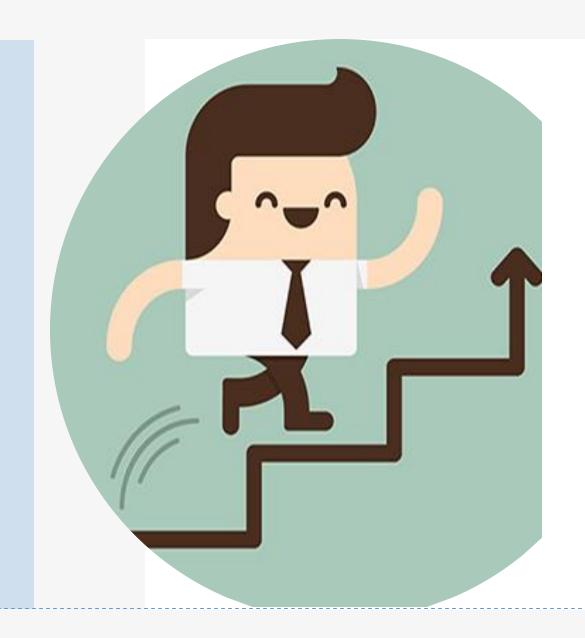


Risk: exisiting activity, scope to do more, reputational

Scope: improvement potential

Influence: ability to influence the vendor





How good are we?

- Tender review
 - Comparison to best practise
 - We engaged master students to this task



...the tender verdict

- We show environmental responsibility to a certain degree.
- Does not practice green public procurement enough.
- Why? Award criteria not weighted enough to make a difference.



- Example: **transport**. Demands to product and wrapping, but no demads to i.ex. Environmental friendly transport or emissions other places in the value chain.
- And: only 24% of the award criterias has formulated demands to environmental factors.
 - 52% in EU
- We're good at demanding a certain environmental profile with our vendors
 - **76% of the tenders contains demands** in the qualifications requirements
 - But what are these demands? Mostly just a requirement to a environmental management system
 - In comparison: only 25% i EU





So

- Bodø Municipality lacks knowledge about the implementation of environmental responsibility in the award criteria
- Difference between **political guidelines** and green procurement in **practice**.





This new information

...gives us opportunity to measure improvements



Recommendations

- Early market involvement
- Not only qualification requirements also award criteria!
- **Precise** environmental requirements.
- **Tools** for implementing political commitments
- **Learn** from the good ones
- Green **terminology** in tenders
- Increased **knowledge** in the whole organization
- Employee dedicated to contract follow-up



Recommendations

Annual evaluation of consumption and routines

Workshops

Requirements, selective deconstruction, reuse - before tender

Categorical requirements

 Example: packaging, washing, textiles, technical solution



What do we do with this information?



Data based

Measure effects from improvement actions



Holistic

Permeate to whole organisation

Decision makers

Communicate results & importance



Our case: more sustainable - more funding



= The power of green procurement



New employee – externally financed

Follow up



Share the ambitions in the whole organisation

Example: how all our suppliers' solutions became circular





Tender

Suggestion new city concept



3 vendors met qualification criteria



Communicated to them the award prioritations early

Circular economy hierarchy



Let them work with our ambtions as a base



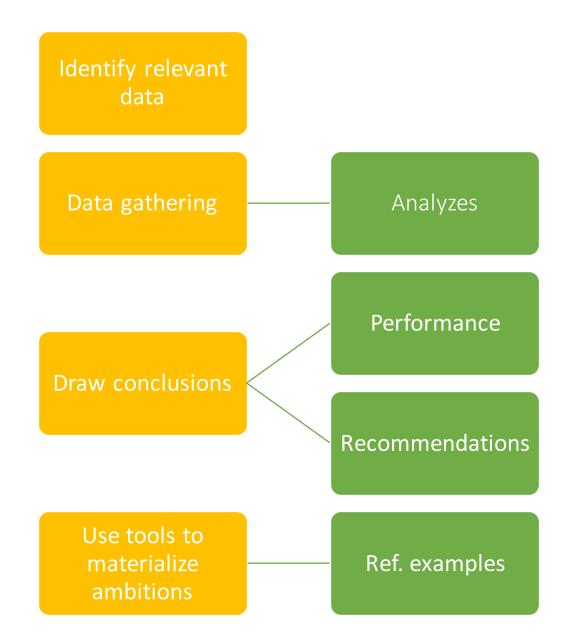
Public presentation



More academic productions

- Public buildings; opportunities, potential, barriers
- Focus segment
- Mechanisms to practise political commitments
- Early market involvement in projects
- Business case: investment analysis mass handling facilities

Summary – step by step





Next time

Business models

- Investment analysis cleaning facilities
- Green profit anlysis-tool
- Reuse examples: landing strip

Innovation & tech

- CityLab
- Visualisation
 - Mapping, material flow, modelling, LCA, databank



2. Business models

- Total cost perspective
 - Public health
 - Emission
 - Traffic
 - LCA
- Make circularity attractive for private companies
 - Reuse of masses
 - Calculations
- Specific case from CDW-sector: investment analysis washing facilities
 - Learn from London Olympics 2012

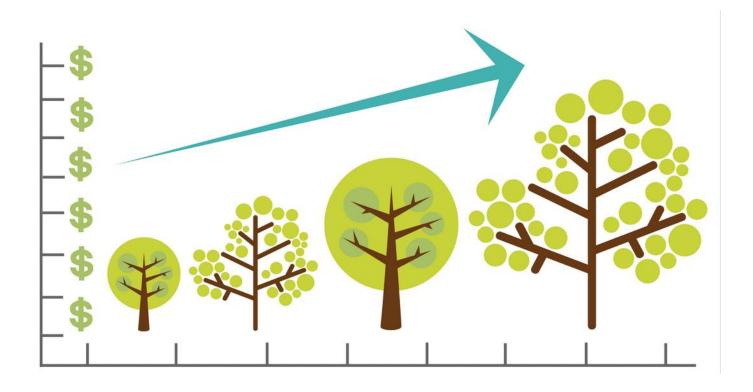


Is it possible to make money from circularity?

- Many companies proves that it is.
 - Example: NOFIR
 - Collecting ocean waste making new products



Green profit analysis (norwegian)



- https://www.miljodirektoratet.n o/globalassets/publikasjoner/M 960/M960.pdf
- https://www.miljodirektoratet.n o/myndigheter/klimaarbeid/kutt e-utslipp-av-klimagasser/klimaog-energitiltak/bygg-oganlegg/energieffektive-ogklimavennlige-nybygg/hvordanbestille-et-klimavennlig-bygg/

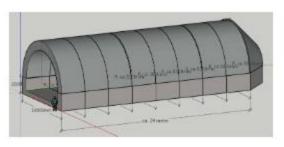
Demonstration project in general – some examples

- Intermediate storage facility confirmed
 - After presentation to the City council, municipal directors and the New Airport New City steering group
 - Structured demolition central
 - (PFAS)Washing facility under consideration.
- Reuse of military landing strip
 - Repurposing. From landing strip to access road
 - To the City and to the New Airport
 - Upcycling
 - Waste reduction
 - New: Circulus project



Selective demolition

• The concept of demolishing structures in order to make its components reusable





Shelter:





Fotgjenger over/underganger









Bro-elementer









3. The tools – and our focus

1) Life Cycle Assessment for demolition and renovated sites

2) Screening procedures and tool for selective demolition

3) Framework for developing a circular soil strategy

4) Instrument for predicting future excavated soil production

5) Tool/methodology for assessing soil reuse potential 6) Tool/methodology for identification and assessment of sites/projects fit for soil reuse

7) 3D-modelling tool for tracking the flows of on-site CDW 8) Databank and digital market place for recovered materials

9) Construction material passport and CDW materials databank

10) Co-design process for public space redevelopment

11) 3D GIS-based visualisation tools for monitoring and planning

12) CityLab (ByLap)
stakeholder
engagement platform
at Bodø town hall

13) Quality assessment of CDW

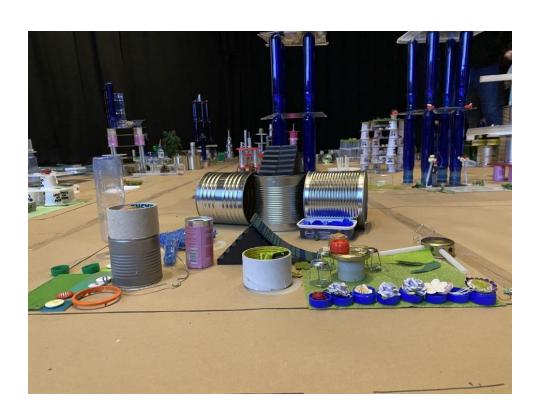
14) CDW flow optimisation tool

15) Wellbeing monitoring tool

16) City simulation platform

17) Awareness campaign on CDW management

Tools examples: CityLab – reuse workshop for kids







CityLab







To make this look like this

Make huge amounts of complicated data understandable



Identify correlations

CA



Databanks reused materials



Selective demolition



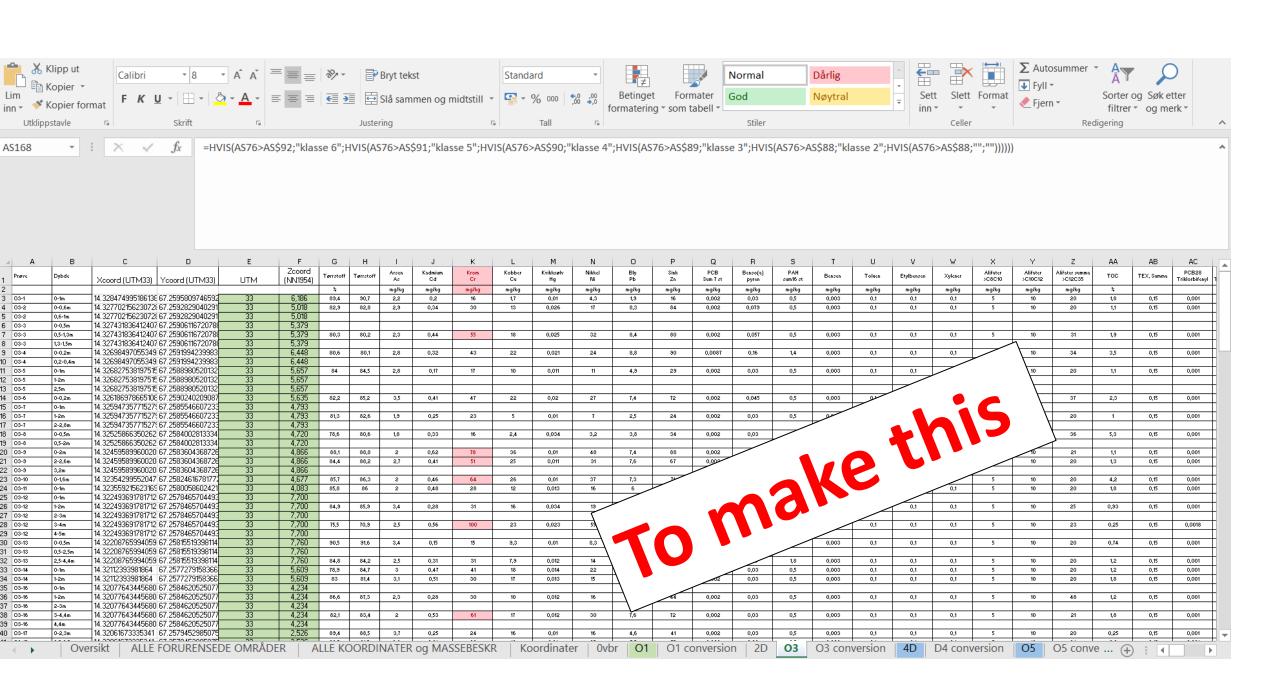
Modelling

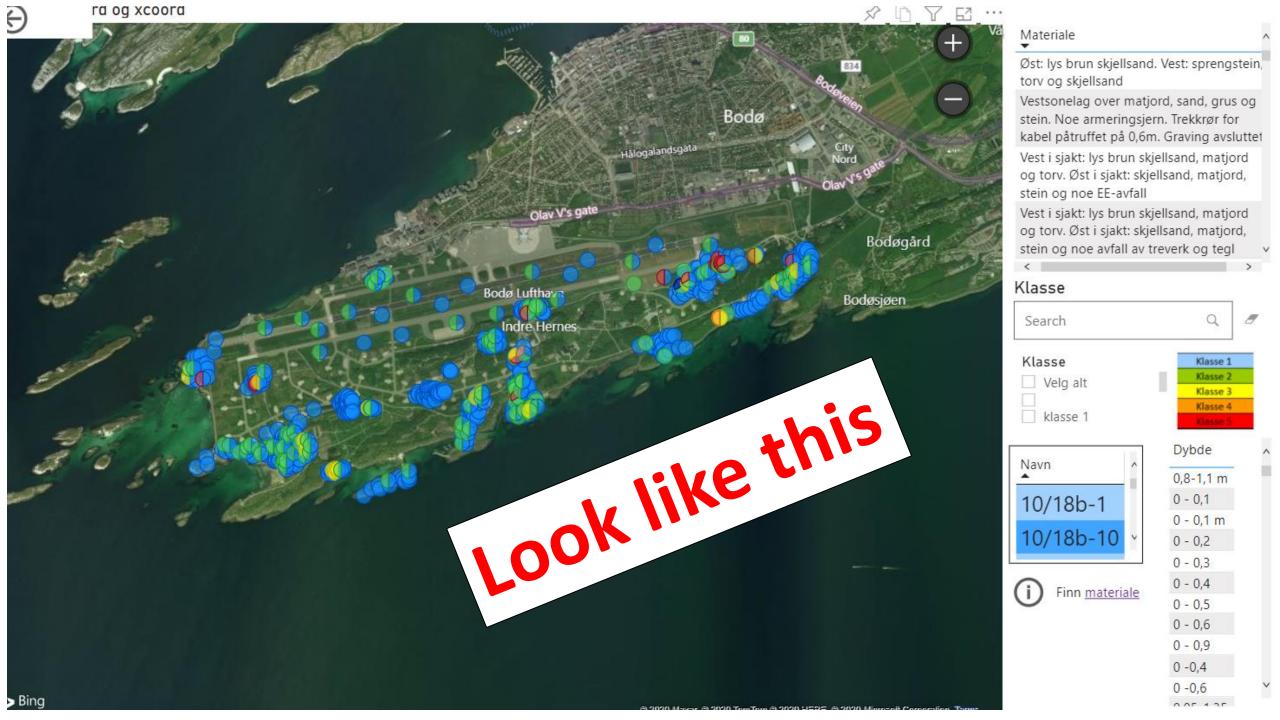
BIM

•Building planning with used knowledge

Simulations

•In relation to live and historical data



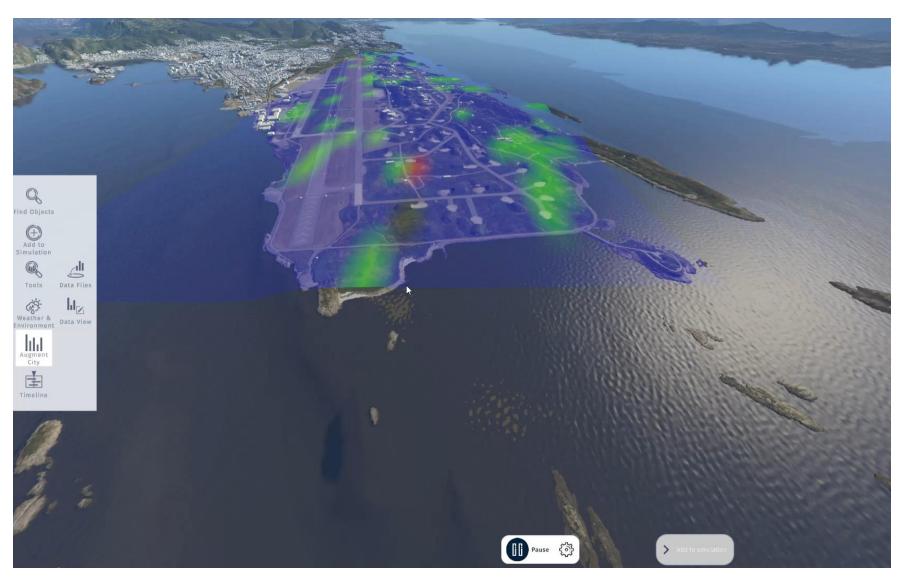




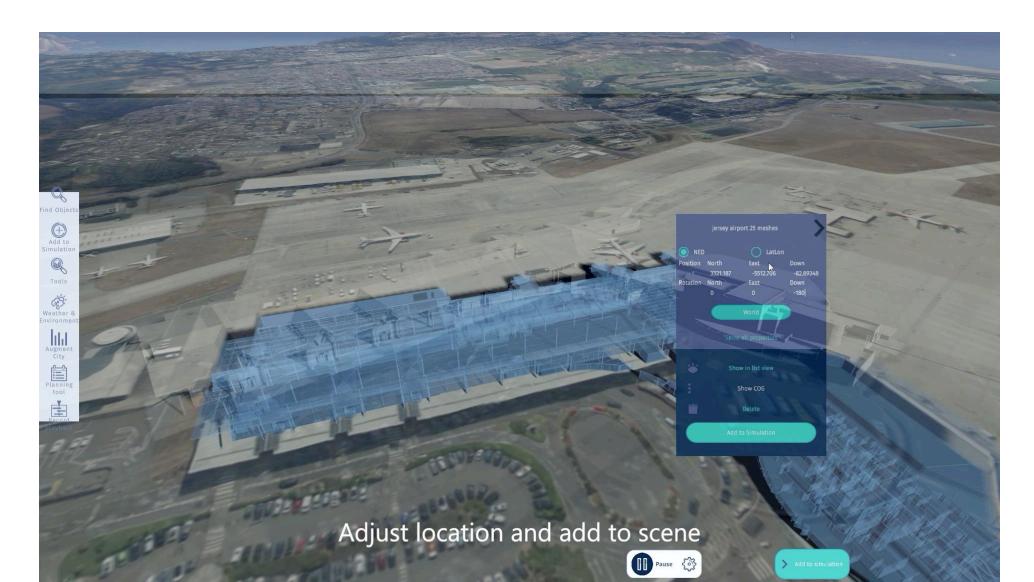
Tool example: digital twin



Pollution and mass identification example



Building modelling example



M36 -> Replication







METHODS



SUPPORT

How can you get funding for these kinds of actions?



Application

Find the fund

Have good case/demonstration site

Have good partners

And of course: good application writers



Approval

Good applications gives funding



Anchoring

Project manager

Internal and external marketing

Entry to relevant project

Materialise the actions!

Utilisation of competence within and outside the project



Implementation

Influence

Measure

Report



Integrating circular economy criteria in the City's Procurement Policy Project



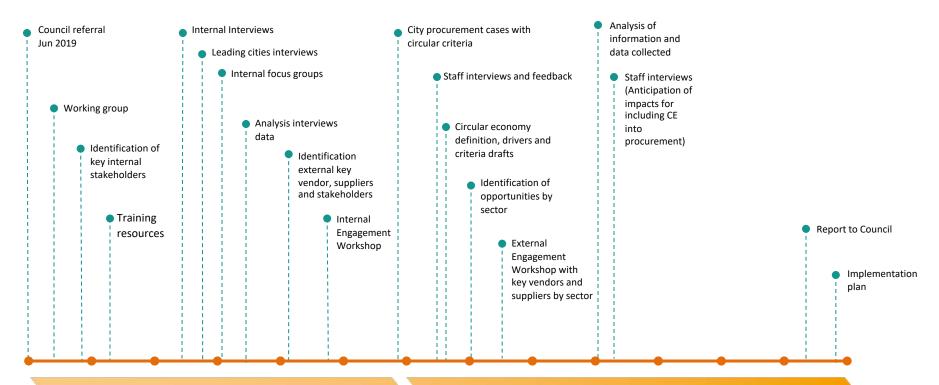
Council referral

- 1. Assess procurement processes in the focused areas for:
 - establishing a well-defined framework that integrates circular economy criteria specific to Richmond activities and procurements;
 - developing indicators for measuring results and impacts;
 - assessing cost implications for circular economy considerations.
- 2. Initiate an interdepartmental engagement program to identify innovative solutions and specifications based on circular economy criteria and anticipated cost considerations.

- 3. Initiate external stakeholder engagement with vendors and local businesses to:
 - inform vendors of the City's circular economy initiatives and expectations for their participation;
 - identify and explore opportunities among stakeholders along the entire supply chain for products, services and solutions that address circular economy criteria;
 - promote potential partnerships and work closer with industry that could interact and exchange with staff market knowledge and solutions providers.

June 2020, staff will report back with a set of procurement policy enhancements with circular economy criteria supported by costing information, guidelines, toolkits and indicators to implement the policy.

Project timeline



2020



City of Richmond

The City of Richmond implemented the Environmental Procurement Policy & the Environmental Purchasing Guide by 2000

In 2015, the City integrated sustainable criteria into the procurement policy, which has reduced environmental impacts

In 2019 City's Council approved a plan to integrate circular economy practices into the City's procurement process

Public Procurement Opportunity in Canada



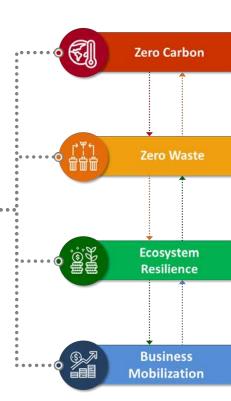
- **15%**: average percentage of a country's GDP spent on procurement
- \$200 billion: Canada's spend on procurement
- \$160 billion: local governments combined spend
- \$3.2 billion: Government of British Columbia spend
- \$130 million: City of Richmond spend with external suppliers in 2018



City's sustainability drivers



Circular Economy
criteria in the
Sustainable
Procurement Policy
can contribute to
City's goals in

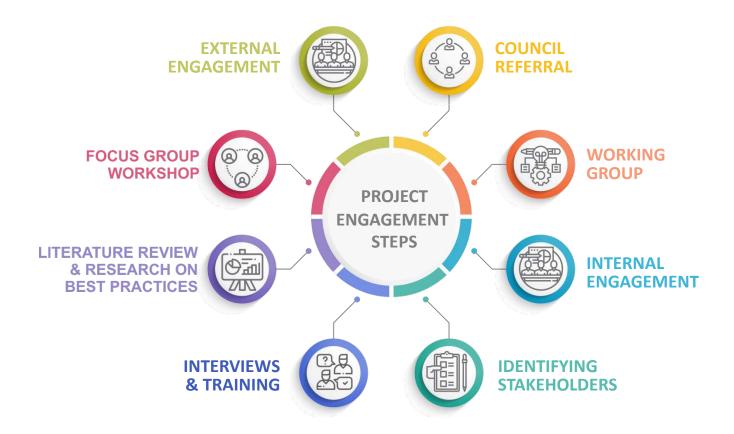


- Green Fleet Action Plan
- Community Energy & Emissions Plan (CEEP)
- Waste Heat Recovery
- · Mix fuel criteria for waste collection trucks
- E3 Fleet Certification Platinum
- Electric Vehicles Fleet and Charging Station Infrastructure
- Diversion: Solid Waste & Recycling Programs
- Recycling Depot
- · Building Demolition Bylaw
- House Moving and Salvage Program
- Integrated Resource Recovery Strategy
- Reclaimed Asphalt Pavement and Concrete Certification Project
- Organic Waste Processing Services
- City Facilities Demotions and Construction Activities Policy
- Sustainable "High Performance" Building Policy City Owned Facilities
- · Ecological Network Management Strategy
- · Corporate Hazardous Material Management Program
- · Riparian Response Strategy
- Invasive Species Action Plan
- Pollution Prevention and Spill Response
- Smart Cities
- Resilient Economy Strategy
- Richmond Food Recovery Network
- · Circular Economy Business Program
- Sustainable Innovation

External Collaboration Is Crucial



Internal and External Engagement Steps





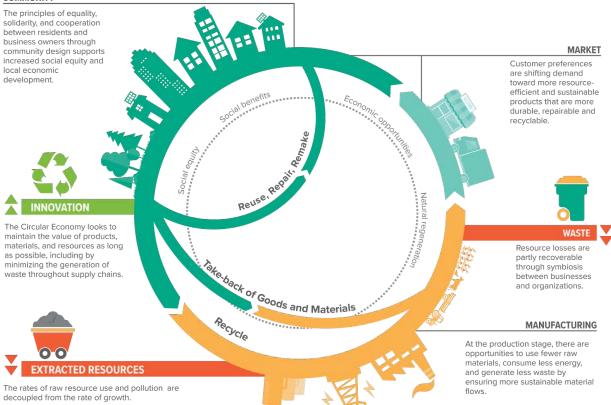


Goals

- Provide overview of the Circular Economy, and key initiatives in other jurisdictions worldwide
- Educate staff on the circular economy vision and principles
- Create awareness of the project and the issues regarding circular procurement activities
- Promote communication and set expectations
- Begin co-creation of a map of circular economy procurement initiatives in City of Richmond
- Identifying what can be implemented when integrating the circular criteria in procurement activities

Why a Circular Economy

COMMUNITY



The City of Richmond's vision for the circular economy is to maximize the value of resources by design through responsible consumption, minimizing waste and reimagining how resources flow in a sustainable, equitable, low-carbon economy.



- New construction (office/facility buildings)
- Demolition
- Renovation
- Paving
- Pump stations
- Park development
- Streetscape and boulevards
- Equipment and machines
- Public lighting
- Sanitary Sewer
- Outside furniture
- Roads/Laneways
- Dikes
- Multiple Use Paths
- Replacement of mechanical systems
- Roofing
- Utility infrastructure works
- Furniture

Sector and Categories to organize circular procurement tools, guide and pilot projects



- Heavy-equipment
- Passenger vehicles
- Trucks
- Fuels
- Garage and maintenance
- Tires
- Insurances



- Consultants
- Catering
- Food
- Accommodation facilities
- Innovation
- Learning



- Audio-visual equipment
- Networks infrastructure
- Telephone services
- Telephone equipment
- Data centre infrastructure
- Computers
- Software
- Print services



- Pools and arenas
- Communities centres
- Preservation works
- · Building renovation
- Renovations/ Demolition
- Office furniture
- Offices supplies
- Facilities lighting system
- Cleaning services
- Building management
- HVAC, machines and equipment
- Work-wear services/PPE
- Winter maintenance
- Cleaning public spaces
- Green spaces maintenance
- Outside furniture
- Pavement
- Traffic control system
- Public lighting
- Dikes / Pump stations
- Sewer

Circular Principles





A. Designing out waste & pollution by prioritising regenerative resources

- A1. Minimize the release of toxins and pollutants and hazardous materials and waste
- **A2.** Minimize waste generated by endof-life of products and packaging
- A3. Increase waste diversion
- A4. Increase recycle content
- **A5.** Increase energy and water efficiency
- A6. Prioritize renewable energy



B. Keeping products and materials in an operational use

- **B1.** Consider alternatives to product ownership
- **B2.** Maximize the useful life of materials through resource recovery
- B3. Prioritize products that are designed for maximum useful life and/or be easy to maintain, repair, upgrade, refurbish or remanufacture
- **B4.** Prioritize sharing platforms to rent, share, swap or lend to promote maximum usage
- **B5.** Require suppliers to offer longer product warrantees (longevity, reliability, and reusability)



C. Regenerating natural systems and mitigating climate change

- **C1.** Minimize environmental footprint and impacts
- C2. Protect habitat and functioning ecosystems that provide critical services to the environment
- C3. Minimize the use of raw materials
- **C4.** Introduce fully renewable, or recyclable materials that can be used in consecutive life-cycles
- **C5.** Reduce both operational and lifecycle GHG emissions



D. Co-collaborating to create innovation and joint value

- D1. Promote innovation and proactively seek opportunities for cross-functional collaboration
- D2. Support staff training and continuing education related to the circular economy
- **D3.** Support staff time contributing to circular initiatives and pilot projects
- D4. Collaborate with relevant partners and sectors to help drive innovation towards more circular services, products, and mutually beneficial solutions



E. Maximizing economic value for money

- E1. Reduce costs through efficiencies
- **E2.** Identify cost savings opportunities throughout product life-cycle
- E3. Think beyond purchase costs by internalizing environmental externalities and cumulative cost impacts
- E4. Consider productivity, efficiency and capacity utilization when evaluating alternative products and services
- **E5.** Promote green jobs created and secured

Roadmaps have short and long-term goals to develop and implement all cities tools and metrics to guide circular procurement

The circular economy criteria into the procurement policy is outlined by cities circular economy ambitions

Cities have a dedicated interdepartmental team to develop, implement and assess the roadmaps actions and results

All cities have adapted and developed the own circular economy concept and principles to integrate circularity across cities activities

Cities are members in a network to pre-competitive collaborations **Leading Cities** Learning & findings during the interviews

Cities shared with staff circular economy information, reports, tools and guides applied in the procurement activities. All the material is shared on CoR SharePoint

Staff continuous education and training in the circular economy is critical for cities achieve goals and results

Circular procurement tools are not standard and need to be developed by sector, areas or products

Periodical engagement with key stakeholders, vendor, suppliers and the markets need to be planned and do as part of the procurement activity

Procurement activities does not start in the procurement department. Cities engage internal client to design projects and operations using circular criteria



External engagement process: Vendors and suppliers workshop

45 companies who attended the workshop

Goals

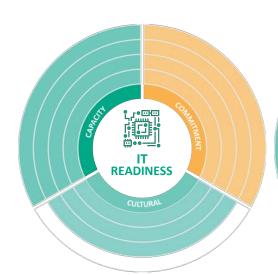
- Create a new awareness about the City's circular economy initiatives and expectations for future participation;
- Identify and explore opportunities on how essential products and services can incorporate tangible circular economy outcomes;
- Promote closer relationships with City suppliers to encourage the sharing of ideas, market knowledge and solutions.

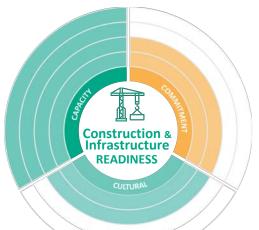
External Readiness

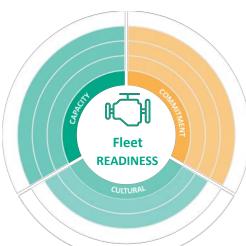
All conversations with key external stakeholders show a moderate to very positive attitude to support City transition to the circular economy. Although, each sectors have a different level of readiness, it is possible to include into City procurement activities circular criteria.

There is several opportunities within the available budgets to become more circular. However, previous the procurement in itself, City need to ignite conversation and engagement process with the market to understand open opportunities to put a circular decision into practice. The external engagement process shows the starting the conversation about City ambition, the suppliers and vendors already has a positive reaction to think about the possibilities.

The discussions in the engagement process shows that it is not yet automatic for City staff and external stakeholders include circular perspective in the procurement process. The implementation plan need to start from quick wins to developing successfully and innovatively a number of good procurement cases to accelerate City transition.











FMO= Facilities, Maintenance and Operations

Identified Barriers



- High truthful investment costs are mentioned in the contexts of a supporting goals and activities for circular economy procurement activities
- Low virgin material cost and even lower end-of-life price is a significant barrier to implement circular economy criteria into the procurement activities
- Low number of business case and no local pilot project and case studies as a reference to stakeholders to include circular economy principles in procurement
- Insufficient, incomplete, or low communication (the pre-competitive communication and engagement are been identified as a key approach to accelerate the transition to the circular economy model)
- Limited budget and funding is the assumption of stakeholder





RESOURCES







RESOURCES









Jo-Anne St.Godard joanne@rco.on.ca

Membership Invitation







