Circular Flanders

Circular Economy

Flanders
State of the Art

Veerle Labeeuw Veerle@vlaanderen-circulair.be

@CirculFlanders

CIRCULAR FLANDERS

circular-flanders.be

1 Ambition

4,263,553,355

Number of consumers

GLOBALLY, RIGHT NOW

NOW | IN 2021 | THIS MONTH | THIS WEEK | TODAY

64,475,789,706

Tons of resources extracted from Earth

GLOBALLY, THIS YEAR

IN 2021 | THIS MONTH | THIS WEEK | TODAY

20,334,472.94

Hectares of forests cut down or burned

GLOBALLY, THIS YEAR

IN 2021 | THIS MONTH | THIS WEEK | TODAY

1,542,766,499

Tons of waste dumped

GLOBALLY, THIS YEAR

IN 2021 | THIS MONTH | THIS WEEK | TODAY

18y 98d 14h 21m 06s

Earth running out of freshwater

UNLESS WATER USE IS DRASTICALLY REDUCED

1,462,736,083

Tons of waste from households

GLOBALLY

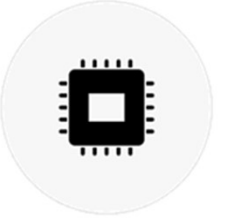
IN 2021 | THIS MONTH | THIS WEEK | TODAY

8,142,557,035

Tons of solid waste generated

WORLDWIDE

IN 2021 | THIS MONTH | THIS WEEK | TODAY



36,386,604

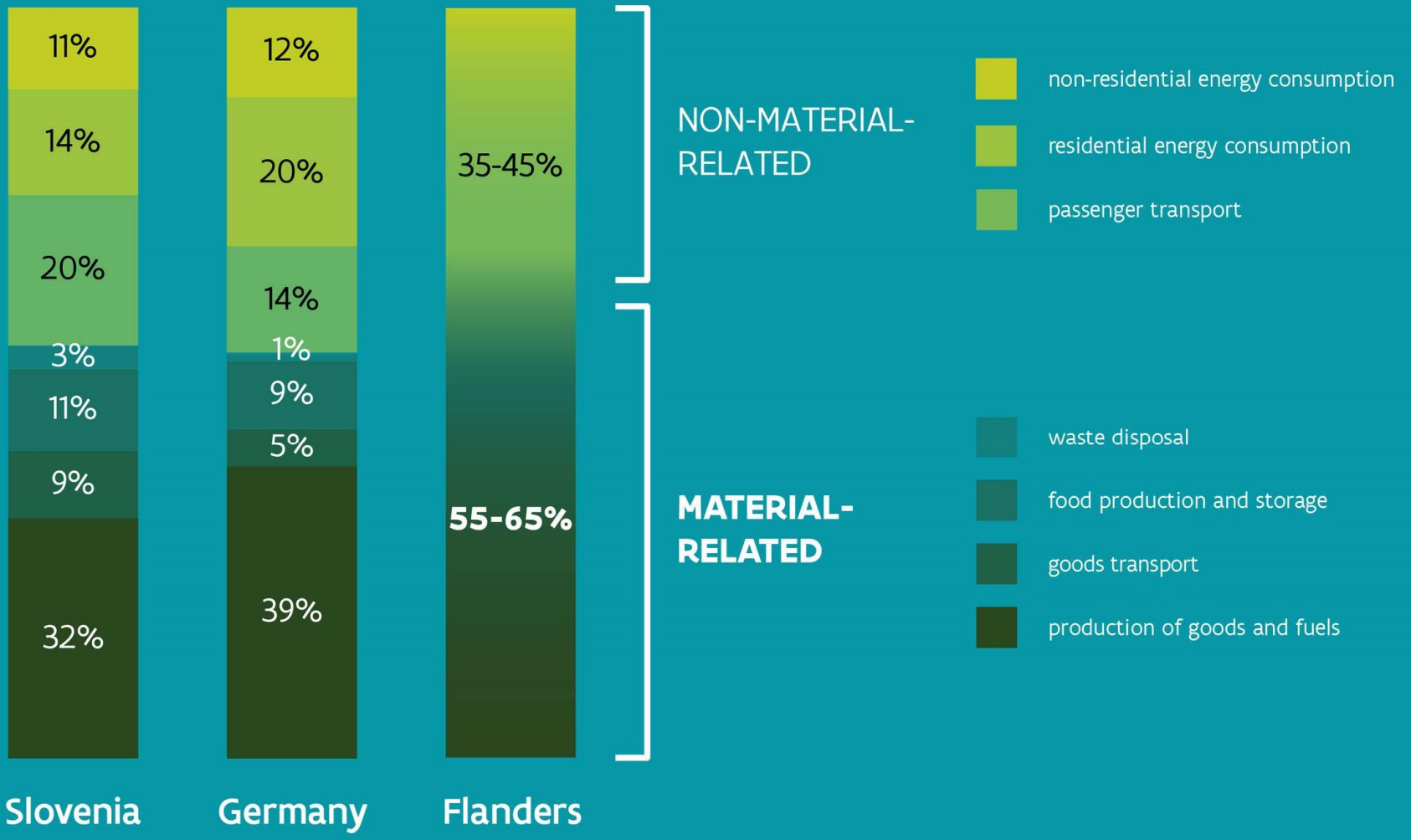
Tons of electronic waste thrown out

WORLDWIDE

IN 2021 | THIS MONTH | THIS WEEK | TODAY

Materials: a big source of **greenhouse gases**

PART EMMISSIONS PER COUNTRY

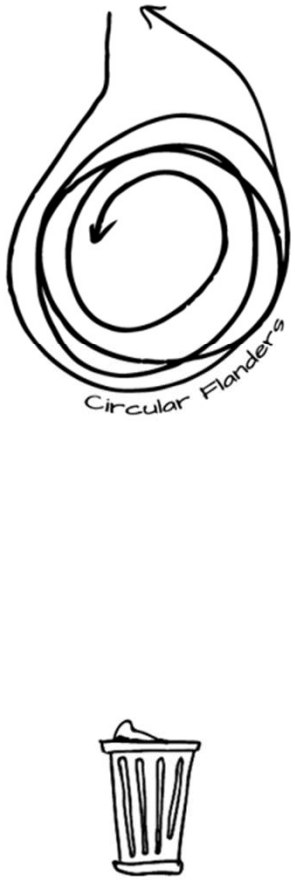


Source: OESO (2012)
Greenhouse gas emissions and the potential for mitigation from materials management within OECD countries.
Flanders: rough calculation OVAM

LINEAR ECONOMY

RECYCLING ECONOMY

CIRCULAR ECONOMY

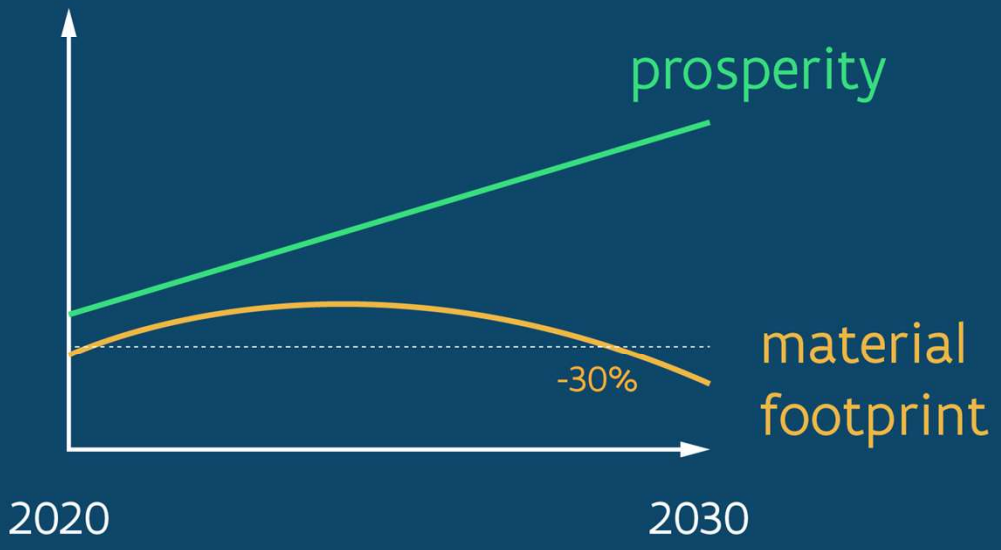


CIRCULAR FLANDERS

Cross-cutting transition priority Flemish government:

FLANDERS AS A FRONTRUNNER IN CIRCULAR ECONOMY

1. **DECOUPLING**
   material footprint from consumption by 2030
2. **REDUCTION**
   of material footprint by 30% towards 2030
3. **A PUBLIC-PRIVATE EFFORT**
   doing this in a **partnership** across society



2

Governance

GOVERNANCE CIRCULAR FLANDERS

Federal collaboration
Intra-Belgian Platform
Circular Economy

EU Green Deal & CE Action Plan

Minister of Economy, Innovation, Labour, Social economy and Agriculture

Minister of Environment and Energy

chairperson

Steering group

industry

civil society

finance

transition manager

government

research

operations team

APPROACH

6 strategic agendas

Public-private collaborations with specific dynamics, targets, lead partners and actions

- circular construction
- chemistry & plastics
- water loops
- bioeconomy
- food chain
- manufacturing

Roadmap Circular Economy

7 levers

Accelerators for overcoming barriers and spreading good practices

Policy and policy measures
Cities and municipalities
Regional policy
Intra-Belgian cooperation
Federal policy
European agenda

Circular procurement
European project ProCirc
Government leading by example
Innovative public procurement

Communication & Reporting
Raising awareness
Co-creation
Sharing knowledge
Sharing best practices
Monitoring, reporting

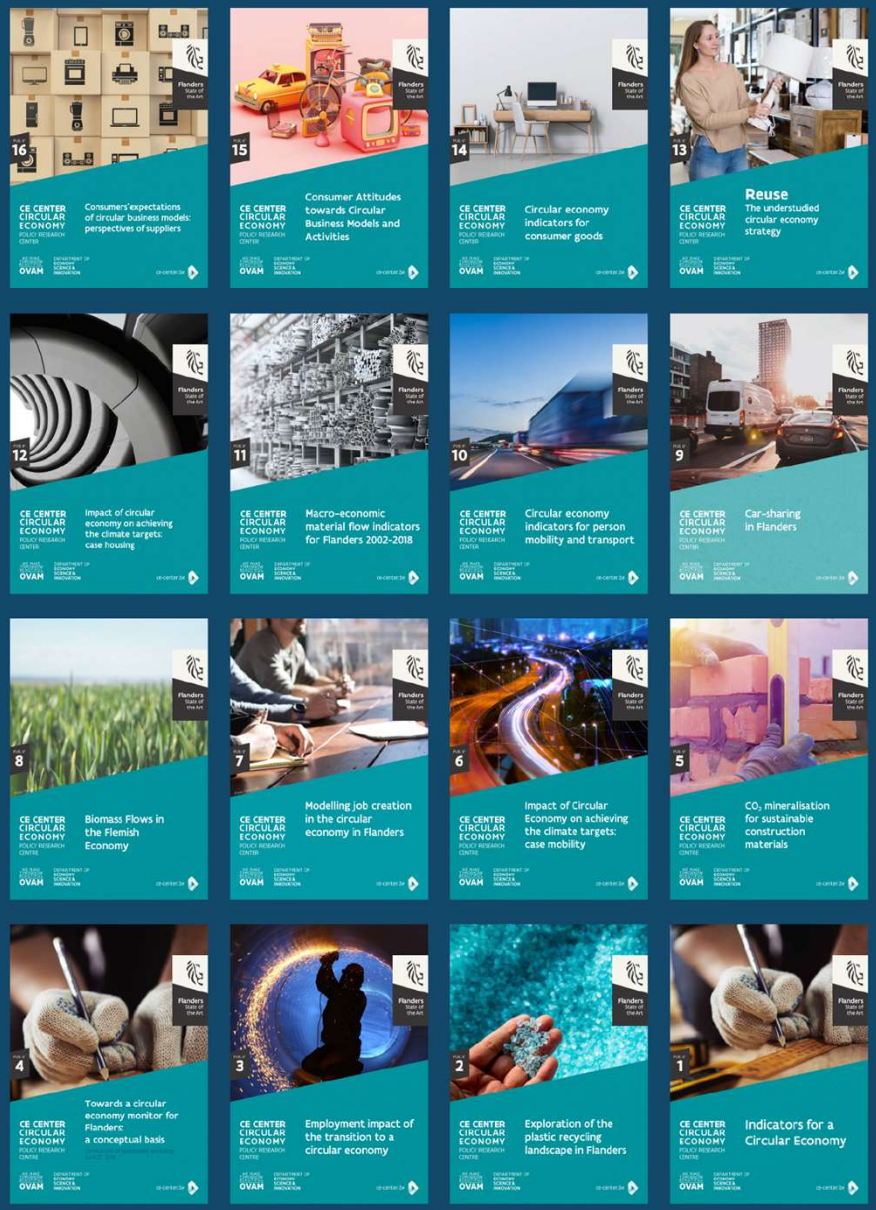
Research
Strategic research agenda
CE monitor
CE-Center for policy research

Innovation & entrepreneurship
I&E support & service
Partnerships
Experimentation

Financing
Incentive and investment policy
De-risking CE financing
CE Fund

Jobs & skills
Education and training
Starters en scalers
Employment
Social economy

collaboration of 30 organisations 100 coworkers



RESEARCH: CE CENTER

Policy research for the circular economy

Employment and actor analysis
Financing and revenue models
Indicators for circularity
Measuring the transition
Modelling systems
Learning effects
Market acceptance

ce-center.be

Search

SEARCHTERM

FILTER

Select an option

www.cemonitor.be

Layers

CIRCULARITY

EFFECTS

HOUSING

FOOD

CONSUMER GOO...

MOBILITY

Indicators

3

Circular Cities


Looking from a different angle
Like the "Fosbury Flop"

Papillon'

Samenlevingsopbouw West-Vlaanderen leases household appliances to people who have pending energy bills and are stuck with energy-guzzling appliances at home

Be Inspired

Circular city governance

What can a local authority do?

REORGANISE YOUR CITY

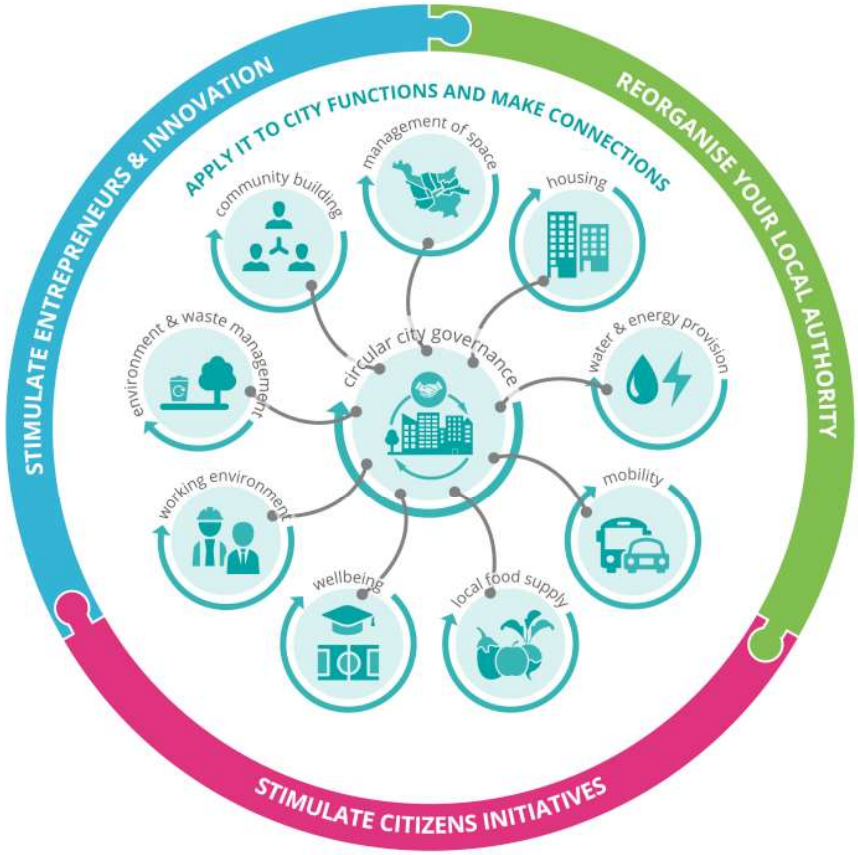
1. Create common long term ambition , with political support & use it in your branding
2. Set up cooperation between city departmants and appoint a coordinator
3. Act circular (circular procurement, futureproof urban planning, sustanable building,...)
4. Get insights in your resources (waste, water, materials,...)

STIMULATE CITIZENS INITIATIVES

5. Promote sharing & functional economy
6. Raise awareness and coach citizens
7. Support bottom up initiatives through legislation, funding, cooperation, communication,...

STIMULATE ENTREPRENEURS & INNOVATION

8. Stimulate local symbioses through (business park) networks, smart technologies,...
9. Create incentives to attract circular business (offer space, taxes, subsidies,...)
10. Communicate success stories



Circular strategies to focus on

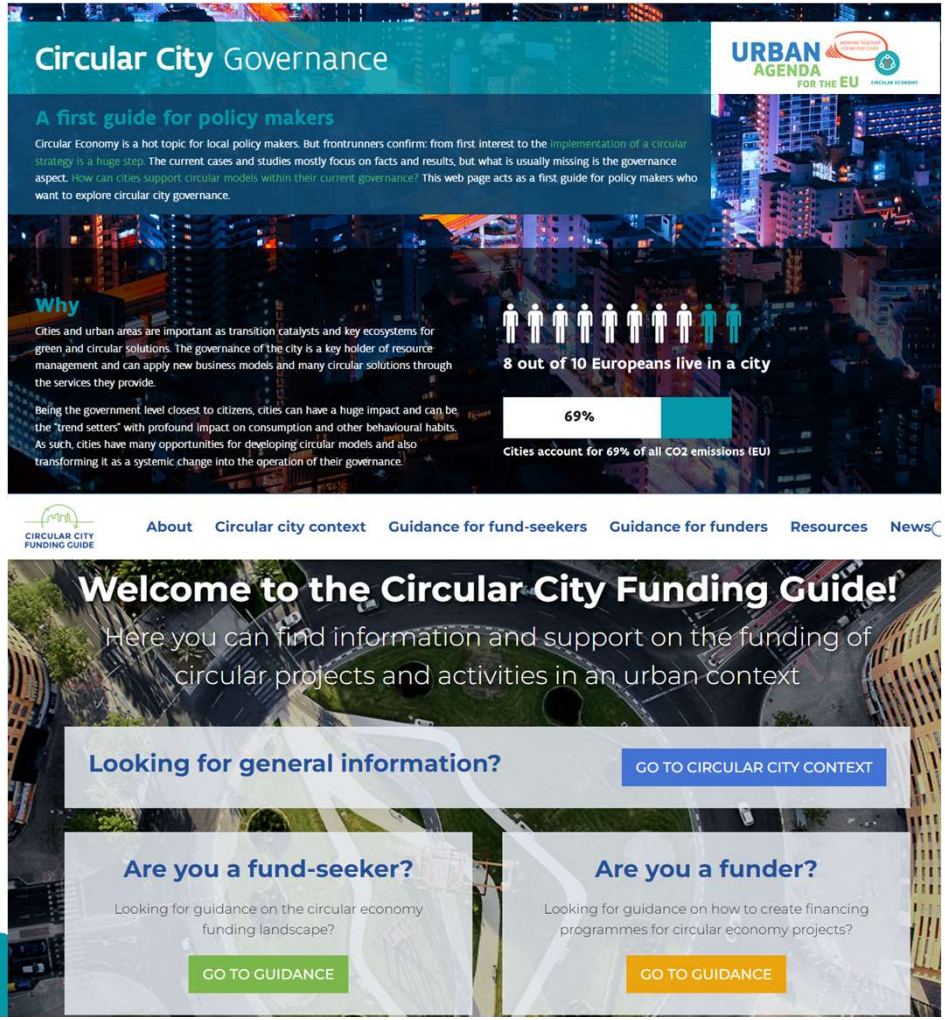
GENERAL AND TECHNICAL NUTRIENTS

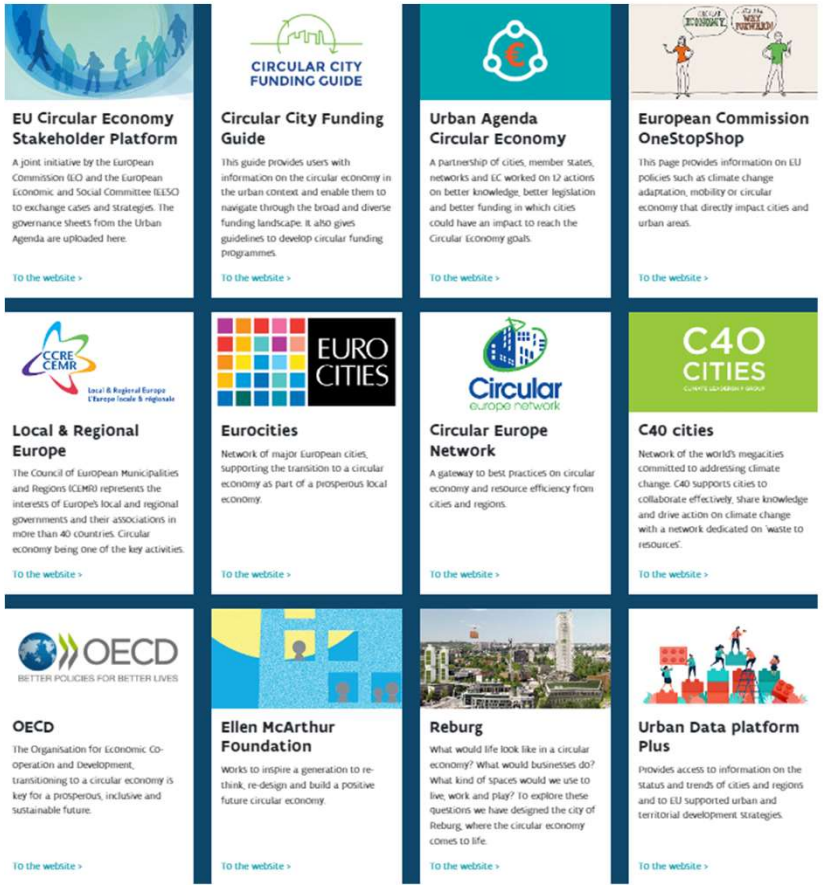
REFUSE · REDUCE · RE-DESIGN · RE-USE · REPAIR · RE-FURBISH · RE-MANU-FACTURE · RE-PURPOSE · RECYCLE

BIOLOGICAL NUTRIENTS

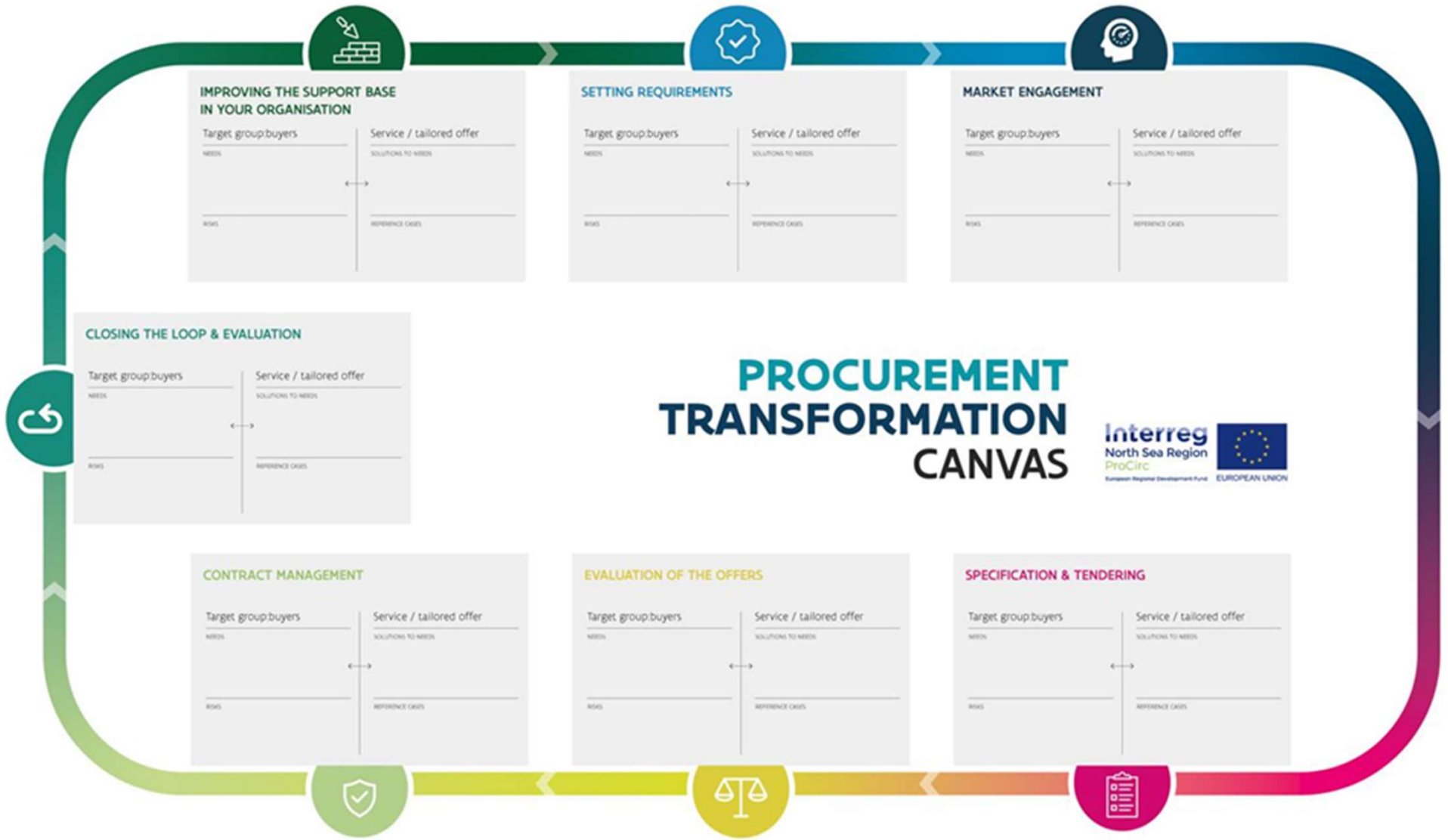
USE RE-NEWABLES · RE-STORE NATURE · COM-POSTING · BIO-CHEM EXTRACT · RECOVER ENERGY

Circular City Governance





4 Circular Procurement


IMPROVING THE SUPPORT BASE IN YOUR ORGANISATION
Target group buyers
Service / tailored offer
NEEDS
SOLUTIONS TO NEEDS
RISKS
REFERENCE CASES
SETTING REQUIREMENTS
Target group buyers
Service / tailored offer
NEEDS
SOLUTIONS TO NEEDS
RISKS
REFERENCE CASES
MARKET ENGAGEMENT
Target group buyers
Service / tailored offer
NEEDS
SOLUTIONS TO NEEDS
RISKS
REFERENCE CASES
CLOSING THE LOOP & EVALUATION
Target group buyers
Service / tailored offer
NEEDS
SOLUTIONS TO NEEDS
RISKS
REFERENCE CASES
PROCUREMENT
TRANSFORMATION
CANVAS
Interreg
North Sea Region
ProCirc
European Regional Development Fund
EUROPEAN UNION
CONTRACT MANAGEMENT
Target group buyers
Service / tailored offer
NEEDS
SOLUTIONS TO NEEDS
RISKS
REFERENCE CASES
EVALUATION OF THE OFFERS
Target group buyers
Service / tailored offer
NEEDS
SOLUTIONS TO NEEDS
RISKS
REFERENCE CASES
SPECIFICATION & TENDERING
Target group buyers
Service / tailored offer
NEEDS
SOLUTIONS TO NEEDS
RISKS
REFERENCE CASES

Improving the supportbase

Workshop Behavioural Change

Setting requirements: *Real needs?*

Setting circular ambitions

GOALS AND STRATEGIES FOR CIRCULAR PURCHASERS

A — Reduce total amount of materials

- A1 Internal sharing
- A2 Renting or peer to peer sharing
- A3 Reuse, refurbishing or upgrading
- A4 Minimal use of materials in design
- A5 Less waste

B — Reduce amount of virgin inputs

- B1 Understanding the share of recycled, biobased and virgin materials present
- B2 Increasing the amount of recycled content
- B3 Increasing the amount of biobased content

C — Extend the useful life

- C1 Extending guarantees
- C2 Contractual arrangements for maintenance and repair
- C3 Upgradable products
- C4 Design for longevity
- C5 Repairability and maintainability
- C6 Modular/change oriented design
- C7 Contractual incentives for extension of useful life
- C8 Supplier guidance for use optimization

D — Maximise the reusability of a product or component

- D1 Design for Disassembly
- D2 Modular design
- D3 Standardised design
- D4 Understanding the internal composition and connections
- D5 Contractual arrangements for take back and reuse
- D6 Stimulate circular business models

E — Maximise the reusability or recyclability of materials

- E1 Design for recycling
- E2 Understanding materials
- E3 Contractual arrangements for take back and recycling
- E4 Reducing or banning toxicity
- E5 Biologically degradable / compostable
- E6 Stimulate circular business models

CIRCULAR FLANDERS

A

Reduce total amount of materials

A 1 Internal sharing

A 2 Renting or peer to peer sharing

A 3 Reuse, refurbishing or upgrading

The Flemish government's Facility Services Agency opts for circular office furnishings

WEDNESDAY 18 DECEMBER 2019

Interreg NSR ProCirc Pilot - circular organisation of government offices

READ MORE ›

C

Extend the useful life

- C1 Extending guarantees
- C2 Contractual arrangements for maintenance and repair
- C3 Upgradable products
- C4 Design for longevity
- C5 Repairability and maintainability
- C6 Modular/change oriented design
- C7 Contractual incentives for extension of useful life
- C8 Supplier guidance for use optimization

Lighting-as-a-service in the City of Mechelen

TUESDAY 17 DECEMBER 2019

ETAP sells light rather than lamps to illuminate City offices

READ MORE ›

D

Maximise the reusability of a product or component

- D1 Design for Disassembly
- D2 Modular design
- D3 Standardised design
- D4 Understanding the internal composition and connections
- D5 Contractual arrangements for take back and reuse
- D6 Stimulate circular business models

Market Engagement: *dialogue!*

Setting specifications

Circularprocurement.be

Circularprocurement.be

Circular Procurement Cases - ICT

KU Leuven wins Fair ICT Flanders Award 2020

WEDNESDAY 16 DECEMBER 2020

Winner of the first Fair ICT Flanders Award On December 15, KU Leuven received the Fair ICT Award 2020. A reward for a process that already started in 2009. Step by step, KU Leuven is implementing...

READ MORE ›

Circularity for ICT equipment

TUESDAY 17 DECEMBER 2019

TV decoders are an important product for Proximus and its customers. The first TV decoders were launched in 2005, and have already been supplied to more than 2 million customers. In the context of t...

READ MORE ›

Public procurement for circular ICT equipment

MONDAY 16 DECEMBER 2019

Flanders wants to have a circular economy by 2050, in which raw material loops are closed. But how do you achieve such a circular economy in practice? The role of government authorities in this is cl...

READ MORE ›

MORE ›

Publications about Circular ICT

Webinar - The future of ICT: circular solutions for a post-Covid world

Within the interreg NSR project ProCirc a webinar was organised about circular ICT

Breaking the two-year cycle - extending the useful life of smartphones

This report is part of NGI Forward, the strategy and policy arm of the European Commission's flagship Next Generation Internet (NGI) initiative, which seeks to build a more democratic, inclusive, res...

Infographic ICT Supply Chain

This Fair ICT Flanders infographic provides an overview of the various risks within the ICT supply chain. The route from raw material to final product is long and complex. Many actors are involved in...

Fair ICT action plan

If your organization is prepared to work on a fair ICT policy, it is important to consider a few questions in order to arrive at a concrete action plan. Why does your organization want to take on a p...

Circular procurement of offfice furnishings on screen

Publications about circular office furnishings

Leasing: ownership from a new angle

The second publication from the interreg NSR project ProCirc discusses leasing as a replacement for the traditional ownership model. It contains interviews with users and a supplier.

DOWNLOAD

Report: Circular Public Procurement Case descriptions Norway

This is an English translation of short case descriptions that are part of a larger report on Circular Procurement and Strategies among Norwegian Municipalities, developed by Inventura AS on behalf o...

DOWNLOAD

Webinar The future of furniture - circular solutions for a post-Covid world

Within the interreg NSR project ProCirc a webinar was organised about circular office furniture. Experiences from suppliers as well as buyers are shared.

VISIT WEBSITE

The Furniture Sector and the Circular Economy

The European furniture industry welcomes the new Circular Economy Action Plan of the European Commission, strongly supports the transition to a circular economy and is ready to be involved in making ...

DOWNLOAD

Evaluation of the offers & Contract Management

5 Learning from each other

Circular Policy and Tools

Compendium

Project outputs		Procurers	Managers	Policy makers	Suppliers and value chain actors	Others
Circular Procurement Guidance	Circular procurement transformation guidance	●				●
	Organisational change	●	●	●		●
	Training materials	●	●			
Circular Procurement Tools and Methodologies	Procurement transformation canvas and workshop manual	●	●		●	●
	Circular procurement tools and toolbox	●	●			●
Circular Procurement Cases and Examples	Opportunities and barriers report	●	●			●
	Best practice articles	●	●	●	●	●
	Pilot case studies	●	●	●	●	●
Value Chain Engagement	Guidance for communities of practice				●	●
	Joint statement of demand	●	●	●	●	●
	Circular business model route maps	●			●	●
Upscaling	Policy recommendations	●		●		
	C-PRONE	●	●	●		●

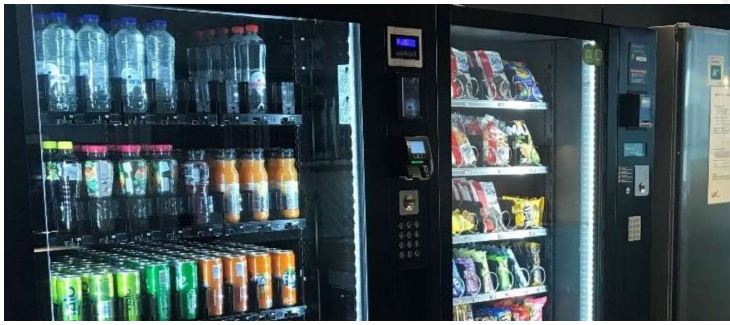
Pilot projects

Furniture

- Education & Office Furniture Framework (Scotland Excel, Scotland)
- Domestic Furniture Framework (Scotland Excel, Scotland)
- Furniture for circular building 't Centrum (Kamp C, BE)
- Circular furniture in office move (DFØ/Digdir, NO)
- Refurbished office furniture (Agency For Facility Operations, Flemish Government, BE)
- Circular furniture in refurbishment of county hall (Vestland/Bergen, NO)
- Reusing post-consumer textiles for the refurbishment of office chairs (Municipality of Groningen, NL)

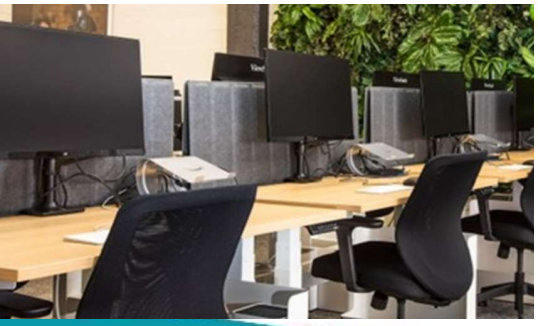
Construction and infrastructure

- Aberdeenshire New Build & Refurb Projects (Aberdeenshire Council, Scotland)
- Social housing neighbourhood renovation (Zonnige Kempen, BE)
- Circular Building 't Centrum (Kamp C, BE)
- Construction and temporary occupation of a circular hub and Makerspace (City of Leuven, BE)
- Demonstration box for circular construction within De Potterij (OVAM, Flemish Government, BE)



Waste

- Circular tendering of waste treatment (Kolding municipality, DK)
- Waste management services (City of Malmö, SE)
- Waste management services (bpost, BE)



Textiles

- Circular tender criteria for professional clothing (Integral UK Ltd, UK)

Other

- Playground Equipment Framework (Scotland Excel, Scotland)
- Fossil fuel to green energy in waste management vehicles (Kolding municipality, DK)
- Circular signs and navigation (City of Malmö, SE)
- Prolonging life-time of baby strollers for preschools (City of Malmö, SE)
- Sustainability criteria for workplace ICT hardware (Dutch government, IWR, NL)
- Sustainable vending machines with healthy products (bpost, BE)

Joint Statements of Demand

Joint Statement of Demand

Circular Professional Clothing

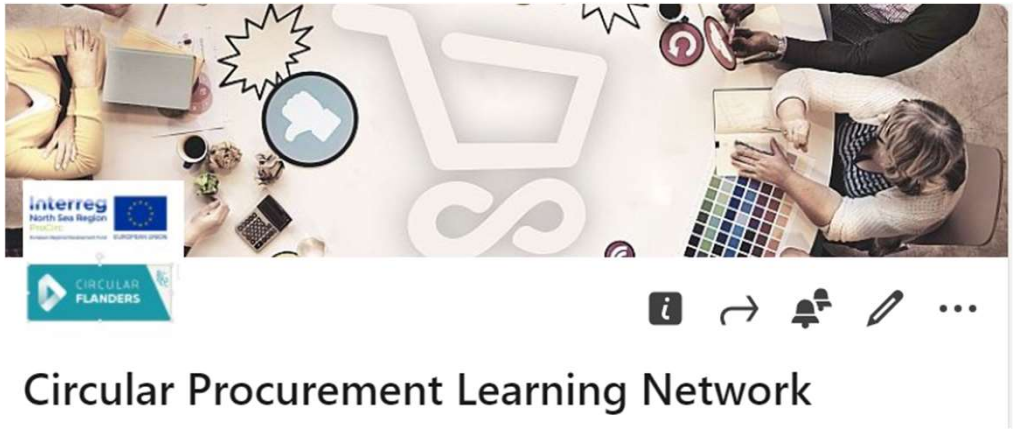
Joint Statement of Demand

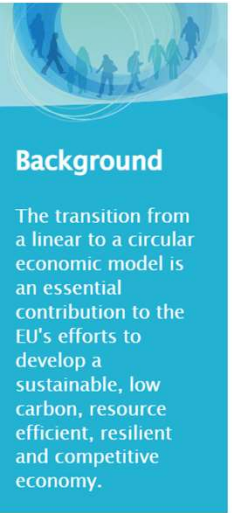
Circular Office Furniture

Electric Vehicle Chargers

Platforms

Linkedin group:





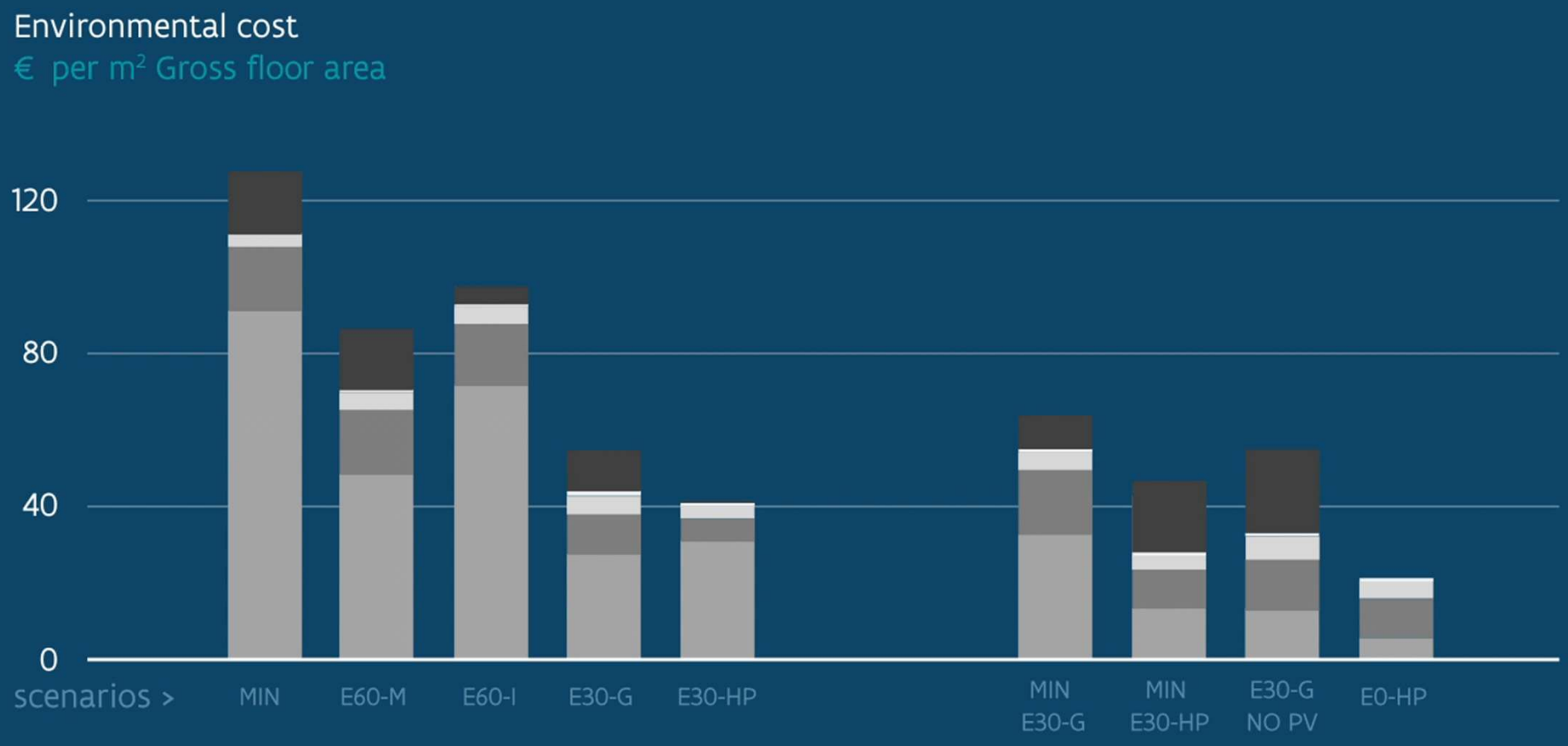
Circular Economy Stakeholder Platform
About the Platform

An EU-wide interactive project steered in partnership with European civil society

A joint initiative by the European Commission and the European Economic and Social Committee, the **European Circular Economy Stakeholder Platform** brings together stakeholders active in the broad field of the circular economy in Europe.

6 Circular Construction

The hidden environmental costs of materials in construction



Data: WTCB (Dossier 2021/3.8)
Graphics: Circular Flanders

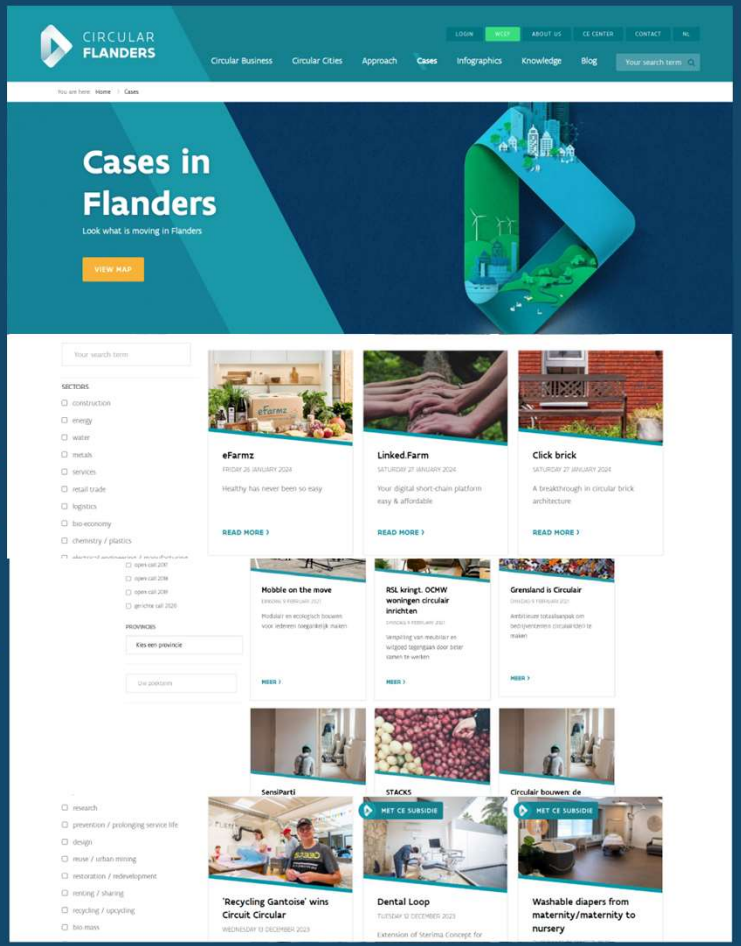
RENOVATION
detached house 1985

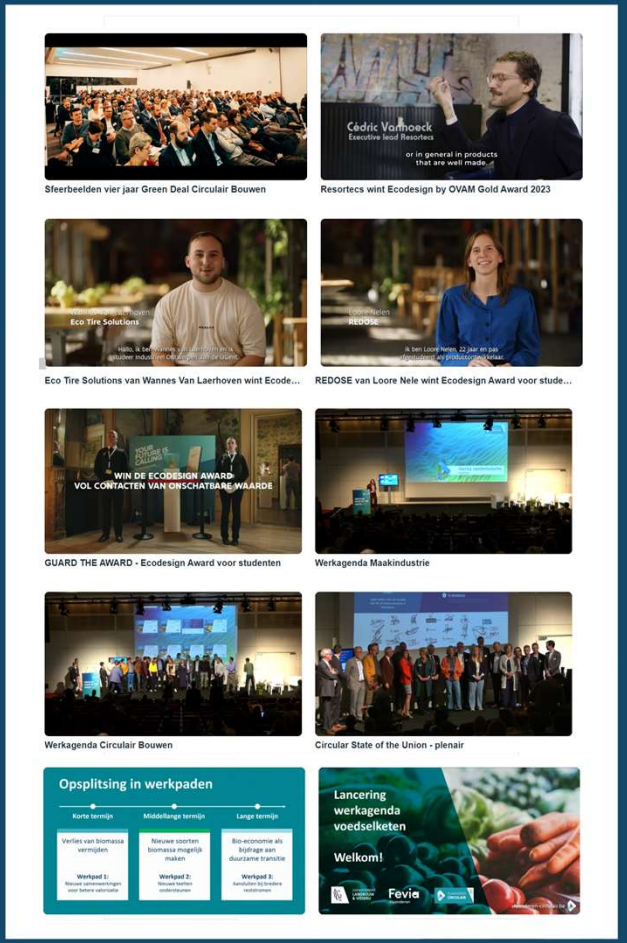
NEW BUILDING
semi-detached house 2020

LEARNING + SHARING KNOWLEDGE

website

linkedin





8

Secret Ingredient


SECRET
INGREDIENT:
FUN!
vito


And take the time to chat
about the Circular Economy

Thank you!

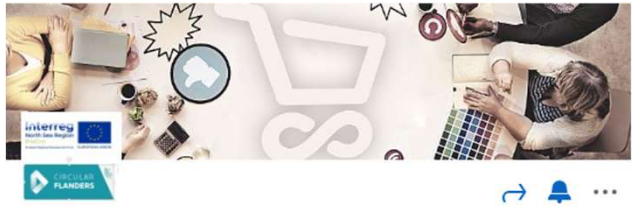
Questions/remarks?

northsearegion.eu/procirc/

interregnorthsea.eu/ceo

circularprocurement.be

veerle@vlaanderen-circulair.be



Circular Procurement Learning Network

Public group

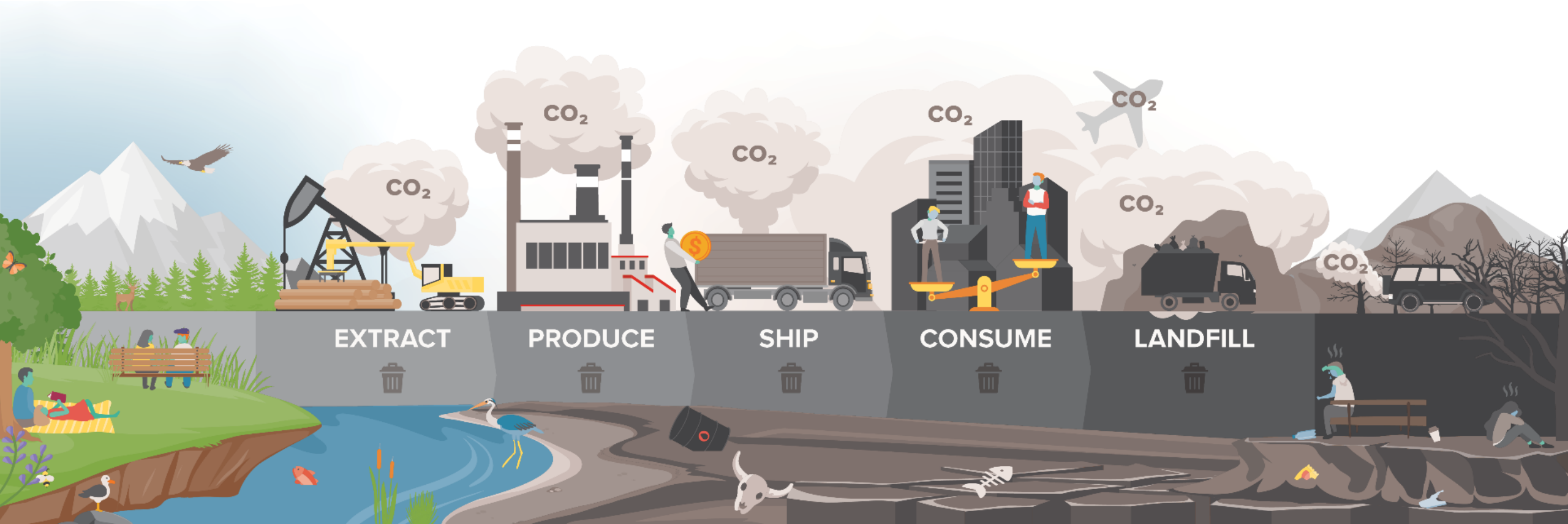
CIRCULAR FLANDERS

THE CIRCULAR ECONOMY IN ACTION

Implementing Richmond's Circular Vision and Principles into City's procurement activities

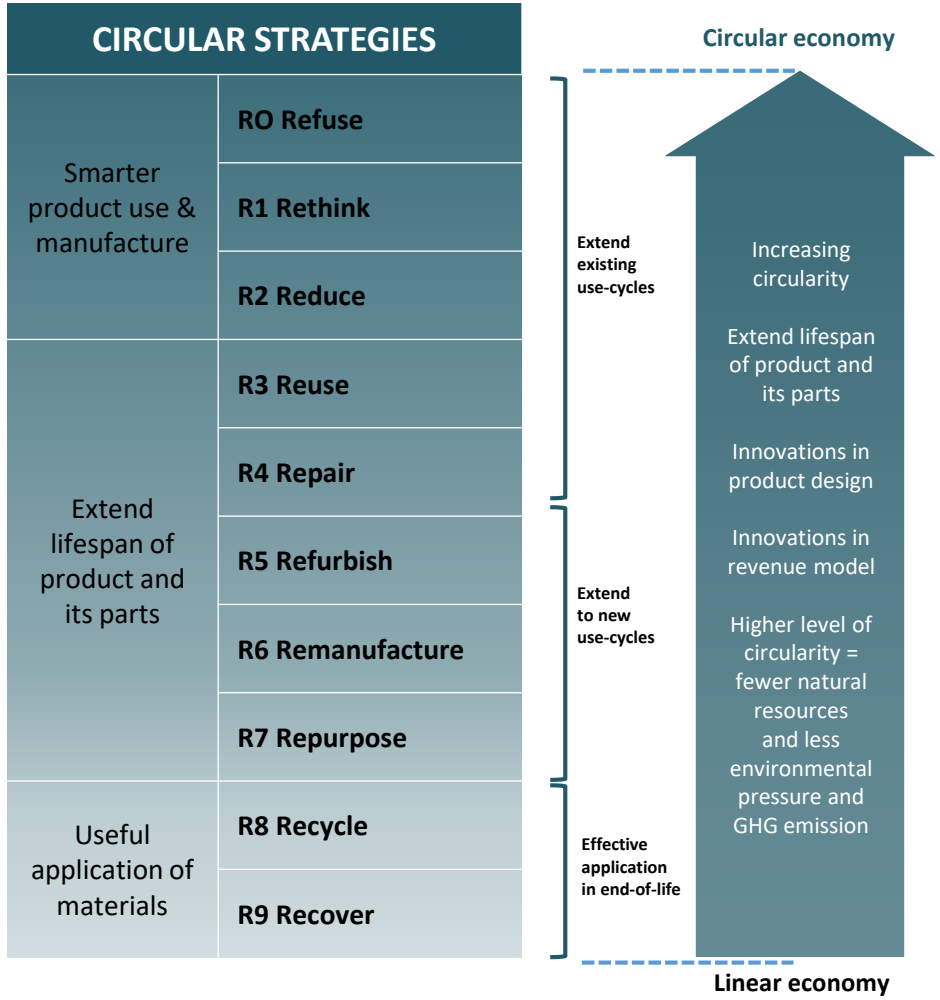
Richmond

WHAT IS THE PROBLEM?



WHAT IS A CIRCULAR ECONOMY?

A circular economy is not recycling: Recycling plays an important role in waste management, but a circular economy offers a comprehensive approach. It addresses a product or service's entire lifecycle, striving to eradicate waste and prolong the use of resources, thereby decreasing the need for new, virgin resources.



The 9R Framework. Source: Adapted from Potting et al. (2017, p.5) and pbl.nl

THE SYSTEM THINKING APPROACH

Circular economy is about the flow of resources, materials, nutrients, products and energy. The actions in the Strategy augment the City work through an expanded focus on these flows.

- 3 5-Year Tourism Plan
- 2 Agricultural Viability Strategy
- 1 Barn Owls Nest Box Program
- 1 Bat Friendly Community Recognition
- 6 Biweekly Garbage Cart Program
- 6 Blue Box/Blue Cart Programs
- 3 Business Resilience Program
- 4 City Centre Transportation Vision 2007
- 4 5 Community Energy & Emissions Plan 2050
- 1 2 3 4 5 6 Cultural Harmony Plan
- 2 3 Farming First Strategy
- 1 Ecological Network Management Strategy
- 1 Enhanced Pesticide Management Program
- 6 Green Cart Program
- 3 5 6 House Moving and Salvage Program
- 3 5 Industrial Land Intensification Initiative
- 1 5 Integrated Rainwater Resources Strategy
- 1 2 Invasive Species Action Plan
- 6 Litter Collection Program
- 6 Large Item Pick Up Program
- 3 5 Resilient Economy Strategy
- Official Community Plan 1 2 3 4 5 6
- Park and Open Spaces Strategy 1 2 5
- Partners for Beautification 1 5
- Poverty Reduction Plan 2 3 4 5
- Public Spaces Recycling Program, Event Recycling, Facilities Recycling 6
- Procurement Policy 3
- Reclaimed Asphalt Pavement Pilot Project 5 6
- Richmond Business Development Program 3
- Richmond Food System Action Team 2
- Richmond Food System Assessment 2006 2
- Richmond Foodland Report 2013 1 2
- Richmond Garden Club 2
- Richmond Local Food Map 2
- Richmond Nectar Trail 1 2
- Richmond Pesticide Management 1
- Riparian Areas Regulation Response Strategy 1 5
- Single-Use Plastic and Other Items Bylaw No. 10000 3 6
- Tree Management Strategy 1 2 5
- Wellness Strategy 1 2 4 5

THE CITY'S VISION FOR A CIRCULAR ECONOMY

The City of Richmond's vision for 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.

Upside-down approach to complexity

CITY'S CIRCULAR PRINCIPLES

The City has started using circular economy criteria in various ways, guided by the following 5 principles:

- Design clean
- Keep using
- Collaborate to co-create
- Regenerate
- Maximize value

RICHMOND CIRCULAR CITY STRATEGY

THE STRATEGY OUTLINES A FRAMEWORK THAT WILL GUIDE RICHMOND'S TRANSITION TO A CIRCULAR ECONOMY

VISION

The City of Richmond's vision for 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.

PRINCIPLES

Design clean, Keep using, Collaborate to co-create, Regenerate, Maximize value.

DIRECTIONS

Maximizing ecosystem services; Regenerative food systems; Resilient and innovative economy; Shared mobility; Adaptive built environment; Products and materials management.

GOALS

30 directional goals, outcome focused.

ACTIONS

84 actions that will set Richmond on a path to achieve 100% circularity.

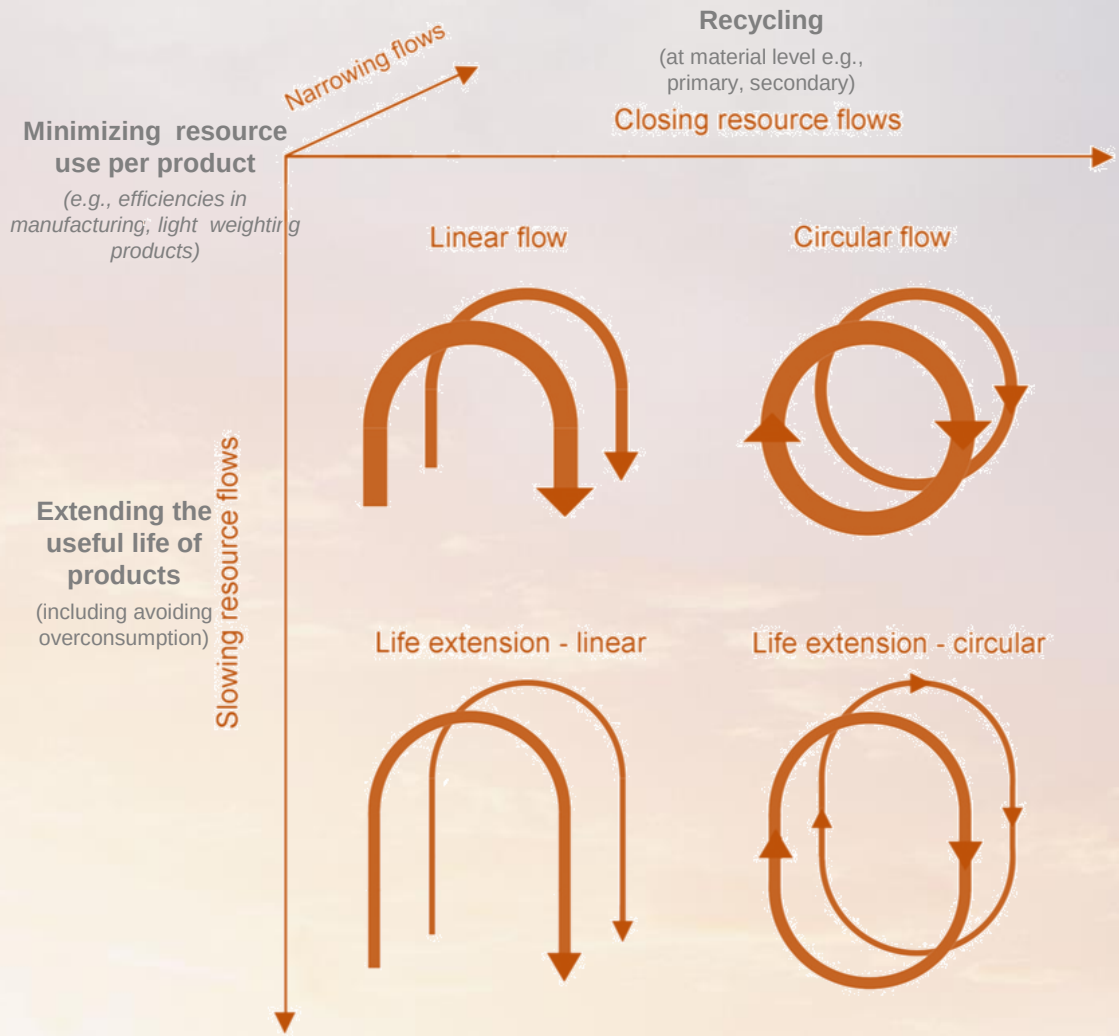
RESULTS

The Strategy makes room for other organizations to co-create, test and implement circular practices as partners with the City or within their respective context, fostering the transition towards a regenerative and circular city.

Richmond

NARROWING THE FLOW

Innovation strategy	Resource strategy: Narrowing Loops	Slowing Loops	Closing Loops
Open	**Value proposition:** Reduce waste and resources in design and production processes **Value creation & delivery:** Reduce cost and negative impact through new technologies and processes in collaboration with suppliers, customers and others **Value capture logic:** Save cost and resources	**Value proposition:** Reuse resources to broaden the offerings to the customer (e.g. vintage, second-hand) **Value creation & delivery:** Create value by connecting internal and external resource flows via generative models **Value capture logic:** Increase the number of transactions in an ecosystem via reuse of products	**Value proposition:** A circular offering which involves lower environmental footprint and resource burden **Value creation & delivery:** Combine resource flows from external ecosystem into customer offerings **Value capture logic:** Lower the cost of resources used in customer offerings, improve brand/corporate image
Closed	**Value proposition:** Reduce waste and resources in design and production processes **Value creation & delivery:** Reduce cost and negative impact through internal technology, process and design innovations **Value capture logic:** Save cost and resources	**Value proposition:** High quality products with high customer value **Value creation & delivery:** Long lasting design, repair services; Create more value from less resources **Value capture logic:** Charging of price premium through achieving quality leadership and customer loyalty	**Value proposition:** Connect with customers by using, recovering, and maintaining post-consumer materials **Value creation & delivery:** Increase customer retention and repurchases via take-back plans **Value capture logic:** Resource efficiency, improve brand and reputation, reduce cost for materials



Source: Bocken, N.M.P., de Pauw, I., van der Grinten, B., Bakker, C. 2016. Product design and business model strategies for a circular economy. J. Industrial & Production Engineering, 32 (1), 67-81.

Richmond

Circular Project Models

System level	Supplier level	Product level
• Product service system • Public Private Partnership • Cooperation with other organizations on sharing and reuse • Rent/lease • Supplier take-back systems including reuse, recycling, refurbishment and remanufacturing	• Supplier take-back system • Design to disassembly • Reparability of standard products • External reuse/ sale of products • Internal reuse of products	• Materials in the product can be identified • Products can be disassembled after use • Recyclable materials • Resource efficiency and Total Cost of Ownership • Recycled materials

(Source: SPP Regions Best Practice Report)

TOP 10 strategies to implement circular economy into your project activities

1 ONE BITE AT A TIME

Decide what impact and products and services you will focus on for the year. Whenever a new product or service is needed, think about how you will define 'circularity' for the focused sourcing you are purchasing.

2 CREATE A STRATEGY FOR SUCCESS

Develop metrics to evaluate progress towards circularity based on the City's vision, principles and sustainability drivers.

3 GET SMARTER ABOUT CIRCULARITY

Take part in and facilitate circular economy training and education (internally and externally) to increase departmental change management and capacity building.

4 TALK WITH YOUR SUPPLIERS AND VENDOR

Engage with various external vendors and stakeholders to determine market trends and readiness for circular procurement opportunities.

5 BREAK DOWN SILOS

Through internal and external collaboration, find solutions to challenges and barriers using an optimal supply chain to meet circular economy criteria.

6 CONTINUOUS IMPROVEMENT

Update procedures and guidelines to integrate circular tools and indicators after every procurement opportunity.

7 TALK WITH OTHER LEADING CITIES

Collaborate with peers from other leading local governments and stakeholders to identify promising circular examples and experiences. Support the 'co-creation' of circular products and services.

8 RETHINK OWNERSHIP OF THE PROCESS

Establish alternative sourcing opportunities and business models by identifying ways to replace linear products and services with circular alternatives.

9 TASK YOUR VENDOR

Engage vendors early to learn how they can support you to achieve success (pre-procurement engagement).

10 SPREAD THE WORD

Share your learning with internal and external peers through case studies, factsheets, videos, webinars, etc.

Richmond

ONE BITE AT A TIME

WHERE TO PLAY

The aim of this tool is to identify circular opportunities

There are three parts to this tool.

It considers the existing value in the department system, where value is lost and at risk, and opportunities to recover lost value and maximize existing values.
Two circular concepts will help you complete this step:

- the power of circularity – which describes how to create economic value through looping of resources and products
- a categorization of typical circular business models that put these looping approaches into practice.

Adapted from Circular Business Model Design Guide – Ellen MacArthur Foundation

A. Map existing value flow

Objective
Identify the existing flow of value within your system, what kind of value it is and how it is measured

Focus on

- What value do we provide?
- What part of the value chain do we manage?

B. Consider lost value and value at risk

Objective
Identify where value is lost within your system and what value is potentially at future risk

Focus on

- Where is this value being lost? Where are there broken or incomplete loops? Why is it not being captured?
- What future customer, supply or policy changes may put current value creation at risk?

C. Identify circular value opportunities

Objective

Based on the insights from A and B, identify ways of creating and/or closing loops to recover lost value, maximize existing value or conserve value at risk

Focus on

- What opportunities are there to recover or create new value? Could any of the typical circular business models help?
- Who benefits from this value?

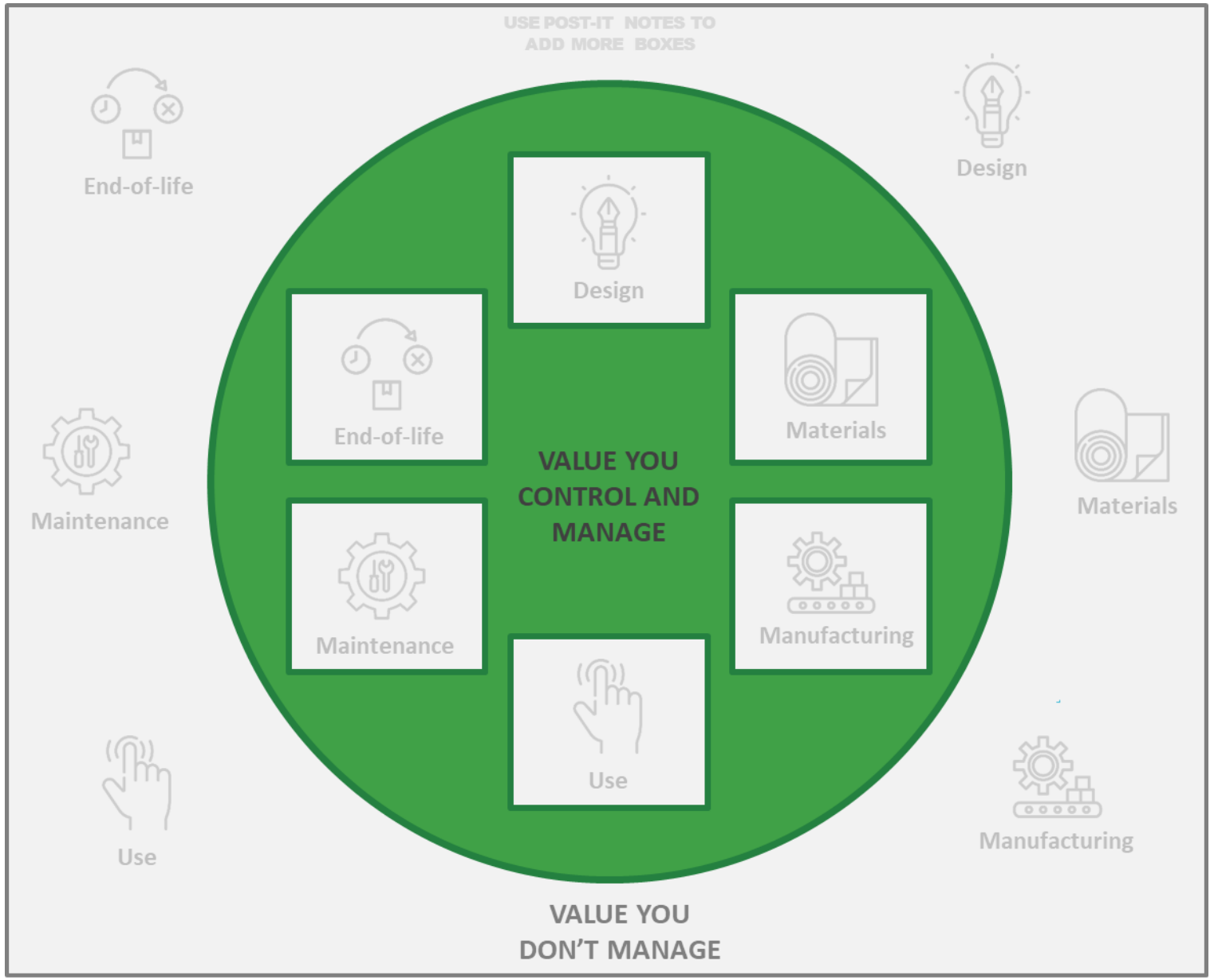
ONE BITE AT A TIME
WHERE TO PLAY

A. Map existing value flow

Objective: Identify the existing flow of value within your system.

- What value do I provide? What type of value?
- What part of the value chain do I manage?

Adapted from Circular Business Model Design Guide – Ellen MacArthur Foundation



ONE BITE AT A TIME

WHERE TO PLAY

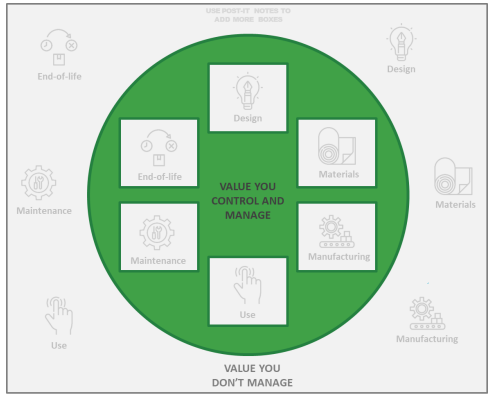
B. Consider lost value and value at risk

Objective: Identify where value is lost within your system and what value is potentially at future risk.

- Where is this value being lost? Where are there broken or incomplete loops? Why is it not being captured?

- What future customer, supply or policy changes may put current value creation at risk?

A.



Value that is lost or at risk:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

Adapted from Circular Business Model Design Guide – Ellen MacArthur Foundation

ONE BITE AT A TIME

WHERE TO PLAY

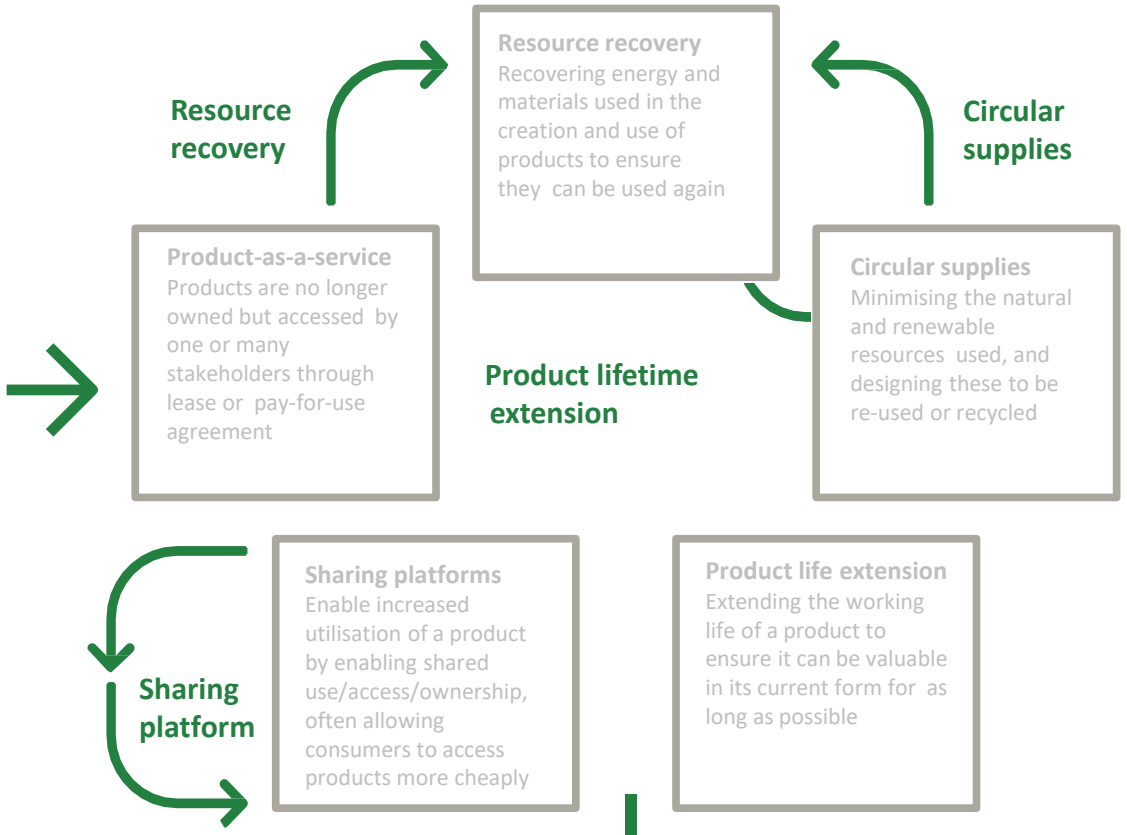
C. Identify circular value opportunities

Objective: Identify opportunities to create or close loops to recover lost value, maximise existing value or conserve value at risk.

- What opportunities are there to close loops? Where could you deploy typical circular business models?
- Who benefits from this value?

B.

Value that is lost or at risk:
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.



CAPTURE CIRCULAR IDEAS

Idea description:	Idea description:	Idea description:	Idea description:
Type of value generated & who benefits:	Type of value generated & who benefits:	Type of value generated & who benefits:	Type of value generated & who benefits:

Adapted from Circular Business Model Design Guide – Ellen MacArthur Foundation

ONE BITE AT A TIME

WHERE TO PLAY

THE SOUTH DIKE UPGRADE PROJECT

The South Dike Upgrade project improved the dike structure from No.3 Road to 400m west of No.4 Road.

Circular criteria involved a focus on reusing excavated materials, recycling raw materials and low-carbon transportation.

Criteria was selected in consultation with the project team and **based on the nature of the project**.

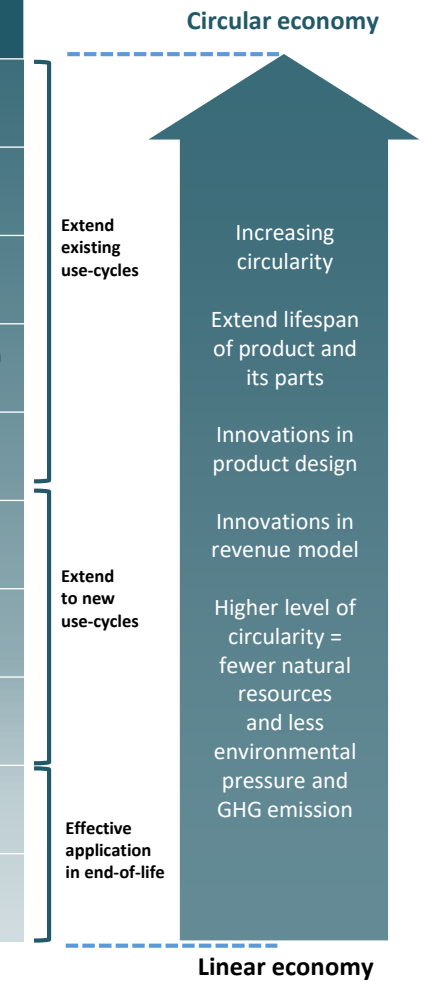
The expected impacts included a greater emphasis on keeping materials onsite and reusing them.

Key learnings from the project include the importance of clear communication and understanding of circular economy principles during the design process.

A wrap-up meeting with the contractor and engineer also provided valuable insights for improving the efficiency and effectiveness of future projects in achieving circular economy goals.

CREATE A STRATEGY FOR SUCCESS

CIRCULAR STRATEGIES		
Smarter product use & manufacture	**RO Refuse**	Make product redundant by abandoning its function or by offering the same function with a radically different product
	R1 Rethink	Make product use more intensive (e.g. by sharing product)
	R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials
Extend lifespan of product and its parts	**R3 Reuse**	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function
	R4 Repair	Repair and maintenance of defective product so it can be used with its original function
	R5 Refurbish	Restore an old product and bring it up to date
	R6 Remanufacture	Use parts of discarded product in a new product with the Same function
	R7 Repurpose	Use discarded product or its parts in a new product with a different function
Useful application of materials	**R8 Recycle**	Process materials to obtain the same (high grade) or lower (low grade) quality
	R9 Recover	Incineration of material with energy recovery



The 9R Framework. Source: Adapted from Potting et al. (2017, p.5) and pbl.nl

CREATE A STRATEGY FOR SUCCESS

REPLACE
Technology paradigm

RESTORE, REDUCE & AVOID IMPACTS		
Raw materials & sourcing	**Manufacturing & Logistic**	**Product use & operation**
Renewables	Lean manufacturing & cleaner production	Product longevity
Recyclable materials	Refurbishment or remanufacturing (pre-user)	Low consumables (energy, water, materials)
Secondary source sourcing	Recycle (pre-user)	Use idle product capacity
Restorative sourcing	Cascade (Industrial symbiosis)	
Non-toxic materials	Recover (energy and compost)	

Improve circularity potential and efficient

CIRCULAR STRATEGIES		
Smarter product use & manufacture	**RO Refuse**	Make product redundant by abandoning its function or by offering the same function with a radically different product
	R1 Rethink	Make product use more intensive (e.g. by sharing product)
	R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials
Extend lifespan of product and its parts	**R3 Reuse**	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function
	R4 Repair	Repair and maintenance of defective product so it can be used with its original function
	R5 Refurbish	Restore an old product and bring it up to date
	R6 Remanufacture	Use parts of discarded product in a new product with the Same function
	R7 Repurpose	Use discarded product or its parts in a new product with a different function
Useful application of materials	**R8 Recycle**	Process materials to obtain the same (high grade) or lower (low grade) quality
	R9 Recover	Incineration of material with energy recovery

Extend existing use-cycles

Extend to new use-cycles

Effective application in end-of-life

Circular economy

Increasing circularity

Extend lifespan of product and its parts

Innovations in product design

Innovations in revenue model

Higher level of circularity = fewer natural resources and less environmental pressure and GHG emission

Linear economy

The 9R Framework. Source: Adapted from Potting et al. (2017, p.5) and pbl.nl

CREATE A STRATEGY FOR SUCCESS

RETHINK
Circular business model and value delivery

Result and performance		Access and availability		Long life products				
Result and performance agreement	Activity management agreement	Sharing / pooling platforms	Temporary contract-based services	1st life	Lifetime products	2nd life	Buy-back schemes / agreements	Direct reuse

Function and value proposition to market

REPLACE
Technology paradigm

RESTORE, REDUCE & AVOID IMPACTS

Raw materials & sourcing	Manufacturing & Logistic	Product use & operation
Renewables	Lean manufacturing & cleaner production	Product longevity
Recyclable materials	Refurbishment or remanufacturing (pre-user)	Low consumables (energy, water, materials)
Secondary source sourcing	Recycle (pre-user)	Use idle product capacity
Restorative sourcing	Cascade (Industrial symbiosis)	
Non-toxic materials	Recover (energy and compost)	

Improve circularity potential and efficient

CIRCULAR STRATEGIES

Smarter product use & manufacture	**RO Refuse**	Make product redundant by abandoning its function or by offering the same function with a radically different product
	R1 Rethink	Make product use more intensive (e.g. by sharing product
	R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials
Extend lifespan of product and its parts	**R3 Reuse**	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function
	R4 Repair	Repair and maintenance of defective product so it can be used with its original function
	R5 Refurbish	Restore an old product and bring it up to date
	R6 Remanufacture	Use parts of discarded product in a new product with the Same function
	R7 Repurpose	Use discarded product or its parts in a new product with a different function
Useful application of materials	**R8 Recycle**	Process materials to obtain the same (high grade) or lower (low grade) quality
	R9 Recover	Incineration of material with energy recovery

Extend existing use-cycles

Extend to new use-cycles

Effective application in end-of-life

Circular economy

Increasing circularity

Extend lifespan of product and its parts

Innovations in product design

Innovations in revenue model

Higher level of circularity = fewer natural resources and less environmental pressure and GHG emission

Linear economy

The 9R Framework. Source: Adapted from Potting et al. (2017, p.5) and pbl.nl

CREATE A STRATEGY FOR SUCCESS

KING GEORGE PARK SYNTHETIC TURF REPLACEMENT

The project involved the removal, disposal, and recycling of materials from the existing infilled synthetic turf system, and the supply and installation of a new thermoplastic elastomer infilled synthetic turf and underlayment shock-pad system.

The artificial turf field at King George Park has exceeded its expected lifespan and now requires replacement to maintain minimum safety levels for operation.

AstroTurf West uses a fuel-efficient fleet from 2018 and employs new equipment and technologies to clean and reuse existing turf infill.

AstroTurf West recycled the existing artificial turf locally by partnering with Fernwood Recycling Ltd., in Victoria, BC.

The plastic-based turf fibers has be repurposed into composite fence posts for agricultural and landscaping applications.

CREATE A STRATEGY FOR SUCCESS

RETHINK
Circular business model and value delivery

Result and performance		Access and availability		Long life products				
Result and performance agreement	Activity management agreement	Sharing / pooling platforms	Temporary contract-based services	1st life	Lifetime products	2nd life	Buy-back schemes / agreements	Direct reuse

Function and value proposition to market

RESTORE, REDUCE & AVOID IMPACTS

REPLACE
Technology paradigm

Raw materials & sourcing	Manufacturing & Logistic	Product use & operation
Renewables	Lean manufacturing & cleaner production	Product longevity
Recyclable materials	Refurbishment or remanufacturing (pre-user)	Low consumables (energy, water, materials)
Secondary source sourcing	Recycle (pre-user)	Use idle product capacity
Restorative sourcing	Cascade (Industrial symbiosis)	
Non-toxic materials	Recover (energy and compost)	

Improve circularity potential and efficient

CIRCULAR STRATEGIES

Smarter product use & manufacture	**RO Refuse**	Make product redundant by abandoning its function or by offering the same function with a radically different product
	R1 Rethink	Make product use more intensive (e.g. by sharing product)
	R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials
Extend lifespan of product and its parts	**R3 Reuse**	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function
	R4 Repair	Repair and maintenance of defective product so it can be used with its original function
	R5 Refurbish	Restore an old product and bring it up to date
	R6 Remanufacture	Use parts of discarded product in a new product with the Same function
	R7 Repurpose	Use discarded product or its parts in a new product with a different function
Useful application of materials	**R8 Recycle**	Process materials to obtain the same (high grade) or lower (low grade) quality
	R9 Recover	Incineration of material with energy recovery

Extend existing use-cycles

Extend to new use-cycles

Effective application in end-of-life

Circular economy

Increasing circularity

Extend lifespan of product and its parts

Innovations in product design

Innovations in revenue model

Higher level of circularity = fewer natural resources and less environmental pressure and GHG emission

Linear economy

The 9R Framework. Source: Adapted from Potting et al. (2017, p.5) and pbl.nl

GET SMARTER ABOUT CIRCULARITY

CORI
CITY OF RICHMOND INTRANET

Search

Admin Site | my hub | **my dashboard** 1 | feedback

Quick Tools | Directories | City Resources | Human Resources | Financial Resources | Corporate Services | Sharing

Toolbox

What's New

Take Our Kids to Work 2023
EVENT FULL - Waitlist Only
2 hours ago

Mug Club
Mug Club - Register in advance by emailing OrgDev@Richmond.ca
1 day ago

Resilience at Work For Supervisors and Managers
Time is running out to register for this very popular workshop. Deadline to register is end of today., October 4, 2023: 8:30AM - 4:30PM
1 day ago

Cozy up with your fall favourites at the Time Out Cafe
Fall is here and with that comes pumpkin season

Organizational Development Success Story

Staff Heroes in the Community

This past summer, two staff members exemplified the City's values while acting compassionately and courageously to assist members of our community in times of need. Madhav Chhibbar demonstrated our values of Leadership and Team when he took charge of a medical situation to provide CPR to a patron of South Arm Community Centre and Dominic Tong from the Community Bylaws team demonstrated our values of People and Excellence to provide assistance and comfort at the scene of a significant car accident.

Madhav was working his regular shift at the front desk of South Arm Community Centre when two patrons came running from the facility's fitness centre to share that someone had collapsed. Madhav drew on his first responder training from school and jumped into action. He grabbed the centre's AED and, on his way to the fitness centre, called on a high school friend and fellow first responder for assistance. With the help of another staff member, the trio started CPR while 911 was called. Madhav noted that teamwork and a tight-knit staff culture helped the

Our Values

Our organization's values are PELTI:

- People
- Excellence
- Leadership
- Team
- Innovation

Learn more on the Org Dev website

Org Dev Challenge of the Week

"*Talent wins games, but teamwork and intelligence win championships.*" - Michael Jordan

Think about your current work projects. Identify one way that you can collaborate more to achieve excellent results.

Single Sign On

Profile & Services
Reset my Password

Applications

Calendar of Events - Event Management
Council Voting Record
Council Decisions Database
Council Referral System
Customer Relationship Management

TALK WITH SUPPLIERS & VENDORS

ARCHITECTS AND CONSTRUCTION MANAGERS SPARKS CIRCULAR IDEAS FOR COLLABORATION

Q: What ideas does your firm have and how should the City change its specifications to reflect a practical and value-added transition to a circular economy?"

The proponents were given time for internal discussions before providing their feedback and answers. This approach allowed the City to gauge the level of awareness, understanding, and market readiness for circular economy principles among the proponents.

The various responses showcased the proponents' ideas and suggestions for collaborating with the City to promote a circular economy.

A consultant shared valuable resources, such as research, tools, and insights on design for disassembly. As a result of this presentation, the architectural firm was connected with the staff to explore further collaboration and integration of circular economy principles into the City's projects.

BREAK DOWN SILOS

FURNITURE CIRCULAR MANAGEMENT: IMPLEMENTING CIRCULAR BUSINESS MODELS FOR SUSTAINABLE AND COST-EFFECTIVE OPERATIONS

PD implemented a circular business models to improve operations performance and reduce in the procurement and management of furniture.

The team utilized existing furniture in the inventory for most reconfigurations. While new materials were occasionally required due to project specifications or insufficient stock, the team also refurbished furniture items, such as chairs, filing cabinets, and panels.

The refurbished items proved to be significantly more cost-effective and required less lead time. For example, the average cost of a new upholstered chair was $602.20 with a 3-4 week lead time, while a refurbished chair cost $230.00 with only a 1-week lead time.

TOP 10 strategies to implement circular economy into your project activities

1 ONE BITE AT A TIME

Decide what impact and products and services you will focus on for the year. Whenever a new product or service is needed, think about how you will define 'circularity' for the focused sourcing you are purchasing.

2 CREATE A STRATEGY FOR SUCCESS

Develop metrics to evaluate progress towards circularity based on the City's vision, principles and sustainability drivers.

3 GET SMARTER ABOUT CIRCULARITY

Take part in and facilitate circular economy training and education (internally and externally) to increase departmental change management and capacity building.

4 TALK WITH YOUR SUPPLIERS AND VENDOR

Engage with various external vendors and stakeholders to determine market trends and readiness for circular procurement opportunities.

5 BREAK DOWN SILOS

Through internal and external collaboration, find solutions to challenges and barriers using an optimal supply chain to meet circular economy criteria.

6 CONTINUOUS IMPROVEMENT

Update procedures and guidelines to integrate circular tools and indicators after every procurement opportunity.

7 TALK WITH OTHER LEADING CITIES

Collaborate with peers from other leading local governments and stakeholders to identify promising circular examples and experiences. Support the 'co-creation' of circular products and services.

8 RETHINK OWNERSHIP OF THE PROCESS

Establish alternative sourcing opportunities and business models by identifying ways to replace linear products and services with circular alternatives.

9 TASK YOUR VENDOR

Engage vendors early to learn how they can support you to achieve success (pre-procurement engagement).

10 SPREAD THE WORD

Share your learning with internal and external peers through case studies, factsheets, videos, webinars, etc.

Richmond

circulareconomy@richmond.ca