



Stakeholder Engagement Plan Apeldoorn

Deliverable 2.1 and 3.1

Municipality of Apeldoorn



Version	1.0, this plan will be subject to revision and updating over the course of the project
WP	2 and 3
Dissemination level	Confidential
Deliverable lead	Municipality of Apeldoorn/ Wageningen Research/ Saxion University of Applied Science
Authors	Hellemans, A.H. Municipality of Apeldoorn – Demonstration Manager and Grant Consultant Aalbers, C.B.E.M., Wageningen Research
Reviewers	Roza, E. Municipality of Apeldoorn Lubberhuizen, S. Municipality of Apeldoorn Entrop, A.G. University of Saxion Lindelov, B., NRI Land, P. ICLEI
Abstract	This Stakeholder Engagement Plan is an action plan. It describes Apeldoorn's approach to participation and change of a linear to a circular policy process. It looks into the kind of influence stakeholders in the demonstration activities of Apeldoorn may have, based on behavioural science. It introduces two different Interactive Design Thinking (ID-Thinking) processes around circularity in Biowaste and Construction and Demolition Waste.
Keywords	Communication; stakeholders, circular economy, circular policy, Biowaste, Construction and Demolition Waste.
License	 <p>This work is licensed under a Creative Commons Attribution-No Derivatives 4.0 International License (CC BY-ND 4.0). See: https://creativecommons.org/licenses/by-nd/4.0/</p>

Contents

1. Executive Summary	3
2. Introduction	3
2.1. The Municipality of Apeldoorn and CityLoops	3
2.2. Civic Engagement in Apeldoorn	4
2.3. Stakeholder Engagement within the CityLoops project	6
3. CityLoops in Apeldoorn	7
3.1. What are we going to do?	6
3.2. CDW and BW, a short summary	8
3.2.1. CDW	8
3.2.2. BW	8
4. From a linear towards a circular policy process	9
5. Stakeholder Engagement in a circular economy	10
5.1. Why should we engage stakeholders in a circular economy?	10
5.2. Stakeholder engagement plan	12
5.3. Our approach	13
5.3.1. Step 1: what is our problem?	13
5.3.2. Step 2: level playing field and score	13
5.3.3. Step 3: Storyboard	15
5.3.4. Step 4: model of behaviour	16
5.3.5. Step 5: 'change graph'	18
5.3.6. Step 6: creation	19
Appendix: Stakeholders in the three project phases for CDW and BW	22
CDW	22
BW	25

1. Executive Summary

This is a stakeholder engagement plan for the City of Apeldoorn, supporting the implementation of the CityLoops activities in the biowaste (BW) and construction and demolition waste (CDW) stream. The goal of stakeholder engagement is to develop a process which inspires individuals, groups, businesses, institutions and others to improve their interaction and to cooperate effectively to accomplish goals. The stakeholder plan is our tool to organize stakeholder processes in the implementation of our main and sub-activities of the CityLoops project. The stakeholder plan and the stakeholder analysis we provide in this document will act as an informative platform to carry out stakeholder activities and achieve our goals. This plan represents an initial idea of how stakeholder engagement may work with the tools and demonstration actions in our city, but it is important to highlight that stakeholder engagement processes are reflexive and repetitive, and that the plan will be updated.

2. Introduction

The economy and society are changing at a high pace. The last several years we became more and more aware of the need to undertake action to mitigate climate change by becoming more sustainable and to work on the energy transition and the circular economy. We face complex problems in a very rapidly changing world. Our world can best be described as a VUCA world, which is highly Volatile, Uncertain, Complex and Ambiguous. We know we can do better and have to do better, but how and where to? Then, in March 2020 we faced the pandemic (COVID-19). Suddenly, we realised that this pandemic is not only threatening our health, it also has a major influence on our daily life and our economy. We live in a globalized world: we buy products from China, Brazil or the United States. Food does not come from next door, but the next continent. It is clear that the economy should not only be more circular, we have to close the loop and act locally to think globally, too. It also makes us realise that our local economy has more power and knowledge than we knew before.

These local economies will be crucial to succeed in the circular economy. We have to work in another way to succeed. And we are sure we can do this. However, we have to 'break through the circle'. The circle of habits and business as usual.

2.1. The Municipality of Apeldoorn and CityLoops

The Municipality of Apeldoorn is one of the larger cities in the Netherlands. It has 162.000+ citizens that live in 72.000+ households. It has a large urban area and rural area, with around

30% high-rise buildings. The total area is 342 km² and it comprises 12 villages. The municipality has many responsibilities, such as maintaining public roads and public space. Being aware of the challenges as described above, the city council of Apeldoorn decided to become more circular. That is why the Municipality of Apeldoorn wanted to be a partner in CityLoops. We are participating in both 'waste streams': construction and demolition waste and biowaste.

2.2. Civic Engagement in Apeldoorn

This first section of the stakeholder engagement plan is intended to give an overview of current stakeholder and citizen engagement methods that are applied in Apeldoorn. In order to be more engaged with what the citizens and communities want and need, the Municipality of Apeldoorn has adopted an organisation wide program, called Civic Engagement (Burgerparticipatie). In January 2019 we started a new program called 'kennen, vertrouwen, waarderen en samenwerken (<https://bit.ly/2VdaSxi>). "Knowing, trusting, appreciating and working together". This document explains the new participation approach in Apeldoorn and describes several participation tracks. It has three strategic pillars:

- 1) Participation for (groups of) people to influence Apeldoorn's policy and planning,
- 2) Involving citizens in Apeldoorn's policy and plans, and
- 3) Creating value and facilitating initiatives.

Each of these pillars have different levels of participation and different approaches. Sometimes it is ongoing, sometimes it is about one single issue. For some civil servants of Apeldoorn this way of working with stakeholders and citizens is new, for some it is business as usual. An important part of the program is setting up training for our colleagues.

A 'district-oriented approach' is one of the major approaches in Apeldoorn for involving citizens (pillar 2). The district-oriented approach [CPA] (<https://bit.ly/39UPeTL>) means that we work together with stakeholders and participants via area managers. These managers (city managers) keep in contact with the community, they pick up signals from the community and help them to understand the city's policies. Every area manager has the opportunity to keep in contact with the community in different ways. Area managers are allowed to experiment in their own area. Some, for example, will give the community more responsibility. The area managers facilitate rather than steer developments. Most citizens and organisations in Apeldoorn appreciate the presence of these area managers. They are key players in the neighbourhood. Issues will first be discussed with the area managers. If that does not help solving the issue locally, then the area manager will contact the municipality in order to try and solve the issue. The focus of area managers is to keep a 'nice ambiance' in their area. This district oriented approach works when it comes to practical and simple issues in the area and agenda setting for larger social development. Since May 2020 we introduced an initiative 'broker', which is part of the third pillar to facilitate initiatives and create value. Combined with this 'broker' there

is public funding from where citizens can receive money to develop local initiatives. The idea of this approach is to stimulate self-supported activities in the city. The initiative broker is appointed for the next 1,5 year. We spoke with the initiative broker to combine the activities of CityLoops into her program. She is enthusiastic to combine circular activities with self-supported activities.

2.3. Stakeholder Engagement within the CityLoops project

CityLoops is a new type of project for the City of Apeldoorn. Not only because of the European funding, but it is also the first project where we have to start with setting up a plan to execute a circular economy approach in construction/infrastructure and biowaste¹. Normally a plan will be made by policy makers, and project leaders (client) and engineers (contractor) will execute this plan. In CityLoops we will start with investigating which information we have about our material streams; quantity, quality, location, value, etc. After that first step, we will start with the 'design thinking approach' with all stakeholders (internal client, internal contractor, designers, maintenance, etc.) including external stakeholders. From the start and during the demonstration phase stakeholders will be engaged. This is more extensive than we have ever done before. In this stakeholder engagement plan, we will describe how and with which partners we will take on this exciting new challenge. We bring the approaches of CDW and BW together, the execution will be different for both waste streams.

The next chapter will give a short overview of the CityLoops project in Apeldoorn.

¹ 'Bio waste' doesn't cover the materials we collect. 'Organic waste' doesn't cover the total bio-waste stream in EU. So we combine these two: Biorganic Waste (BioW).

3. CityLoops in Apeldoorn

For both CDW and BW the main phases are the inception and demonstration phase. The actions, focus and output in these phases differ between the two streams (see table below). The 'timeline' is from top to bottom.

	CDW	BW
INCEPTION PHASE		
1. investigation of resources	Surface of road	Organic materials from public space
	Materials: quality/quantity (WP 4)	
	KPI's: social/ economic/ environmental	
	Historical overview materials	Mowing and pruning season
	Material passport	'Kind of material passport'
	Business case: stakeholders, material passport/ depot, the road	Business cases: not defined yet; 3-5
2. Design thinking/ mapping	Internal stakeholders undergo a trial and error exercise	Invite all kind of start-ups and businesses who might be interested in the demo phase, based on potential business cases and quality assessment done by WR
3. Output (milestone)	Optimal implementation plan, with:	
	<ol style="list-style-type: none"> 1. Demolition process 2. Quality of data 3. Quantity of data 4. Circular procurement approach (WP5) 5. Design thinking process 6. 3D visualisation 	<ol style="list-style-type: none"> 1. Quality assessment and business case development (3-5) 2. Valorisation decision making tool 3. Procurement guidelines (WP5) 4. Development of innovative sorting and treatment
	KPI: economic, social, environmental (WP6)	
DEMONSTRATION PHASE	<ul style="list-style-type: none"> • Start Circular procurement (WP 5) 	Start business cases
	<ul style="list-style-type: none"> • Selection stakeholders 	Deploy business cases
	<ul style="list-style-type: none"> • Doing design thinking process 	Procurement guidelines testing (best value route; WP5)

- | | | |
|--|-----------------------------|------------------------------|
| | • Start reconstruction road | |
| | | Monitoring/ evaluation (WP6) |

3.1. CDW and BW, a short summary

Complete description can be found in the Appendix.

3.1.1. CDW

Apeldoorn will develop innovative planning approaches and instruments to enhance the circular economy in the construction and demolition sector – aimed at incorporating the use of locally recycled CDW into the design and planning of new constructions.

Stakeholders: local residents, planning department of GA, maintenance department of GA, procurement department of GA, contractors and CleanTech region.

Output delivered:

- Reconstruction of at least 3,000 m² of public space
- Co-design process for public space redevelopment
- Manual for planning and decision making in building and construction processes
- Procurement guidelines for construction and demolition projects
- Construction materials passport system and materials databank

3.1.2. BW

The focus of activities in Apeldoorn is on optimising collection, reuse and added value applications of biomass from green public spaces (PS), with a series of 3 – 5 new business opportunities identified and exploited, with the Municipality of Apeldoorn as one of the launch customers. A BW valorisation decision tool will be developed, based on a detailed analysis of BW, and technical/economic valorisation options within the city, which will then be used to help launch a series of new business opportunities. At this moment, we are investigating what kind of organic materials we have in Apeldoorn and will build the business case from there.

Stakeholders: The key stakeholders to be involved in the planning, implementation and evaluation of the demonstration actions are start-ups and the following organisations: Circulus-Berkeel (waste management organisation), WR, RWS, Dutch Ministry Infrastructure and Water Management, Dutch Ministry of Agriculture, Nature and Food Quality, Environmental Service Agency OVIJ and ODRN, Province of Gelderland, and Waterschap Vallei and Veluwe (Water Authority). A network will be built between the City of Apeldoorn and above-mentioned organisations to help the project partners to establish and evaluate project actions and their

replication in other neighbourhoods and cities. Start-up businesses will be specifically engaged in the identification and exploitation of business opportunities as part of the project and will emerge from the Integral Design Thinking process.

Output delivered:

- 3-5 business opportunities executed during demonstration phase.
- OW valorisation decision tool
- Establishment of procurement guidelines for the municipality to act as launch customer
- Development of innovative sorting and treatment approaches for OW from PS

4. From a linear towards a circular policy process

In the municipality of Apeldoorn, the process of policy development and execution of this policy for spatial and urban planning has an linear bureaucratic outline and is not very stimulating if we want to challenge the market for smart and innovative circular solutions. We are starting to move towards a more circular approach for purchasing and procurement. For example, we experimented with Rapid Circular Contracting. With this type of contracting, we stopped designing the total process ourselves and demanded what we exactly needed. We formulate the ambition and tender the more or less rough idea/result/outcome, and design the final outcome/result together with market contractors. This Rapid Circular Contracting process changes the timeline and the exact outcome. Not working in a linear way, but co-designing the end-product/result. An important part of a (more) circular policy process is the involvement and engagement of stakeholders. There are different levels of participation and different roles for organisation to fulfil.

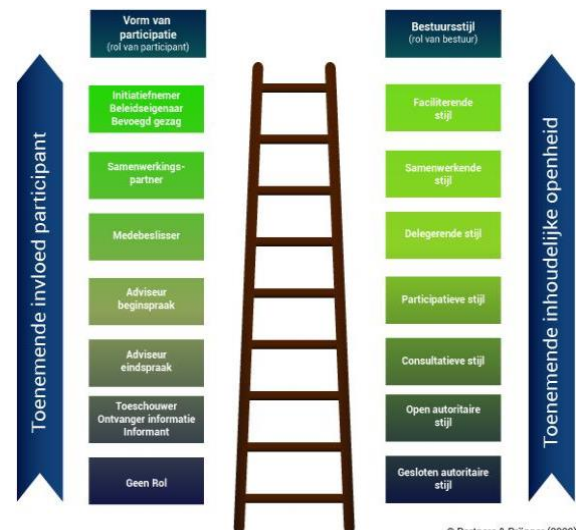


Figure 1: participation ladder of Pröpper, 2009

To understand this change, we have to consider that there are several roads to engage with the audience/ participants/ stakeholders. In the schedule which is shown (figure 1) you see 'the Ladder of Pröpper'. This ladder tells us on the left the type of engagement and on the right which kind of 'steering' is needed to be successful with this specific type of engagement. For example, if we will cooperate with our audience, we should be a cooperation partner. If we will facilitate, we should be a facilitator or an initiative manager. The organisation Circularities (K.Kurk, 2019) believes that the roll of the municipality in a circular economy will have to be different than before. They believe that municipalities can be a facilitator, 'purchaser', 'framer',

offer materials, initiator, financial or fiscal/legal supporter. If we compare this overview with the ladder of Pröpper, we have to change our roles as a municipality and as a civil servant if we want to employ and facilitate circular projects and opportunities.

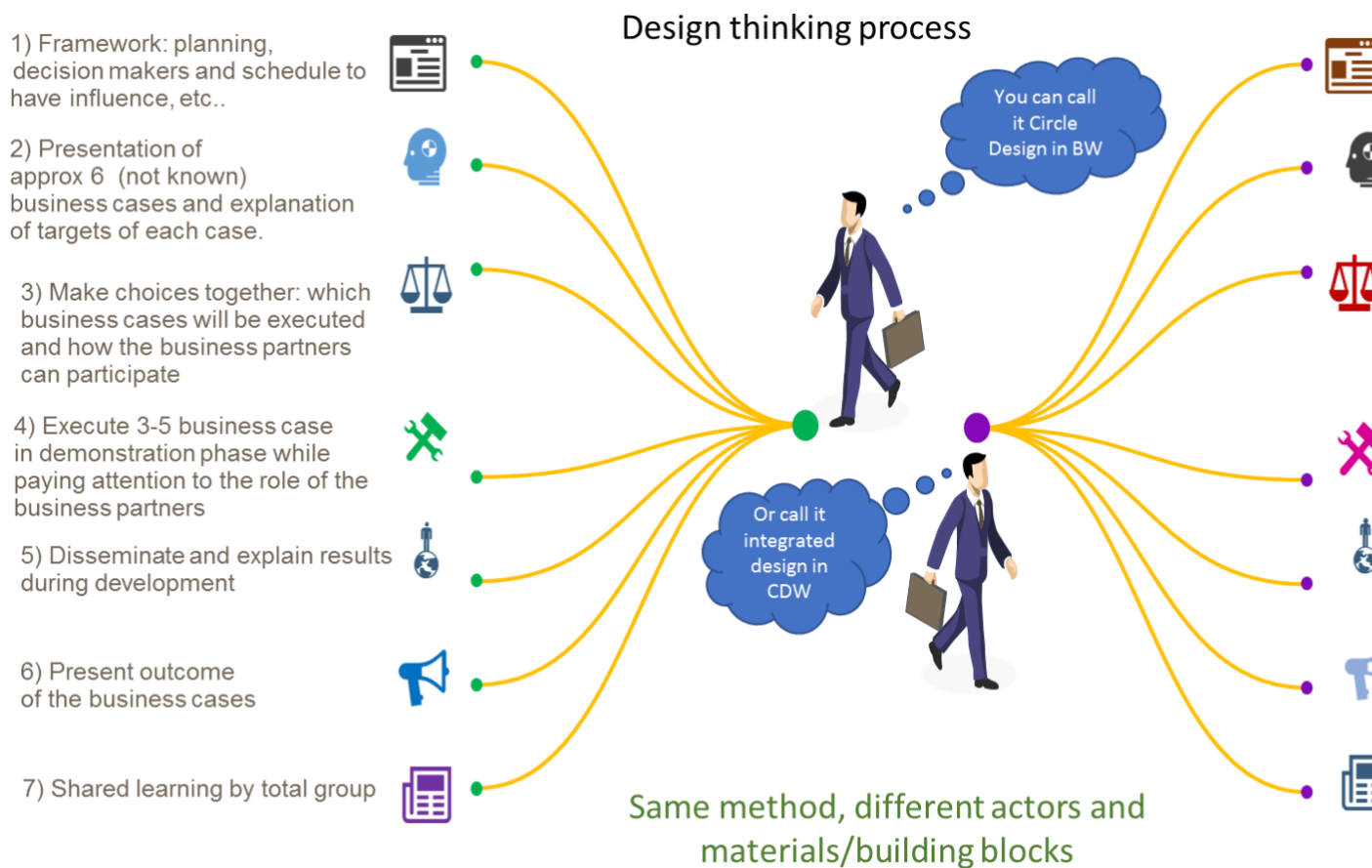
Conclusion: we do believe that we will have several roles during a circular project. We start as an initiator. We will facilitate and be a purchaser. We will finance some trials and maybe have to change fiscal and legal regulations in order to enable circular projects. We will have useful materials, so we can offer (interesting) materials. This means, if we want to be successful in the total circle, we have to cooperate. Not linear, but as a group. Like a piece of cake confronting the same challenge (see figure 3).



Figure 2: circular approach

5. Stakeholder Engagement in a circular economy

As described in the previous chapters, we are moving from a linear economy towards a (more) circular economy in a complex world that is changing rapidly and facing the problems of the 21st century. Our municipal organisation is still designed for a linear way of policy making, planning, procurement and decision making. People demand to get more involved and want to take over some tasks which we traditionally thought that belonged to the municipality. Apeldoorn is making some big steps towards engaging people, as mentioned in chapter 1. Not only our citizen stakeholders are new in this circular society, businesses are too. As mentioned earlier, local and regional small to medium enterprises are crucial in the circular economy and closing loops. As a municipality, we have different roles and can shift between those roles to stimulate and facilitate circular opportunities. The first step is being aware of this and to act accordingly depending on the phase and challenges encountered. We therefore made an action plan where a design approach and stakeholder engagement come together. This action plan is shown in the figure below:



The most important issue to understand is that the approach of our plan in bio waste and in construction and demolition waste are essentially the same: same methods, however different actors and materials.

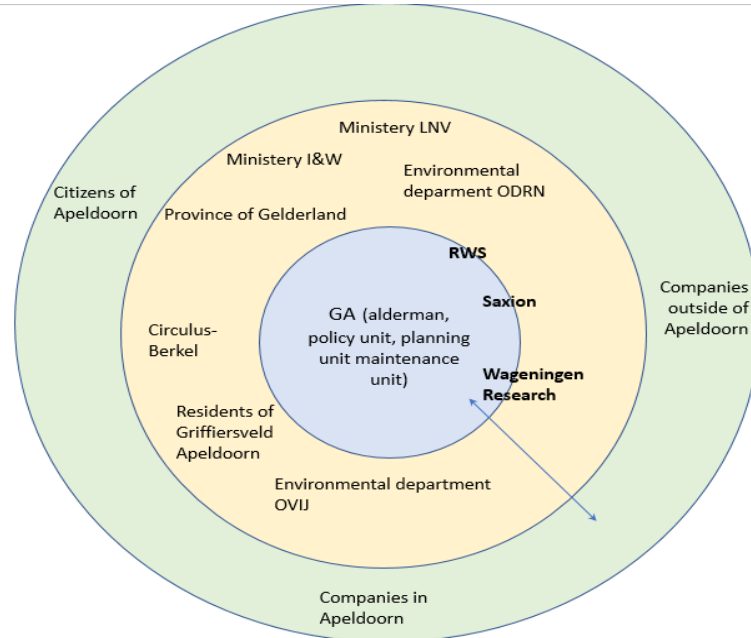
5.1. Stakeholder engagement plan

The circular economy depends on changing practices of citizens and companies. For Biowaste, our stakeholders will be business partners and maybe NGOs. For Construction and Demolition Waste the stakeholders will be inhabitants, internal stakeholders and probably one or two external business stakeholders (the contractor and communication manager).

This plan identifies, organizes, influences and involves stakeholders and gives them a position in the CityLoops project. We identified the stakeholders on the basis of existing external sector related contacts among authorities and companies, and our internal way of working, so both external and internal stakeholders will be included. Indicators like: processing capacity, influence in terms of regulations, public support, and internal procedures are relevant when selecting stakeholders, based on the approach of NRI gives us even a better overview of the stakeholders. For BW we identified the stakeholders we know we will need. For the development and employment of the business cases, we want to invite start-ups and companies who might be interested in the potential business cases we identify with Wageningen Research. Internal stakeholders are selected because of their role in the organisation and because they have the possibility to stimulate other people in the organisation to participate. External stakeholders are selected because we work already often with these organisations.

To get to know our stakeholders we will assess them according to the categories in the NRI proposal. To compare one to another, we looked into the current possibilities of different stakeholders to change and to engage in a circular approach in (and) around Apeldoorn.

During the inception phase we adopt a design thinking approach for BW. For CDW we do this as well, but during the demonstration phase. The starting point of design thinking approaches to invite all involved parties to participate in an open-ended solution development process that takes into account the current status quo and formulates functional goals, but does not prescribe how to achieve these goals. These design processes are setup differently for the different waste streams, because the desired output is different. For BW we need 3-5 start-ups or businesses who will undertake the business cases with us. In CDW this design process is more related to the level of participation and working together in a design.



In the following chapters we describe our approach. As mentioned, this approach is based on the tables and literature (provided by NRI and also of Duwtje – research and advisory office in behaviour changes).

5.2. Our approach

In the figure on page 9 we explain our approach in a design overview. We will explain in word what this means below.

5.2.1. Step 1: what is our problem?

Our problem is that CDW and BW are still part of a linear process. Resources are being exhausted worldwide, our loops from resources to waste are big, we still see waste as waste instead of valuable resource so we waste many valuable materials. Our main goals are: how do we get our organic waste stream more valuable in BW. For CDW is the question how do we make our infrastructure circular. We have to find solutions to upgrade the value of organic waste streams in BW and to increase the usability of the infrastructure; can we reuse these materials?

5.2.2. Step 2: level playing field and score

In this paragraph, we explain which characteristics we see in each stakeholder (see attachment for the complete stakeholder list). In the attachment, we score the stakeholders and participants for power, legitimacy, and resources. These 'rates' are aligned in a score-table. Based on these rates we can set up a strategy how we have to communicate with these persons/groups. For example: if an internal stakeholder doesn't want to change from a linear approach to a circular approach, while his influence is high and he is hard to change, then we have to set up a strategy how we still can change him into another way of working. Or, if an internal stakeholder has large influence, but the manager involved does not want to change, then we have to set up a strategy how we can make the manager be part of the new strategy.

Name of the organisation

- a. Name of the person in the organisation
- b. Function of the person in the organisation
- c. Internal or external
- d. Knowledge/ expertise of the person, ranked by high knowledge/ medium knowledge and small knowledge
- e. Decision making and the influence of the person in the organisation ranked by:
 - i. advisor/ coach. The person is an advisor. His/ her advice will mostly be followed up by the decision maker.
 - ii. User. The person is the user of the topic. His/her influence can be critical when the decision maker makes his/her decision.

- iii. Legal/ purchaser. The person has influence when it comes to legal issues or because of tender issues.
 - iv. Decision maker. The person who finally makes the decision.
- f. Behaviour is about what kind of behaviour we normally see when this person acts in projects. When we do know better what the behaviour of the person is, we can act and re-act on his/ her attitude. The following behaviours are identified:
 - i. The person adapts his attitude to a social norm (adjusting)
 - ii. The person is a role model to others (Informal influencer)
 - iii. The person is intrinsically motivated
 - iv. The person is extrinsically motivated
 - v. The person is unsure where and how to start
 - vi. The person 'feels' external pressure
 - vii. The person is sceptical
- g. Changeable. To get 'grip' on the situation and to use the energy in the right direction it is useful to know if the person (historically) is easy to change or hard to change. And if so, does it have any impact or not. So we identify the following changers:
 - i. Easy to change, less impact
 - ii. Easy to change, huge impact
 - iii. Hard to change, less impact
 - iv. Hard to change, huge impact
- h. Authority: Authority in terms of channelling messages to superiors and external bodies? 1 is rarely, 2 is sometimes, 3 is often.
- i. Authority in terms of structuring the participation in decision-making processes? 1 is rarely, 2 is sometimes, 3 is often.
- j. Actors' influence to other actors. 1 is rarely, 2 is sometimes, 3 is often.
- k. Actors' influence by other actors in terms of the scope of the project. 1 is rarely, 2 is sometimes and 3 is often.
- l. The following questions will be chosen, when the design process has been finished:
 - i. The person is positively or negatively affected
 - ii. The person has less, average, big concerns about the set up
 - iii. The person can help to address specific impacts
 - iv. Who will be able to be responsible?
 - v. Are additional actions needed to avoid the experience of disadvantage
 - vi. The behaviour of the stakeholder has been changed. Reason?

The list of stakeholders in the attachment is not completely yet. We have to categorize SMEs in more detail, like type of SME, names etc. We also have to identify who will be involved from the Cleantech region, Wageningen Research, Start-life, Start-Hub, Kiemt. Part of this group can be identified later. This is because we will set up an open invitation in the BW part. In the CDW part the stakeholders (participants/inhabitants) will be invited by mail, newsletter, etc. They can't be named right now (because of the General Data Protection Regulation).

Resources

We are aware of the importance of the issue of resources but presume that external partners will themselves assess whether they are able to play a role and want to attend. Therefore, we did not fill in these questions, that have been suggested by NRI in the stakeholder engagement plan template. We will give an answer on these single lines when the design process has been done (because the questions are interesting enough to combine them within the next stage).

	Weight	IS	ES	PI
Material and nonmaterial resources different actors possess or have control over: Knowledge, expertise, skills effectively address the issue/solve the problem?				
Material and nonmaterial resources different actors possess or have control over: arises from learned skills and experience and is expressed in the ability to solve practical problems				
Material and nonmaterial resources different actors possess or have control over: technology, effectively address the issue/solve the problem?				
Material and nonmaterial resources different actors possess or have control over economy effectively address the issue/solve the problem?				
Resources from information capability deriving from the control of the flow of information and influence over information content.				
Resources from communication and negotiating skills to grasp the crux of the issue and to communicate clearly and concisely, conveying a coherent message, persuading others and thereby asserting one's own interests.				
Ability and skills to utilise knowledge and experience in such a way that they generate new ideas, concepts and solutions and provide an innovative view of existing systems.				
What is the actor's interest in the issue/problem?				
What options exist to increase the actor's interest and engagement, or to dismantle obstacles?				
<i>Weighted score (Sum of weight·score)</i>				

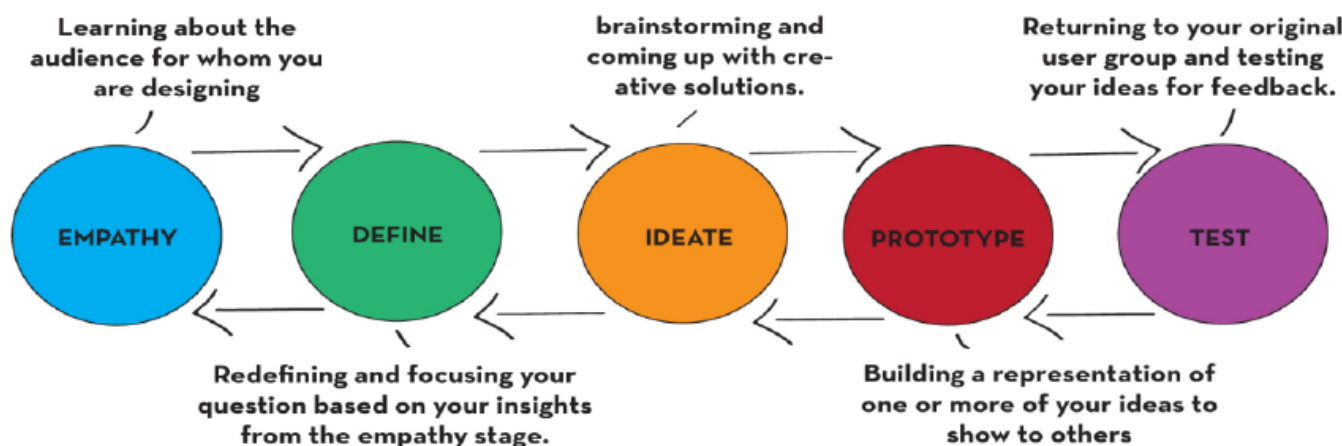


Figure 3: <http://financingcities.ifmr.co.in/blog/2014/07/17/a-design-thinking-approach-to-urban-infrastructure-planning/>

5.2.3. Step 3: Storyboard

Design thinking, circle design, research by design, planning by design are approaches where we use visualisation. A story board however, is a textual translation of words and explains what the outcome can be. For example: “if you say the outcome will be ‘a business case for a road’. You will have another imagination of this outcome than I will have. ‘Your imagination is like a paper’, but my imagination is a painting of the road’.



If we want to make clear what the outcome will be, we have explain the outcome or we will draw the outcome; the story board supports the common understanding.

In Biowaste: the storyboard will be developed during the selection process of 3-5 business cases. We will do this in advance with the consortium group and we will do this with the business partners who will develop the business case.

In CDW: the storyboard will be developed in the preparation phase Q4 2020 and during the design process with the stakeholders (inhabitants).

5.2.4. Step 4: model of behaviour

In the schedule below we ask ourselves questions about the regular behaviour of internal and external stakeholders. These questions are related to the behaviour of these stakeholders. An example to make it clear:

If the behaviour of a stakeholder in the past was negative in for example a 'development vision', but this stakeholder has huge influence in decision making, we have to consider (or notice) that if we want to motivate this stakeholder, we have to use other words or other visualisations, or other persons to motivate the development of this stakeholder. Perhaps it takes us more time to get this person in the direction to develop circular economy approach.

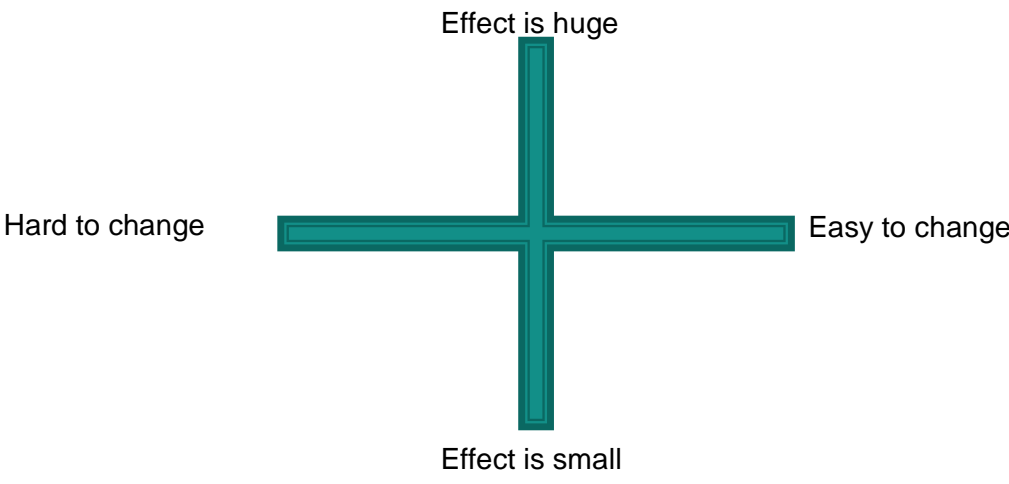
These questions will be answered for every stakeholder. In the overview below we will give a summary of all the stakeholders, separately for BW and for CDW.

Criteria (items)	--	-	+	++
1 Development vision: The stakeholder supports a constructive vision of development based on democracy and the balancing of interests.				
2 Operational effectiveness: The stakeholder works in a goal-oriented and results-driven way and periodically checks the extent to which goals have been achieved.				
3 Flexibility and innovation: The stakeholder is open to new ideas and adapts his/her/its organisation to new challenges.				
4 Contractual fidelity: The stakeholder keeps to agreements and fulfills the relevant requirements on schedule.				
5 Communication: The stakeholder keeps others informed of his/her/its activities, participates in the exchange of information and answers queries promptly				
6 Relationships: The stakeholder facilitates contacts, creates spaces in which encounters can occur and adapts his/her/ its actions to the capacity of his/her/its external partners.				
7 Management: The stakeholder acts on the basis of transparent guidelines and strategies, and clarifies roles and responsibilities in his/her/its organisation.				
8 Trust: The stakeholder informs others proactively about his/her/its intentions, objectives and expectations, and shows understanding for other interests.				
9 Conflicts: The stakeholder is quick to flag tensions and conflicts and is prepared to tackle them constructively, openly and quickly.				
10 Capitalising on experience: The stakeholder evaluates his/her/its experiences, is open to criticism and shows a willingness to learn and to change.				

11 Resistance: the stakeholder could be resistant to a business case.				
- -/+ Degree of agreement with the statement. Draw lines connecting assessment to get the profiles of different stakeholder				

5.2.5. Step 5: 'change graph'

Once stakeholders are defined, organised in groups, and assigned given 'points' in terms of development, operational effectiveness etc., we also have to consider that even if the stakeholder has a 'development vision', we have to be aware of her/his influence, difficulty to change or not and if he/she will change, what the effect of this change will or can be. We call this the change graph (Duwtje, sept 2019).



5.2.6. Step 6: creation session

A creation session is a session where you do know the steps (process), but you will not know the outcome. This process is based on 10 years' experience from Dienst Landelijk Gebied with the Schetsschuit (<https://edepot.wur.nl/193390>) and <https://dschool.stanford.edu/about>.

Schetsschuit is a Dutch word. It is a combination of 2 words; 'sketching' and 'boat'. The idea with this word is that you have to take the time to give your brain the opportunity to think out of the common box. Sketching is a process you do together, the boat is there because you need time to give your brain some time. It is an open and transparent process.

In CDW the process will be exactly like the Sketch boat.



Specific for Biowaste

In BW, the design process to develop and implement 3 – 5 business cases is based on the approach of Stanford. During the design session, stakeholders will follow these steps to develop a business case. After the session, the selection of business cases will take place. The goal is to generate ideas in an open-ended design process and to then narrow it down based on criteria detailed in step 2

1. Bring in your idea, try to empathy your story. This will result an overview of ideas

EMPATHY MAP
Identifying stakeholder behaviour

Project name: Stakeholder: Day: Month: Year:

Designed for: Designed by: Version:

THINK & FEEL?
what does (s)he
What really counts
Major preoccupations
Worries & aspirations

HEAR?
what does (s)he
What friends say
What the boss says
What influencers say

SEE?
what does (s)he
Environment
Friends
What the market offers

SAY & DO?
what does (s)he
Attitude in public
Appearance
Behaviour towards others

PAINS
fears
frustrations
obstacles

GAINS
"wants"/needs
measures of success
obstacles

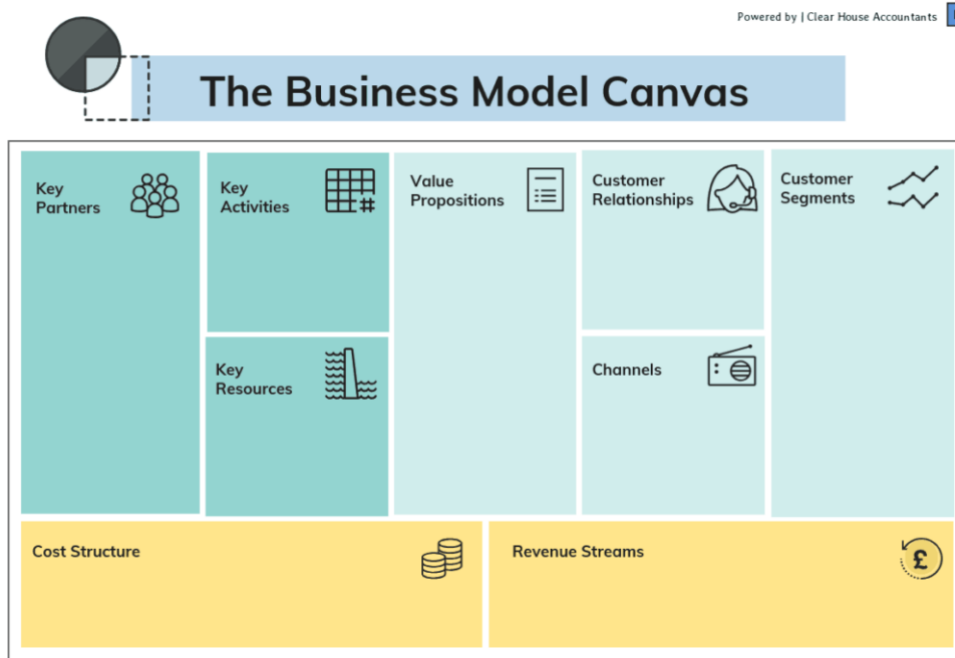
Designed by
EVENT DESIGN collective
2018 EVENT DESIGN COLLECTIVE GMBH

EVENT DESIGN USING THE EVENT CANVAS™ METHODOLOGY
www.eventcanvas.org

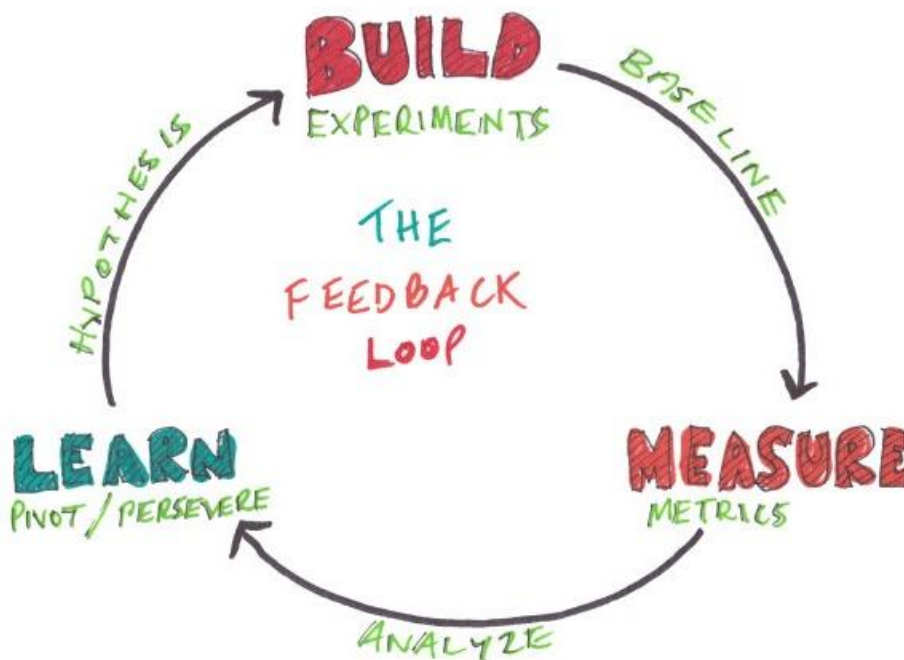
version 20180621
Source: adapted from XPLANE

2. Determine a selection based on conditions which are for everyone equal. Like:
Among the criteria for selection of emerging business cases will be (at this moment):
 - A. Technical Readiness Level ([Technical Readiness Level](#))
 - B. Societal Readiness Level (https://innovationsfonden.dk/sites/default/files/2018-08/societal_readiness_levels_-_srl.pdf)
 - C. Feasibility of business
 - D. Scalability
 - E. Scale of potential business case (local, regional, national)
 - F. Market value, societal, value for public greenspace, value for greenspace

- The best idea gets 'one step further'. Participants of the session execute the ideas into business model canvas (see figure)



- Make an idea of a Minimal Valuable Product (like LEAN Start-up process: Build, measure and learn)



OUR POINT OF VIEW
We believe everyone has the capacity to be creative.

After this session we will select, based on the criteria in step 2, which organisation will be a partner in the demonstration phase.

Appendix: Stakeholders in the three project phases for CDW and BW

CDW

Apeldoorn will develop innovative planning approaches and instruments to enhance the circular economy in the construction and demolition sector – aimed at incorporating the use of locally recycled CDW into the design and planning of new constructions, and promoting

----- Inception and preparation phase (M1-18) -----

Co-design process for public space redevelopment – a detailed participatory planning process will be developed, for involving the residents of the demonstration area. This process will incorporate the 3D visualisation tool (see below), and will be applied in the development a detailed renovation plan for the demonstration area.

Stakeholders: Saxion University (SAX), residents of the demonstration area, The following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Architecture, Planning department of GA, contractor.

Guidelines for planning and decision making – a set of generic guidelines for incorporating circularity systemically in planning and decision making processes for construction and demolition projects, including major renovation projects.

Stakeholders: SAX,, The following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Architecture, Planning department of GA, contractor.

Business case development - a series of business cases will be developed for potential valorization pathways focused on promoting reuse, recycling and valorization of CDW and soil. In Apeldoorn, these will focus on asphalt and concrete (both highly polluting).

Stakeholders: SAX, The following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Planning department of GA, contractor.

Construction/demolition project procurement guidelines - a set of guidelines/recommendations for the procurement of construction and demolition works within the specific demonstration projects. In preparation for this Apeldoorn will organize a regional workshop with stakeholders and key actors in collaboration with RWS.

Stakeholders: SAX, the following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Planning department of GA, contractor and Rijkswaterstaat.

Construction material passport and CDW materials databank - The three step circularity approach for CDW described above will be underpinned by the development of a construction material passport system and VDW materials databank. This will include the development of the following instruments:

- A classification system for CDW in the waste hierarchy will be designed, covering both quality and environmental impact, together with a screening procedure to assess the quality of the materials
- A digital databank will be established, where data designed to enable CDW material reuse will be stored in the form of a “construction material passport”. This will collect information on the nature, volume, quantity and location of construction material, together with information on environmental performance. This will draw heavily on existing pilot experiences (such as the H2020 project BAMB, and ongoing work by RWS in the Netherlands). All passports for materials used in the demonstration action will be stored in this bank, as well as any other construction projects started in Apeldoorn during the demonstration phase.
- It will be explored whether the establishment of a construction materials market place is also feasible.

Stakeholders: SAX, The following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Planning department and contractor.

Screening procedures and tool for selective demolition – Procedures, screening and assessment tools will be developed to identify CDW for recycling and qualification, substituting primary resources. This tool will be tested during demonstration phase, resulting in a tested tool which identifies materials qualified to substitute a primary resource.

Stakeholders: SAX, The following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Planning department and contractor.

----- **Demonstration phase (M18-44)** -----

In the next few years Apeldoorn plans to renovate several neighbourhoods build in the period 1965-1985. Public spaces and roads in these neighbourhoods consist of typical materials, notably concrete and asphalt that have a high circular potential. In CityLoops, a road with a surface area of at least 3.000 m² in one of these neighbourhoods, together with all the public space around it that needs to be renovated, will serve as the CDW-demonstration project. This public space typically consists of a road made of asphalt or concrete, a pedestrian area made of concrete materials and green spaces with street furniture, like benches. All materials in the public space are within the scope of the demonstration project, including street lighting. The renovation will take place according to a plan developed in phase 1 in cooperation with the residents, in which public space (roads, benches, green spaces, parking options, etc.) will be designed. The three-step circularity process for CDW will be applied during the

renovation, applying the screening and material classification procedure, the raw materials passport, and the digital databank.

Stakeholders: SAX, The following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Planning department and contractor.

----- Replication phase (M36-48) -----

Following successful demonstration, and revision of procedures and tools as appropriate, the goal is to establish the three-step CDW circularity approach as standard procedure in Apeldoorn as a part of the environmental code which is being developed. The co-design participatory planning process, together with 3D visualisation tool, if proven successful, will then also be applied as standard in other similar projects across the city and also be part of the environmental code.

Stakeholders: SAX, The following departments of Apeldoorn: Circular Economy, Engineer office, Maintain & Maintenance, Planning department and contractor and municipality of Ede (and their departments)

Stakeholders: local residents, Circulus Berkel (waste management organisation), Omgevingsdienst Veluwe Overijssel (environmental service agency), CleanTech region, (Stadswerk, Waterschap Vallei en.

Output delivered:

- Renovation of at least 3,000 m2 of public space using the developed (participatory) planning approaches and tools (3D modelling, construction material passport), the screening procedures and tool for selective demolition, and the manual with recommended planning and decision-making framework for construction projects
- Co-design process for public space redevelopment
- Manual for planning and decision making in building and construction processes
- Procurement guidelines for construction and demolition projects
- Construction materials passport system and materials databank

BW

The focus of activities in Apeldoorn is on optimising collection, reuse and added value applications of biomass from green public spaces (PS), with a series of new business opportunities identified and exploited, with the Municipality of Apeldoorn as one of the launch customers. An BioW valorisation decision tool will be developed, based on a detailed analysis of BioW, and technical/economic valorisation options within the city, which will then be used to help launch a series of new business opportunities.

----- Inception and preparation phase (M1-18) -----

Business case development and BW quality assessment) – Business cases for reuse, recycling and valorisation of BW from the demonstration sites will be developed. This will include an analysis of the volume, quality and treatment options of BW in PS (garden and green waste), together with an assessment of technical valorisation options (based on theoretical availability and lab research), and an analysis of economic regional market opportunities. This will include an analysis of legal and other non-economic barriers/opportunities to valorisation. Apeldoorn will particularly examine 1) composting, 2) biogas production, 3) co-firing, 4) fibre for paper, composites and building materials, for chemical composition as well as functional properties, and will be complemented by analyses aimed at the components specific for organic waste (e.g. bacterial contaminations, sand, protein). This analysis will build on existing knowledge at WR and affiliated companies/industry on the demands of the consumers or industrial users of the potential products, incl. the StartLife incubator and accelerator of WR for Apeldoorn.

One of the business cases will be Bokashi made from fallen tree leaves. Making Bokashi and reapplying it in public is not allowed by law. In order to set up a good pilot in the demonstration phase, we need to get an exemption from the Province of Gelderland and their Environmental Service Department ODRN. We will work together with the Municipality of Rotterdam, since they have a similar pilot. WR will be our research institute. One of the objectives is to change national law, therefore we are in conversation with RWS, the Dutch Ministry Infrastructure and Water Management and the Dutch Ministry of Agriculture, Nature and Food Quality.

WR is making a list of potential business opportunities. During the Integral Design Thinking process, potential businesses and start-ups will be invited that might be interested.

Stakeholders: WR, RWS, Dutch Ministry Infrastructure and Water Management, Dutch Ministry of Agriculture, Nature and Food Quality, Province of Gelderland, Environmental Service Agencies OVIJ and ODRN, maintenance department GA, Municipality of Rotterdam and other stakeholders and potential businesses from the Integral Design Thinking process.

BW valorisation decision tool – Based on the analysis above, a tool will be developed for waste management companies and start-ups to assess potential valorisation options for different BW components. The quality (organic matter content, impurities and pollutants, morphological and chemical characteristics) of the organic waste collected will be inputted into

the tool, which will then link the source with the optimal business opportunity for value added products. The tool will be used during Phase 1 to select the 3-5 most promising cases to be demonstrated in Phase 2, together with the parties potentially able to exploit these opportunities. Where necessary, adjustments to local policies and legislation will be made to make these businesses possible.

Stakeholders: WR and maintenance department GA

Procurement guidelines - a set of guidelines/recommendations for how the municipality can act as launch customer for the new products to be developed in the demonstration activities, to be directly reused in public space, building on the outcomes of the circular procurement assessment.

Stakeholders: WR, RWS, procurement department GA, maintenance department of GA.

Development of innovative sorting and treatment approaches for BW from PS – Prior to the demonstration actions, sorting and treatment approaches and techniques will be tested and developed at a smaller (lab) scale, to show the potential of the BW to interested businesses that are currently using biomass from other sources. The produced intermediates from BW will be used to secure the involvement of business partners in Phase 2.

Stakeholders: WR, maintenance department of GA, potential businesses from the Integral Design Thinking process

----- **Demonstration phase (M18-44)** -----

Based on the business opportunities identified in phase 1, 3-5 business opportunities will be executed during demonstration phase. Apeldoorn municipality will serve as a launching customer for these businesses. Possible high-quality application techniques might include, but are not limited to: increasing the value for bioenergy production by selectively removing components and/or drying; optimising the nutrient and protein availability by mechanical or biological pretreatment; tailoring the fibre properties by (semi-) mechanical treatments for use in animal bedding, cat litter, paper, composites and building materials and; PHA (Polyhydroxyalkanoates) may be accumulated from leaching liquid and then transported to a central purification facility. Innovative sorting and treatment approaches, and final product optimisation processes will be demonstrated, in collaboration with interested local and regional companies.

Stakeholders: WR, maintenance department of GA, businesses that have emerged in phase 1.

----- Replication phase (M36-48) -----

GA will embed the result of the demonstration actions, together with a local partner Circulus-Berkel, by establishing an expert centre. This expert centre will be a place where government, entrepreneurs and knowledge institutes can exchange their experiences and possibilities of new business. In addition, a series of workshops and roadshows will be undertaken throughout the region to demonstrate the OW valorisation tool together with the procurement guidelines, and the specific new sorting and treatment techniques developed.

Stakeholders: The key stakeholders to be involved in the planning, implementation and evaluation of the demonstration actions are start-ups and the following organisations: Circulus-Berkel (waste management organisation), WR, RWS, RWS, Dutch Ministry Infrastructure and Water Management, Dutch Ministry of Agriculture, Nature and Food Quality, Environmental Service Agency OVIJ and ODRN, Province of Gelderland, and Waterschap Vallei and Veluwe (Water Authority). A network will be built between the City of Apeldoorn and above-mentioned organisations to help the project partners to establish and evaluate project actions and their replication in other neighbourhoods and cities. Start-up businesses will be specifically engaged in the identification and exploitation of business opportunities as part of the project and will emerge from the Integral Design Thinking process.

Outcome delivered:

- 3-5 business opportunities executed during demonstration phase.
- OW valorisation decision tool
- Establishment of procurement guidelines for the municipality to act as launch customer
- Development of innovative sorting and treatment approaches for OW from PS



CityLoops is an EU-funded project focusing on construction and demolition waste (CDW), including soil, and organic waste (OW), where seven European cities are piloting solutions to be more circular.

Høje-Taastrup and Roskilde (Denmark), Mikkeli (Finland), Apeldoorn (the Netherlands), Bodø (Norway), Porto (Portugal) and Seville (Spain) are the seven cities implementing a series of demonstration actions on CDW and OW, and developing and testing over 30 new tools and processes.

Alongside these, a sector-wide circularity assessment and an urban circularity assessment are to be carried out in each of the cities. The former, to optimise the demonstration activities, whereas the latter to enable cities to effectively integrate circularity into planning and decision making. Another two key aspect of CityLoops are stakeholder engagement and circular procurement.

CityLoops runs from October 2019 until September 2023.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 821033.

Disclaimer: The sole responsibility for any error or omissions lies with the editor. The content does not necessarily reflect the opinion of the European Commission. The European Commission is also not responsible for any use that may be made of the information contained herein.