

**OPEN**  
GLASGOW

# THE FUTURE OF WASTE AND ROAD REPAIRS

A future vision for Glasgow

## INTRODUCING SNOOK

Snook are an award winning Design and Social Innovation agency based in Glasgow, Scotland. Snook are ambitiously challenging the way governments and companies do business, re-designing the everyday products and services that make up our daily lives by rethinking them from a user-centric perspective.

Snook use design methods to visualise and test experiences before costly implementation and ensure the people who use and deliver the service are at the heart of this development process.

Snook has an array of past and present clients including The Scottish Government, Stirling Council, Architecture and Design Scotland, SYNC, STV, Glasgow City Council, Technology Strategy Board, Design Council, Mozilla, Edinburgh Council.

Snook's services extend beyond traditional Service and Product Development, and the company have experience of embedding design thinking inside public bodies in the format of a Lab environment to create in-house design and innovation capability.

These labs take the essence of Design thinking, the process of creative problem solving and realising new ideas to develop start up capabilities amongst employees and opportunities to rethink and re-design how services are delivered with and to the public to save money and improve customer satisfaction.

This process continues to a further stage of venture development in collaboration with local authorities and public bodies to design and further scale up new services that cover unmet needs or deliver existing services in a smarter way.

Snook's biggest successes includes building and launching the UK's first online feedback platform for the police, MyPolice, in Tayside. Other ventures include The Matter, a service to give young people a voice by giving young people the skills and know how to research, design and publish their own newspaper.



[wearesnook.com](http://wearesnook.com)

## FUTURE CITY GLASGOW

This paper has been produced as part of the Future City funding worth £24 million from the Technology Strategy Board awarded to Glasgow City.

Future City | Glasgow is an ambitious £24million programme which will demonstrate how technology can make life in the city smarter, safer and more sustainable. Glasgow was awarded this funding by the Technology Strategy Board (TSB) – the UK Government's innovation agency, against stiff competition from other locations.

The city has embarked on a trail-blazing programme that will put residents at the forefront of technology integration and application. Analysis of data collected during the demonstrator will assist policymakers and inform future investment.

The Glasgow Future Cities Demonstrator will illustrate at scale, and in use, the additional value that can be created by next-generation integration of city systems. It will embed a legacy for progress into the economy of the city maximising; existing partnerships, investments and opportunities and accelerate delivery towards addressing Glasgow's challenges – notably in health, energy, transport, sustainability and public safety. Issues that are common and relevant to the majority of other large urban areas which will benefit from the lessons learned.

The demonstrator project is running over 18 months and the presentation of concepts within this paper have been developed from December 2013 to April 2014 wholly informed by listening to citizens and service providers from communities across Glasgow.

The concepts presented within this paper take into consideration the various strands that make up the Future City Glasgow demonstrator project. These include:

### *OPEN Glasgow*

OPEN Glasgow is encouraging citizens to explore and rediscover their city through the vast amounts of information it generates every day. It's a gateway that opens up a wide range of datasets relating to Glasgow, making them quickly and easily accessible. It's a freely adaptable resource designed to assist anyone curious about how the city really works – and inspire ways to improve it.

### *My Glasgow App*

My Glasgow App is a mobile app that focuses on allowing citizens to report issues to Glasgow City Council and discover information. The concepts look at how they could enhance the design of this product and links with Glasgow City Council customer care department.

### *Linked Data Site*

A visual comparison site showing data related to Glasgow statistics within health, crime and education.

### *City Dashboard*

A dashboard of widgets customising city data into useful applications and digestible data for citizens.

**@openglasgow**  
**[open.glasgow.gov.uk](http://open.glasgow.gov.uk)**

# DESIGNING A FUTURE CITY

## INVESTIGATING ROADS AND WASTE

Snook were invited to be part of the Glasgow Future City initiative to identify citizen and service provider needs to consider the near and future service potential for road repair and waste management.

This report seeks to challenge the way in which the council work with citizens in Glasgow. From the outset, this work had no requirement for the proposed designs to fit with existing practices and Snook would recommend this would be the next stage of this work to consider the business case and how these citizen facing solutions could integrate with the backstage business processes and existing systems of Glasgow City Council.

By working closely with communities and citizens in Glasgow we have outlined the needs of citizens from the council and taken these insights into proposed designs.

Our overall focus aligns with the Customer Care Strategy and our concepts strive to:

1. Make it easier for customers to contact the council if there is an issue
2. Reduce contact with the council by providing alternative community services or support
3. Ensure the customers' experience is a good one

Our focus was split between two services with an overarching consideration for citizen to council contact. We laid 70% of our focus on Waste services and 30% on Road Repairs.

### What do we mean by bin collection?

Bin collection as a service has many other facets that include, bin collection calendar requests, missed bin registration, changing of schedules, multiple bin colours etc.

#### - Refuse Collection

On a daily basis there are hundreds of requests for collection schedules and missed bin pickups from the general public to the council. The internal process for handling these requests spans multiple departments and internal systems.

#### - Bulk Uplift

The Councils Land and Environmental Services (LES) provides a special uplift service for bulky items of domestic waste. This service is provided to all households in Glasgow and is free of charge for most items, however some types of materials are chargeable, or for health and safety reasons cannot be uplifted. The service typically covers disposal of those larger items that would not normally be covered by the usual refuse

collection services and is chargeable for commercial use. Requests can be made by phone or via an online form, with pickups provided at an allotted time.

#### - Littering

Littering is an issue that is recognised as a potential blight for neighbourhoods and can make it unsafe for children to play in their local-park or public spaces. Through the Public Health Group and the Clean Glasgow Campaign, the council looks to respond to littering complaints and clean up offending items.

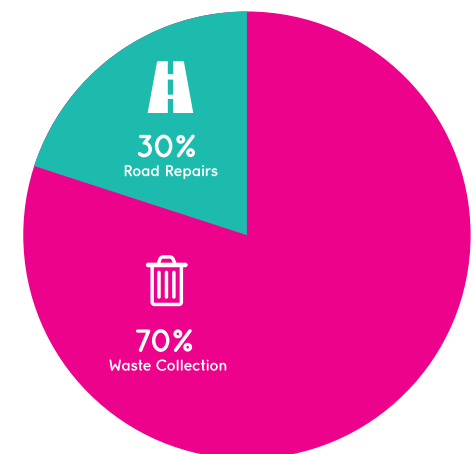
### What do we mean by Road Repairs?

The road repairs service has many facets including, roadways, lighting faults, footways and potholes etc.

The condition of road surfaces can have significant impacts on the traffic flow through the city as well as the experience of driving for the motorists of Glasgow. Street lighting and footpath problems can have a quality of life impact for pedestrians and for communities in general. The service aims to quickly identify and rectify problems where possible in order to avoid bigger problems downstream.

RALF (Roads and lighting faults) covers a wide range of city touchpoints. These include:

- Roads
- Pavements
- Street lighting
- Cycleways
- Traffic signals
- Pedestrian crossings
- Road drains and gullies
- Bridges
- Railings and safety barriers
- Road signs
- Street furniture
- Road markings
- Manhole covers



#### LOOK OUT FOR CALL OUTS IN THIS REPORT



We've linked to a variety of initiatives that are already happening across the Globe and technology in existence or development that could be implemented to make the design proposals in this report a reality.



# SERVICE DESIGN IN THE CITY

## WHAT FUTURE STORY WOULD YOU TELL ABOUT COUNCIL SERVICES?

Every time I jump in a Glasgow taxi I'm asked the inevitable question, 'So hen, what do you do?'

"Well, you see, I'm a Service Designer."

"What's that? You build websites?"

"Er, sort of"

Sometimes it's tough to explain what Service Design is in quick taxi ride without showing tangible examples. From re-designing Care Information Scotland's total service to rethinking how we digitally accredit young people's soft skills in the education sector.

Service Design is different to process mapping, web design, business development, product design because it encompasses all of these. Service Design is an umbrella of multiple disciplines coming together to rethink how processes work for people, putting people at the heart of services to provide them with experiences that work for them.

Services are all around us and these experiences can't simply be bottled up. They are made up of a series of touch points, elements of an experience delivered to us, by an organisation. This might be a ticket machine, a phone line, a website, a branded poster. As 'customers' we experience all these touch points over time, into what becomes our user journey to undertake some kind of transaction. Banks, Fast food outlets, Shopping Centres, Hospitals, everything around us is designed to some degree. These can all be quite complicated processes. Bring in the process of Service Design and we can break down complex systems into understandable chunks that put people, both who consume and deliver services at the heart of these processes. Essentially, the question we are asking as the role of a Service Designer is how can we make this better and more efficient for people?

Largely Service Design is about storytelling. Think of it as re-telling future stories by designing new possibilities and thinking through the lens of people and the narratives they'd like to tell. When you experience a service, often one that doesn't go well, you tend to complain about it. "The bins haven't been lifted again, the back yard is filthy", "That GP phone line just keeps buzzing out, I can't get an appointment", "The bank's had me on hold for twenty minutes". Then think, what if we used a design process to turn those phrases on their head, "The streets are looking clean, pick up is on Thursday" or you don't even notice because the service is so flawless. Sometimes, Service Design can be so well executed, you won't even notice the transaction you're undertaking. Then turn this thinking to a city and local authority. Councils

deliver a large range of complex services from the day to day council tax turn around to more critical services like waste management. Just imagine, for one second, what would happen if our bins stopped getting collected? Or it was easy to report a pot hole?

And, given the 21st century has arrived and we're embracing technology at a speed faster than we can type that with our thumbs on our smart phones, there's real need to consider how we deliver multi channel experiences to the public in a smart, uncomplicated and useful way. And hey, even throw in some delightful moments too, who said councils couldn't surprise their customers?

We've had the pleasure of working with Open Glasgow on two tracks, Service Design for Waste Management and Road repairs. We're looking at what the future possibilities are for both these domains and how services should and could work for people.

We're thinking in a few ways on this:

- What tools do people need to have a good relationship with their council when it comes to interacting around roads and waste?
- What future narratives will exist to diffuse frustration between the council and citizens?
- What technology and political/social trends will likely evolve across the next 50 years that will influence the design of future services?
- How do people behave now and how might we alter this behaviour and attitude in the future?

## CO-CREATION

We don't believe you can design anything without meeting the people who will use the final products. So we've been out meeting cyclists, citizens, bus drivers, community activists from all over Glasgow to understand their experiences of waste and road repairs to understand what their needs are.

We use ethnographic methods to drill down to the motivations, behaviours and responses people have to the themes we are researching. This means we spend time talking with people in their environments as well as using a variety of visual methods to stimulate people's responses to the themes we're focusing on. We say goodbye to closed focus groups in white wall rooms and hello to photographing how citizens collect their recycling in a cardboard box in their kitchen to understand how they behave in relation to waste.





# “LARGELY SERVICE DESIGN IS ABOUT STORYTELLING. THINK OF IT AS RE-TELLING FUTURE STORIES BY DESIGNING NEW POSSIBILITIES AND THINKING THROUGH THE LENS OF PEOPLE AND THE NARRATIVES THEY’D LIKE TO TELL.”

One method has seen us using Go Pro cameras attached to our chests and bike helmets to replay what the city looks like from a citizen perspective during our transitionary journeys from home to work and around our own communities. It’s a very powerful piece of film that can be used to re-interview a citizen on their response to the city and trigger ideas for improvement. We don’t just consider services from the home but the city is one large touchpoint and interface between the council and citizens.

A repetitive sub theme that we’re feeding back into the Open Glasgow team is around the citizen to council relationship. This will be a fundamental underpinning structure to our service development and how we move from a council to citizen model to a citizen to citizen model with the council supporting this structure.

Currently, frustration exists, due to poor feedback loops and two main things arise from this. Citizens become frustrated when they receive no response and therefore become apathetic, in the long run they will not interface with the council if they don’t have to or will turn to alternative private services.

What if councils pivoted on their role and offered products and services that supported citizens to improve society around them and work with each other, in their communities to improve what’s around them in a direct way? This has been a repetitive insight from our research around

community accountability for waste and cleanliness, and we want to build on the need to provide communities with the support to work better together.

We’re looking at concepts like wiki bin, which allows citizens to design and print their own bins relative to their personal, and community needs by downloading and moulding 3D and 2D files of open source bins.

This can get complicated. And yes it is a little. It involves a shift in the social relationship between the council and the public and some complicated technology. When you look at some of the conversations we’ve had with citizens on their interaction with technology and you’re being presented with teletext as the main source of information and transaction for weather updates and holiday bargains, we begin to face a problem.

This is where good, user centred design comes in. We strip back the technology to introduce a range of simple interactions and almost, for some citizens hide the complexity of the technology behind it. And this is why we use story telling. If we can simply articulate complex services into an understandable narrative that work for people on their terms, we can be successful in making our lives easier and Glasgow better. In turn, we can also make services more efficient.

It all comes down to a better Glasgow. When we’ve talked to people about Open Glasgow, dashboards, data sets it’s gone over their heads. And that’s fine. Some of us like opening up objects and understanding how they work, and some of us, just want things to work. The majority of citizens would like the latter, but there’s no harm in putting a transparent form around it, remember when Apple did see through Macs?

So, like all the great partners involved in Open Glasgow that we’ve had the pleasure of working with, we’re all focusing on a better Glasgow and the future stories people will tell about their areas, the city and the council. Technology is an enabler and will make services more efficient, streamlined and smart, but ultimately our mission is to make Glasgow better and put people at the heart of a smart city.

And let us not forget. More efficient services, more savings.

**SARAH DRUMMOND**  
CO-FOUNDER AND DIRECTOR OF DESIGN, SNOOK



# AN ENABLING COUNCIL

## A COUNCIL THAT FACILITATES CIVIC ACTION

The preeminent theme throughout this research and subsequent Design development is that citizens want to actively support a Better Glasgow.

Current communication between citizens and council services is based upon a centralised model where citizens contact the council to report issues and await a response.

As part of our early stage research we mapped customer journeys of citizens on how they interact with the council in relation to waste and road repair services.

This investigation highlighted a frustration from citizens on the current relationship they have with the council:

- The majority of citizens had contacted the council only when they wanted an issue resolved or to make a complaint and did not feel rewarded for taking civic action or incentivised to keep their community clean or report an issue.
- Citizens chose to use alternative private services or local community services when it came to waste collection as the service was faster or easier to use even if more expensive.
- Citizens share no data with the council unless making a complaint. Interaction is minimal and less proactive.
- Citizens would like to be more involved in making their community better and build a relationship with the council to do so.
- Feedback is very rarely brought full circle and citizens who are particularly active would like a form of continuous feedback or status update they can easily access from the council on reported issues and service developments that is easily accessible, in particular relevant to where they live, work or run a business.

### A Council to Citizen Model

Currently the relationship model is citizen to council.

When citizens try to behave responsibly and engage with council services for the good of the city, they feel their efforts are unnoticed or citizens had the impression they were not being listened to and their complaints were not making any difference. Without effective communication between the public and councils citizens can become demotivated.

From mapping the interaction of Glasgow citizens with the council there is a clear lack of continuous feedback whether through reporting an issue to the council or actively wanting to improve services and local areas.

We believe that in order to bring the Designs to life outlined in this report the council will require a cultural mind shift to work actively with citizens and move from what some have described as command and control to a relationship of facilitating and enabling citizens to build a better Glasgow.

Further to this we are looking to the council to become a facilitator of citizen to citizen services to reduce waste, littering and improve the quality of communities. This is a key narrative throughout our design proposals.

**“Trying to talk to the council or give any feedback is impossible. It’s like a black hole and not worth the time hanging on the phone”**

- Glasgow Citizen

**“We tried to contact the council about extra pick ups but I knew it would just take too long so we called a private company to deal with our waste ”**

- Glasgow Business Owner on reporting waste issues



# FUTURE CITY PRINCIPLES

## SERVICE PRINCIPLES FOR GLASGOW FUTURE CITIES

### Inclusive

Allow users to choose how they engage with the services they want. Provide a variety of widgets and services on and offline to meet the needs of citizens in Glasgow.

### Engage Community

Increase engagement and social responsibility by empowering people. In order to turn Glasgow into a smart city first engage people to make smart citizens.

### Better Value

Streamlining services will provide better value for both Glasgow City Council and citizens in their daily lives. Organisations can benefit as well as citizens in order to make Glasgow a more efficient city.

### Open & Transparent

Provide Open Data being produced by citizens and services. Accessible data empowers citizens, encourages experimentation and the development of new services.

### Be Visual

Be inclusive and make information easier to digest by providing it in a visual language. Visual language will support people to engage with complex data.

### Educate

Use open data to educate citizens on the current status of services and communities and provide educational material and prompts to change citizen behavior over time

### Responsive

Act upon citizen feedback. Respond across different stages of feedback providing status updates to gain citizen trust.

### Simple & Automatic

Automate services to increase responsiveness and reduce communication capacity. This will ensure feedback is continuous.

### Visible in the city

See the city as a total touchpoint. Visualise and project data across city touchpoints to move beyond the screen and put data in front of citizens on their daily journeys.



# Meet our Citizens

## Bringing Glasgow Citizens to life

We developed personas, based on people we met throughout the research.

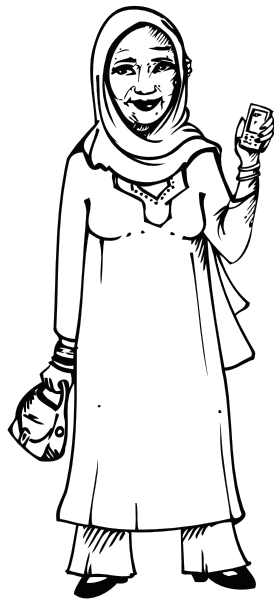
These personas have been used to design and develop our design proposals.

This method of development is an important element to how the services have developed, being fully based on citizen needs and behaviours in the city.

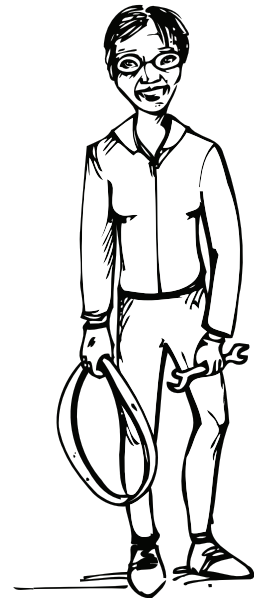




**HILDA: 80**  
LIFE LOVING GRANDMA  
Likes to keep busy, strong personality,  
tries to stay updated as much as possible



**GUIZAR: 70**  
POSITIVE HOUSEWIFE  
Originally from Pakistan relaxed,  
social, loves her family



**KATIE: 61**  
FEMALE BIKE MECHANIC  
Passionate cyclist with an active lifestyle  
and hands on attitude



**ZAHLDA: 34**  
SUCCESSFUL WORKING DAUGHTER  
Organised, supportive, creative, social  
and career oriented

## BRINGING GLASGOW CITIZENS TO LIFE

Our full personas can be found in  
our supporting report  
and appendix.

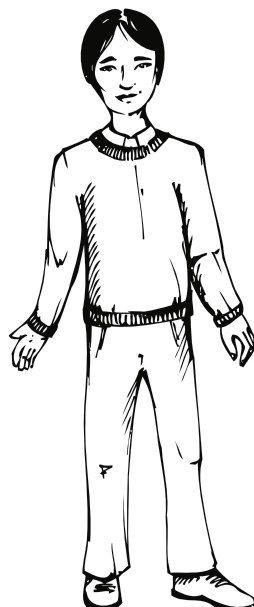
In the following pages we have  
developed two personas, Hilda  
and Lucy to pose questions and  
narratives about citizens growing  
with a Glasgow Future City.



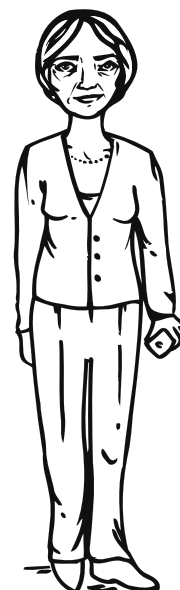
**JOHN: 55**  
ELECTRICAL ENGINEER EX BUS DRIVER  
Pretty happy, relaxed, really keen  
on technology



**LUCY: 27**  
YOUNG PROFESSIONAL WOMAN  
Quietly spoken, insightful, intelligent  
and driven to do good



**TAY: 23**  
INTERNATIONAL MASTER STUDENT  
Driven, great work ethic, intelligent, techy,  
quite social but not a party animal



**DINA: 48**  
BUSY MOTHER AND BUSINESS WOMAN  
Active lifestyle, strong opinions, well  
informed, driven and determined



## Lucy S. // 27

Driven to do good, always informed and comfortable discussing with people who don't share her point of view

### BACKGROUND, LIFESTYLE, HABITS, HOBBIES, BELIEFS AND MOTIVATIONS

Originally from the States, Lucy decided to move to Scotland to study and has now lived here for 8 years. She studied Science and is currently going out with a tech startup owner. Lucy is quiet and diplomatic but will always share her views and express her opinions. She tries as much as possible to live to her beliefs, volunteering for charity, being a vegetarian and always walks to get around in the city and recycles as much as possible.

### RELATIONSHIP WITH TECHNOLOGY AND VISUAL INFORMATION

Lucy is up to date and very active online. She has her own blog, a Twitter profile with a large number of followers. She uses Instagram, planning apps like Wunderlist, gmail, calendars, eventbrite, evernote. There aren't many apps she hasn't heard of.

### APPS AND DEVICES

Websites/Apps: BBC, Guardian, Amazon, Google, Facebook, Gmail, Wordpress, Wunderlist, Iphone calendar/Notes/Reminders, Tumblr, Twitter, Eventbrite, Hootsuite, Fubiz.net etc..  
Devices: Smartphone, Iphone 4s, Macbookpro.

NOW

5 YEARS

10 YEARS

FUTURE ?

Lucy is a young professional, she lives in the West End and volunteers for city mission. She enjoys going to charity and vintage shops, buys second hand books and reads on kindle rather than iPad as it feels too modern.

She is living with her boyfriend, they have been together for 2 years. As an american she is quite optimistic but the more she stays in Scotland the more realistic she becomes. She 'does good' and behaves well because she is aware and fully understands her impact on society, she sees the global picture, lives in the present but has the future on her mind too.

Lucy knows how to link the dots, she is switched on and is a great future citizen. She doesn't take things for granted, because she hasn't always lived in Glasgow she really notices the city state. She is logical and organized but also quite emotional and creative, she could be defined as an emotional planner.

She usually comes across as very organized, often organizes others, but sometimes emotion prevails in her decision making process.

#### INFLUENCERS

She reads The Guardian and loves real newspapers, reading online feels more efficient and work related while she considers reading a paper a more pleasurable experience.

She is a democrat, reads blogs and news from the US.

She is familiar with internet memes, uses Pinterest, often visits change.org (where she starts and signs petitions).

She is influenced by her boyfriend's tech apps, a variety of blogs and the charity she is involved with.

On Twitter she follows:  
Seth Godin (<http://www.sethgodin.com/sg/>)  
Horace Dediu (<https://twitter.com/asymco>)  
Gary Vaynerchuk (<https://twitter.com/garyvee>)

Lucy is quite strong, independent, passionate she wants to be different and make a difference. She is very adaptable, she understands how this can give her a lot of social capital. She still has a strong set of values and the freedom to choose where and how to work. She is part of a small group of people that aren't afraid of change but find it exciting! In ten years the idea of marriage has changed she is still with the same boyfriend, they never got married but are financially committed to each other. Lucy has no kids yet, in 2024 forty will be the new thirty, people like Lucy will try to make more of their life and medical progresses have made it much easier and safer to have kids at an older age.

Because of her transient nature Lucy didn't buy a house for herself, but she purchased a property with her boyfriend, renewed it and decided to rent it out, it was a business investment. She had some more money to invest in property and decided to try a completely different scheme, real estate looks different in the future. She partly owns a series of houses around the world and moves from one to the other. She works at science park (Maryhill rd.) where there is a high concentration of companies that are truly making things happen.

She is CSO (Chief science officer) of a startup company that discovered a chemical able to dissolve oil. This discovery made it possible to prevent massive oil spills and made the cleaning process much easier and faster in case they happen.

Lucy is perfectly aware of the type of industry she is working in and she is happy to make a positive impact. She travels a lot, especially between Aberdeen, Norway and Texas. She doesn't take part of charity work anymore but donates instead. In her mind she knows that real positive change has to be commercial and she is aware that with her job she is improving society way more than she could doing charity work. She is still a consistent and coherent person, driven to do good, she is very grounded and understands herself.

She has a core group of friends that she has known all her life, a wider group of transient friendships connected to her interests, location and business and an even wider and more detached circle of friends and acquaintances, some of those she met in person others she is only digitally connected to, but they are still very important.

#### LUCY AND TECHNOLOGY:

She uses technology that's relevant to her career. She now lives in a Smart Home and selects the technology that is relevant to her to be as functional and informed and possible.

#### INFLUENCERS:

She is starting to influence other professionals, she writes articles for papers and blogs. Because of her career and personal beliefs, she has two influential networks, official and activist. She is influenced by conferences, speakers, professional journals.

Compared to when she was younger she still has a solid set of core values but because of her profession and the corporate world she is a bit more institutionalized, she is more money driven.

Lucy has all we want, autonomy and nothing is holding her back. She has an active social life closely linked to her business connections and core group of old time friends. She is now a mother (soccer mom) driven for her kids to succeed.

Because of her past investments and career development Lucy could retire from her main job and become director of a charity, or part of an association board. She could have also become scientific advisor for the US government or the environmental equivalent of "Marissa Mayer".

She now owns a few properties that generate a consistent income, she is financially independent, moderated in the use of technology and still committed to good causes. She has become a very respected and influential individual, she can choose to dedicate herself to what she believes in, she no longer feels the need to compromise like she did when she was in the corporate world.





## Hilda // 80

Life loving grandma. Likes to keep busy, has a strong personality, tries to stay updated as much as possible

### BACKGROUND, LIFESTYLE, HABITS, HOBBIES, BELIEFS AND MOTIVATIONS

Carer for her husband who is 96. Enjoys spending time with the family and her grandchildren. Despite her age she likes to live life as much as possible and has quite a few hobbies such as: Indoor bowls, Digital photography and Decoupage. She enjoys Watching TV and goes to Nan McKay Hall, her local community centre to attend classes on how to use the computer and socialise with her friends.

### RELATIONSHIP WITH TECHNOLOGY AND VISUAL INFORMATION

Fascinated by technology and trying to stay updated but unable to use laptop without help. Plays games on laptop (Solitaire/Sudoku). When it comes to visual information she understands TV Guides and weather Maps well.

### APPS AND DEVICES

Websites: BBC website  
Devices: Cellphone (only calls), Computer/ emails (with help of family or Community workers)



Hilda is friendly and curious, often speaks to strangers. She is open to change and other opinions.

If she is shown something that's easy enough she adopts it straightaway. She has a defined routine and likes to do the the same things every week (e.g. fish on fridays) and going to church on a Sunday. She loved gardening, would love to do it more but that's no longer possible because of her age so she is consulting others and giving advice (e.g. what's in season, whats not).

She is the type of person you can easily drink tea while chatting all day long. She is a great story teller and truly likes helping others. For Hilda the local community centre is very important as a social meeting point and source of information, she loves meeting friends there, drink tea, read books and magazines. She also listens to e-books, her family set it up for her and taught her how to do it.

When she was younger she used to be a home maker with a part time job on a perfume counter in a department store. Her favourite film is "It's a wonderful life".

TECHNOLOGY & INFORMATION  
She has a simple mobile phone, she has phone book, yellow pages, and sometimes still uses the operator. She looks for a human connection in services and to chat in person with people.

"It's not about getting the job done, like young people, but having a wee chat"

She needs a more human and conversational approach. She has a home care device (bracelet) to check her health conditions. She is drawn online by health matters, information on care services and things she is very interested in for example her hobbies, crafts and digital photography.

INFLUENCERS  
Handyman, Doctor, her domino team, Betty her friend for 50 years, her grandchildren (John 25, Mark 24, Claire 29) radio, tv, newspapers, Bruce Forsyth, Great grandchildren (Sophie 10, Brian 14) Terry Wogan and other women in her community

Hilda is a bit disappointed as they discontinued services she was comfortable with, like teletext. Hilda lives alone now, her husband passed away and two of her children are living abroad, sometimes life feels a bit lonely. She is aware of energy consumption but now energy prices are higher then they used to be. She uses email to keep up to date with her two children but finds it difficult to write long responses.

She finds the experience of online touch points too complicated, new mobile phones are too complex and her bus stop has been moved away from her, making it harder to travel. She still goes to the community centre and to Church, these are key places for her social life.

She visits the Library every now and then and when she can she volunteers to help the local community. She knows how to live in the moment, concentrates on "the now" and takes longer to process things. For her, the speed of Glasgow future City might be challenging to keep up with.

She is an "information mine" and gives back to the community sharing her knowledge.

In particular she is a great source of local knowledge and a great role model for how to live your life. A new form of social care brings her together with new friends and young volunteers, an advanced version of Care Home that truly engages her and makes her feel involved.

The world she lives in is a less friendly place, no one has time to talk to her anymore.

DEATH IN DIGITAL

"The city that never forgets"

The city is made of people that provide something. Thanks to digital and technology Hilda's knowledge is captured and passed on for future generations. Her possessions are shared and tracked as they are used by others.

The sharing of her possessions and knowledge extends her life bringing comfort to the family. For Hilda, and people from her generation reality really mattered, she wanted to create real long-lasting value and she did this buy passing on her knowledge and living a legacy.

She lives in a future where some family stories can be shared publicly. Some may only be relevant to her family but others could be fundamental for research purposes and the development of the city. She could leave part of her data as inheritance for Future City. Her medical and genetics data could also be important for the wellbeing of her family and scientific purposes.

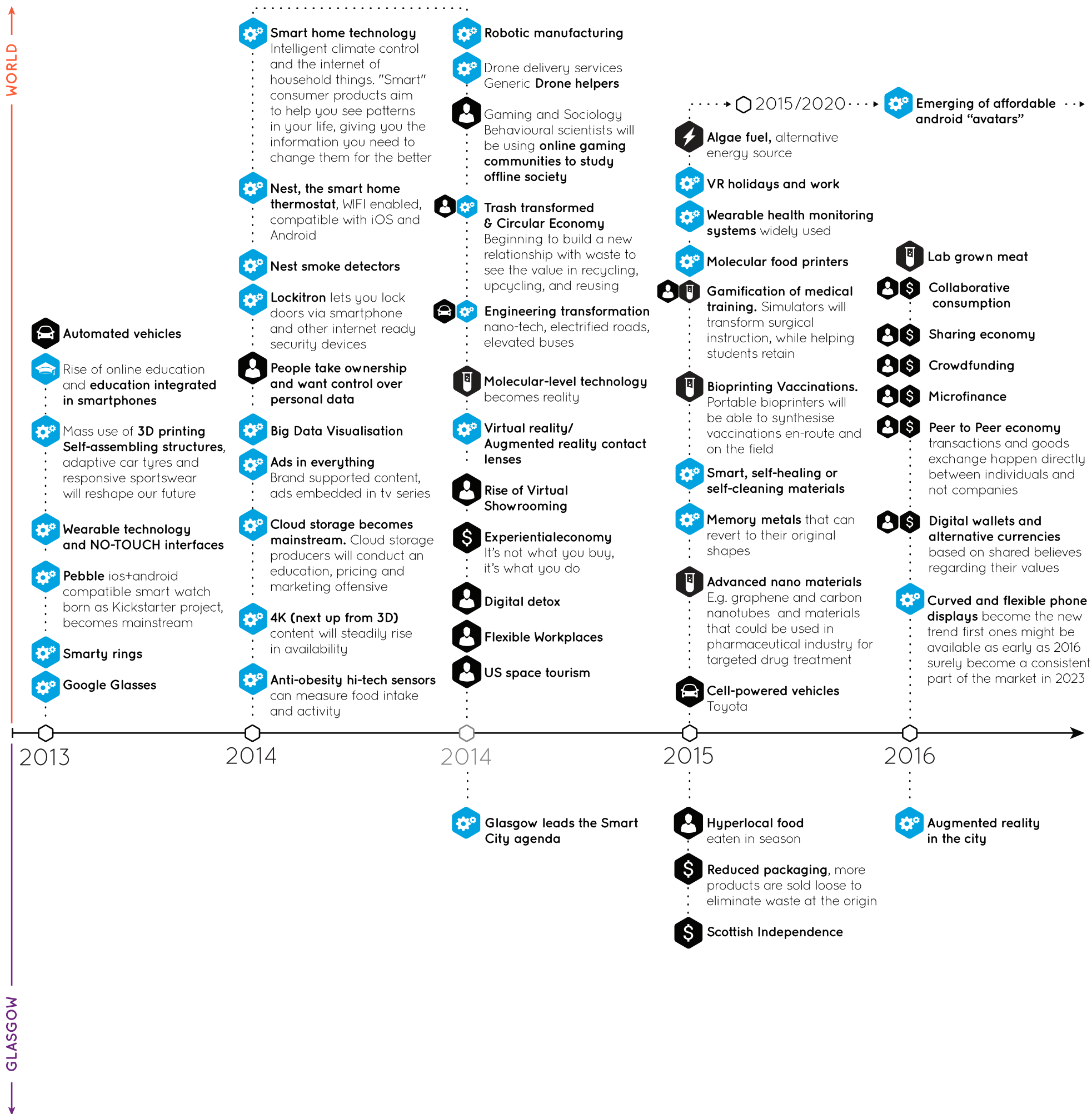
She lived with no regrets and she wants to pass on this motto. Every decision you make, be happy with it, there is always going to be trades off but there is no way back, only forward.

Hilda's knowledge contributes to the creation of a community we can be proud off, she left security for her family and offspring.

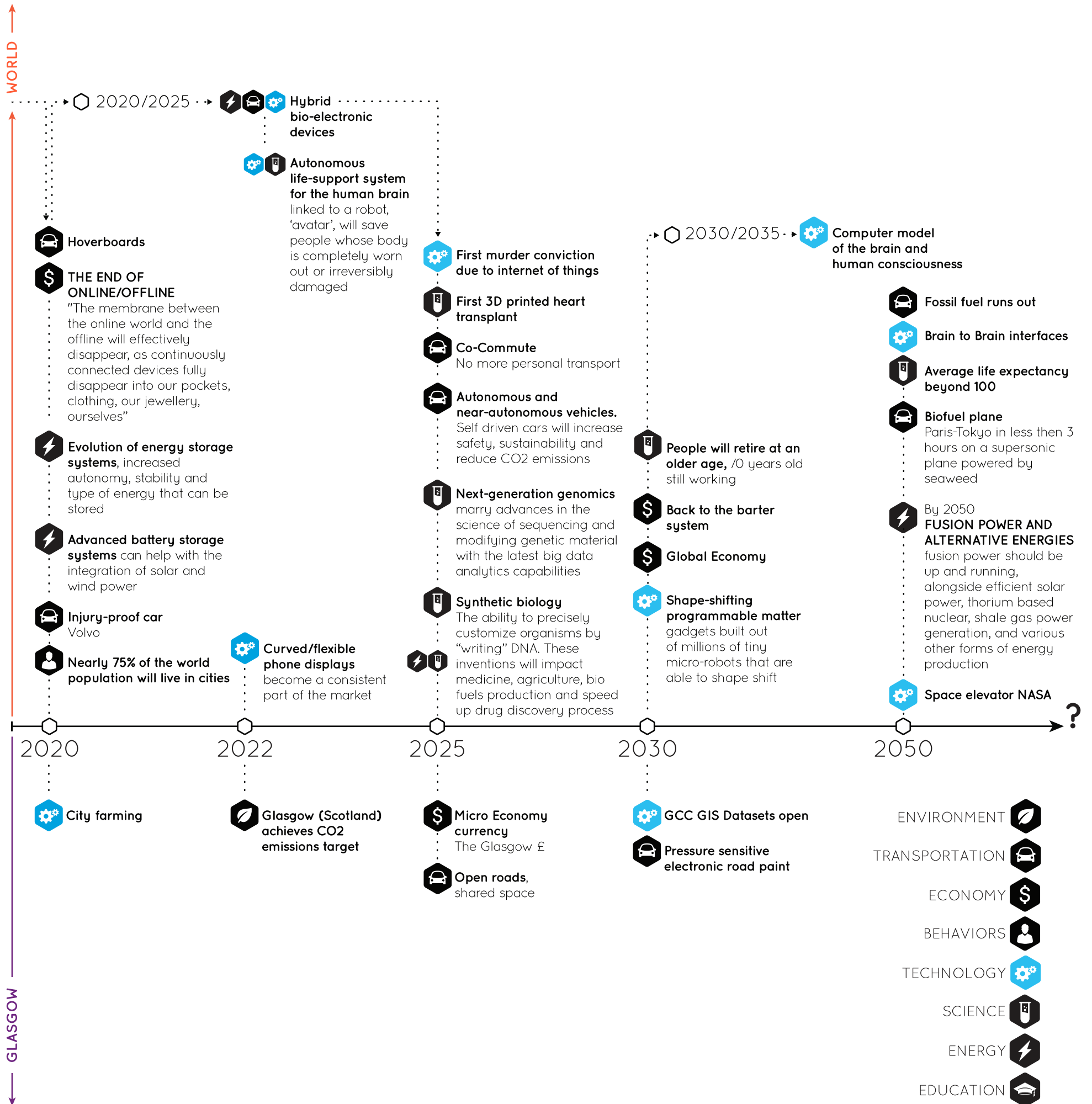
She had the possibility to organize her belongings and data for her death day via her care home.

# MAPPING THE FUTURE

A PEST ANALYSIS OF FUTURE TECHNOLOGY AND TRENDS TO INFORM OUR DESIGN PROPOSALS







# SERVICE DESIGN PROPOSALS

Our design proposals are broken down into four core concepts. Each proposal considers components required to make the total service a reality, how the service could develop from now to 2025 and tells a story of how each would work for citizens over time.



## 1. SMART ROAD CONDITIONS AND REPORTING

An easy to use system accessed online and through a MyGlasgow app to both report issues and access updates on road repairs, scheduled repairs under the RALF framework and be relevant to citizen core journeys in the city.



## 2. BIN SENSORS AND SMART DATA TO TRACK WASTE

A smart waste measurement system to monitor business and household waste disposal and recycling to optimise council waste services. Further to this, provide data to influence good behaviour and increase recycling efforts.



## 3. MYGLASGOW COMMUNITY UPLIFT SERVICE

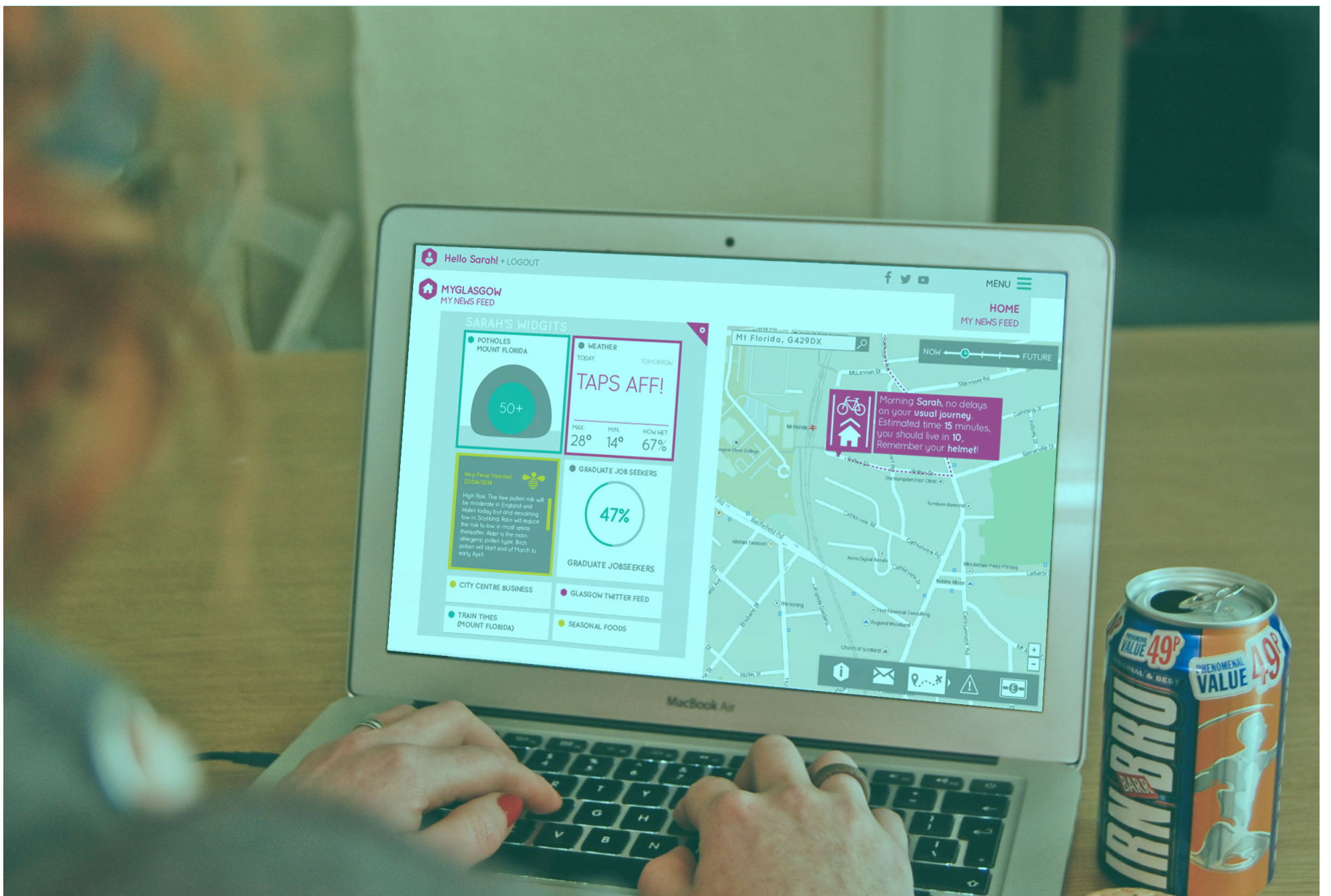
A streamlined bulk uplift service that provides a platform for citizens to advertise their bulk objects before council pick ups. Supports the council to optimise their bulk uplift service by understanding what is being thrown away before pick up days.



## 4. SMART BIN INFORMATION AND REPORTING

Using the bin as a touchpoint to provide information on pick up schedules, reporting specific issues easily and simplified information on waste and recycling.





# MyGlasgow

## A PERSONALISED DASHBOARD FOR CITIZEN SERVICES

We have outlined a future state form of MyGlasgow to lay a foundation for our design proposals to build upon.

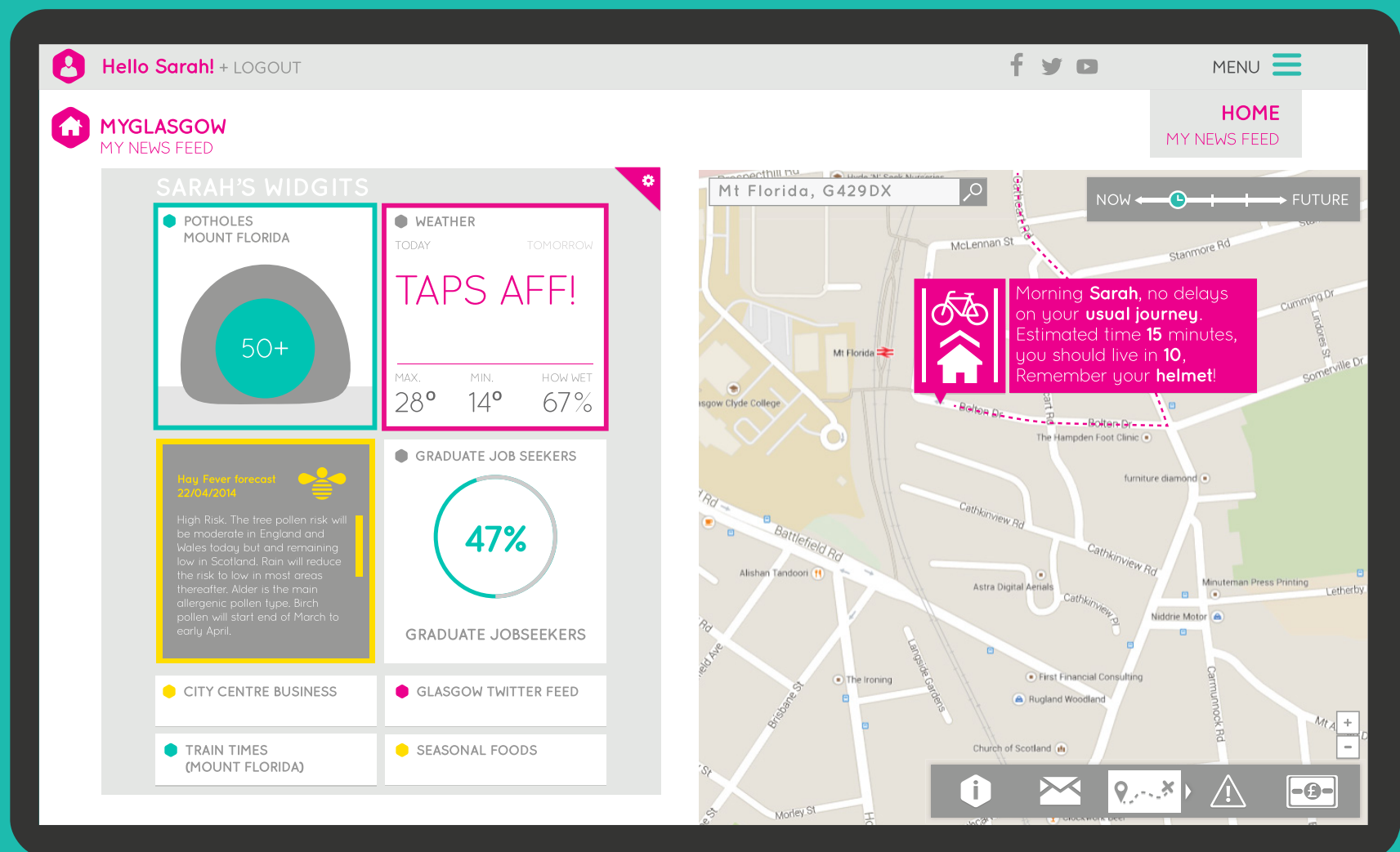
We see MyGlasgow as an overarching system for citizens to interact with Glasgow City Council and the services they provide. It is a personalised account for citizens to streamline their transactions with the councils from paying council tax to reporting potholes.

MyGlasgow will collect data from citizens on their preferences and their journeys through the city, their transactions and data they produce per household so that the information provided to the public can be made relevant, personalised and to certain extents automated as outlined in our Service Principles.

The development of these features provides a basis for all of our design concepts and have been built from citizens feedback.

“The Myglasgow app was too fiddly so I deleted it off my phone, it took too long to log an incident or pothole”

- Richard, Glasgow Taxi Driver



## Core components of MyGlasgow

### 1. A UNIQUE LOGIN

Citizens will have one login for MyGlasgow which becomes their personal profile for interacting with a future state Glasgow City Council

### 2. SMART LOCATION

MyGlasgow will automatically alter the presentation of data relevant to where a citizen's main address is registered.

When a citizen logs in to their MyGlasgow dashboard the interface is tailored to either their main residential address or current location

### 3. CITY DASHBOARD

The City Dashboard becomes personalised by MyGlasgow.

This means that widgets can be added to a citizen's dashboard using their MyGlasgow login

### 4. SET UP JOURNEYS

Building on smart location, a major part of living in the city is about journeys. By collecting data on citizen's daily journeys, MyGlasgow will be able to present relevant data about transport, weather, deals relevant to where a citizen is most likely to be at the given time of day

### 5. INTEGRATED

Integrating with 3rd party apps and services including twitter and facebook will allow MyGlasgow to reach out to citizen's on their platforms

### 6. CONNECTED TO BUSINESS

Business owners will also own a MyGlasgow account to streamline their transactions with the council

### 7. SMART ORDERING

MyGlasgow account holders will be able to set up smart ordering for any services they are connected to with the council

### 8. TRANSACTIONS

MyGlasgow account holders will be able to streamline their bills with the council online and undertake transactions for services they use





# Integrated Offline

## BRIDGING THE DIGITAL DIVIDE IN GLASGOW

Ensuring that citizens with different levels of digital literacy and access to technology can equally benefit from MyGlasgow will be an important element of taking forward the MyGlasgow initiative.

MyGlasgow is predominately an online service, however we propose that Glasgow Life staff in libraries, museums and other venues are trained in supporting citizens to get online.

By utilising the widget function from the city dashboard, trainers can support citizens to personalise their dashboard. This builds on research based on Glasgow on getting people online. It has been shown that providing a 'hook' of interest will support citizens who would normally not engage in digital services to raise interest in services.

A high level categorisation of widgets would be provided including topics like 'transport', 'weather' and 'services' to allow trainers to get citizens online and using MyGlasgow with the services they are either most interested or relevant to them.

**“[ofcom] data estimates that 40% of people in the Greater Glasgow area are still offline. .. in terms of actual numbers, this means around 115,000 households”**

- Across the Divide: Tackling Digital Exclusion in Glasgow, Carnegie UK



# MULTIPLE ACCESS

## SUPPORTING THE UPTAKE OF MYGLASGOW

### 1. Access via interactive touchpoints in public spaces Low/Standard engagement with optional assistance



#### Who is it for?

- Citizens with basic computer knowledge
- Citizens who don't own or regularly use a computer and/or smartphone
- Citizens who might need help and/or guidance to access and use digital services

#### How does it work?



- Services can be accessed at local Libraries, Glasgow Life venues and community centres
- At these venues citizens can use public computers or interactive screens and login to their profile using their name and postcodes



- Citizens can create a profile on MyGlasgow login and use the services independently or receive help from a local community worker
- Once logged in, they can customise their page with a selection of their favourite widgets

### 2. Basic access via personal computers and smartphones Standard engagement



#### Who is it for?

- Citizens who own and use computers and smartphones in their everyday lives
- Citizens with moderate understanding and interest in technology
- Citizens who want to access basic Council services and information but don't want to be highly involved because of busy lifestyles or lack of interest

#### How does it work?



- Services can be accessed from any personal computer or smartphone
- Visiting [open.glasgow.gov.uk](http://open.glasgow.gov.uk) citizens can access information and Council services anonymously or create a personal profile using their name and address



- Citizens can choose to create a profile on MyGlasgow, login and customise their page with their favourite widgets
- They can also download MyGlasgow app, create a profile and access Council services via mobile

### 3. Premium access via personal computers and smartphones High engagement



#### Who is it for?

- Tech savvy citizens interested in experimenting with new technologies, apps and tracking systems
- Citizens who own and regularly use computers, smartphones and wearable tech
- Citizens with a strong Civic sense, desire to get involved in Council initiatives to improve the City and driven to do good

#### How does it work?



- Same as "Basic access" services can be accessed from any computer or smartphone
- Once logged in into their profiles citizens can visit the "Civic citizen section" and sign up to participate to a variety of initiatives



- Civic citizens who join special initiatives to improve the City receive small rewards, their efforts and participation are also tracked and connected to their MyGlasgow (e.g. citizen Digital Badge) and can be showed on a variety of social media and websites (e.g. Facebook and LinkedIn)

### 4. Offline access to special initiatives and information One off engagement

#### Who is it for?

- Citizens who aren't very keen for technology but want to be involved in one off events or on a regular basis

#### How does it work?



- Citizens can get information, sign up and join special events and programs in shops and relevant venues



- In these venues they can also receive kits or equipment to be used at the initiatives or join a waiting list for future events

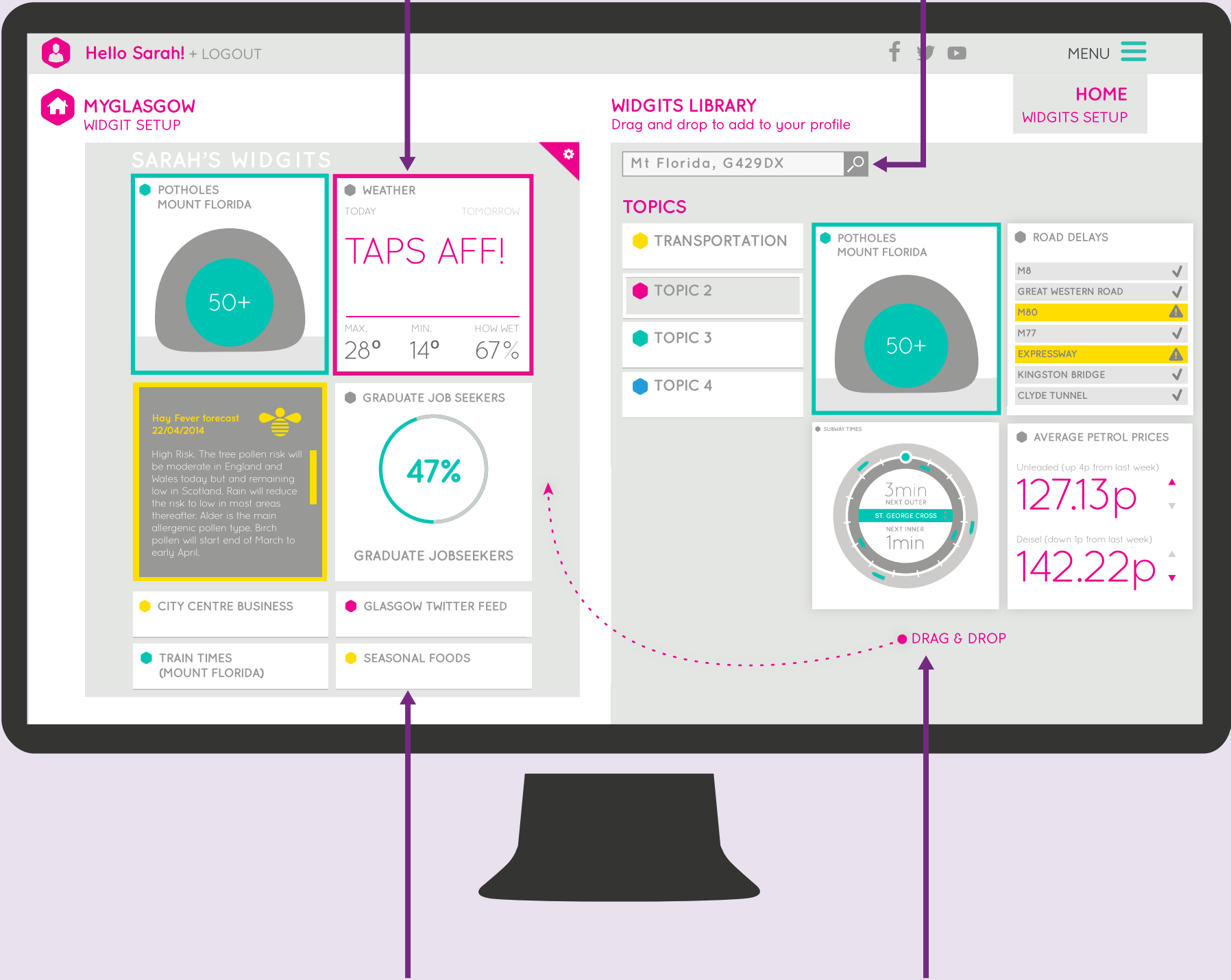


TAPS AFF

Some widgets are comedic to raise interest in the platform and support citizens to understand how data can work like 'Taps Aff'. This tells you when the weather is above 17 degrees and plays on the Glasgow phrase of 'Taps Aff' when the heat reaches a certain level.

POSTCODE

Trainers can support MyGlasgow set up by starting with basic data including name and setting up the home address to allow services to be tailored to where people live.



CATEGORIES

Widgets are categorised for citizens to add to their MyGlasgow profile based on what data they are interested in.

DRAG AND DROP

Widgets can be dragged into a citizen's MyGlasgow profile. These are in core categories from transport to weather to core services.



# ROAD SERVICES

## A high level overview of road services

**MyGlasgow/rodas will provide access to road services and information provided by the council.**

Through our research we have identified the highest level of menu options for citizens to interact around road services and repairs and which link in with our following proposed design options.

The core aim of these features is to reduce phonecalls to the council to decrease complaints and streamline issue documentation.

As a Smart City, Road service information over time would grow around the journeys citizens make in their city. By building on MyGlasgow information per citizen, information and updates about their journeys would become more personalised. Secondly, MyGlasgow/roads would show present issues that have been reported by citizens and the stage they are at in the repair pipeline in real time to reduce repetitive complaints

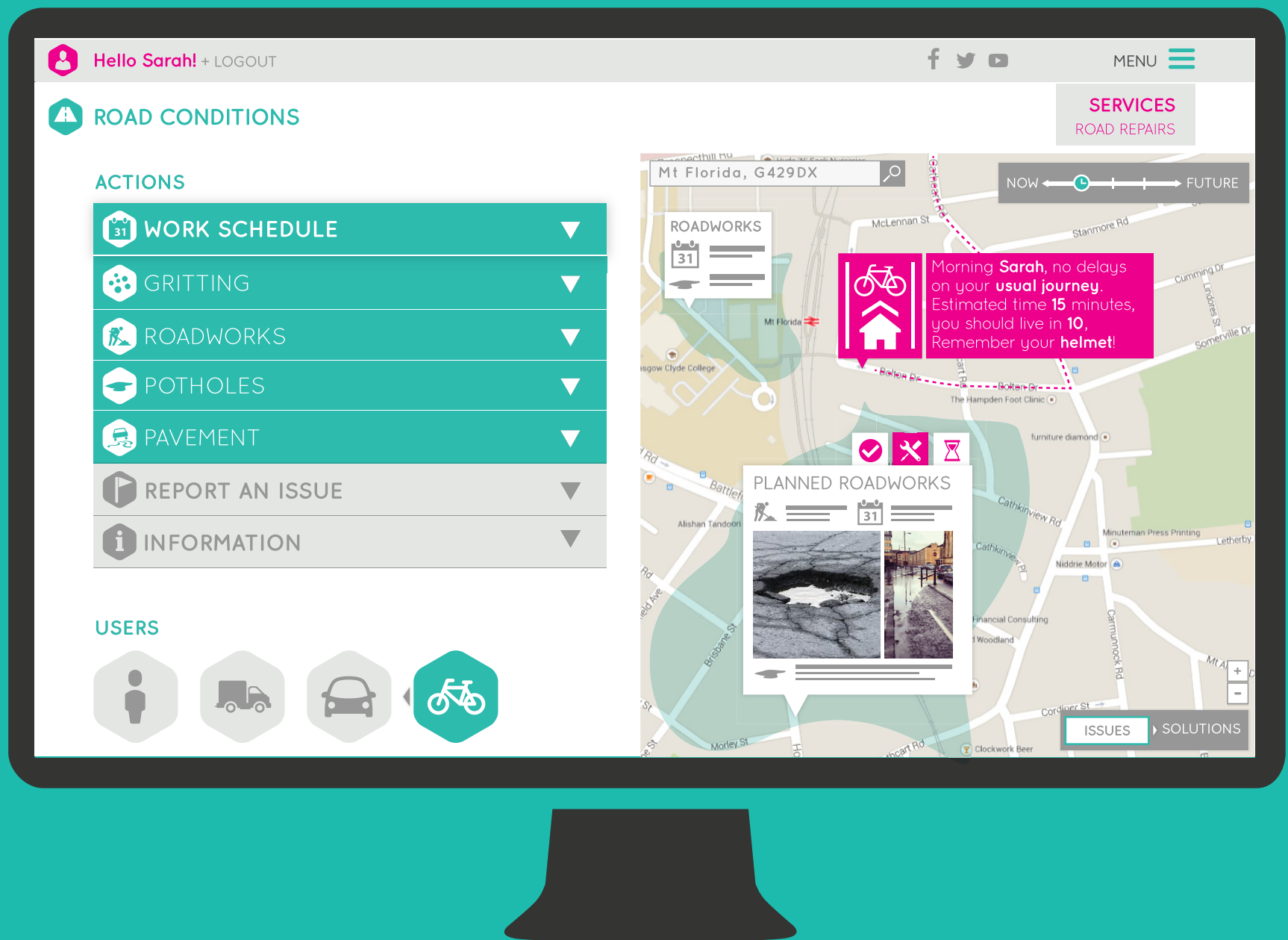
MyGlasgow/roads should show all road users (Bus, taxi, car, bikes and pedestrians) and information regarding the RALF framework to highlight that everyone is a user in the city.

Additionally, a core element of this segment of Myglasgow is about journeys. As data grows using apps such as the developing cycle app from the active travel strand, the system should grow to provide data relevant to where citizens move the most in the city.

**“I’ve had over a £1000 of damage to my taxi. In 10 months I had 16 incidents with my cab...There’s no point in complaining it never comes to anything”**

- Taxi Driver, Glasgow





## Core components of MyGlasgow/roads

### 1. FAQs

This would show frequently asked questions about roads and who to contact in a drop down accordion menu to make it easy to digest information about roads in Glasgow and extend citizen understanding of the RALF framework

### 2. REPORT AN ISSUE

This would link into creating an open report about road conditions. This would include all faults or issues under the RALF system.

### 3. MY JOURNEY

Link in with journey recording apps including the recent development by Glasgow Future Cities to document cycle routes. Allow 3rd party connection to travel apps to build a smart understanding of citizen routes in the city and provide automatic updates on citizen's most used routes/locations.

### 4. FUTURE SCHEDULES

Show future schedules for roadworks and repairs in the city relevant to citizen journeys allowing them to plan routes to work and recreational locations, gaining an overview of planned work in the city.

### 5. ISSUE UPDATE

Overview of all issues reported and the status in the repair pipeline.

“I get really annoyed seeing potholes on the road when I’m cycling to work but as soon as I enter the office, I forget or can’t be bothered to do anything about it”

- Cyclist, Glasgow



## SMART ROAD CONDITIONS AND REPORTING

Presenting information and an understanding of where poor conditions exist on the road before citizens make a complaint could support the council’s reputations with the public in regards to road repairs.

Smart Roadconditions and reporting reduces the steps to log an issue under the RALF bracket and actively asks citizens to support the council by logging the conditions of roads, pavements, streetlights etc.

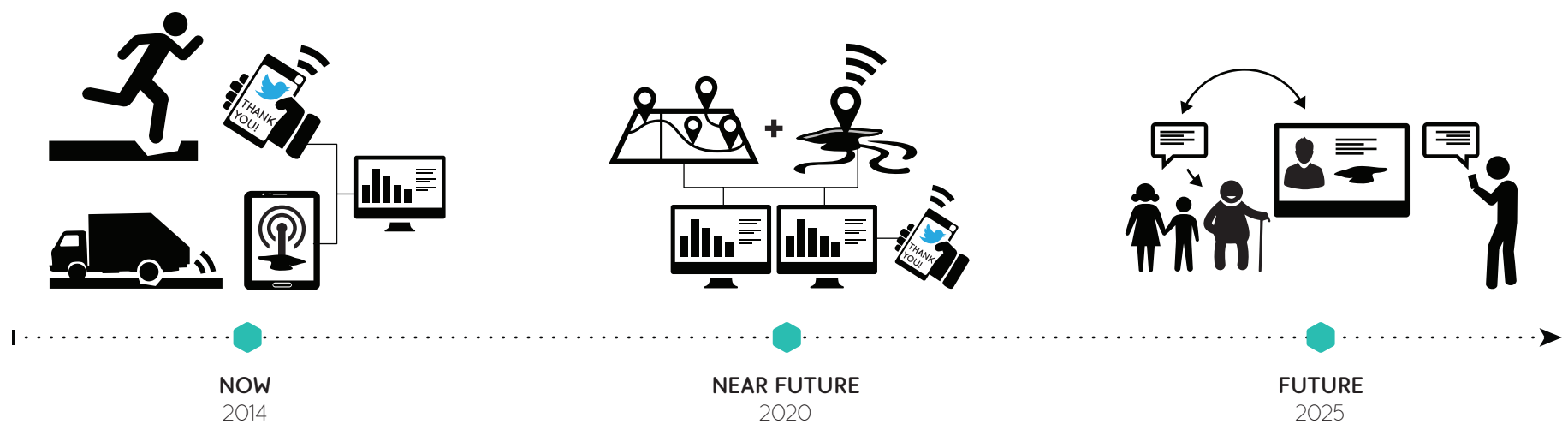
In addition the council can utilise the existing infrastructure of buses, taxi drivers and cyclists who are utilising the roads on an everyday basis by attaching sensors to these.

By providing them with either sensors, MyGlasgow apps or connecting with their existing road monitoring software, the council can gain an overview of road conditions in Glasgow and make this data open to the public.

“I used to take pictures of the potholes, using that Myglasgow App but it’s too fiddly on the phone, a lot of small details to put in. I’d just prefer to quickly take a photo and have it know where you are”

- Taxi Driver, Glasgow





### CITIZEN ISSUE COLLECTION

- Use existing technology and resources to collect basic data on road conditions
- Use social media to engage with citizens and acknowledge their efforts
- Simplify potholes reporting process

**i** [www.cityofboston.gov/doit/apps/citizensconnect.asp](http://www.cityofboston.gov/doit/apps/citizensconnect.asp)  
Citizens Connect, City of Boston's award-winning effort to empower residents to be the City's "eyes and ears." Alert the City to neighborhood issues such as potholes, damaged signs and graffiti. To start reporting, download the app, send us a text or tweet, visit our website, or give us a call. All available 24/7/365.

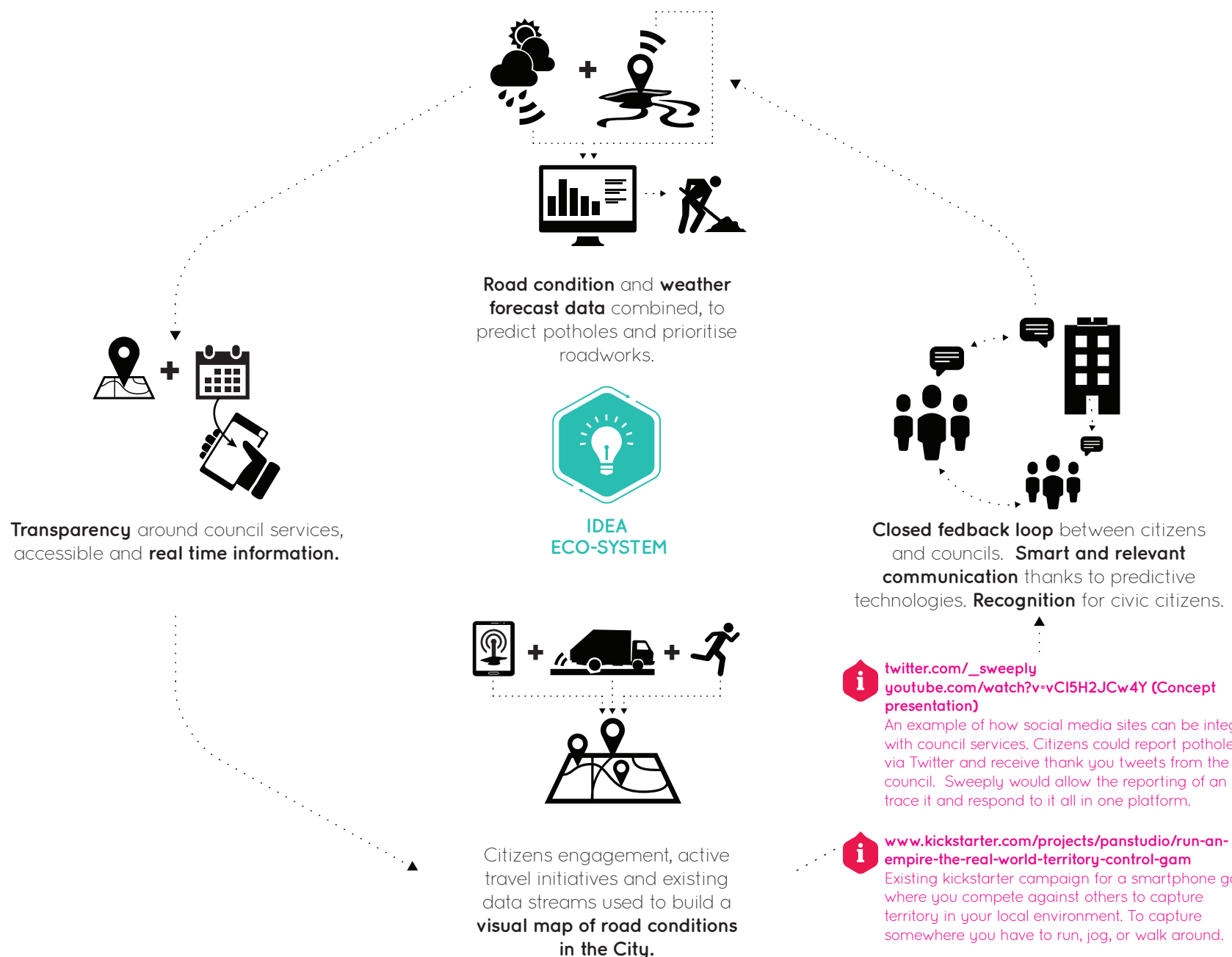
### LIVE ROAD STATUS AND DATA

- Gather and analyse more precise data on road conditions
- Predictive technology to prioritise roadworks
- Social media analytics to provide careful feedback

**i** [datasmart.ash.harvard.edu/news/article/chicago-mayors-challenge-367](http://datasmart.ash.harvard.edu/news/article/chicago-mayors-challenge-367)  
Open Source Municipal Analytics, pioneered by the city of Chicago. Chicago's SmartData project will build the first open-source, predictive analytics platform – aggregating and analyzing information to help leaders make smarter, faster decisions and prevent problems before they develop.

### AUTOMATIC RESPONSE TO ROAD CONDITIONS

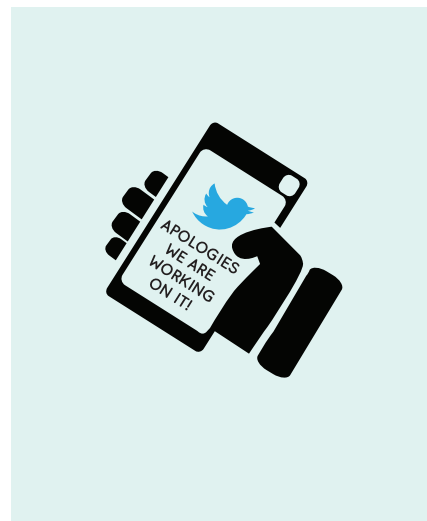
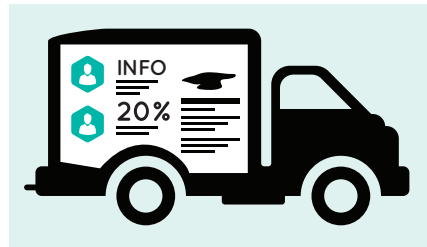
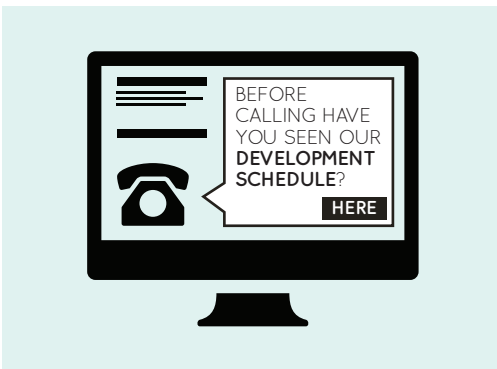
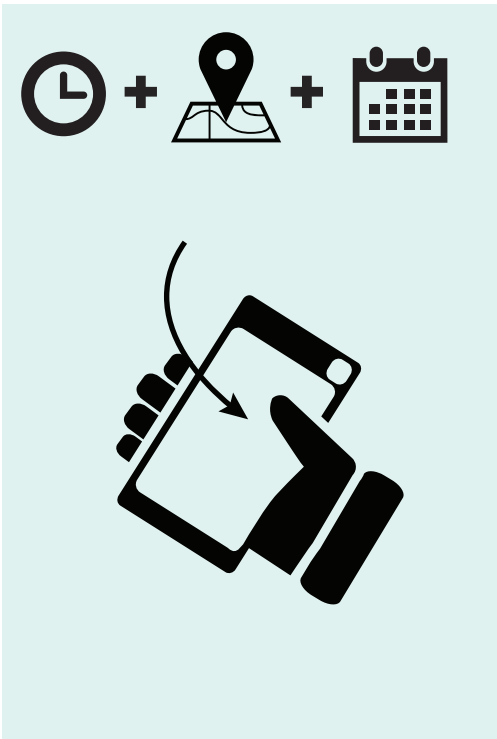
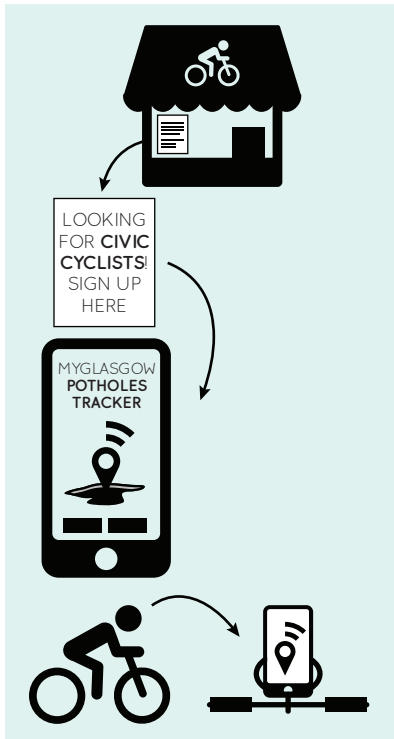
- Push data back to the city, make it visible and accessible
- Use data and social media to predict and prevent citizens' discomfort



**i** [twitter.com/\\_sweeply](https://twitter.com/_sweeply)  
[youtube.com/watch?v=vCI5H2JCw4Y](https://youtube.com/watch?v=vCI5H2JCw4Y) (Concept presentation)  
An example of how social media sites can be integrated with council services. Citizens could report potholes via Twitter and receive thank you tweets from the council. Sweeply would allow the reporting of an issue, trace it and respond to it all in one platform.

**i** [www.kickstarter.com/projects/panstudio/run-an-empire-the-real-world-territory-control-gam](http://www.kickstarter.com/projects/panstudio/run-an-empire-the-real-world-territory-control-gam)  
Existing kickstarter campaign for a smartphone game where you compete against others to capture territory in your local environment. To capture somewhere you have to run, jog, or walk around.

FRONT STAGE



After signing up, citizens receive a kit and premium access to MyGlasgow App. They are engaged in active travel challenges to map road conditions in the city. As a reward they receive discounts on cycling products through local cycle repair shops.

Public vehicles, equipped with Green Road technology and sensors, map road conditions as they move in the city.

Citizens can see road repair schedule and average time for specific areas. There is an easy to use sync roadwork and personal calendar function. Citizens can receive real time notification if they are to be affected by road repairs and tips on how to avoid discomfort and traffic.

Interactive, smart website with pop up windows that provide relevant information to citizens and guide them through the reporting process.

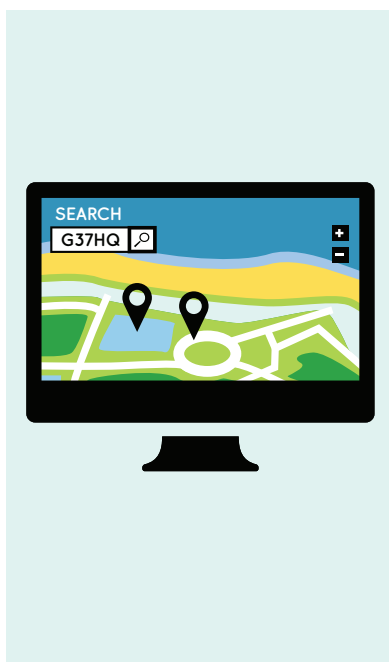
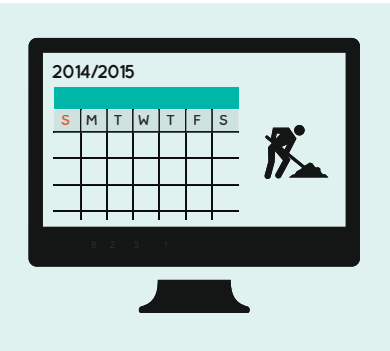
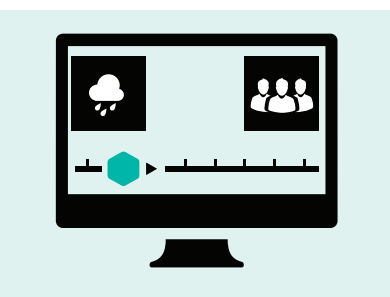
Immediate reward messages for citizens that report potholes

Roadworks data visualised in the city. Geo tagged data on public vehicles relevant to the area they are currently in.

Personal profiles on My Glasgow, citizens register daily commutes and receive tailored information

Pre scheduled tweets from MyGlasgow platform updating citizens regarding what they are working on and respond to citizens

BACK STAGE



Council provides an App and support Kit that can be used by selected citizens and on public vehicles to track target roads.

View and analyse data

Road conditions/complaints data in live time and set current action/status of repair.

Data Widget. The council can visualise the effect of weather on roads, their popularity and prioritize roadworks accordingly.

Interactive roadworks calendar.

Services become smarter, roadworks are planned and prioritised using predictive technology, weather and road conditions data combined.

Visual map of road conditions, built with data gathered by citizens and vehicles and updated in real time. Users can search a specific area code and access information related to roadworks, potholes and complaints.

Social media analytics to understand when and why citizens complain. Prepare a set of Tweets to send from MyGlasgow to respond to citizens and maintain an open dialogue. Council becomes more responsive. Communication with citizens becomes more personalised. The council manages citizen profiles and provides them with filtered information relevant to their needs, habits, commutes etc.

**open.glasgow.gov.uk/hackathon/hackathon-no1/**  
**@stewhir**  
 In just 3 days one of the teams from to Future City Hackathon on Public Safety already developed a code to predict crime in Glasgow. This is the proof that predictive technologies and social media analytics could be easily implemented for Glasgow.



“We tend to stack up recycling in the house. We do our best to do good for the environment but we sometimes just put everything in the bin because it’s easier”

- Citizen, Glasgow



# WASTE SERVICES

## A high level overview of waste services

Myglasgow/waste is the main portal to all waste related services that Glasgow Council has to offer.

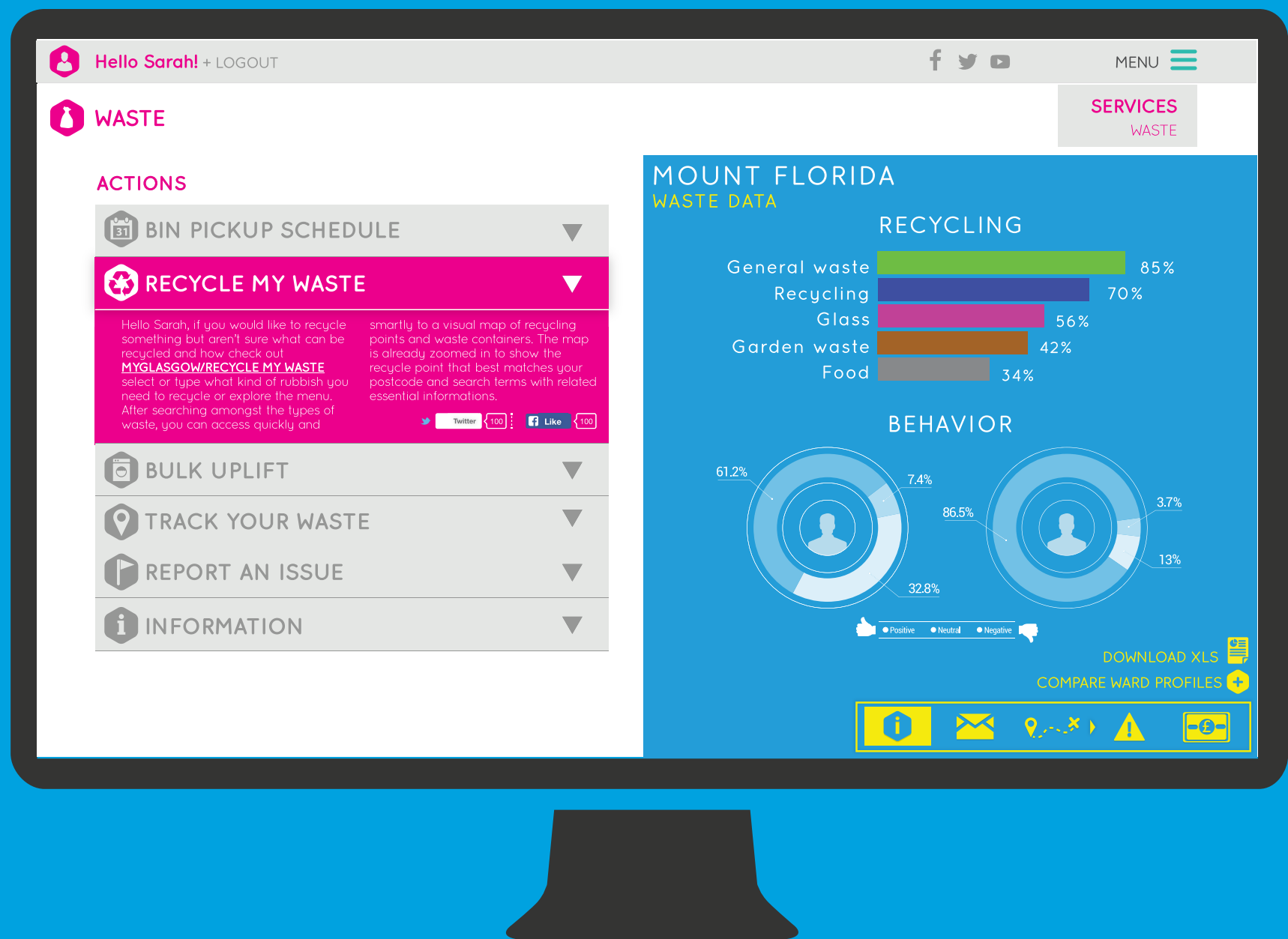
Through our research we have identified the highest level of menu options for citizens to interact around waste in Glasgow which integrate with our following design proposals

The core aim of these features is to reduce phonecalls to the council to reduce complaints and streamline issue documentation. A core principle of this area of MyGlasgow is to present easy to understand information about waste in a visual format and simple menu structure in order to reduce enquiries about bin schedules and recycling.

Secondly, MyGlasgow/waste would show present issues that have been reported by citizens and the stage they are at in being dealt with in real time to reduce repetitive complaints and build a transparent relationship with citizens.

“The website has so much information on it in council speak I can never find the right way to report a missed collection. So I call them, and get passed around two or three departments”

- Glasgow Business Owner



## Core components of MyGlasgow/waste

### 1. BIN PICK UP SCHEDULES

This would highlight weekly and monthly managed collection schedules of all bins belonging to both households and business. These schedules would be presented visually to allow citizens to easily understand and digest multiple bin collections.

### 2. RECYCLE MY WASTE

This would allow citizens to understand general principles around recycling, a visual overview of what to recycle and where and support citizens by asking, 'What do you need to recycle?'

### 3. REQUEST BULK UPLIFT

This would allow citizens to easily request a bulk uplift but first link them into MyGlasgow community uplift service. Additionally upfront information would be provided about where to take bulk items before contacting the council.

### 4. TRACK YOUR WASTE

This would in the near future provide data and a visual overview of where waste produced by households and business in Glasgow goes. In the future, this feature would track and show data on how much waste households and business produce and track where in the process this waste is.

### 5. REPORT AN ISSUE

This would allow citizens to quickly and easily report and issue for a missed bin collection, reporting damaged bins or highlighting litter or dog waste issues.





“It’s quite a long process to put together data on the area from crime statistics to complaints being made. If we could just print a report that would be great”

- Community Council Member, Glasgow

## BIN SENSORS AND SMART DATA TO TRACK WASTE

Smart waste is about understanding what is being wasted, recycled and re-used across the city in order to optimise back end council waste services and empower citizens.

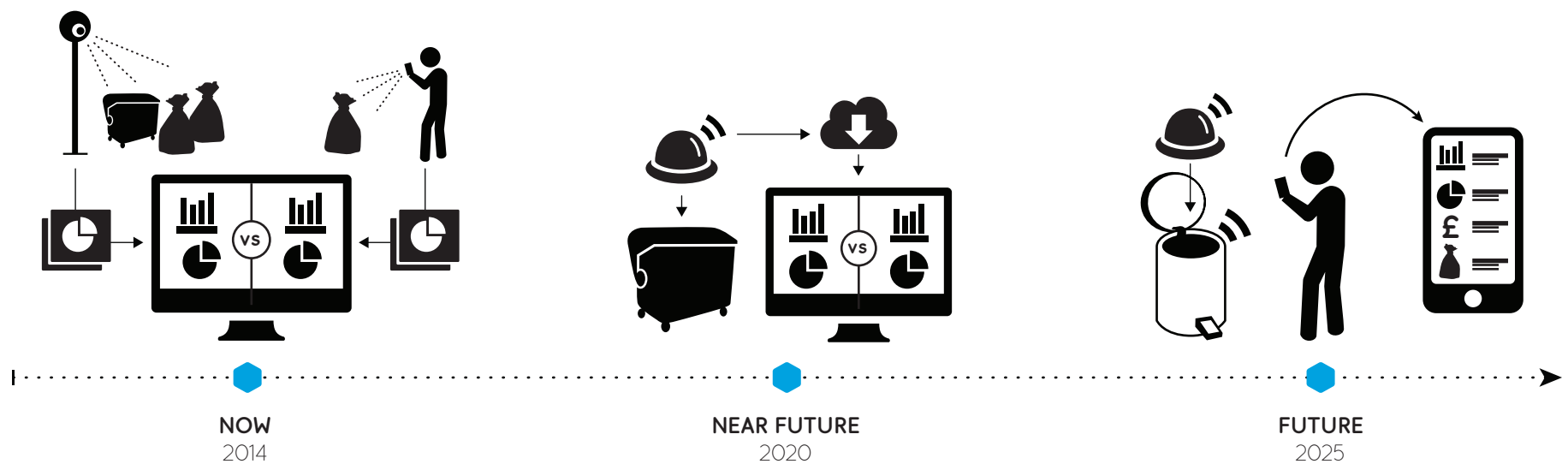
Using Smart sensors to collect data on how waste is produced and dealt with will allow the council to track and analyse citizens behaviour.

This intelligence will allow the council to deliver relevant information and guidance on recycling in the city.

By making this data open to citizens, the public will be able to analyse how healthy their community is in recycling and understand, in real-time what is happening to their waste.

“Citizens who want to do good, have to know waste is handled the way they are told it is”

- Jen, Glasgow



### ENABLE COMMUNITIES TO DOCUMENT WASTE

- Use existing data streams and resources to gather data on waste and build a visual map of the effects on Glasgow and its citizens
- Promote waste tracking initiatives engaging with community councils, active citizens and schools (e.g. Green Flag award and Eco schools) and document via MyGlasgow App
- Compare how different communities deal with waste to stimulate citizens, and show tangible benefits



**everyblock.com**

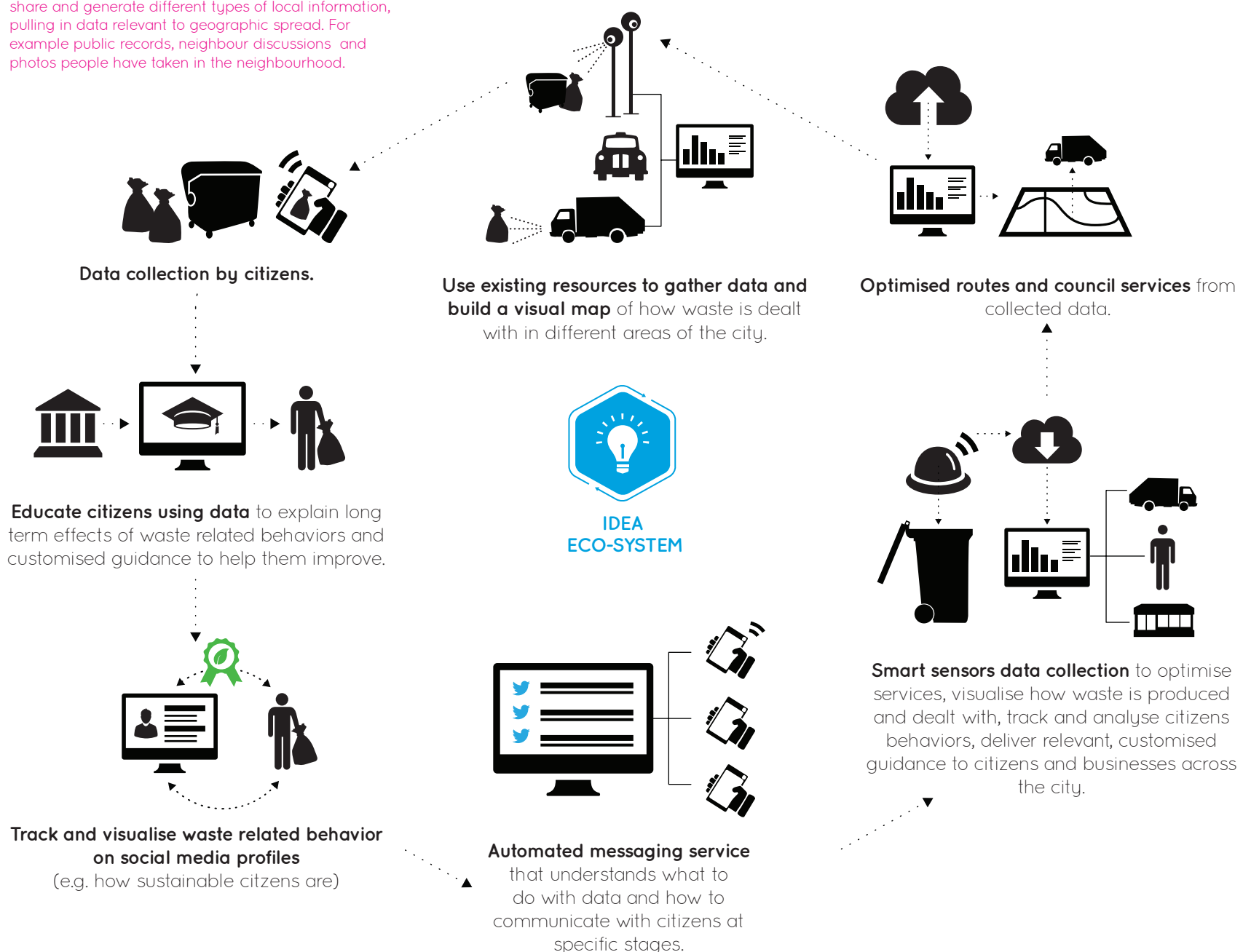
A smart digital platform that citizens can use to access share and generate different types of local information, pulling in data relevant to geographic spread. For example public records, neighbour discussions and photos people have taken in the neighbourhood.

### INTRODUCE BIN SENSORS

- Smart sensors introduced in communal bins
- Data on waste management and citizens behavior
  - Ongoing dialogue with citizens and optimised rubbish collection services
- Link positive behaviour with real benefits for communities and provide guidance to communities who want to improve

### PERSONALISED WASTE DATA

- Smart sensors introduced into household bins
  - Personal data analysis and customised guidance on how to sort household waste and optimise household resources
  - Gamified education
  - Connection with social media





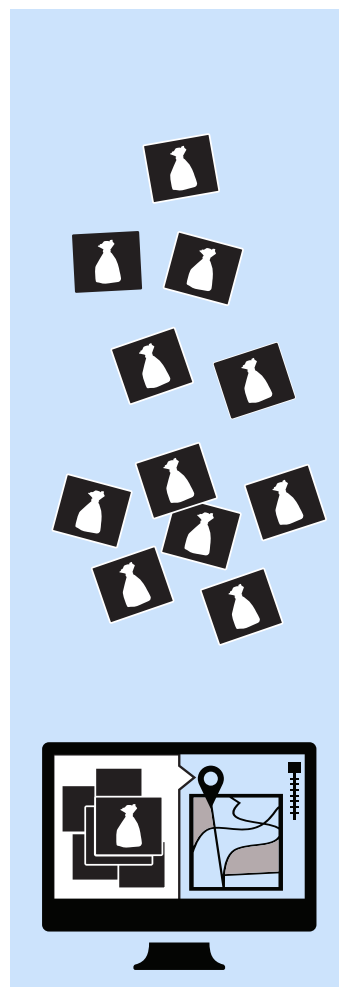
FRONT STAGE



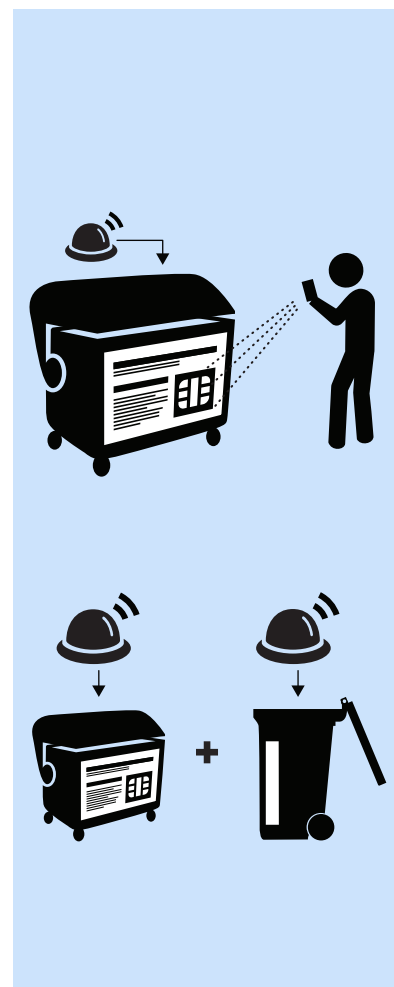
Civic citizen challenges on MyGlasgow and downloadable explanatory PDF's that can be used by community councils to engage citizens. "Clean Street" how to document the cleanliness of your area by capturing dog poo, litter and overflowing bins.

MyGlasgow app provides citizens with ability to photograph and geotag waste in the city.

MyGlasgow waste tracker app allows a quick issue filing process. Complaints have limited word count and do not require personal data every time as citizens are already logged into their MyGlasgow profile. When citizens send a photo they can select Generic report or Report someone and choose to stay anonymous or not.

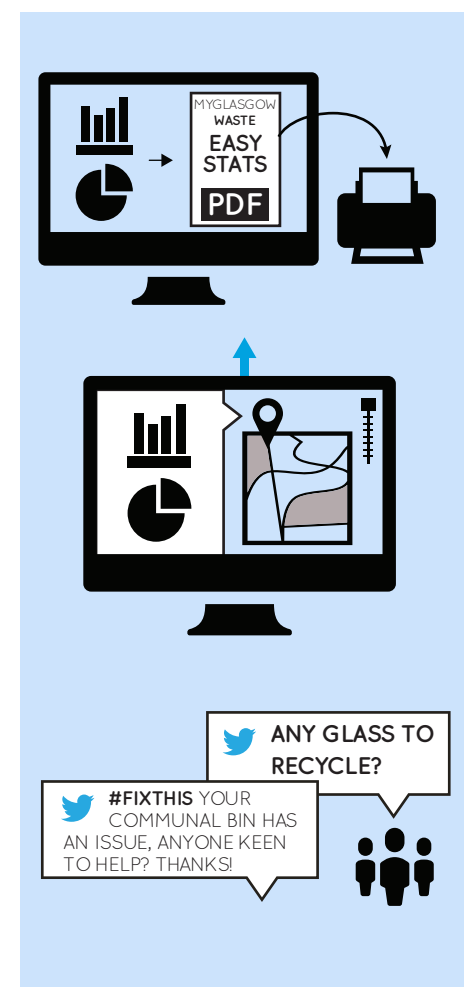


The images of waste sent by citizens are aggregated in an interactive map where users can click on selected areas and visualise images in a pop up window.



Communal bins will also be provided with smart labels or RFID chips. Citizens can scan them with smartphones and access waste related information via MyGlasgow such as what goes in the container, pick up schedule and general data.

Smart bin sensors are inserted in normal communal bins and community recycling bins. Sensors will gather information on bins' fill levels, bins' health (e.g. if they are contaminated or not) and provide useful data to the council that can be used to optimise collection routes and waste related services.



Community council can export and print local monthly or annual statistics to use in meetings and discussions.

Interactive visualisations of how waste is dealt with in the city. Users can compare neighbourhoods, areas and buildings, select general overview or a specific type of waste and visualise relevant information.

Automated messages are sent out to the community to engage with citizens.

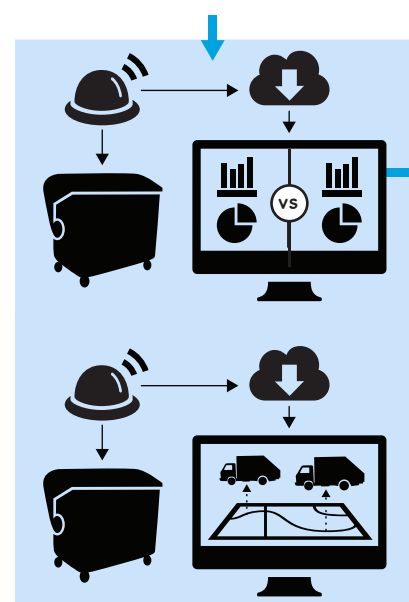
BACK STAGE



Data gathered can be used to organise meetings, define agendas, review complaints, understand citizens behaviors and smartly plan future actions. This is particularly relevant for scheduling meetings and to aid community councils.



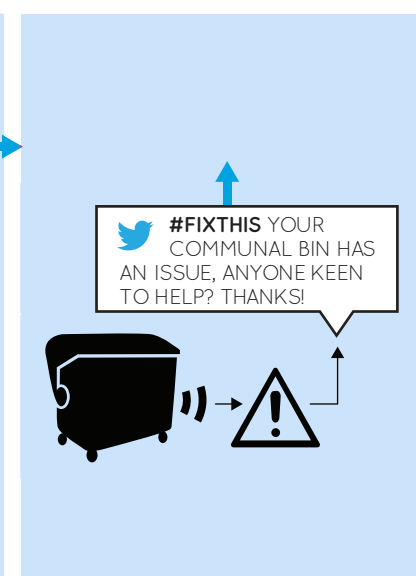
Once issues reported are solved they are marked on the visual map and a notification is sent to citizens to inform them action was taken on an issue they reported.



Bin sensors can be used to map bins usage in each community and analyse which communities recycle more efficiently, and which communities damage bins or preserve them.

It can show which communities produce more waste and where schedules can be reduced.

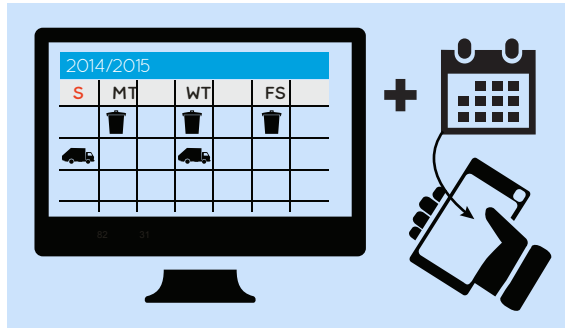
Sensors provide useful data that can be used to optimise collection routes and council resources (E.g. real time information on bins fill levels).



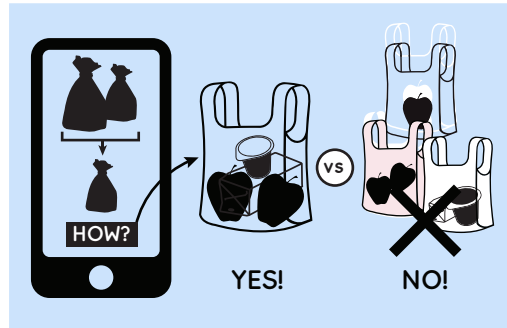
Bin sensors can also be used to track and visualise issues related to bins and containers. The council can set automatic messages and push them out asking for citizens' help to solve issues they might be responsible for. If citizens get involved they will be thanked and rewarded. This will prevent Missed Bin collection reports and reduce citizens complaints.

## COLLECTION ROUTE OPTIMISATION

## FUTURE OF HOME WASTE AND OPTIMISATION OF HOUSEHOLD RESOURCES



Pickup schedules and information is easily accessible on MyGlasgow, citizens can sync their personal calendar, receive notification and automatic updates on service changes.



The amount of waste produced is linked to actionable tips to help citizens reduce waste and real time cost estimates to show and quantify the impact of their behavior. In the case of "Pay as you throw" this scheme become a reality in Glasgow. Citizens could quantify their savings using MyGlasgow/MyWaste tracking and guidelines.

**belkinbusiness.com/echo-water-0 (water sensors)**  
**belkinbusiness.com/everything-connected (electricity sensors)**  
**nest.com/uk/ (energy sensors)**

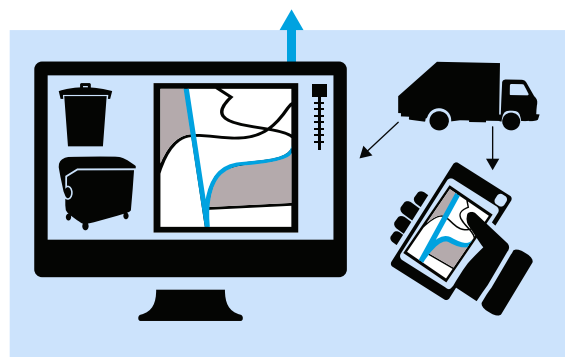
A few examples of existing smart home sensors that are able to monitor exactly how all resources flow in and out of the house (and tell you how to use less of them).

**myenergy.com**

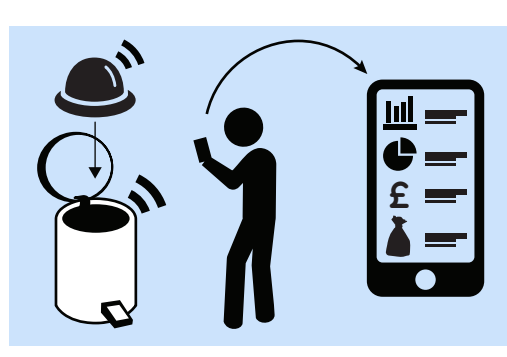
MyEnergy is an online service that allows you to gather all of your utility usage and bills in one place, and lets you share them with your friends and family.

**mint.com**

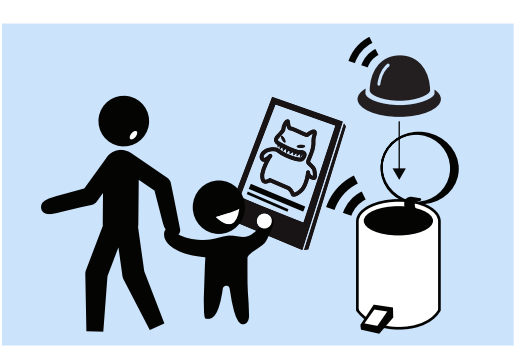
Mint is an online service that pulls all financial accounts into one place. Users can set a budget, track their goals and do more with their money.



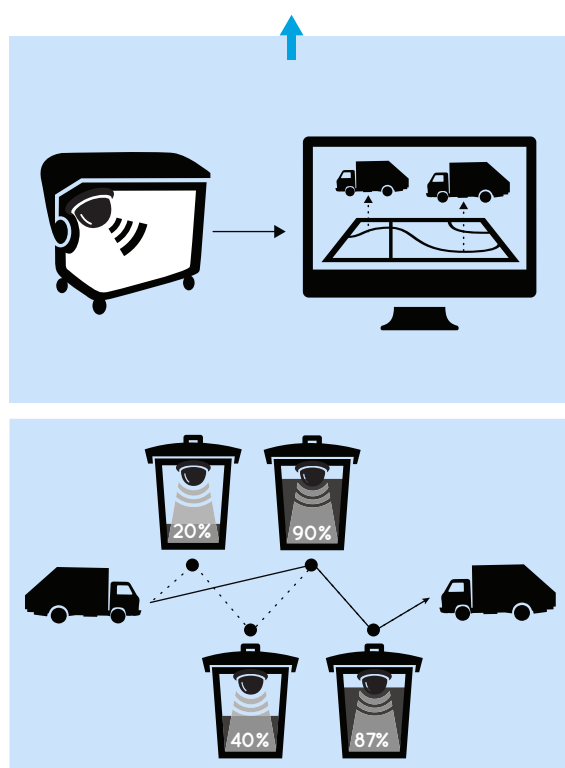
Sensors can help organise bin collection and street cleaning work, for example the amount of waste they have to sort in a shift could be expressed in weight and time. This could also be visualised on smartphones and touchscreens with real time information on the route they should follow, defined according to bin fill levels and bin status.



Smart bin sensors are inserted in personal home waste containers. The data gathered can be integrated with other household resources and expenses such as energy, water, or general personal data (e.g. fitness and diet related data).

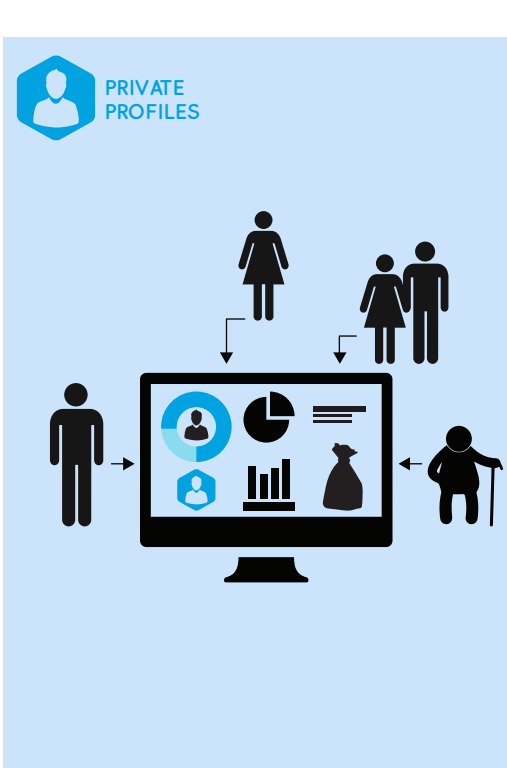


Gamified education for kids, sensors can interact with mobile phones and interactive devices. Bins gamified to visualise digital monsters that kids have to look after checking how much and what they ate.



Information provided by sensors is used to optimise waste collection routes.

Until now waste has been collected with static routes and schedules. Smart bin sensors can help planning smarter routes, avoiding stops at empty containers or attending to overflowing waste containers.



All relevant information connected to specific citizens or households could be aggregated in personal profiles. The council could quickly visualise and access these citizens accounts and information all in one place (e.g. council tax, water bills, taxes etc.)



### Businesses accounts for waste optimisation

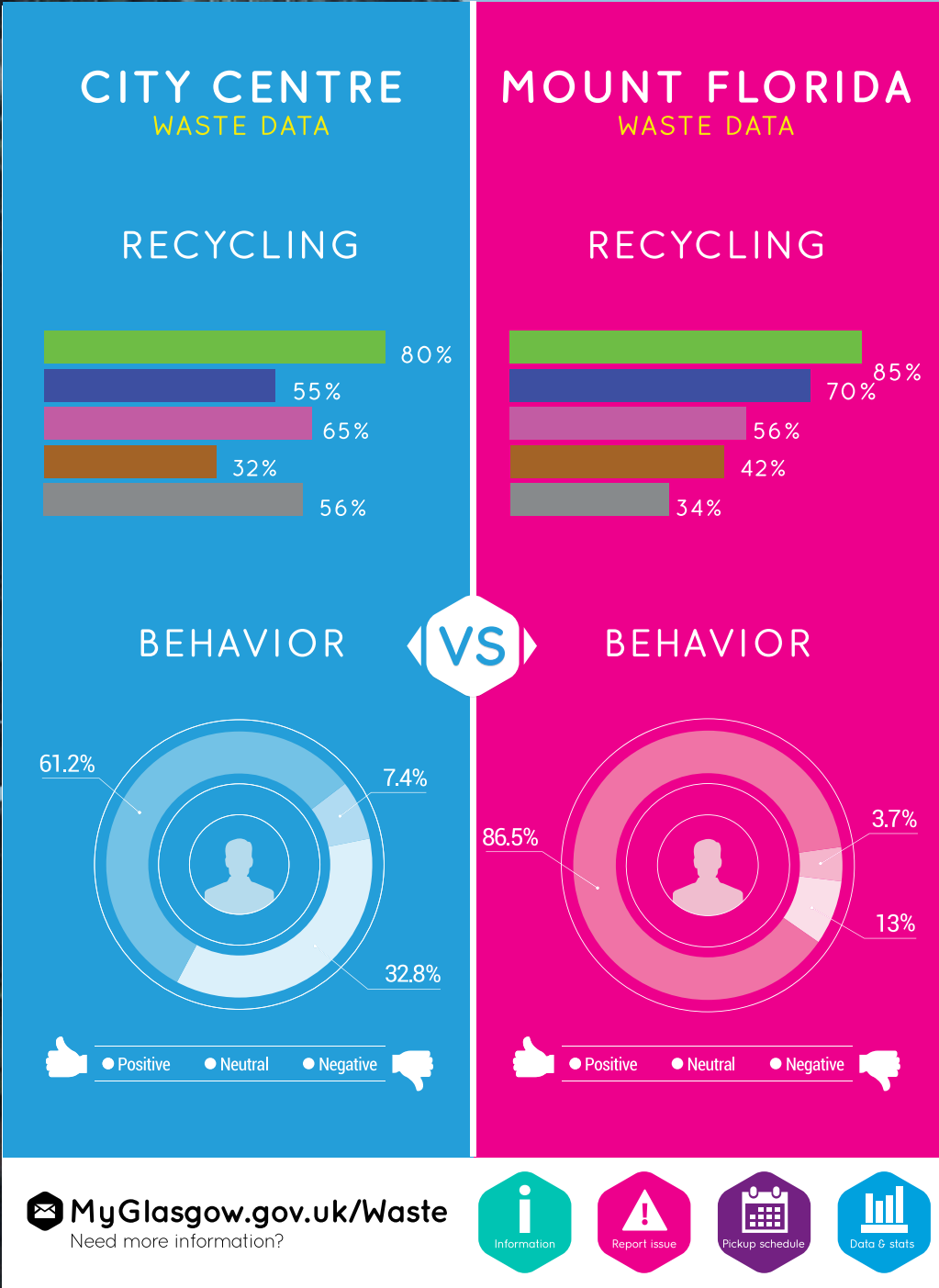
MyGlasgow could offer business accounts.

Businesses can register, receive updated information, pickup schedule and book trade waste sacks. MyGlasgow business profiles would aggregate all the information in one place. Access to existing council services would be easier and automatic. Data analysis on waste production, statistics and guidance provided by MyGlasgow will be essential to help businesses optimise their resources and meet waste targets.



# VISIBLE IN THE CITY

Data comparison could be shown  
in the city and relevant to the  
areas it is highlighting





“It would be good to have like an interaction with street furniture, so you could easily let the council know if there is an issue”

- Citizen, Glasgow



## SMART BIN INFORMATION AND REPORTING

Using the bin as a direct touchpoint for information will allow citizens to both gain relevant information and easily contact the council with a report if there is an issue with bins from missed collection to damage.

Smart Bin information and reporting is about turning bins into data fuelled touchpoints that contain relevant information on refuse collection and waste behavior.

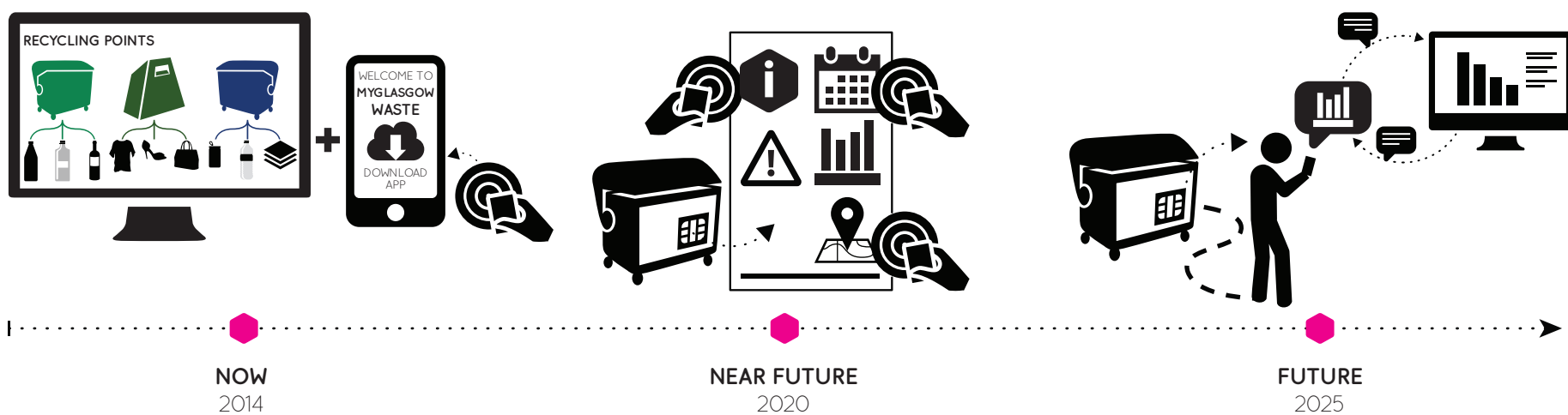
By using embedded NFC tags and RFID chips, citizens can scan a bin to skip current reporting steps and quickly communicate an issue to the council.

Further to this, overall information presented should be visually communicated to be inclusive for all and easy to digest weekly managed collections.

“I’d like to be able to speak to my bin, find out where my waste is going at the point of contact. Having to go through pages and pages of a website isn’t going to inspire me to do good”

- Citizen, Glasgow





### VISUALISE EXISTING INFORMATION

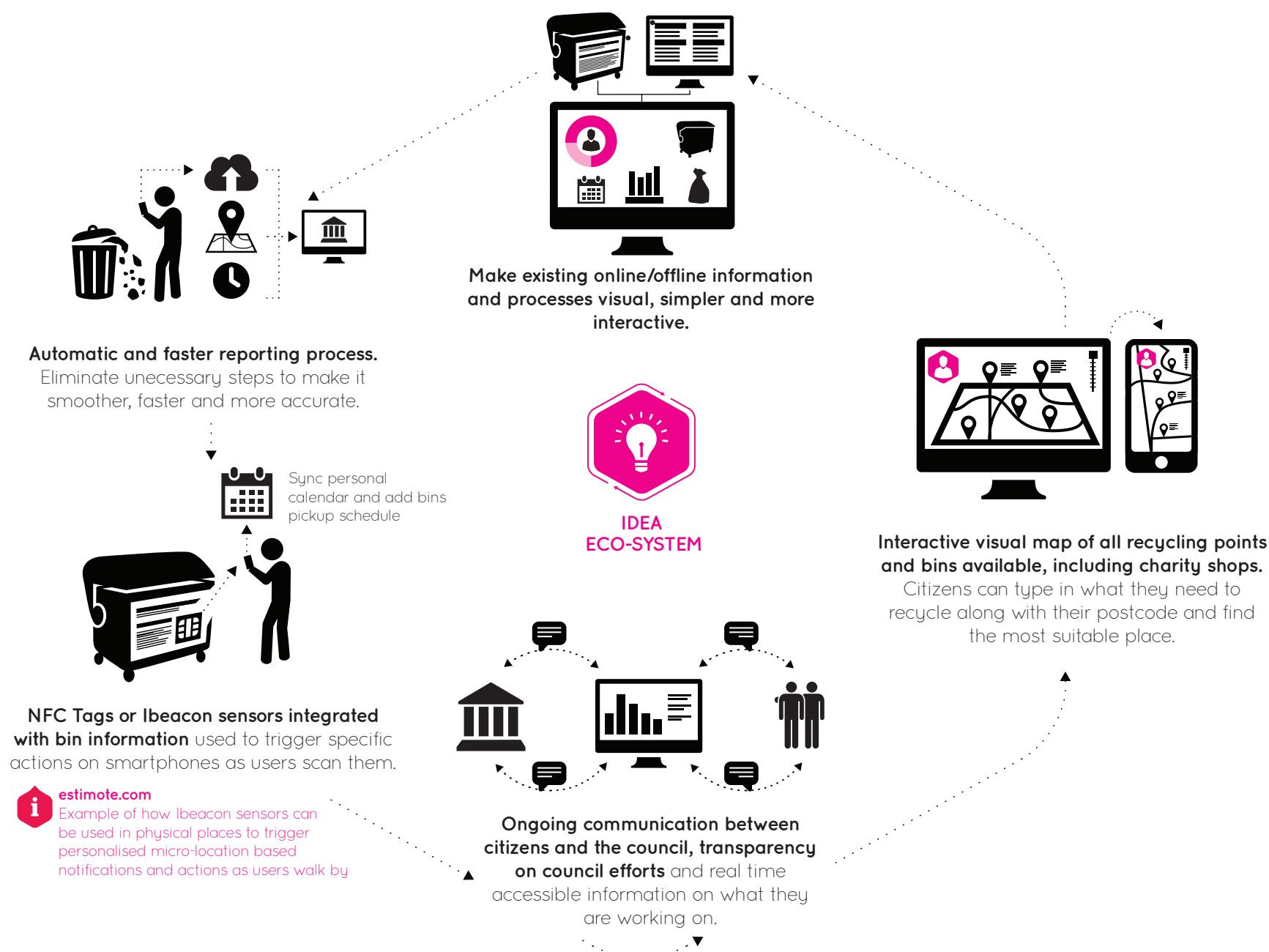
- Simplify and make existing online and physical information visual
- Simplify how to access and understand pick up schedules for waste in households and business and how to report an issue
- Add direct links or QR codes that allow citizens to reach with one click relevant website sections and download MyGlasgow app on physical bins

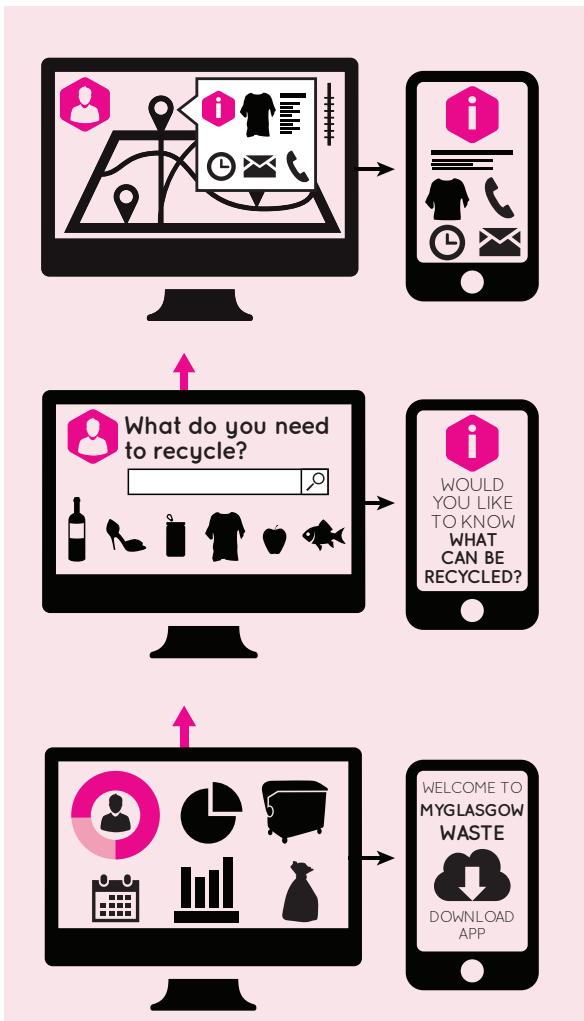
### EMBEDDING INFORMATION INTO BINS

- Simplified reporting process. Citizens scan a bin (location, type of bin and household are automatically detected) they label the issue (possibility to select precomposed complaints) add a photo if necessary and submit
- Development of online visual directory of all possible recycling points, which materials can be recycled and where
- Embed NFC tags and RFID chips in bins information stickers that trigger smartphones apps or actions as users scan them

### LIVE WASTE INFORMATION

- Embed IBEACON or similar sensors in bin information that can spontaneously send relevant information and tips related to waste, location and community to citizens as they walk by
- Smart system that analyses complaints and optimises services accordingly (e.g. recognise if a community needs more bins capacity or better waste education)
- Integrate smart and customised information, pick up schedule and updates related to waste and bins in MyGlasgow profiles

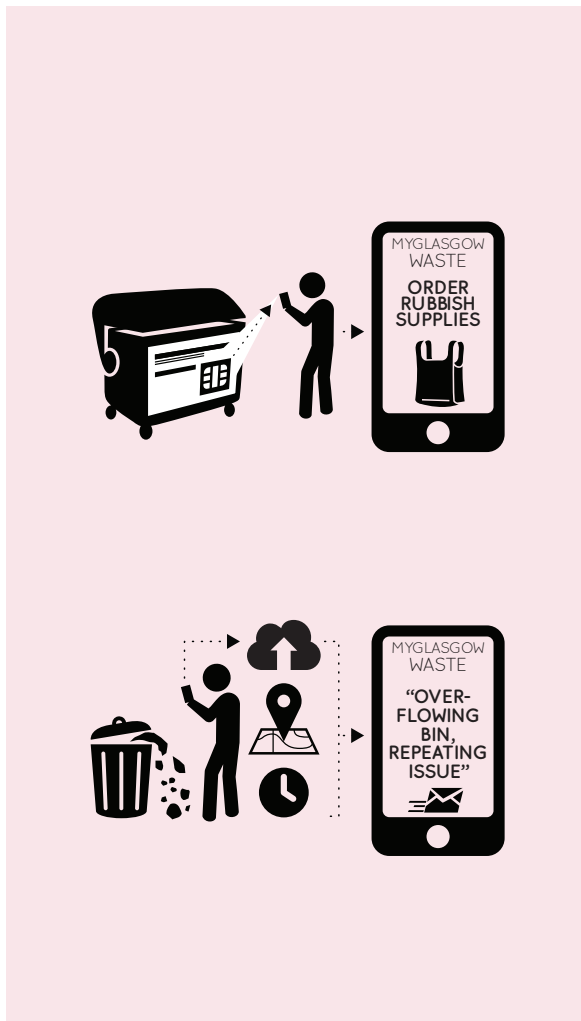




After searching among the types of waste, citizens can access quickly and smartly a visual map of recycling points and waste containers. The map is already zoomed in to show the recycle point that best matches their location and search terms with related essential informations (opening times, contact, directions, etc...)

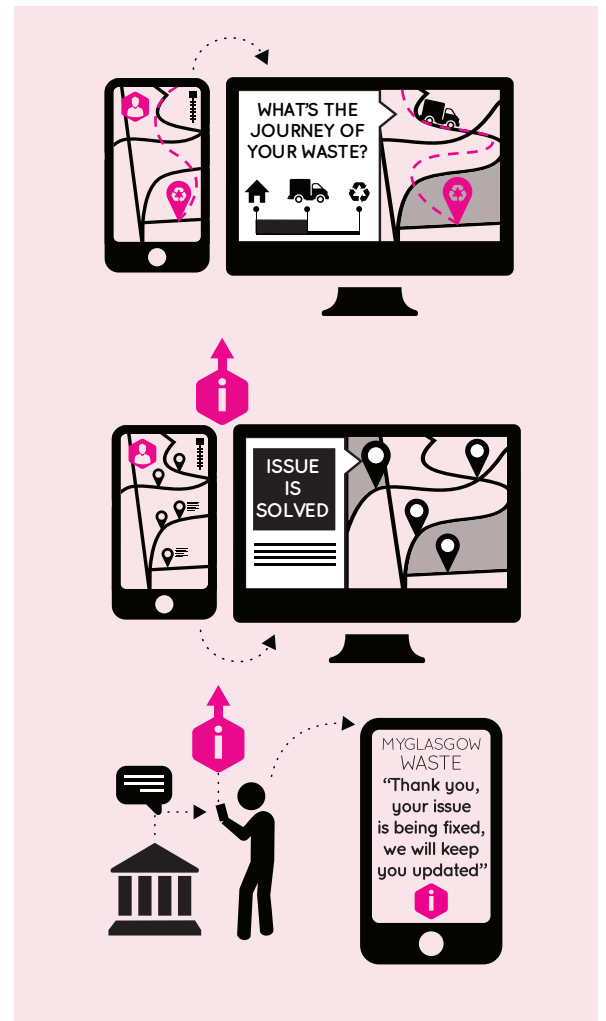
On MyGlasgow/waste citizens can select or type what kind of rubbish they need to recycle or explore the menu.

Simpler way to navigate by material types of waste for information and recycling FAQs. Citizens can choose from categories like glass to textiles.



Scanning the bin information citizens will also be able to order waste plastic bags, request new bins or different types of containers depending on availability.

Citizens scan a bin, select issue, label it, attach a photo if necessary and file a report. Date, time, location and bin type are automatically detected.



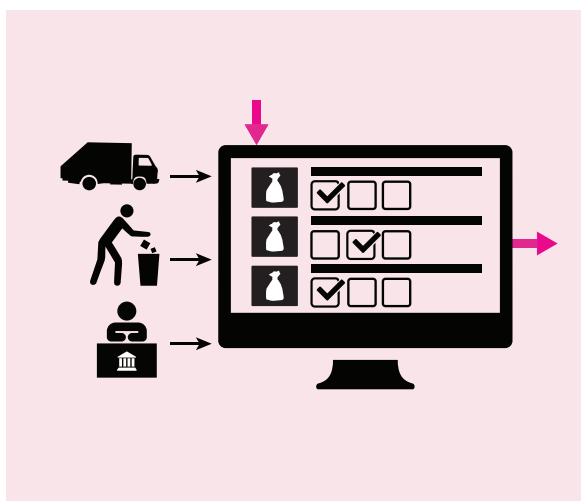
As the system develops and more precise data is gathered citizens will be able to visualise the journey of the waste they produce and recycle; see the impact of their efforts on their community and the city. They will also be able to see how the waste containers and communities are performing.

The map shows what the council is currently working on and where, what is being fixed, how they are using resources and the status of complaints and issues.

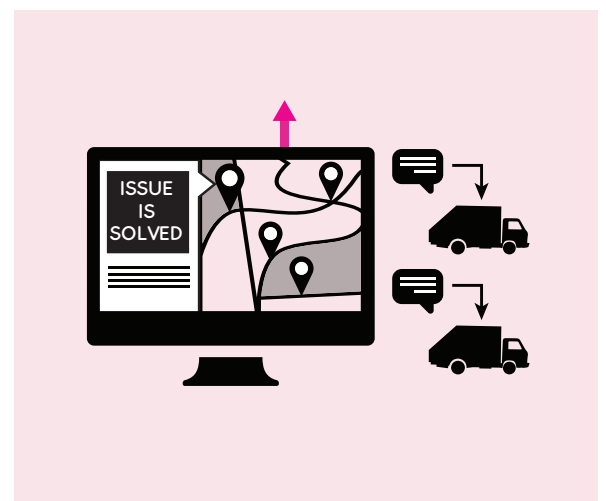
When citizens file a report they get a response on what's happening and estimated time in which the council will solve their issue. Clicking on "information" they can easily access visual evidence of the council's work, visualised on a map.



Datasets on all types of bins, waste containers and recycling points are used to build a visual map that can be accessed by citizens. The map integrates all possible ways to recycle including charity shops.



Optimised list of issues with brief description and option to tick following boxes: Fixed, Currently working on it and Planning to work on it in the future. This could also be used by council staff as a project management tool, to track their achievements and see their progress as they work.



When issues are solved or new ones arise, automatic messages are sent out to optimise existing routes and resources. Visibly smarter services will help reduce citizen's complaints.



“We’ve got no way of simply documenting dog poo or overflowing bins. We just do it with cameras and email photographs to the council but that is time consuming”

- Community Council member, Southside

Rules - stuff we need -  
- contact email - one to sl  
- do it / out cyclehack

OPEN Glasgow  
**CLEAN STREETS**  
Support your community to map your area

Check out other civic citizens initiatives at  
[MyGlasgow.gov.uk/CivicCitizens](http://MyGlasgow.gov.uk/CivicCitizens)  
MyGlasgow.gov.uk/Waste  
Need more information?  
0141 287 0229  
Prefer a direct contact, our team can help

## CIVIC TOOLS


Civic challenges could be advertised through MyGlasgow to encourage sign up to the MyGlasgow system and use of the reporting functions with the app.

Equally this tool could be placed in the hands of council staff doing bin pick ups to also report issues in the city.

By linking this to a backend reporting system, the council can optimise teams out on a bin collection cycle to pick up a missed bin rather than send out one team for single bins. This could empower staff to take pride in their jobs and increase in staff morale has been seen through similar initiatives like Love Lewisham where council staff were equipped with smart phones and the app to capture issues in the city.

MyGlasgow/Waste

### REPORTED ISSUE



Issue

Date / Time

Automatic location

Status  
☒ ☐ ☐

[MORE INFO](#)

MyGlasgow/Waste

### REPORTED ISSUE



Status  
☒ ☐ ☐

Issue

Date / Time

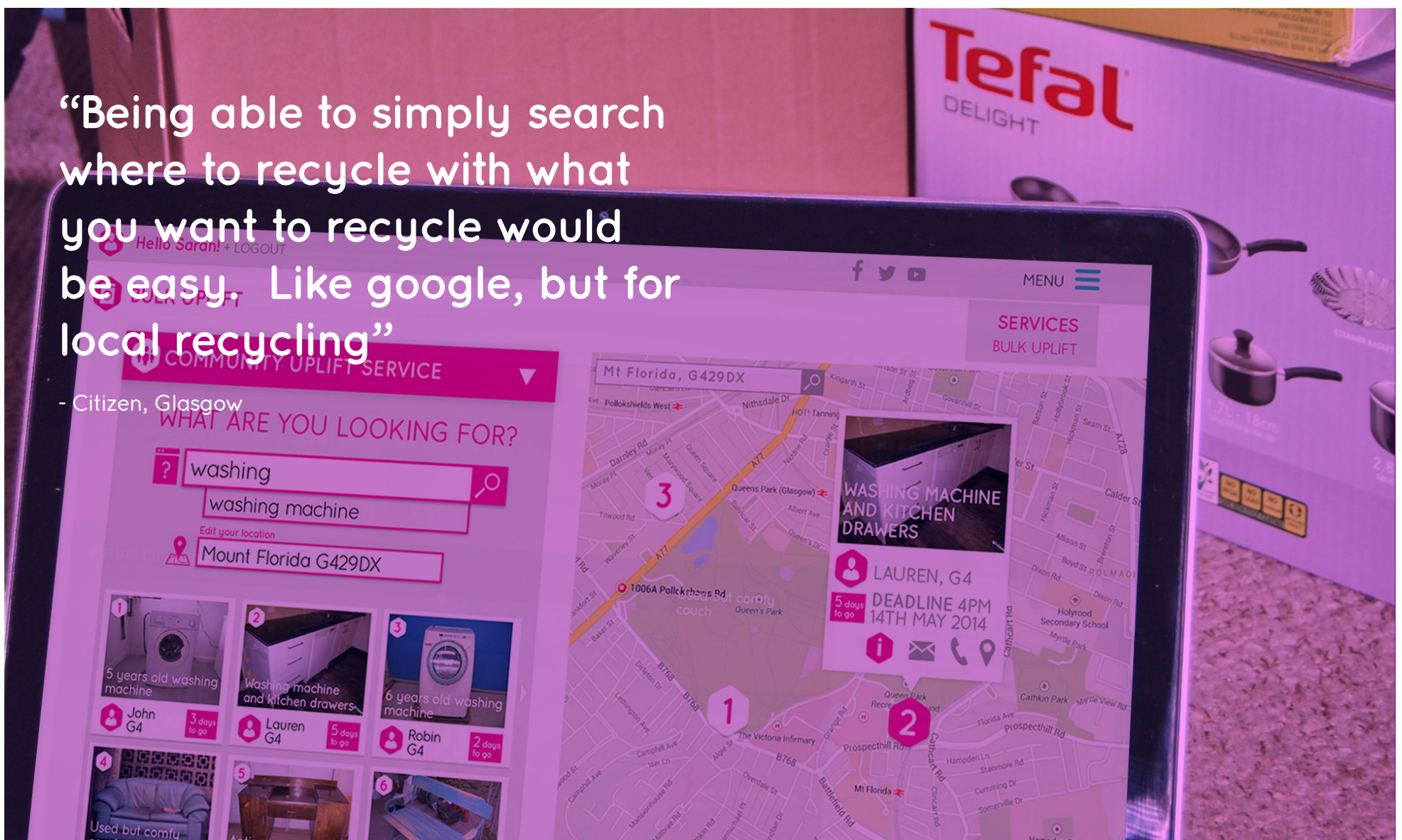
Automatic location

[MORE INFO](#)



“Being able to simply search where to recycle with what you want to recycle would be easy. Like google, but for local recycling”

- Citizen, Glasgow



# MYGLASGOW COMMUNITY UPLIFT SERVICE

MyGlasgow Community Uplift Service is both a citizen and council powered service. It is Gumtree meets Bulk Uplift.

There are many items that could be re-used or recycled by citizens that are being either uplifted or left on the street outwith the allocated time frames for bulk refuse collection.

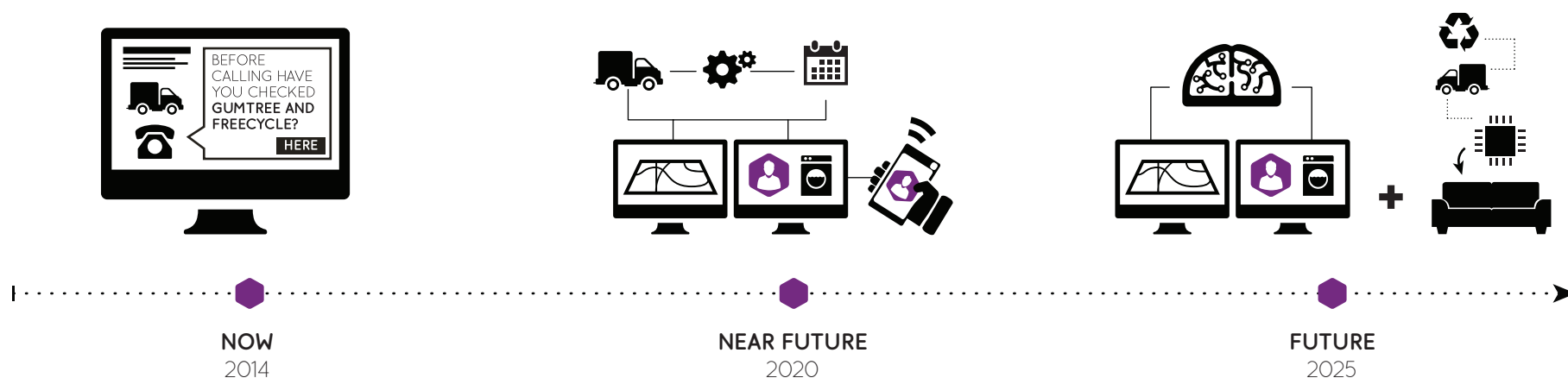
By supporting a community with the tools to both easily book a bulk uplift from the council and advertise goods for recycling or swapping, the council can reduce it's service provision for bulk uplift and move towards a behaviour change by citizens.

This service allows citizens to request a bulk uplift and book this through MyGlasgow but in the waiting period advertises bulk items to the local community.

“I was trying to get rid of my couch but couldn't get it downstairs myself so just called the 'scrappy', they came the next day, gave me a specific time and took it from my flat”

- Citizen, Glasgow





### USE EXISTING FREecycle SITES

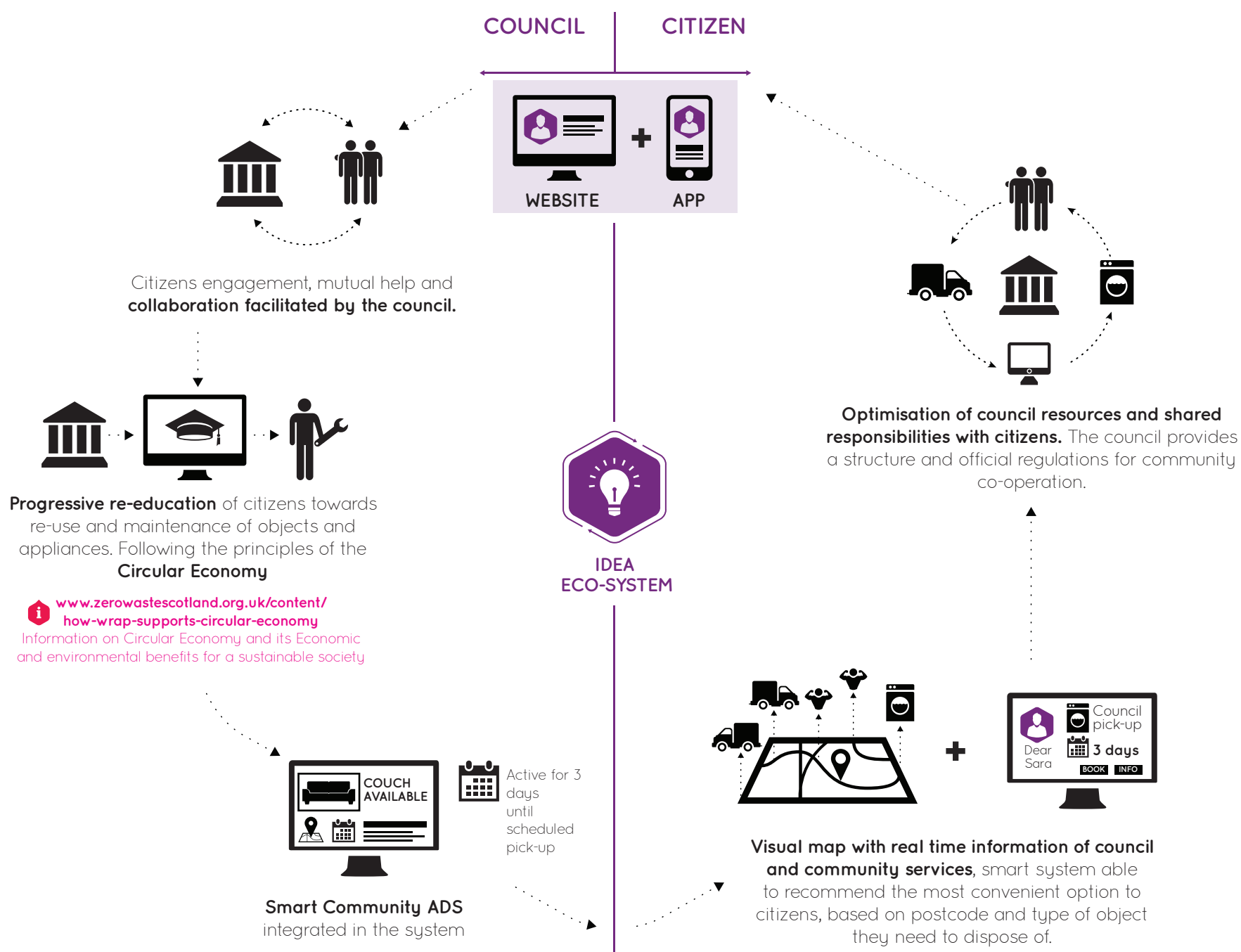
- Advertise how the system will work using existing sites (e.g. Gumtree and Freecycle)
- Support and educate citizens to think, repair and offer items to the community before they throw them away

### USE EXISTING FREecycle SITES

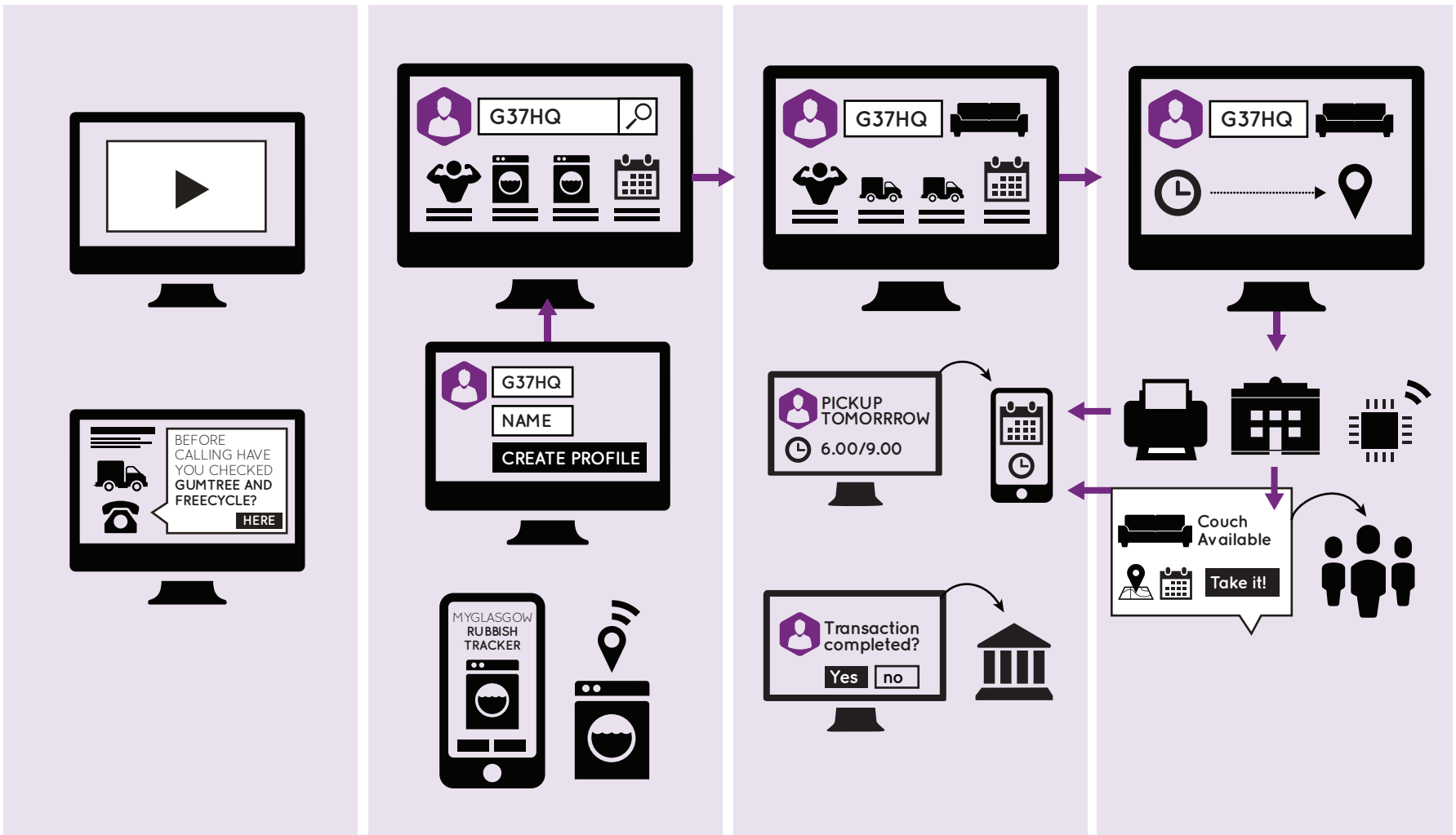
- Development and implementation of the digital service, integrating a goods freecycle service into MyGlasgow and connect with MyGlasgow accounts
- Advertise new service on MyGlasgow

### BULK REFUSE LABELS

- Fully optimised council tracking service for bulk refuse items
- Glasgow City Council has comprehensive understanding and data on everything that is thrown away
- Only registered objects with a smart label can be disposed of legally. Citizens and the council can track an item and follow its journey through the system



FRONT STAGE



Citizens can view video education on upcycling, re-use and Circular Economy.

FreeCycle and Gumtree integrated in Council Bulk Uplift website as alternative service to promote the upcoming system of MyGlasgow Community Uplift Service.

Citizens can search using their postcode on MyGlasgow/waste website and visualise what's available in their area: Items available, help needed and available (e.g. scrap yard) dates and times.

Citizens register and join MyGlasgow community

Capture and geolocate items on the streets with MyGlasgow App. Valuable data for the council to evaluate current services.

Citizens can search using postcode, input the bulk refuse and visualise services available.

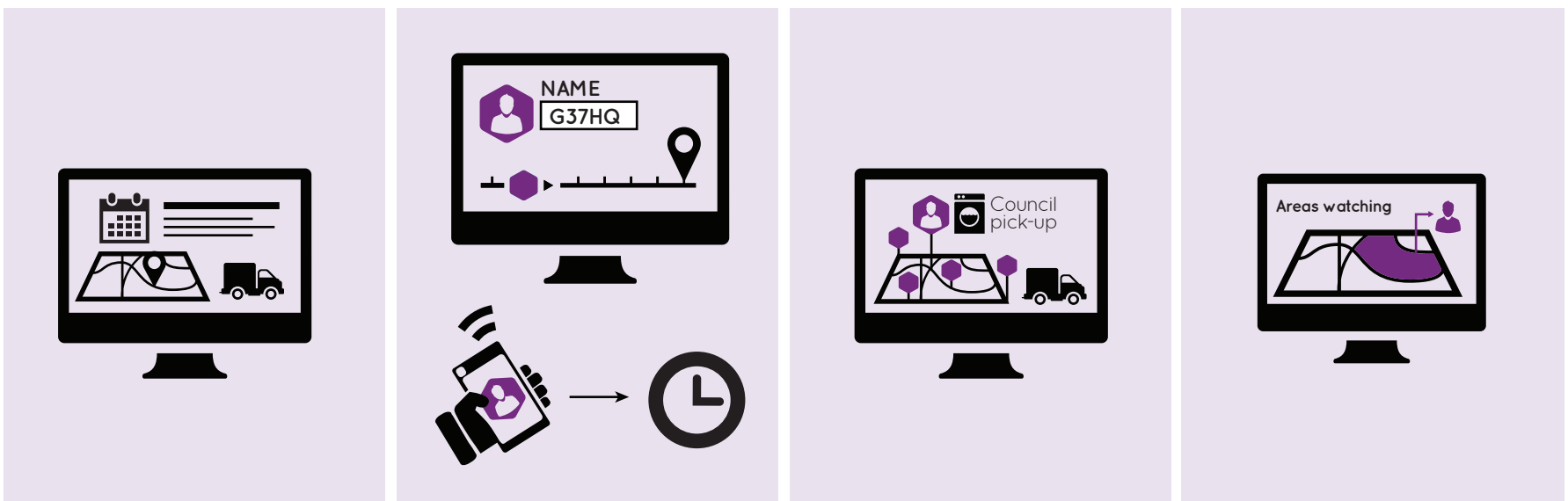
Whether the item is picked up by the community or council, citizens can set a reminder alert that will automatically notify them once the collection date is closer.

Once the item is picked up a confirmation is sent to the council.

According to their search citizens receive a recommendation and time estimate. They can accept and print a receipt. This can also be collected in local service outlets (e.g. the post office)

Print or collect the bulk uplift receipt. In the future this can be an RFID tag or smart label to track disposed objects and collection services. Once uplift is booked, an automatic advert is sent to the community. It will be valid until the pickup date and automatically disappears afterwards.

BACK STAGE



Existing information about when citizens can put out medium sized items that don't require bulk uplift visualised on an interactive map accessible to citizens and visible on Dashboards.

Simplify and make current Bulk Uplift website page more visual. Give citizens exact estimate of collection date to avoid large objects abandoned on the streets and give citizens a receipt.

Allow citizens to choose their availability or at minimum a time frame for collection that integrates with bulk uplift pick up schedules.

Integrate citizen requests in bulk uplift city council map. Once the objects are picked up they are automatically eliminated from the map and archived.

"Helpers" map. Showing dates, times and locations of areas that are actively being "watched" by citizens, scrap yards and others.



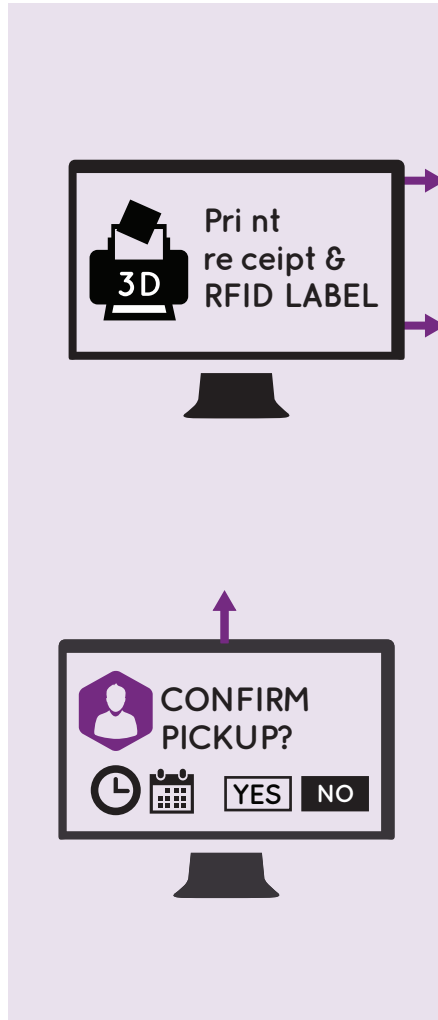
FRONT STAGE

BACK STAGE



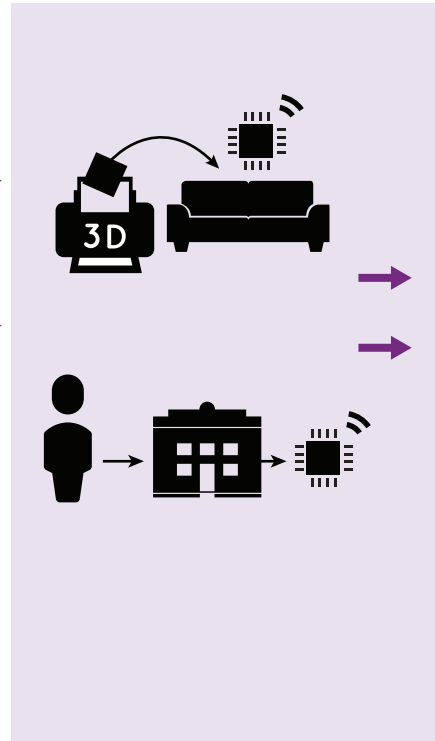
Citizens who need to dispose of large objects can access bulk uplift services using MyGlasgow app or website.

Once signed in with their MyGlasgow profile, using name and area code they can search amongst the services available and book a pick up.



Citizens can print a receipt and a smart label with RFID chip to place on the object that needs to be picked up.

Once selected citizens can review the date, time and type of pickup of their booking and confirm it.



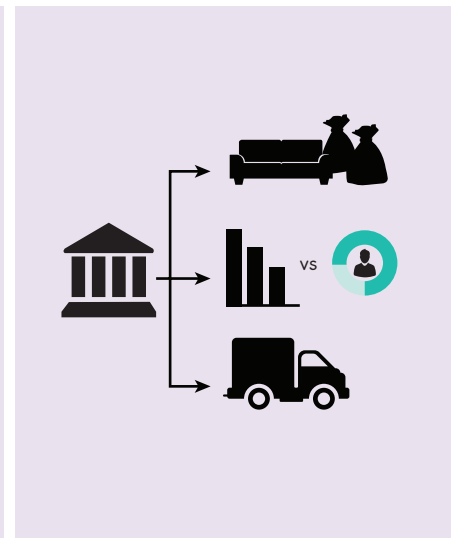
Citizens can print their smart labels at home or collect them at libraries, community centres and Glasgow Life venues, then place the labels on the item that will be picked up. Only registered items that have been through the process will be considered.



Thanks to smart labels citizens can track and visualise what happens to their items and follow their journey. Transparency will increase trust in the service. Seeing how their correct behavior is making a difference is an incentive for citizens to actively recycle and re-use.



Thanks to smart labels the council will be able to gather and visualise accurate data on how waste is produced and disposed of in the city. Item pickups will be automatically integrated in the system.



Thanks to this idea the council will be able to reduce the presence of abandoned objects on the streets; gather data on waste production and citizens behavior, optimise vehicle routes and check in real time if the service is working.

## ASK THE QUESTION

Asking citizens what they are searching for to recycle and map populates with results of where this is possible in the city

## POSTCODE

Responses will automatically be made relevant to where the citizen lives and the surrounding area



## BEHAVIOR CHANGE

Advertising MyGlasgow Community Uplift service in the online directory on space allows Glasgow to reach out and potentially change citizen behavior by asking them to advertise their 'waste' before throwing it onto the street

## SMART RECYCLING

A visual menu can be navigated to find where objects and waste can be recycled locally. This brings together both local recycling spots, larger centres and local charity shops

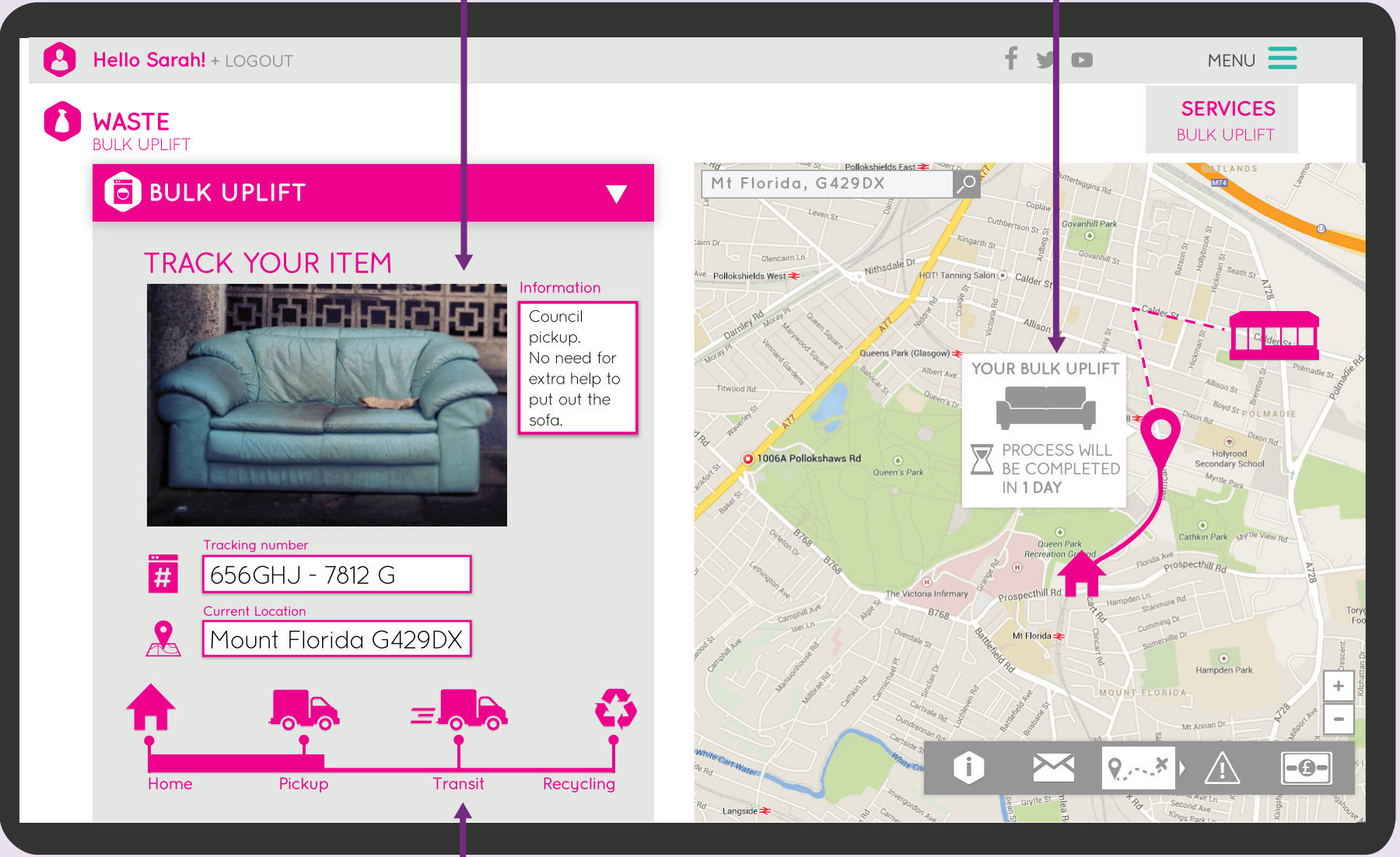


ADVERTISE

Citizens can advertise their bulk items they intend to be lifted

POSTCODE

Items will be advertised to the community but citizens given a time based on pick up schedules how long an item has left to be picked up. After this time, the advertisement is removed from the listings

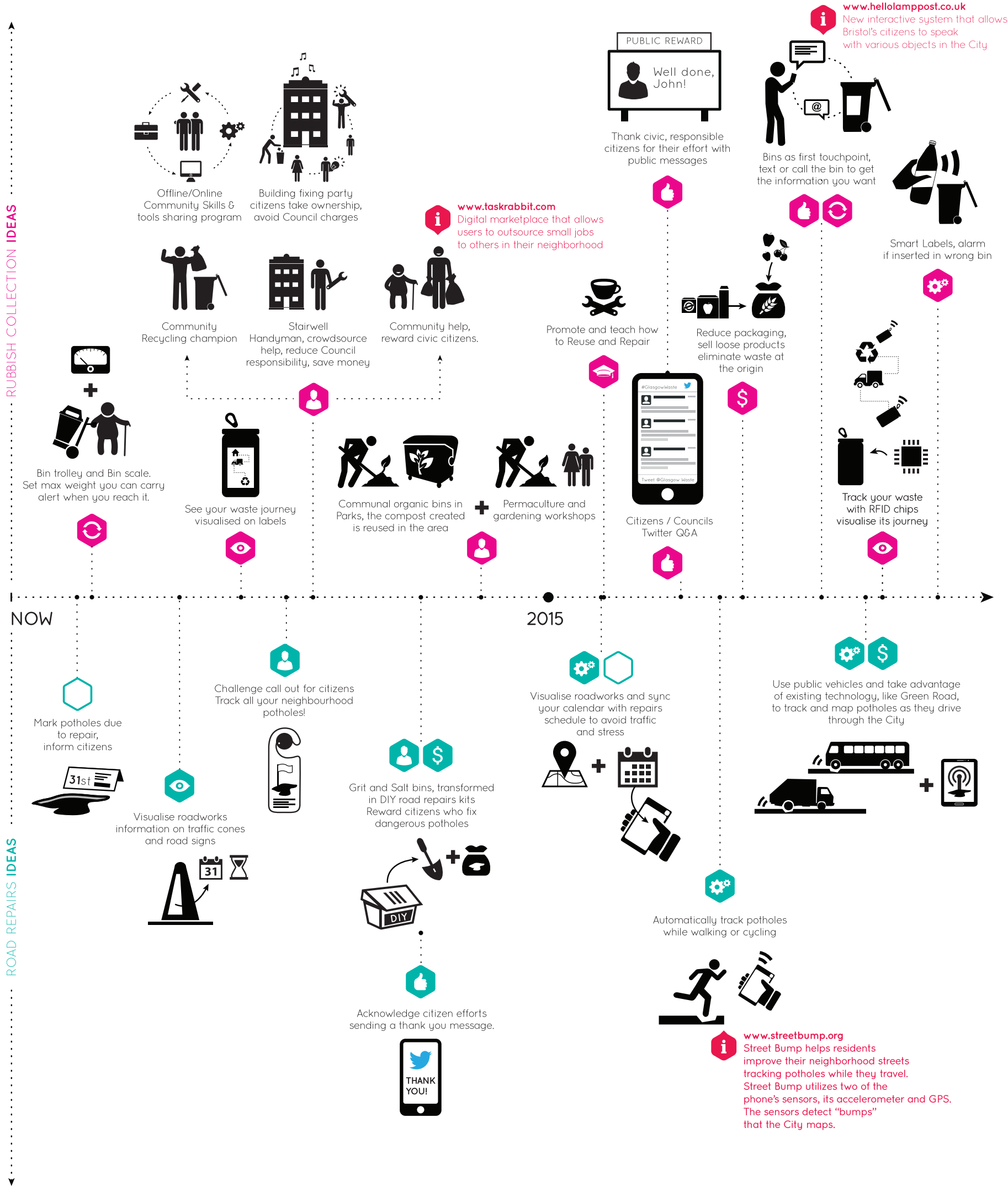


TRACKING

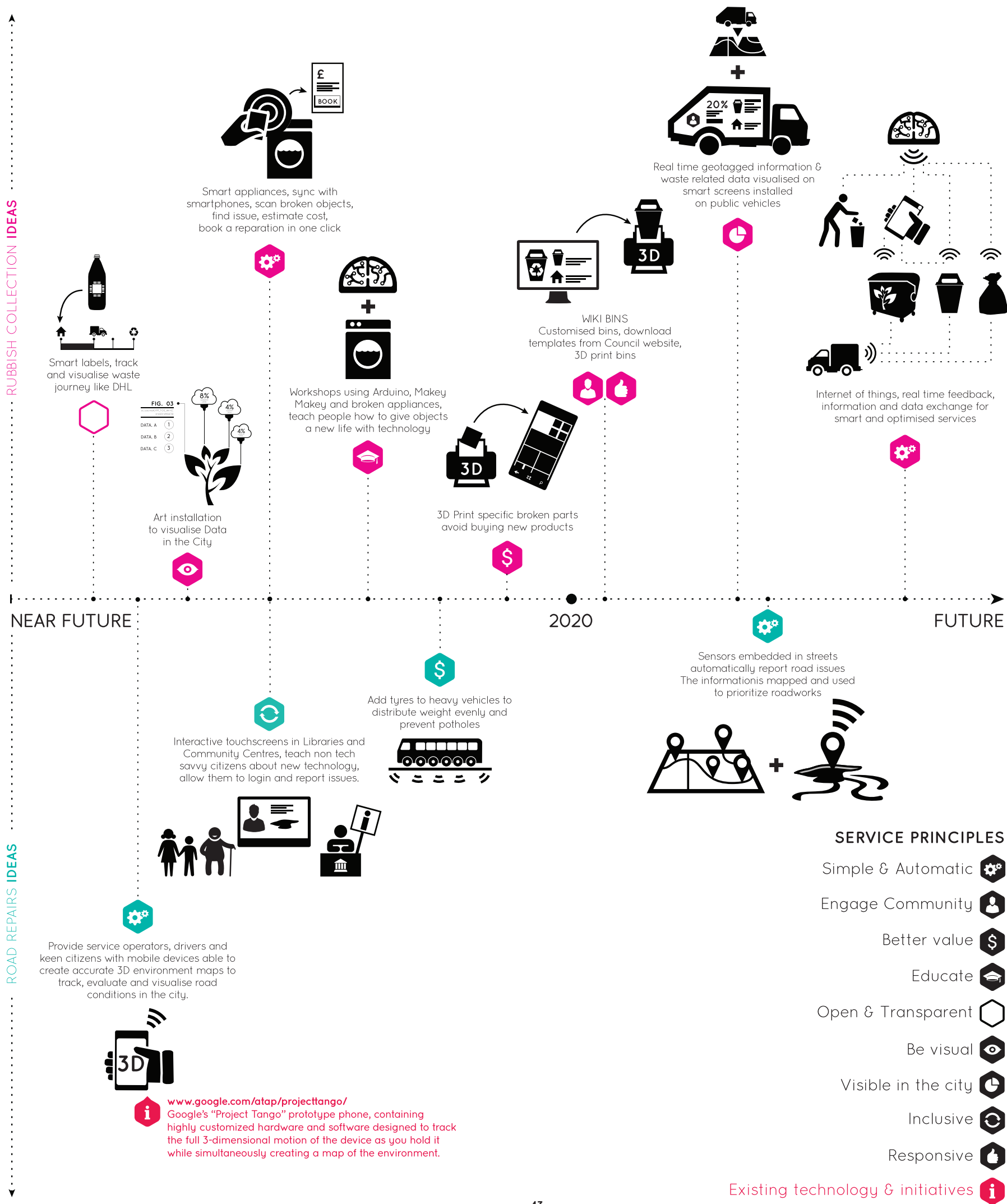
Citizens can follow where their items are in the recycling chain

# FUTURE IDEAS

## A RANGE OF HIGH LEVEL CONCEPTS CONNECTED TO THE SERVICE PRINCIPLES

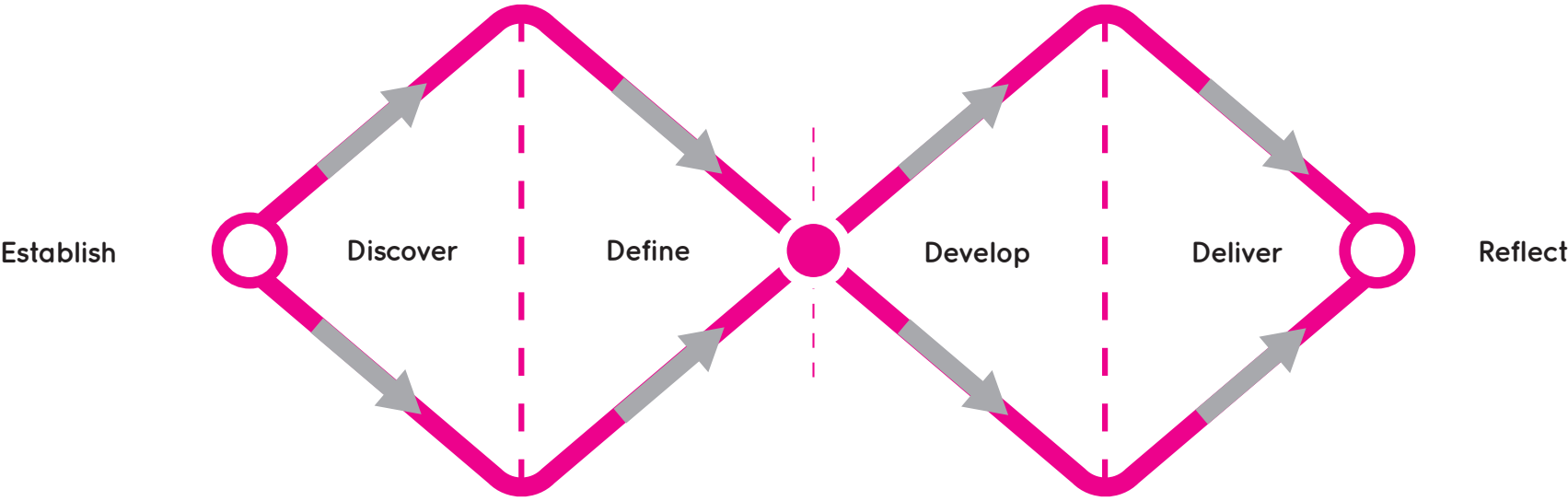






# PROTOTYPING GUIDE

DESIGNINGSMARTCITIES.COM



This report, the ideas and research was undertaken with a design-led agenda. We worked to the framework of the Design Council (2007) Double Diamond Model. This focuses on open investigation to gain insights from people, moving into problem and opportunity definition and then iterations follow into a prototyping phase where ideas are made real in order to test how they work. By testing ideas it is possible to gain early feedback before implementation on how designs could be improved.

Throughout the work the customer experience was considered and not only the front stage of services (what the customer sees) but the backstage of how the council might deliver these services, and further still drive efficiency in what they do to save money.

For this method of working to continue we have produced an online Smart City design and prototyping guide to showcase our methodologies and provide tools for other cities to use.

These tools and methods focus on placing citizens at the centre of service development and focus on their needs over and above technology.



GIVE US SOME FEEDBACK!

Twitter 2k

Like 1.3k



WELCOME TO THE

# SMART CITIES PROTOTYPING GUIDE

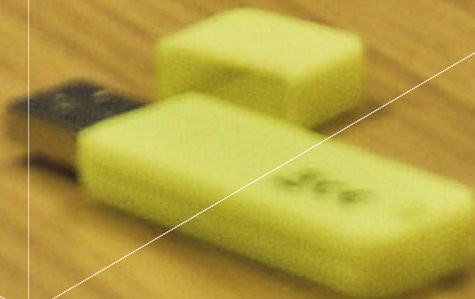
ENTER

  
SPEAK TO  
AN EXPERT

MacBook Pro

100%:   
design stakeholders may  
Thursday lunch meetings  
over updates

☒ Bring computer stand  
☐ Zero WASTE  
☐ Photo Visuals Done by  
End Thursday  
☐ Mac charger / Big Mac  
☒ Megabits March  
Take office pic !!! @







# A report for Open Glasgow

[open.glasgow.gov.uk](http://open.glasgow.gov.uk)

Produced by  
[wearesnook.com](http://wearesnook.com)