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Leeds
CITY COUNCIL

Visualising waste failure demand
User research report

North East Lincolnshire and
Leeds City Council

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Overview of the project

Background to project

The Smarter Neighbourhoods Transformation Programme is a key programme to enable the council to deliver savings and efficiencies. It is a very visible and emotive part of council services that the community values and if the service does not meet expectations the level of dissatisfaction is high. A key challenge in the service is being constantly distracted to do rework where we have not got things right. This has a clear impact on our planned work meaning this is potentially delayed to do the rework and in itself drives more avoidable contact and demand on council services. So, our view is that getting things right, first time, on time will inherently make us more efficient.

The Smarter Neighbourhoods Programme sponsor approached the Service Design Team with a challenge to identify the area where failure demand had the greatest impact. Understanding our failure will help us reduce demand which could have a big impact on cost, user experience and staff satisfaction. Looking at data from all different services it was apparent that Missed Bins was an area to focus on and where we could add the most value.

As part of NELC failure demand project we undertook discovery work to understand the problem. The user research included working with waste management team, the waste crews, business support, customer services, members and residents. We collated and analysed the research work and identified data as an issue, along with 4 other areas, as key opportunities to reduce failure demand.

Legacy systems make it difficult to extract information from the waste system and it is not easy to drill down to see problem areas on a daily / weekly basis. It is also not easy to share information with front line services and to keep customers informed. As part of Discovery phase we realised there were gaps in the data collected which left us unable to determine if and why bins were genuinely missed.

What are the current challenges?

NELC neighbourhood services has undergone significant transformation over the last year. This includes moving to 2 weekly collection of residual waste, changes to the frequency of grass cutting and with reduced resources following a restructure, is pressured by increased fly tipping and other anti-social behaviour. This is manifesting itself in increased failure demand and hence the drive for the failure demand project. Data was identified as a key issue either not being available or in a form that the service could act on to address the failure.

As many parts of the service are interconnected, it is critical that planned work can be delivered and failure demand is minimised to avoid rework and distraction. To meet expectations we need to understand why containers are missed.

This means that we need to have robust plans, understand our capacity restraints and how best to deploy our resources. Key to this is understanding the failure demand and stopping this happening.

The challenge from a data perspective was to present the information in a way that tells the story or at least enables us to ask the right questions:

- Why is this happening?
- Where is this happening?
- What are the opportunities for change and improvement? I.e. process change, training etc.

What is the problem we are trying to solve?

Reports produced on a monthly basis are quickly out of date and are not widely shared or stored in a centralised area, resulting in a lot of ad hoc reports being produced to deal with enquiries and complaints and to update managers and members. Managers were not able to self-serve.

Conversations with the Smarter Neighbourhoods Programme Sponsor at the start of the earlier Neighbourhoods discovery project highlighted that although we had data regarding missed container reports, we didn't know the number of actual missed containers or the reasons for failure. We were therefore unable to address failure demand and crews were continually being taken away from their normal schedule of work for re-work.

It is extremely difficult to establish the number of genuine missed collections by the service as the reason for missed containers wasn't recorded or if it was, it was recorded in a text field which is difficult to extract for reporting. Furthermore more than one report is often made regarding the same missed collection.

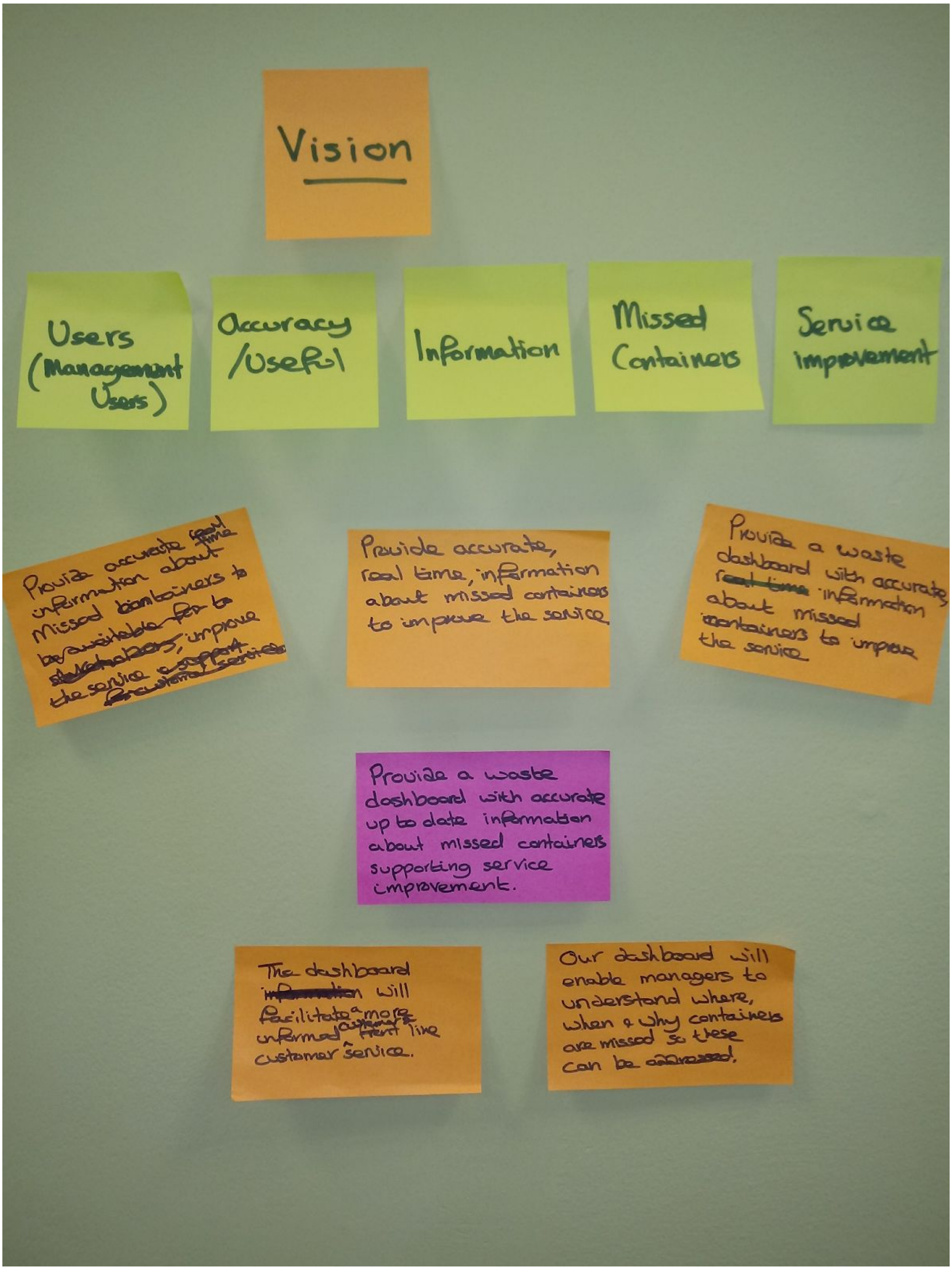
How did we get to where we are today?

From research and conversations with service managers we identified initial requirements for a basic dashboard regarding missed container reports feeding direct from the waste management system to allow access a wide range of data, including back office activity and recording.

An initial basic prototype was created and initially tested with the waste team manager, waste team leaders, waste strategy team, customer services and business support. Feedback was overwhelmingly positive and led us to believe that this would be a good project for the MHCLG Local Digital Funding opportunity as collaborating with other councils would be beneficial in developing the dashboard. Following a successful bid, working with Leeds City Council we agreed on the main objectives and a project vision at the Agile for Teams training we attended:

'Provide a waste dashboard with accurate up to date information about missed containers to support service improvement.'

The vision was formulated through looking at user needs identified through sharing our discovery work with Leeds as highlighted in the photo below.



Vision

Users (Management Users)

Accuracy /Useful

Information

Missed Containers

Service improvement

Provide accurate ~~real~~ time information about missed containers to ~~be available for~~ to ~~stakeholders~~, improve the service & support ~~[illegible]~~ services

Provide accurate, real time, information about missed containers to improve the service

Provide a waste dashboard with accurate, ~~real time~~ information about missed containers to improve the service

Provide a waste dashboard with accurate up to date information about missed containers supporting service improvement.

The dashboard ~~information~~ will facilitate a more informed ~~customer~~ front line customer service.

Our dashboard will enable managers to understand where, when & why containers are missed so these can be ~~[illegible]~~.

Project Outline

The scope of the Alpha being to use existing technologies available to many councils. To replicate early work North East Lincolnshire Council have started to develop visualised data around failure in waste collection rounds. Enabling the sharing of code and method to achieve a successful useful output by many councils to deliver service improvement in waste collections. Intended as a largely internal tool to meet different users needs across waste management, team leaders, customer services and members but with the potential longer term to be used with customers via a range of CRM systems.

In scope:

- Mapping of data visualisation
- Common data and taking forward earlier data standards work by DCLG
- Data by authority
- Data by round
- Data by ward
- Data by waste type
- Data by collection type (assisted and unassisted)
- Data by household
- Data look-up by household

Out of scope:

- Missed streets (for the alpha but a definite long term aspiration)
- New technologies (for the alpha but longer term has implications around procurement)
- Production code for future Beta development
- Use externally with customers
- Pilot waste collection schemes such as hessian sacks for recycling (NELC) and food waste (LCC)
- Change of service processes (the Alpha product providing the evidence base for investigation and analysis to support the service changes)

Work was mapped out to include two rounds of user research with anticipated end users of the dashboard to gain wider user testing, feedback and suggestions. Feedback and suggestions were considered and if feasible were prioritised. Iterations were then made to the dashboard based on value added.

Prototype screenshots of the iterations were shared on Pipeline, at the MHCLG roadshow and during fortnightly show and tells which were recorded and links added to Pipeline and Slack.

Early on in the project, Leeds were given a login to the basic prototype to test with users at Leeds. Any iterations made to the prototype were viewable to both councils. Leeds were also given an extract of the data model including data fields and types, system codes included to help Leeds identify and extract the data required for the dashboard.

As NELC and Leeds CC use different systems, this is likely to be the same across most councils. To validate our hypotheses we planned a survey across local authorities to include a snapshot view of their ICT estate. As we realised the potential differences, we agreed that we should concentrate on producing a common data model which could be replicated across multiple systems. We would focus on high level waste types eg Dry Recycling, Domestic and Garden waste within dashboard and use common language on the dashboard to increase scalability across councils.

The timeline of the project progress is here.

Risks and Benefits

Whilst in London at the kick-off meeting and during the site visit to Leeds we discussed the risks and benefits of the project and found most of them were shared across the two councils. We further explored the risks and benefits during the Agile for Teams training.

The main risks highlighted by both Leeds CC and NELC were short timescales, increased complexity of working collaboratively, different technologies and system complexities, limited resources and trying to do too much. We considered these risks when agreeing ways of working and decided to use Slack, Trello and Skype to communicate throughout the project to enable collaborative working and to keep stakeholders informed. The risks of limited resources, short project timescales and trying to do too much helped us to keep the scope of the dashboard realistic and achievable.

Common benefits were identified as service improvement through identifying recurring challenges for the waste service and resource planning. Benefits to the customer were anticipated to be more reliable and efficient waste service and the improvement of communication with the customer through the collection of missed container reasons and better managing customer expectations.

Both councils could see real benefits to collaboration and sharing of learning.

User Research Goals

- Valuing the user and putting them at the heart of the design
- Identify data required to provide minimum viable product
- Testing of the prototypes
- Test outcomes/missed container reasons against waste service standards collection event taxonomies and with Leeds CC
- To enable iteration based on the insight and feedback
- Identify whether other authorities could replicate the same data model
- Identify whether other visualisation tools such as PowerBI could be used to replicate the same prototype on a low cost basis without the need to go out to tender a new system

Methodologies used

- Structured research discussions with waste collection staff
- Demos of prototype and gathering feedback in show and tells
- Structured discussions with Customer services staff
- Observing business support around waste services
- Discussions with members and demonstration of early prototype
- Survey across multiple councils to explore commonalities across systems and organisational data analysis maturity
- Calling out to LA's early in the project for information nationally using Slack
- Using Pipeline to share the show and tells and screen shots for feedback
- Researching costs and impact of missed containers with finance teams
- Researching councils across the region about infrastructure and capability across waste systems

Data Research Questions for Leeds City Council

As well as the discovery work shared, Leeds were asked to complete some data research questions to give further detail to the information already shared.

What are the key problems areas that you have to deal with at Leeds?

Customers and customer service teams are frustrated by the lack of information in real time as to why a container has been missed. This leads to high levels of avoidable contact for customer services as customers will contact the council before customer services have access to any information as systems are updated by waste at the end of the day, therefore forcing customers to call back the next day. Communication between waste, customer services and the customers could be improved. Furthermore, recovery protocols and processes can be difficult to uphold by the crews resulting in frustration from customers and customer services.

From a waste services perspective, the most common issues customers experience are problems with their domestic waste collections. Often a complaint is raised if the issues are reoccurring, the collection problems are serious (communal bins/bin yards) or if a customer is unaware of the Council's policies regarding recovery action. We also receive complaints regarding wider policies and also problems experienced at the various Household Waste Recycling Centres around Leeds.

What are the current challenges at Leeds?

The in cab technology in some cases is not being used to its full potential to record missed collections and the various reasons for those missed collections, therefore we have no real time reporting available. This means we are unable to identify the root cause of the failure and we cannot explain the reasons to the customer for single or repetitive missed collections.

We currently do not have a CRM system to link customers using multiple formats to report missed containers, therefore work is potentially duplicated in order to address the problem.

We produce monthly reports on data and customer feedback highlighting problem areas but the impact of these reports affecting real change is uncertain.

Waste Team Leaders face many challenges; these include the difficulties in contacting complainants and residents at suitable times and ensuring collections happen when roadworks or access issues have prevented these previously. Issues surrounding health and safety are very important, and this is one of the main issues faced by Waste Team Leaders.

What are the current pain points for Leeds?

The current pain points identified are:

- Repeat missed collections
- Customers not receiving feedback from their missed collections
- Avoidable contact generated due to a lack of shared knowledge
- High demand for real time reporting

What information do you need to help you in your role to improve the service delivery?

Customer service officers would want as much real time information as possible including:

- Bins fallen in wagon
- Single missed collections and reason
- Missed streets with reason and planned return
- Ability to highlight/ identify problem routes
- Information on where call back requests from the service are failing

This is dependent on whether the bin crews use the in cab technology to provide real time information. It is also noted that customer services have limited access to information in comparison to waste services so it would be useful for this to be shared knowledge.

For Team Leaders and Helpdesk it would be useful to be able to identify routes with known issues.

It would be useful for customer services to see missed bins information and reasons for individual missed collections and missed street collections to identify problem areas and be able to organise recovery efficiently. It would be useful to see any information which has been or should be passed to the customer in terms of the advice for recovery. Customer services would also like easy to access performance info.

How could data support teams at Leeds?

Data would enable management and team leaders to have performance data and resource effectively. They can highlight different issues on specific routes and look at the reasons why repetitive failure is happening in certain areas.

Customer service officers can see more specific data to better inform customers. Customer services can then try and reduce avoidable contact by providing accurate and timely data

User Research Stages

1. Initial research with Leeds council during site visit
2. Identify user needs for the dashboard
3. Key users of the system
4. Identify basic overall principles of the dashboard
5. User research methodology and participants
6. Round 1 of user research
7. MHCLG roadshow
8. Round 2 of user research
9. Test whether the prototype can be replicated across councils and different systems
10. Waste Data Standards and using common language
11. Regional survey to discover more about which systems other councils use and their data maturity.

1. Initial research with Leeds council during site visit

Our project lead, business analyst, developer and data officer spent the day with Leeds City council learning about problem similarities. Agenda.
Leeds had colleagues from the key project team as well as the waste Service Manager, IT and Customer services representatives.

What we heard

There are many differences between NELC and Leeds CC and the way that they manage their waste services, customer services and reporting. Policies and waste types also differ as does the technology. This means quite a challenge to achieve a common service pattern and ways of working. However this is also an opportunity to demonstrate that the challenge is not the technology but understanding user need and how this can be best met using a service design led approach, treating technology as building blocks to deliver an end to end user journey.

Technology

Leeds CC use different systems than NELC to manage their waste system. Leeds use Collective, whilst NELC use Mayrise. Both are common waste management systems used across many different councils. For customer services Leeds CC use Civica 360 CRM whilst NELC use Firmstep. Both council’s CRM system integrates into the waste system so missed container forms completed by either the customer or customer services create a job in the waste management system. At NELC however a free text field from Mayrise is viewable from the CRM system so Customer Services officers can see any updates written in the field regarding the missed container report. Information however is limited and often of little value and cannot be reported on due to free text format. Customers currently receive little or no feedback on submitted forms. At Leeds CC customer service officers have no access to Collective waste system to get updates on missed container reports and jobs are often closed with no feedback given to the customer.

Leeds CC have adopted PowerBI as their corporate reporting tool and although they have access to Oracle APEX they are decommissioning its use in favour of PowerBI. NELC use Oracle APEX and are currently exploring the feasibility of PowerBI as a corporate reporting tool.

Reporting

Leeds CC produce detailed reports on a monthly basis using PowerBI and the Collective system. Data is pulled from their online form system into excel spreadsheets and then into PowerBI but still fail to understand why due to a lack of failure codes feedback from the Collective system. Reports are very visual and detailed however Leeds lack real time reporting as monthly reports quickly become out of date. Leeds CC haven't as yet used PowerBI to report from Collective, however a variety of different operational reports can be generated through Collective. Leeds CC have paid for the Dashboard module within Collective but licencing costs mean that isn't widely used. Data is difficult to extract from Collective. Customer Services can't pull Ad Hoc reports from their online form system during working hours.

Missed container reasons are collected for missed streets but not for individual missed bins. Leeds CC were really keen to explore how this might be done on Collective.

Leeds are working on a data warehouse for extracting waste data and this is a barrier to progressing to Beta at this stage.

Processes

Leeds CC missed container customer report has a series of checks that it asks the customer before a form is generated. If the bin wasn't presented on time, a form isn't generated. The form is also programmed to recognise if the customer has previously tried to submit the form with a different time to stop customers changing the time on the form to bypass the controls. The form also asks whether the bin was stickered for a violation of the waste policy such as side waste or contamination and if it was, a form isn't generated.

All missed streets are entered into Collective when reported and work is rescheduled to allow crews to return.

Policies

The main difference in policies between NELC and Leeds CC is that Leeds don't return for missed containers unless there have been 3 reports or if it is a missed street, the report is escalated and crews will revisit the property. Customers are encouraged to submit a missed bin form even though the crews won't return in order for the waste team to track the volume of missed containers. Once the form is completed customers are given the message to put their container out for the next collection.

Crews will return for missed assisted collections or for missed streets.

Rounds operate 6 days a week including bank holidays and staff work 10 hour days over a 4 day period with a 3 week shift pattern. The same crew operates same round with domestic one week and then recycling next week

Waste services are also operated in a different way and the recycling offer can differ within areas of Leeds with a food waste collection service available in one area of Leeds. Inner city areas have weekly waste collections and 4 weekly recycling.

Garden waste is also a free scheme in Leeds whereas in NELC it is a paid service.

NELC also has a pilot collection in place using hessian sacks for recycling.

As these are localised and not whole borough, these are as stated out of scope as they do not feature in the data set.

Summary of main differences:

:

- Different CRM, waste and reporting systems
- Different bin types and collection systems even within Leeds itself depending on area
- Leeds don't return for individual missed bins unless they have been missed 3 times
- Outcomes not collected for individual missed bins in Leeds
- Leeds report all missed streets into their waste system whereas NELC don't.

Common areas:

After learning about the different processes and tools used by Leeds CC, it was perhaps surprising how many common areas there were too especially with regards the issues and problems surrounding the waste service. At both councils waste collections are a politically sensitive area which carries a negative effect on the reputation of the council and on customer satisfaction. As with other councils both NELC and Leeds CC have seen many changes recently to waste collections in order to work towards recycling targets, reducing costs and with shrinking resources.

The highest volume of demand from customers is Missed containers at both councils. There are also issues with side waste and contamination at both councils. Customers can report missed containers either online or via the customer services team. At both councils a large percentage of reports came via telephone rather than online.

Data

Both councils lack timely reporting with most reports being produced on a monthly basis. Data from the waste system isn't currently linked up to any visualisation tools. It is difficult to gather business intelligence from the data presented.

Data collected in the missed containers form and within the two waste systems is very similar and areas of data visualised by the initial prototype were also largely captured by Leeds CC. The only exception was missed container reasons for individual containers, which is data NELC recently started to collect as a result of the wider internal failure demand project. Ward information is particularly relevant to both councils who deal with a number of requests from members for information regarding their wards.

A missed streets report is manually collated each day and emailed out to customer services, however this information isn't made available to the public at either council. The process for collecting this information is inefficient and it is hard to identify trends or hot spot areas from how the report is produced.

Both councils have invested in In Cab technology for the wagons however this isn't being used to its full potential. For Leeds CC this means that it is being used inconsistently and therefore data quality and reliance is poor. For NELC, implementation has been stymied and therefore no data is currently being collected.

Shared goals

Both councils shared same goal of reducing contact and bad publicity caused by missed container reports. The desire to make better use of their data and to see something different with regards reporting was also shared. Both councils could see the benefit of having up to date data which could be used to visualise trends in missed bins to quickly and easily see where we are failing and to use this intelligence to inform resource planning and service improvement.

2. Identifying User needs for dashboard

During the agile for teams training, in February, we reflected on the key user needs which were identified during both councils' discovery work and our site visit to Leeds. We wrote these up as user needs to cover each anticipated system user and to identify acceptance criteria which we would use to ensure that the dashboard meets user needs. We also developed NELC user personas and Leeds user personas to help us identify with customer, members and end users. Resident user needs however as an internal dashboard are those as a result of enabling the service improvements where internal users have access to the data to take formative action to improve the service (this was the predication for the failure demand project).

User Needs - Team Leaders

- Last 7 day picture of missed containers so can organise resources
- Display information by crews and by wards to organise resources and deal with member related queries
- Also need longer term picture to investigate complaints and spot trends in missed containers
- Property search to investigate complaints
- Map views

User Needs - Service Managers

- Require short, medium and long term information
- Ward information with maps to deal with member queries
- Round/crew information
- Functionality to drill down to individual properties
- See long term trends and patterns to inform resource planning and service improvement at strategic and operational level

User Needs - Customer Services

- Simple minimal information related to individual properties

- Quick and easy property search with details and history of missed container reports for each property

User Needs - Members

- High level detail of missed containers in their ward
- Charts and map views with ability to filter by missed bin reason

User Stories	Acceptance Criteria
As a…. Team Leader for waste.. I want … to be able to see the number of missed containers by type and round… So that.. I am able to organise resources and improve efficiency.	It's done when dashboard provides: -Filters for waste types and crew rounds -Ability to drill down to see patterns
As a ...Team Leader for waste.. I want… to be able to quickly and easily drill down into individual properties So that… I can get a better understanding of the number of times individual containers are missed and why this is so that I can stop this happening.	It's done when dashboard provides: -Ability to search different time periods -Individual property search
As a ...Service Manager for waste.. I want.. my service to run smoothly with few disruptions So that… I can run a productive and efficient service.	It's done when dashboard regularly used: -to plan resources -to improve service delivery
As a ...Customer Services Officer I want.. To be able to provide the resident with correct and timely advice So that… I can close the call	It's done when: -Data is refreshed at least nightly -Data is accurate and complete
As a... resident I want… to be provided with correct information So that … I know why my container has been missed and what happens next.	It's done when: -We know why my container was missed -Information provided is correct
As a … resident	It's done when:

I want… a reliable waste collection service So that… my container is collected on time.	-Decline in missed container reports -Reduction in customer contact
As a ... member I want… to be able to see how many containers have been missed in my ward and why So that… I can address any problems with waste collection in my area.	It’s done when dashboard provides: -Filter by ward -Ability to see which containers are missed and why

3. Key users of the dashboard

The key users of the dashboard are expected to be waste back office staff, service managers and customer service officers so their needs were prioritised when iterating the dashboard.

Residents needs were explored during discovery work with the Business analyst speaking to residents whilst working with the crews. The wide range of information available on the dashboard was considered not appropriate to publish externally. It is expected however that residents will however benefit from the dashboard through an improvement in the service being delivered and in more information being available on the reason for their containers being missed.

Members were also considered during initial discovery work and a paper prototype of a smaller scale dashboard was tested with waste office staff to judge how comfortable they would be with members having access to this information. The dashboard has the potential to have restricted views of the data if councils wish to progress with this feature.

4. Overall basic principles of the dashboard

User research and working with Leeds at the Agile for Teams training, we highlighted the below principles for the dashboard:

Simple in design and easy to use

Users should be able to navigate around the system without much guidance. Sections should be clear and self-explanatory with the same format throughout the prototype and information presented should be easy to understand and clearly presented.

High level detail but functionality to drill down to individual property

Users should be able to see data over a period of time to give trend information and spot patterns in missed bin reports. This will aid service development and the planning of resources.

Common language

Dashboard should use plain english and use common waste terms which multiple users will understand

Filters to allow flexible approach to information available to support individual requirements and remove need for Ad hoc reports to be produced

The dashboard should meet a range of user needs. Users should be able to custom their views through the use of filters to see a wide range of information. It is hoped that the dashboard will avoid Ad Hoc reports having to be run which can be time consuming to run and generally just used once.

One stop shop for all missed bin information

The dashboard should be a one stop shop for both strategic and operational missed bins data. The dashboard should meet a range of user needs whether it is high level data, trends or drill down into individual property data. Waste teams should be able to use the dashboard for operations, strategic and resource planning, resolving complaints and obtaining figures to help with FOI requests.

5. User Research Methodology and participants

NELC user research was carried out by having informal chats face to face and were led by the Business analyst, the Information specialist and Information officer.

During the interview sessions, the participants were asked about their experience when undertaking their role and the issues they encounter on a daily basis regarding missed bins, where the main problems areas were, and what improvements could support the service and the resident.

The prototype was demonstrated in show and tells, in staff workplace and in the crew staff room either using the system or paper prototypes.

Questions asked were:
- Do you feel this dashboard would be useful to you in your work
- Would you use it?
- What would you use it for?
- Is there anything missing that you would need?
- Is there anything you don’t think is useful?
- How easy is it to use?

Participants for NELC research:

- Waste management team managers, team leaders and strategy team
- Business support team
- Customer services - contact centre and Customer access point
- Members
- Crew

Leeds CC methodology:

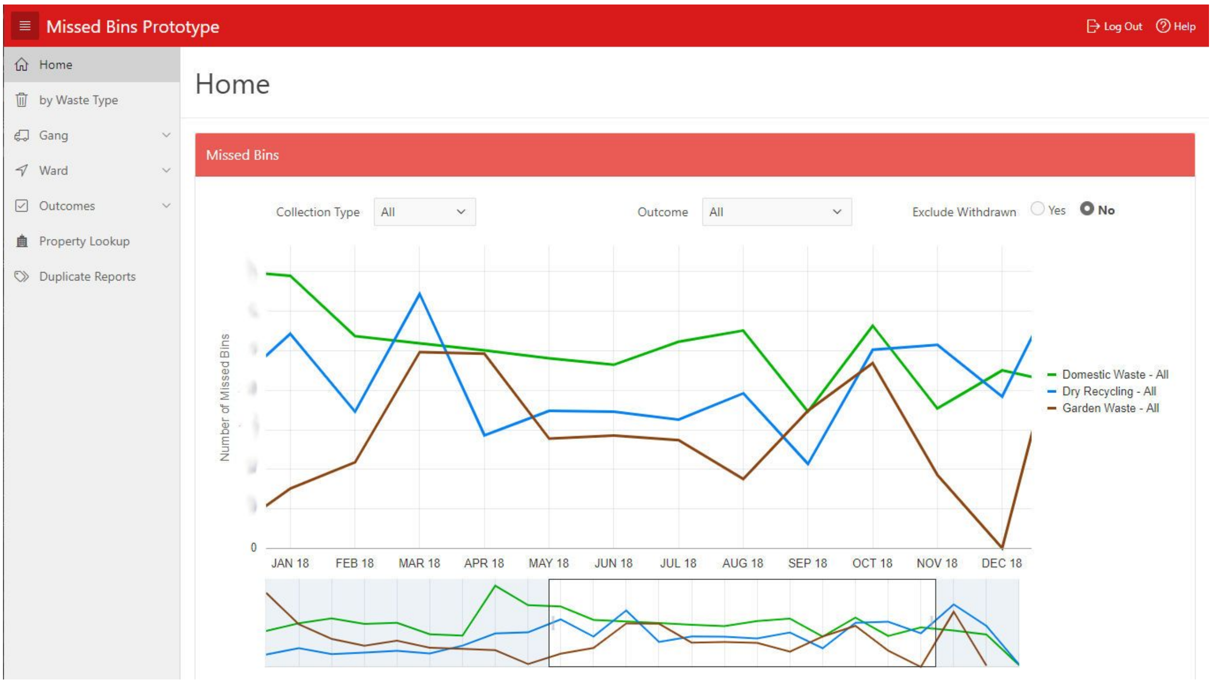
- Customer feedback analysis from follow up contact, customer surveys and calls
- Shadowing of customer services
- Shadowing of waste back office staff
- Data analysis of both customer services and waste services
- Desk research of member enquiries
- Systems and process mapping to determine how data is processed

Participants for LCC research:

- Customer services
- Waste business support team
- Waste managers
- Social media officers

6. Round 1 of User Research

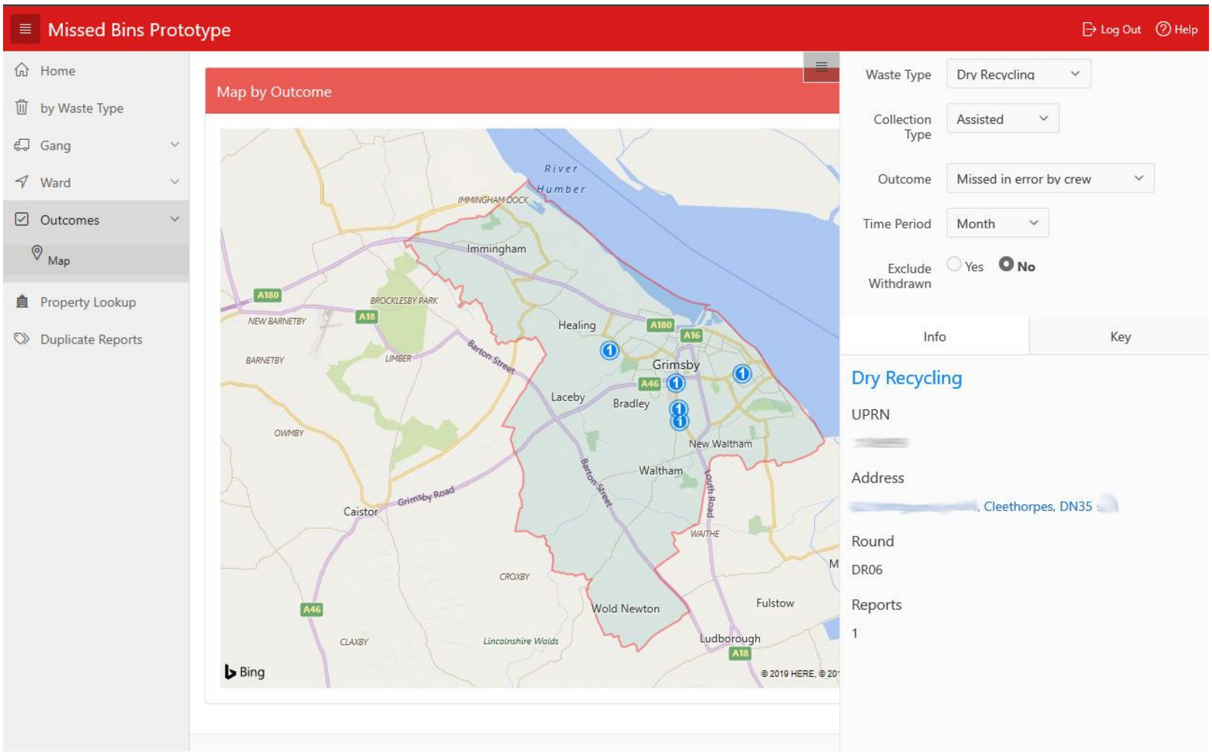
Below are screenshots of the initial prototype at the start of the project.


Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Ward
Outcomes
Property Lookup
Duplicate Reports
Home
Missed Bins
Number of Missed Bins
0
JAN 18
FEB 18
MAR 18
APR 18
MAY 18
JUN 18
JUL 18
AUG 18
SEP 18
OCT 18
NOV 18
DEC 18
Domestic Waste - All
Dry Recycling - All
Garden Waste - All

Collection Type: All

Outcome: All

Exclude Withdrawn ○ Yes ● No


Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Ward
Outcomes
Map
Property Lookup
Duplicate Reports
Map by Outcome
River Humber
IMMINGHAM DOCK
Immingham
A180
BROCKLESBY PARK
NEW BARNETBY
A18
BARNETBY
LIMBER
Barton Street
Healing
A180
A16
Grimsby
A46
Laceby
Bradley
New Waltham
OWMBY
Waltham
Louth Road
Caistor
Grimsby Road
WAITHE
CROXBY
Wold Newton
Fulstow
A46
CLAXBY
Lincolnshire Wolds
Ludborough
A18
Bing
© 2019 HERE, © 20
Info
Key

Waste Type: Dry Recycling

Collection Type: Assisted

Outcome: Missed in error by crew

Time Period: Month

Exclude Withdrawn ○ Yes ● No

Dry Recycling

UPRN

[redacted]

Address

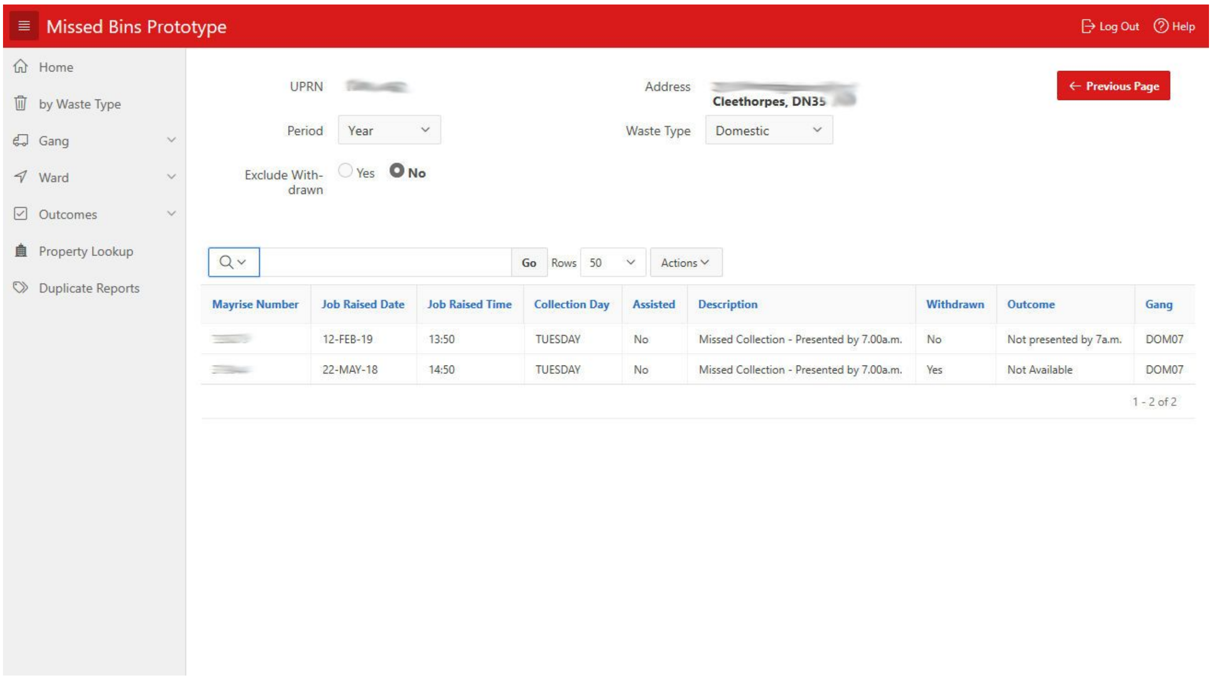
[redacted], Cleethorpes, DN35 [redacted]

Round

DR06

Reports

1



Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Ward
Outcomes
Property Lookup
Duplicate Reports
Previous Page
Go
Rows
Actions

UPRN [redacted]

Address [redacted] Cleethorpes, DN35 [redacted]

Period: Year

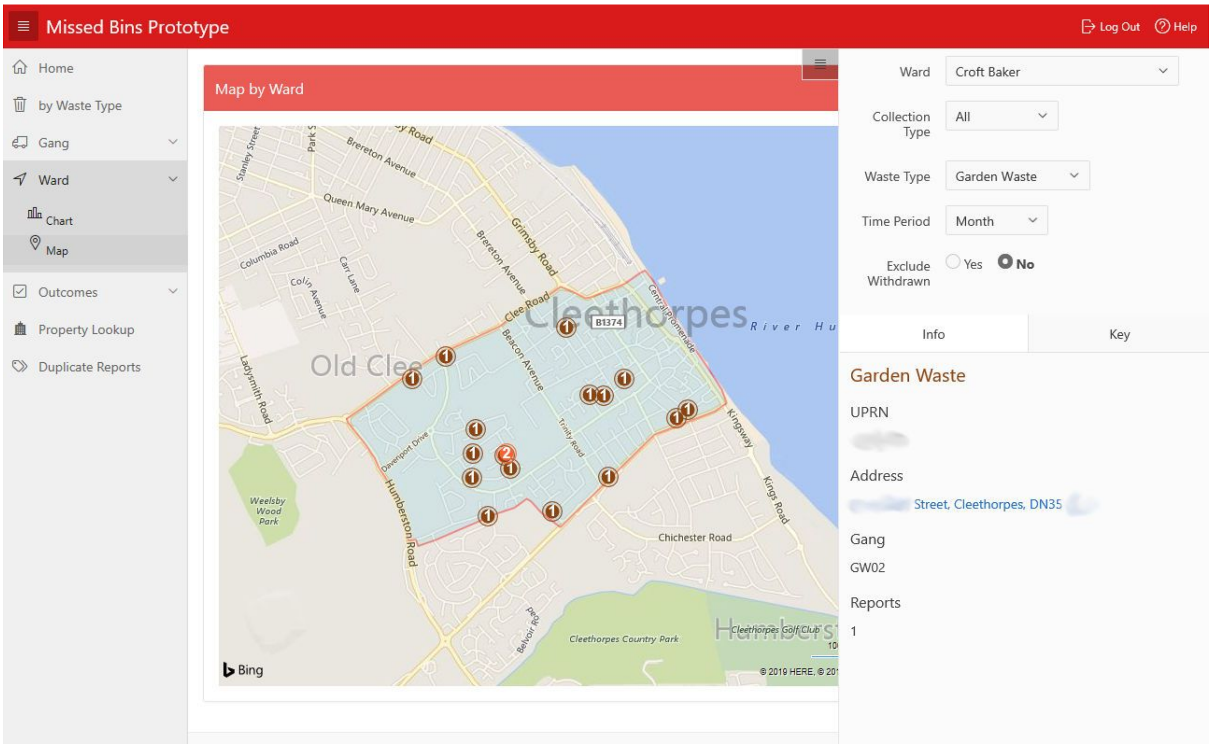
Waste Type: Domestic

Exclude Withdrawn: ○ Yes ● No

Rows: 50

Mayrise Number	Job Raised Date	Job Raised Time	Collection Day	Assisted	Description	Withdrawn	Outcome	Gang
[redacted]	12-FEB-19	13:50	TUESDAY	No	Missed Collection - Presented by 7.00a.m.	No	Not presented by 7a.m.	DOM07
[redacted]	22-MAY-18	14:50	TUESDAY	No	Missed Collection - Presented by 7.00a.m.	Yes	Not Available	DOM07

1 - 2 of 2



Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Ward
Chart
Map
Outcomes
Property Lookup
Duplicate Reports
Map by Ward
Cleethorpes
Old Clee
River Hu
Brereton Avenue
Queen Mary Avenue
Grimsby Road
Columbia Road
Clee Road
Beacon Avenue
Humberston Road
Ladysmith Road
Chichester Road
Kingsway
Kings Road
Trinity Road
Davenport Drive
Weelsby Wood Park
Cleethorpes Country Park
Cleethorpes Golf Club
B1374
Bing
© 2019 HERE
Info
Key

Ward: Croft Baker

Collection Type: All

Waste Type: Garden Waste

Time Period: Month

Exclude Withdrawn: ○ Yes ● No

Garden Waste

UPRN

[redacted]

Address

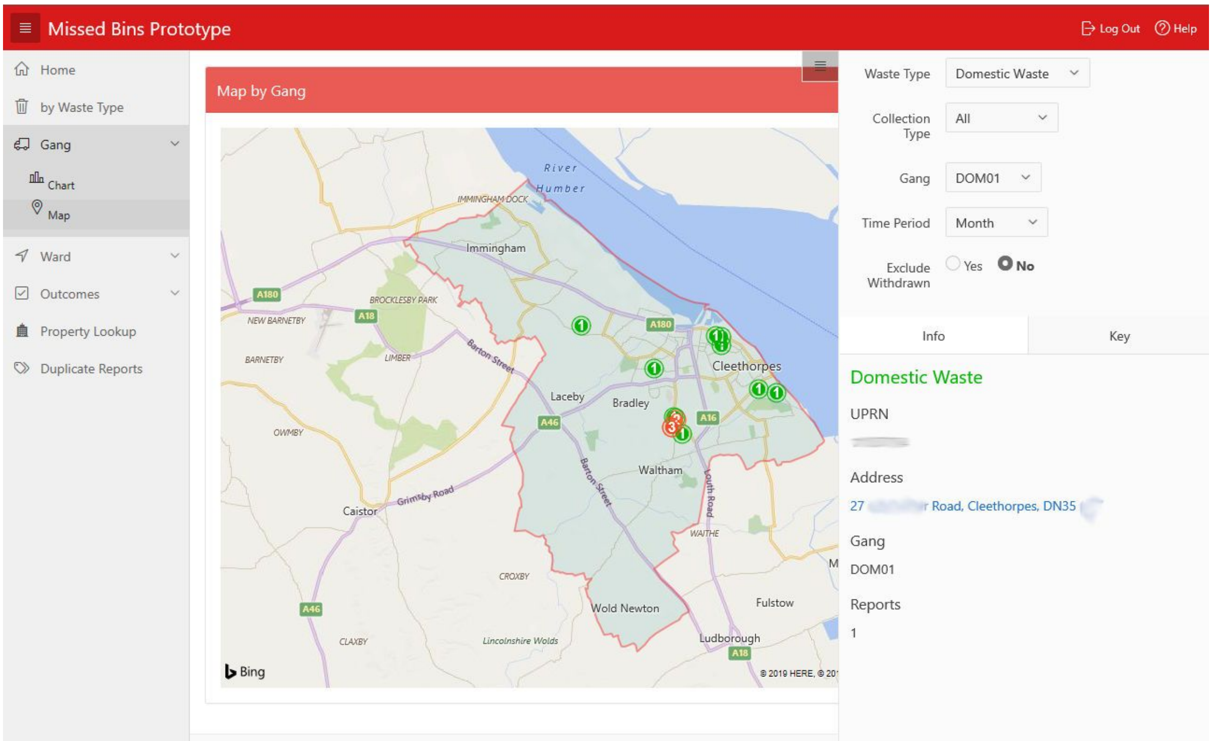
[redacted] Street, Cleethorpes, DN35 [redacted]

Gang

GW02

Reports

1


Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Chart
Map
Ward
Outcomes
Property Lookup
Duplicate Reports
Map by Gang
River Humber
IMMINGHAM DOCK
Immingham
BROCKLESBY PARK
NEW BARNETBY
BARNETBY
LIMBER
OWMBY
Barton Street
Laceby
Bradley
Cleethorpes
Waltham
Caistor
Grimsby Road
Louth Road
WAITHE
CROXBY
Wold Newton
Fulstow
Ludborough
CLAXBY
Lincolnshire Wolds
A180
A18
A46
A16
Bing
© 2019 HERE, © 20
Info
Key

Waste Type: Domestic Waste

Collection Type: All

Gang: DOM01

Time Period: Month

Exclude Withdrawn: ○ Yes ● No

Domestic Waste

UPRN

[redacted]

Address

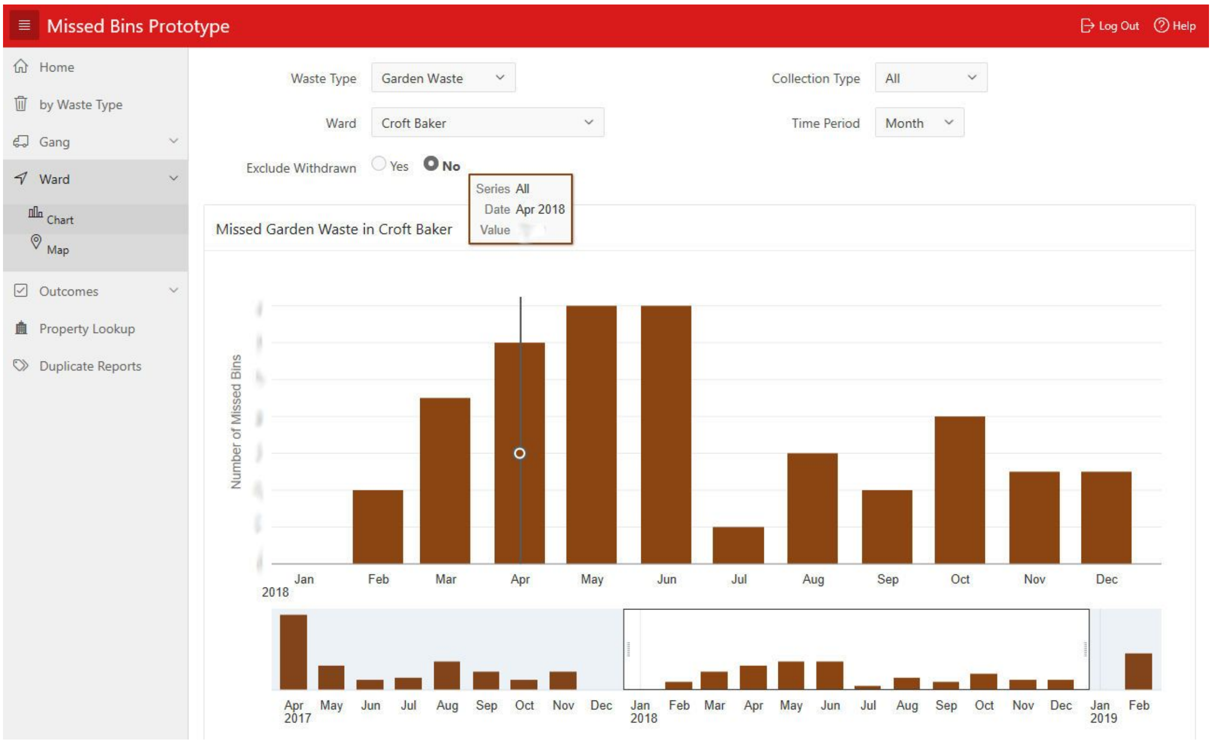
27 [redacted] Road, Cleethorpes, DN35 [redacted]

Gang

DOM01

Reports

1


Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Ward
Chart
Map
Outcomes
Property Lookup
Duplicate Reports
Number of Missed Bins
Jan
2018
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Apr
2017
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
2018
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
2019
Feb

Waste Type: Garden Waste

Collection Type: All

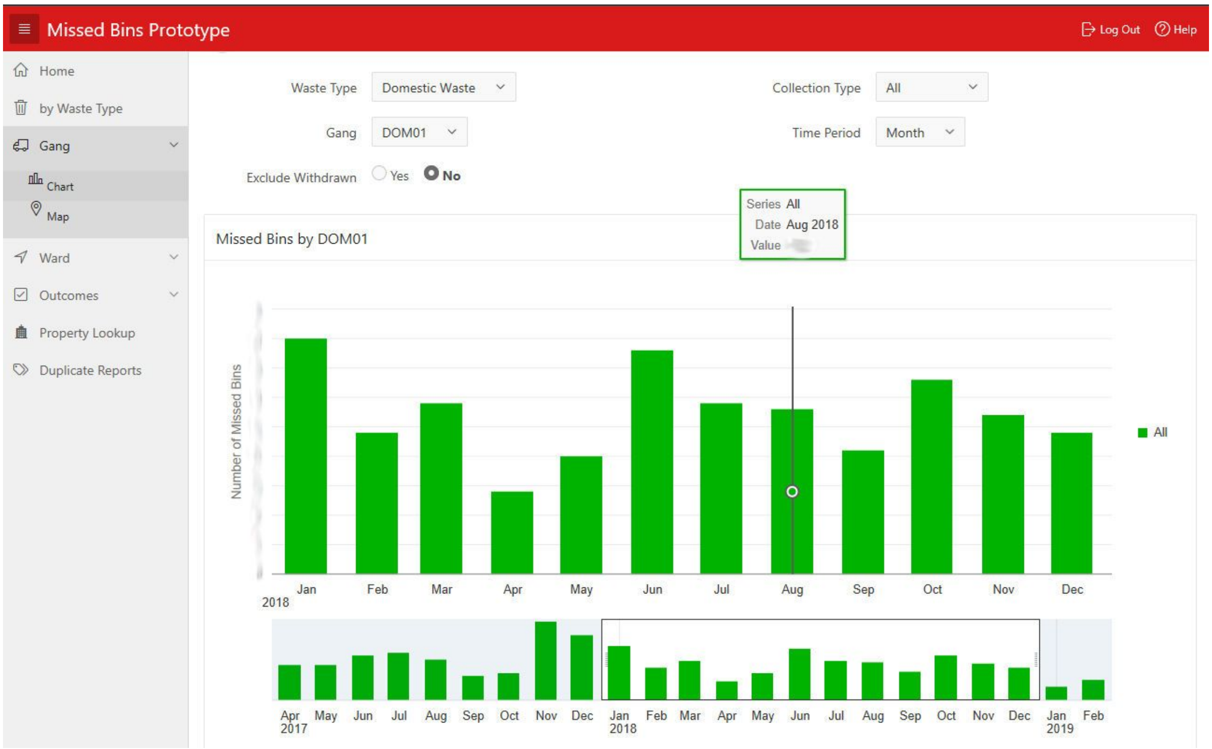
Ward: Croft Baker

Time Period: Month

Exclude Withdrawn: ○ Yes ● No

Missed Garden Waste in Croft Baker

Series All
Date Apr 2018
Value [redacted]

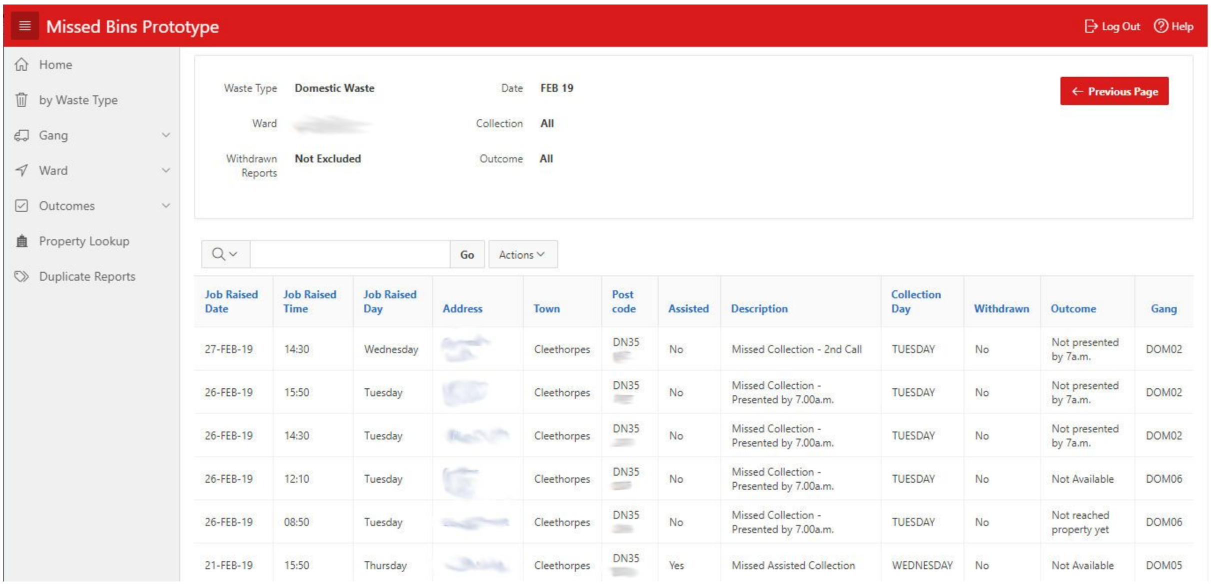

Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Chart
Map
Ward
Outcomes
Property Lookup
Duplicate Reports

Waste Type: Domestic Waste
Collection Type: All
Gang: DOM01
Time Period: Month
Exclude Withdrawn: ○ Yes ● No

Missed Bins by DOM01

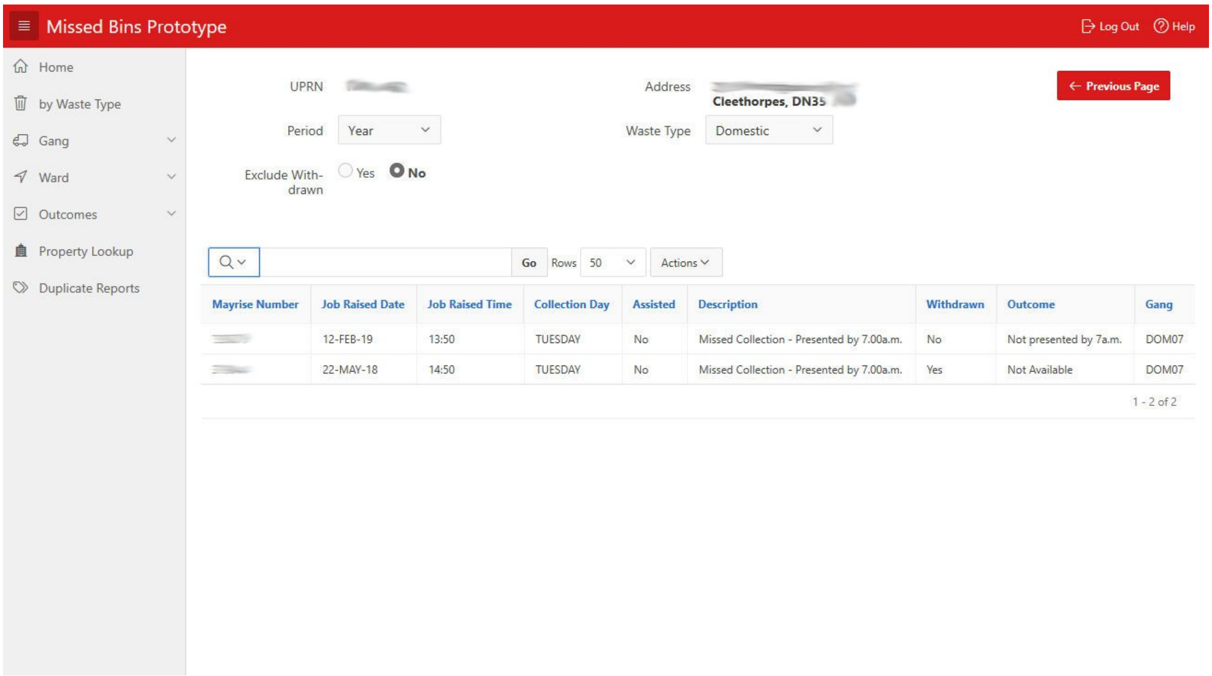
Series All
Date Aug 2018
Value [redacted]

Number of Missed Bins
Jan
2018
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
All
Apr
2017
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
2018
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
2019
Feb


Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Ward
Outcomes
Property Lookup
Duplicate Reports
Previous Page
Go
Actions

Waste Type: Domestic Waste
Date: FEB 19
Ward: [redacted]
Collection: All
Withdrawn Reports: Not Excluded
Outcome: All

Job Raised Date	Job Raised Time	Job Raised Day	Address	Town	Post code	Assisted	Description	Collection Day	Withdrawn	Outcome	Gang
27-FEB-19	14:30	Wednesday	[redacted]	Cleethorpes	DN35 [redacted]	No	Missed Collection - 2nd Call	TUESDAY	No	Not presented by 7a.m.	DOM02
26-FEB-19	15:50	Tuesday	[redacted]	Cleethorpes	DN35 [redacted]	No	Missed Collection - Presented by 7.00a.m.	TUESDAY	No	Not presented by 7a.m.	DOM02
26-FEB-19	14:30	Tuesday	[redacted]	Cleethorpes	DN35 [redacted]	No	Missed Collection - Presented by 7.00a.m.	TUESDAY	No	Not presented by 7a.m.	DOM02
26-FEB-19	12:10	Tuesday	[redacted]	Cleethorpes	DN35 [redacted]	No	Missed Collection - Presented by 7.00a.m.	TUESDAY	No	Not Available	DOM06
26-FEB-19	08:50	Tuesday	[redacted]	Cleethorpes	DN35 [redacted]	No	Missed Collection - Presented by 7.00a.m.	TUESDAY	No	Not reached property yet	DOM06
21-FEB-19	15:50	Thursday	[redacted]	Cleethorpes	DN35 [redacted]	Yes	Missed Assisted Collection	WEDNESDAY	No	Not Available	DOM05


Missed Bins Prototype
Log Out
Help
Home
by Waste Type
Gang
Ward
Outcomes
Property Lookup
Duplicate Reports
Previous Page
Go
Actions

UPRN [redacted]

Address [redacted]
Cleethorpes, DN35 [redacted]

Period: Year

Waste Type: Domestic

Exclude Withdrawn: ○ Yes ● No

Rows: 50

Mayrise Number	Job Raised Date	Job Raised Time	Collection Day	Assisted	Description	Withdrawn	Outcome	Gang
[redacted]	12-FEB-19	13:50	TUESDAY	No	Missed Collection - Presented by 7.00a.m.	No	Not presented by 7a.m.	DOM07
[redacted]	22-MAY-18	14:50	TUESDAY	No	Missed Collection - Presented by 7.00a.m.	Yes	Not Available	DOM07

1 - 2 of 2

NELC User Feedback

We demonstrated the initial basic prototype to Waste Service Manager, Team Leaders, Business Support Officer and Strategy team as well as Customer Services and Communications Officer.

Feedback and discussion at the demonstration was extremely positive and in conjunction with Leeds CC has informed the iterations to the dashboard throughout.

Key iterations identified in Round 1 tab of the iteration spreadsheet, has developed a better, improved dashboard and solution which meets the needs of both local authorities, waste management, team leaders and customer services.

The dashboard was well received with everyone liking how easy it was to view the information and the simplicity of the layout. The group liked how visualising the data through charts, drilldown features and maps allowed patterns to be easily identified. One particular pattern of note, was how easy it was to spot that a lot of the properties with a high number of reports were where more than one report had been made for the same missed container.

We also demonstrated dashboard to two Members, one being a portfolio holder and the Deputy Head of Operations; and also in a separate session to the Assistant Director of Environment.
Members were really pleased to see information by ward and maps were very well received. Visualising information in this way showed the potential for this to be used in other service areas.

The Assistant Director of Environment liked the dashboard and was particularly interested in drilling down into the reasons why containers were missed and in the ward information.

Leeds Feedback

Leeds demonstrated the prototype to 4 people from the Waste team and 5 people from customer services.

Overall, Leeds user research found the prototype does meet waste management needs for identifying missed bin collections and for performance management as it will help the service to improve service delivery by targeting resources more effectively and allocating capacity to priority areas. It helps to identify any recurring challenge or issues so that resources can be deployed and investigations into recurring missed container collections can progress.

This tool will help to better manage customer expectations by having clear data that we can use to provide the customer with accurate and up-to-date information about their container collections and why their bin was missed, reducing the amount of contact we receive and reduce complaints.

Suggestions for improvement
The prototype needs a differentiation between individual missed bins and full street missed bins. This is because the response to the customer is different for each type. By displaying this, it will improve clarity around what constitutes as a ‘failure’ and how we communicate this internally and with customers.

The service would like to see an outcome shown somewhere on the dashboard which shows how best to advise the customer. For example, if there has been a group of properties (full streets), we need to advise the customer to leave their bin out for two working days after the normal collection day as the service should be aware of the failure and will have already made arrangements to ‘recover’ the container. If more than two working days elapses the customer is advised then to take their container back into their property and wait for the next collection. If the bin is one individual property, the householder is advised to take the container back into their property and await their next scheduled collection. This is in line with the waste policies.

Leeds Waste Services feedback

"The dashboard is a useful tool which will help us to communicate effectively with the customer providing the most up to date information. It will help us to ensure that any missed bin collections are identified and recovered quickly minimising any disruption to the public."

Leeds CC Waste Services Officer

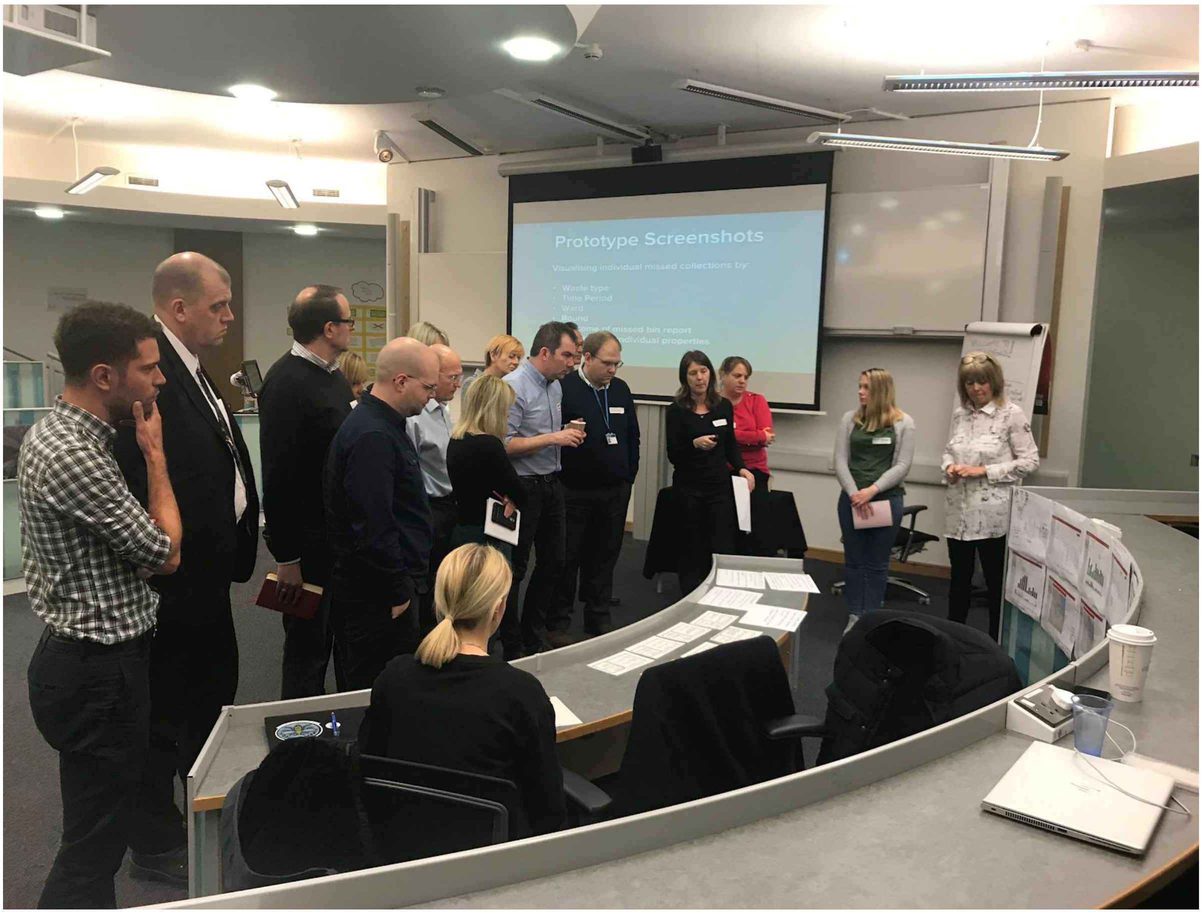
- Have the HOME page as simply a navigation to other tabs/areas
- 'Waste type' tab is useful but would be beneficial to filter by type of missed container (street/individual) and ward
- "Love the map tab!"
- Language used is different from Leeds (eg. 'crew' and 'gang')

Leeds Customer Services feedback

- Customer Services Officers pleased with the potential of live data and the prospect of being able to offer customers real time information
- CSOs found prototype easy to use and self-explanatory

7. MHCLG roadshow

Prototype Screenshots



We presented screenshots of our prototype at one of the sessions and received positive feedback. Missed bins was clearly an area of interest for many councils and verbal feedback throughout the demonstration highlighted that missed containers was an issue at several councils as was the lack of usable data to inform service improvement.
Other councils were also interested in extending the prototype to include missed streets and there were discussions on how we could make this data more open to reduce customer reports and demand.

With regards language used on the dashboard, one comment received, which was also voiced by our partners in Leeds, was that ‘missed container reason’ would be a clearer term to use on the dashboard than using ‘outcome’ when referring to the reason why the containers were missed. During the session we shared contact details and a link to our project and pipeline page for further comments or suggestions, however none was received.

8. Round 2 of user research

Following round 1 of user testing, we discussed feasibility of user wants and needs and the value added to the dashboard compared with the effort involved. We were also careful to consider user needs, scope, dashboard requirements and timescales when prioritising the suggestions made. Full details of iterations are in Round 1 tab of Log of dashboard improvement suggestions and iterations.

The screenshots below show the changes made to the dashboard and the iterations made had quite a significant impact on the look and feel of the prototype as well as additional product features being included.

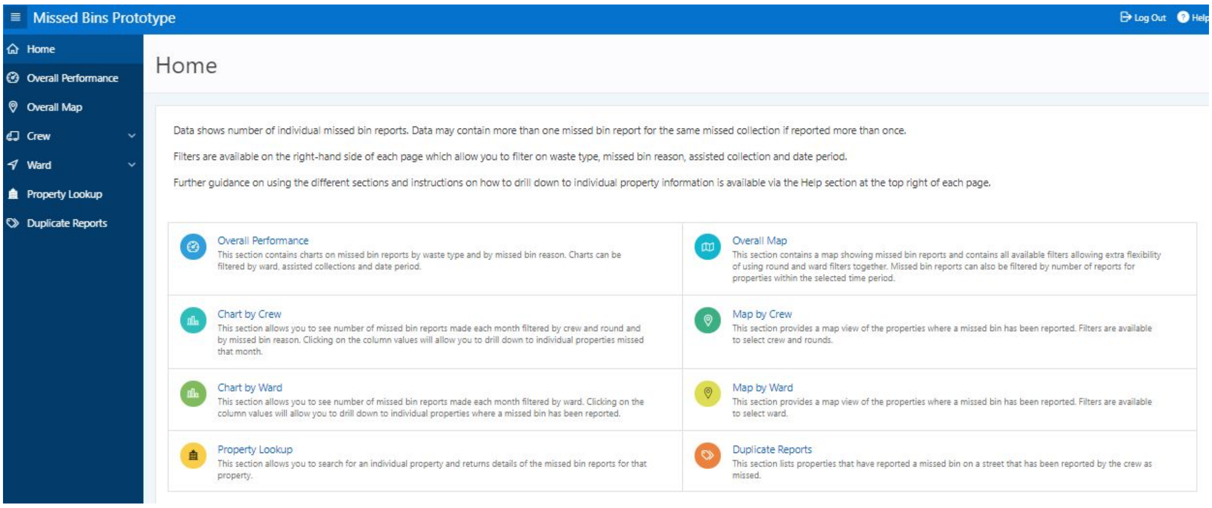
A lot more flexibility had been built into views to allow users to filter by ward and by missed container reason on all pages.

A new page had also been added which we initially called the one map. This allows users to apply all filters on the one map. This gives an extra level of flexibility with the ability to filter by waste type, crew, round, collection type and ward all on the one map.

The Overall Performance page, renamed from the Waste Type page had also changed significantly with the inclusion of more graphs.

The time period feature was also changed based on user need to have more flexibility with the time periods upon which you could search.

Home page



Data shows number of individual missed bin reports. Data may contain more than one missed bin report for the same missed collection if reported more than once.

Filters are available on the right-hand side of each page which allow you to filter on waste type, missed bin reason, assisted collection and date period.

Further guidance on using the different sections and instructions on how to drill down to individual property information is available via the Help section at the top right of each page.

Overall Performance
This section contains charts on missed bin reports by waste type and by missed bin reason. Charts can be filtered by ward, assisted collections and date period.

Overall Map
This section contains a map showing missed bin reports and contains all available filters allowing extra flexibility of using round and ward filters together. Missed bin reports can also be filtered by number of reports for properties within the selected time period.

Chart by Crew
This section allows you to see number of missed bin reports made each month filtered by crew and round and by missed bin reason. Clicking on the column values will allow you to drill down to individual properties missed that month.

Map by Crew
This section provides a map view of the properties where a missed bin has been reported. Filters are available to select crew and rounds.

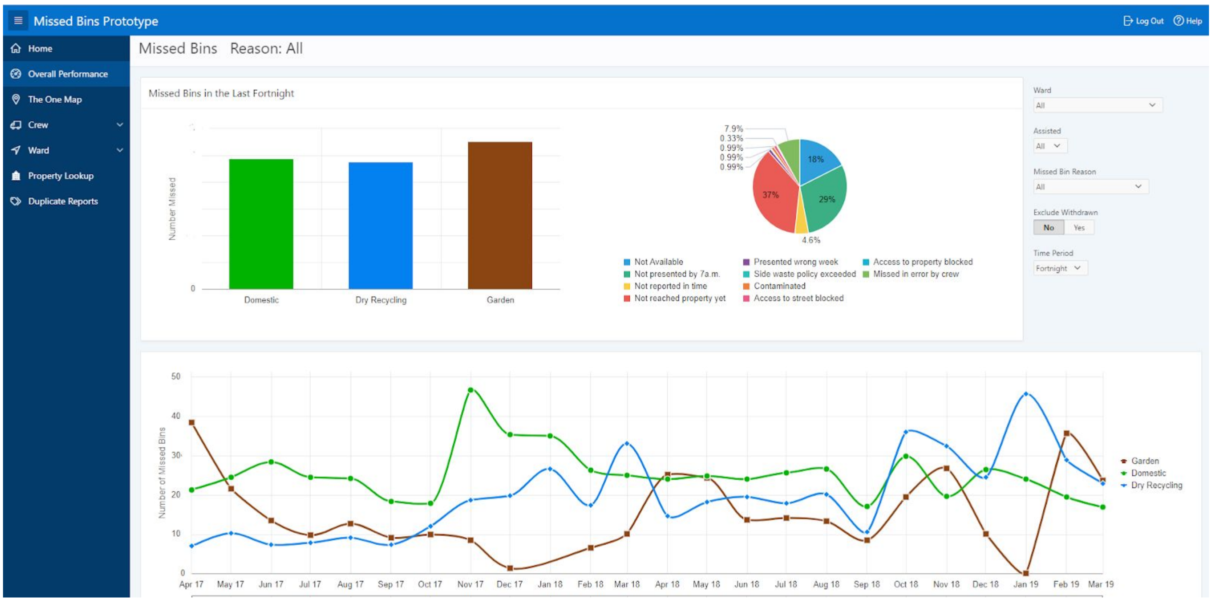
Chart by Ward
This section allows you to see number of missed bin reports made each month filtered by ward. Clicking on the column values will allow you to drill down to individual properties where a missed bin has been reported.

Map by Ward
This section provides a map view of the properties where a missed bin has been reported. Filters are available to select ward.

Property Lookup
This section allows you to search for an individual property and returns details of the missed bin reports for that property.

Duplicate Reports
This section lists properties that have reported a missed bin on a street that has been reported by the crew as missed.

Overall Performance page


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
The One Map
Crew
Ward
Property Lookup
Duplicate Reports

Missed Bins Reason: All

Missed Bins in the Last Fortnight

Number Missed
0
Domestic
Dry Recycling
Garden
7.9%
0.33%
0.99%
0.99%
0.99%
18%
37%
29%
4.6%
Not Available
Not presented by 7a.m.
Not reported in time
Not reached property yet
Presented wrong week
Side waste policy exceeded
Contaminated
Access to street blocked
Access to property blocked
Missed in error by crew
Number of Missed Bins
0
10
20
30
40
50
Apr 17
May 17
Jun 17
Jul 17
Aug 17
Sep 17
Oct 17
Nov 17
Dec 17
Jan 18
Feb 18
Mar 18
Apr 18
May 18
Jun 18
Jul 18
Aug 18
Sep 18
Oct 18
Nov 18
Dec 18
Jan 19
Feb 19
Mar 19
Garden
Domestic
Dry Recycling

Ward: All

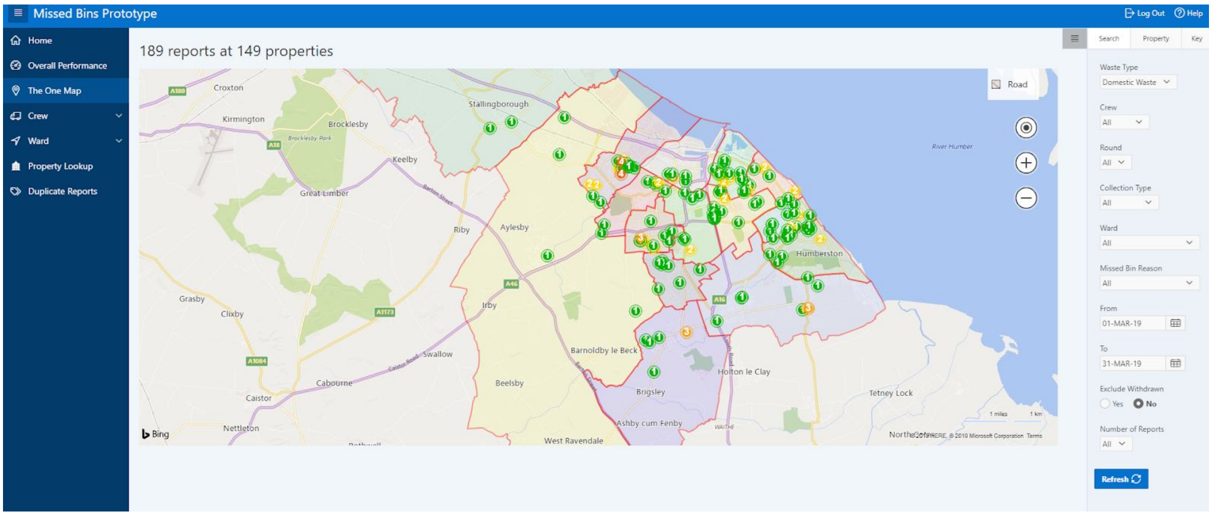
Assisted: All

Missed Bin Reason: All

Exclude Withdrawn: No Yes

Time Period: Fortnight

The One Map


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
The One Map
Crew
Ward
Property Lookup
Duplicate Reports
Search
Property
Key
Road
Croxton
Kirmington
Brocklesby
Stallingborough
Keelby
Great Limber
Riby
Aylesby
Humberston
Grasby
Clixby
Irby
Swallow
Cabourne
Caistor
Beelsby
Barnoldby le Beck
Holton le Clay
Brigsley
Tetney Lock
Ashby cum Fenby
West Ravendale
Nettleton
River Humber
Bing
Refresh

189 reports at 149 properties

Waste Type: Domestic Waste

Crew: All

Round: All

Collection Type: All

Ward: All

Missed Bin Reason: All

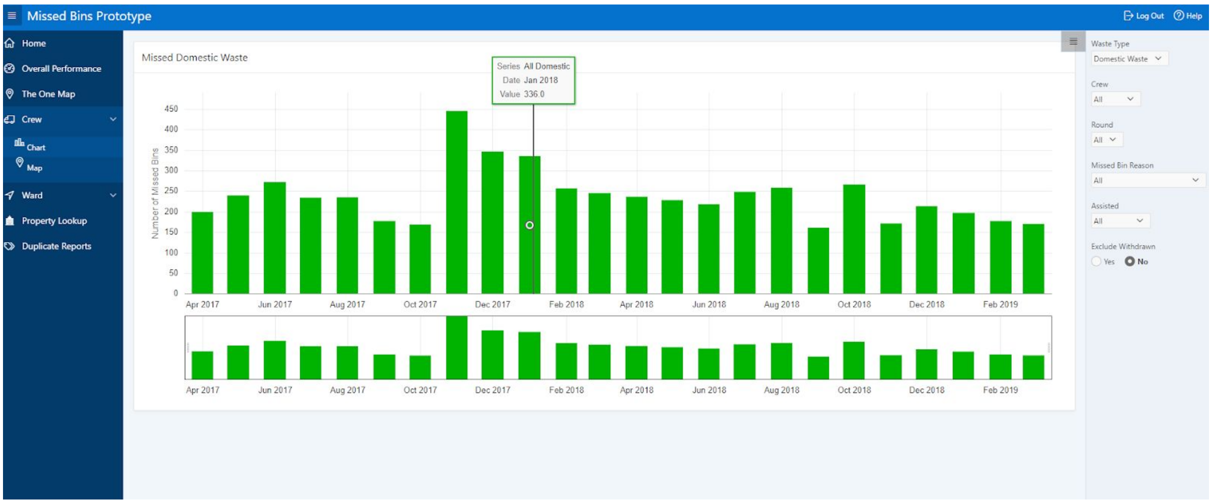
From: 01-MAR-19

To: 31-MAR-19

Exclude Withdrawn: ○ Yes ● No

Number of Reports: All

Gang chart


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
The One Map
Crew
Chart
Map
Ward
Property Lookup
Duplicate Reports
Series All Domestic
Date Jan 2018
Value 336.0
Number of Missed Bins
0
50
100
150
200
250
300
350
400
450
Apr 2017
Jun 2017
Aug 2017
Oct 2017
Dec 2017
Feb 2018
Apr 2018
Jun 2018
Aug 2018
Oct 2018
Dec 2018
Feb 2019

Missed Domestic Waste

Waste Type: Domestic Waste

Crew: All

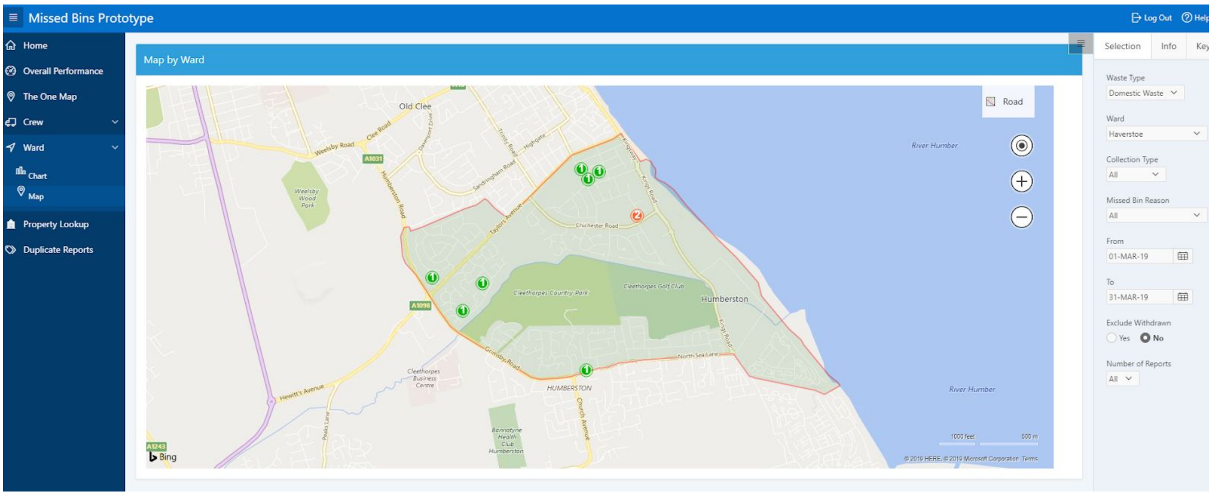
Round: All

Missed Bin Reason: All

Assisted: All

Exclude Withdrawn: ○ Yes ● No

Map by ward


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
The One Map
Crew
Ward
Chart
Map
Property Lookup
Duplicate Reports
Map by Ward
Road
Old Clee
Weelsby Road
Clee Road
A1031
Weelsby Wood Park
Chichester Road
Cleethorpes Country Park
Cleethorpes Golf Club
Humberston
A1098
Cleethorpes Business Centre
HUMBERSTON
North Sea Lane
Hewitt's Avenue
River Humber
Bannatyne Health Club Humberston
A1243
Bing
1000 feet
500 m
© 2019 HERE, © 2019 Microsoft Corporation Terms
Selection
Info
Key

Waste Type: Domestic Waste

Ward: Haverstoe

Collection Type: All

Missed Bin Reason: All

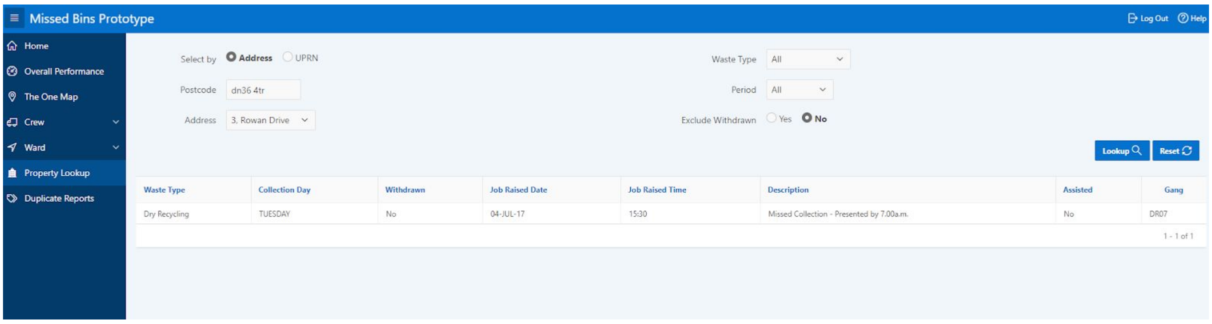
From: 01-MAR-19

To: 31-MAR-19

Exclude Withdrawn: ○ Yes ● No

Number of Reports: All

Property Lookup


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
The One Map
Crew
Ward
Property Lookup
Duplicate Reports
Lookup
Reset

Select by: ● Address ○ UPRN

Postcode: dn36 4tr

Address: 3, Rowan Drive

Waste Type: All

Period: All

Exclude Withdrawn: ○ Yes ● No

Waste Type	Collection Day	Withdrawn	Job Raised Date	Job Raised Time	Description	Assisted	Gang
Dry Recycling	TUESDAY	No	04-JUL-17	15:30	Missed Collection - Presented by 7.00a.m.	No	DR07

1 - 1 of 1

NELC research with Team Leaders, Strategy Officers and a Business Support Officer.

We visited the waste depot in Grimsby to gather feedback on iterations made to the prototype. We discussed developments made to the dashboard since the first round of user testing with the 2 Strategy Officers and with the Business Support Officer and then in a later session with the Team leaders. We then demonstrated the iterated prototype, talking through the changes made to the dashboard and asking for feedback on the changes made. Overall feedback was very positive and the strategy team felt that they would definitely use the dashboard.

“The provision of a waste dashboard will make a positive contribution to supporting service improvements within the Waste Services department.” Waste Strategy Officer

Waste Strategy officers made some further suggestions for improvement including adding total counts to the top of the map pages so that it was easy to see the total count of missed containers rather than just individual map points. They also felt that the graphs on the Overall Performance page needed to be bigger and clearer.

"We will definitely use it and this will support any round change implementations."

“*The dashboard will not only vastly improve feedback waste services provide to support services, customer services and its customers, it will create more accurate data which can*

be used to identify performance issues and improvements and create a more efficient, cost effective service."
NELC Waste Team Leaders

We also demonstrated the dashboard to the team leaders. They liked the iterations and felt that the Overall Map added real value in ease of use with all the round, ward and missed container reason being viewable on the same map. We asked if they felt the system was easy to use and they felt it was. We asked if they would use the dashboard and they said that they definitely would. They saw value in using it to quickly find information to resolve complaints and plan resources. An unforeseen use was the suggestion that it could be used it during team meetings with the crews to highlight missed containers on the individual rounds and explore the reasons why these containers were being missed.

Summary of user testing

Liked :

- Changes to home page
- New overall performance page
- Having more charts on the Overall performance page
- Saw potential of using dashboard to manage rounds and share information with staff
- Quick and easy to use
- Refined look and feel to dashboard
- Waste Team leads really liked One View Map, now renamed as overall map on dashboard

Suggestions:

- Format of charts on overall performance page needs revisiting

The missed bin reason pie chart is small and difficult to read. It also looks rather messy. It was suggested that we add bigger charts in if we could to make the information more readable.

- Property lookup needs further search criteria

Team leaders pointed out that they didn't always have UPRN or postcode details for properties and they felt that a search box for the street name and area would be necessary to ensure that they could quickly and easily find missed container reports for all properties.

- Totals added to each page on banner

Add total counts to the top of the map pages so that it was easy to see the numbers of missed containers rather than just individual map points.

- Could we add year on year comparison chart

To enable tracking and trend over service performance and an early warning indicator of any issues to monitor and manage.

NELC research with Waste Crews

Following research with the Team leaders and their view that crew should see the dashboard and the information collected. Even if they wouldn’t have access to the dashboard, we felt that the crew should be aware of the data developments being made and see some of the results that have come out of the discovery work that was undertaken with them.

We visited the crew in their staff room towards the end of their shift to talk to crew about the missed bins dashboard and the project itself. Due to lack of wi-fi in the room we took screenshots of the prototype for crews to feedback their views.

“It would be good to have the dashboard information shared with us”.
NELC Driver/Loader Charge Hands

We heard that the crews felt that round changes have a significant effect on number of missed containers.
From the overall trend graph we can see clearly see large spikes in missed collections when we moved to fortnightly waste collections, Christmas and periods of bad weather. It is easier to see impact of decisions made on collection rates from the dashboard.

NELC user research with customer services

Further research was conducted with customer services to test whether the missed bins dashboard could be used by customer service advisors when dealing with enquiries.

Unlike Leeds CC the customer service team at NELC already have access to the waste system so are able to view progress of missed bin reports. We spoke to 5 different Customer Service Advisors to gain their views on the potential for having a restricted view of the dashboard where customer service advisors could do a property search to look up missed bin reports and see reason why they were missed.

“It is extremely useful to see which properties are regularly missed so investigations can happen to find out why. Great to see live information and give customers meaningful updates.”
NELC Customer Services Team supervisor

“This tool shows the specific waste history of a single customer allowing us to adapt quicker to the information and providing solutions or answers through the pattern of their previous issues/reports.”
NELC Customer Services Team supervisor Advisor

Overall feelings were that the dashboard was simple to view and looked easy enough to use. Further details in comment boxes about the missed bin report raised are however available in Mayrise, NELC waste system and this would probably be needed. If advisors have to use both Mayrise and the dashboard to look at missed container reports, this would feel like double-handling. NELC customer services feedback from user research

Leeds CC user research with customer services

Leeds also did a second round of user research with 5 officers from the customer services team to test iterations to the prototype and how useful the tool would be to their customer services team.

‘I think this is a really useful tool for displaying refuse data. Some of it may be a little more than most CSOs would need but it looks great for identifying patterns and problem areas.’
Leeds CC Customer Service Officer

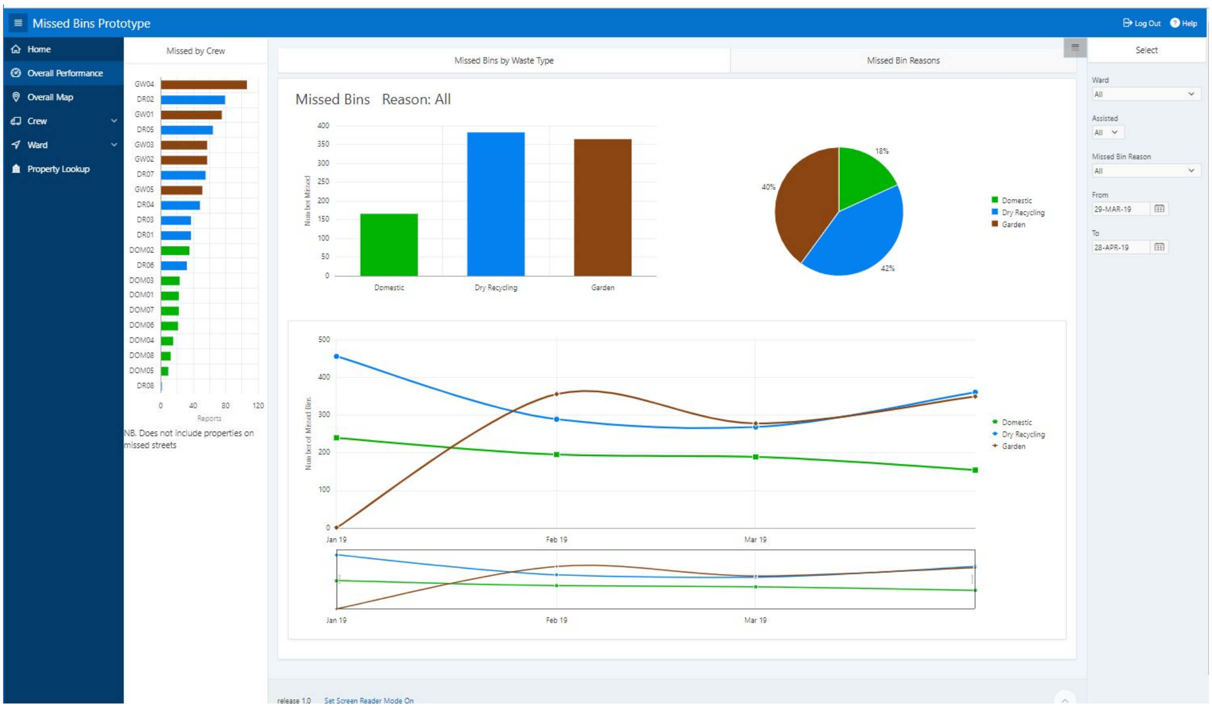
- It’s involves quite a lot of information that I won’t necessarily need to know
- Being able to filter areas is really useful
- Seeing maps of the city is useful – especially if you can filter to specific areas
- Quite complicated unless you understand what you are looking at.

Full details of the iterations made from the suggestions collated are available in the Round 2 tab of Log of dashboard improvement suggestions and iterations.

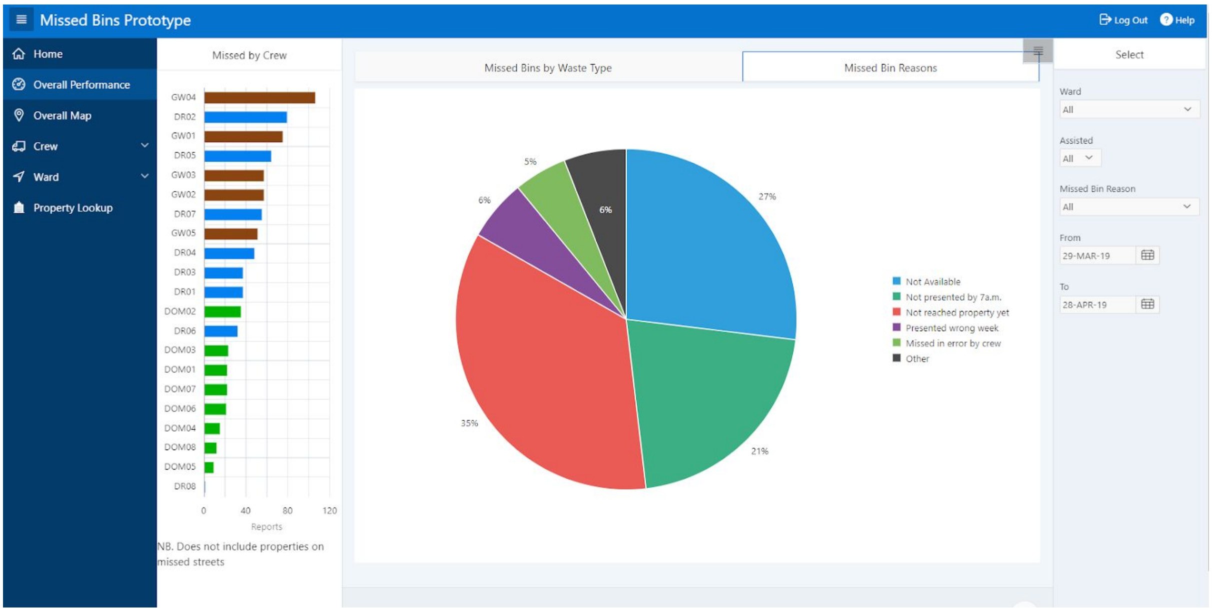
Final Iterations

NELC suggestions made by the Waste Strategy team and Team leaders were taken on board and changes made to the Overall Performance page to now give it two tabs along the top to make the pie chart for missed bins reason appear on a separate tab so that we could make it bigger and more readable.

Final Overall Performance page - Missed containers by Waste Type view

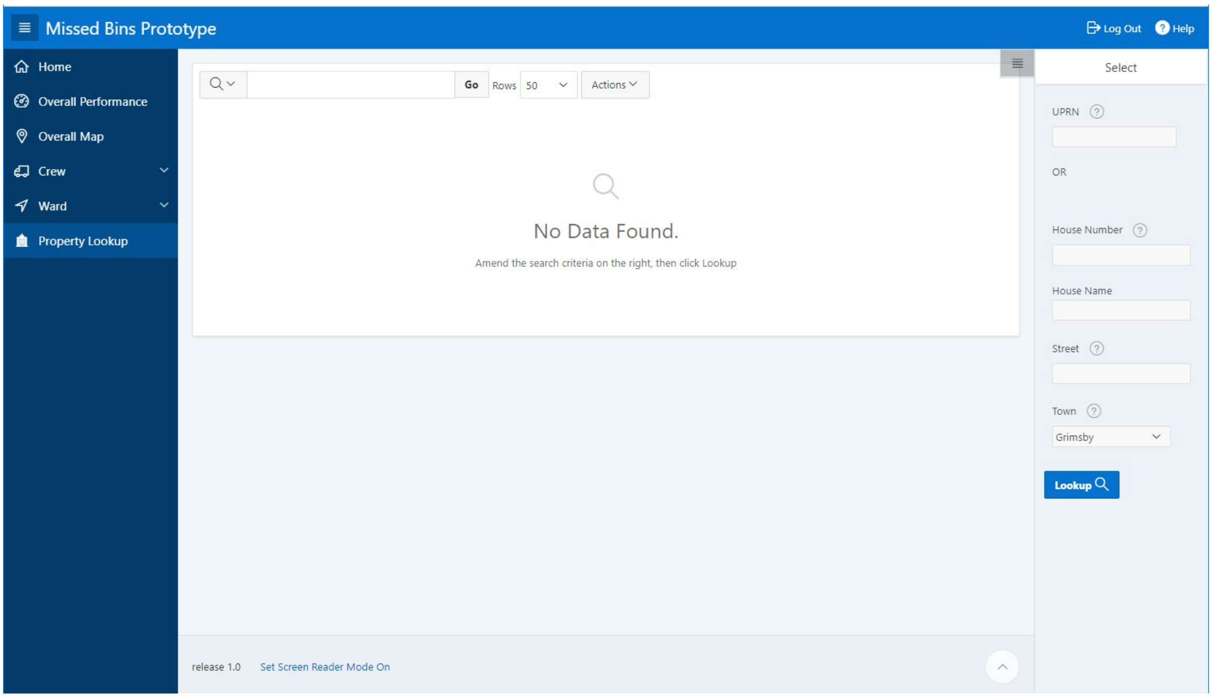

Missed Bins Prototype
Log Out
Help
Home
Overall Performance
Overall Map
Crew
Ward
Property Lookup
Missed by Crew
GW04
DR02
GW01
DR05
GW03
GW02
DR07
GW05
DR04
DR03
DR01
DOM02
DR06
DOM03
DOM01
DOM07
DOM06
DOM04
DOM08
DOM05
DR08
0
40
80
120
Reports
NB. Does not include properties on missed streets
Missed Bins by Waste Type
Missed Bin Reasons
Missed Bins Reason: All
Number Missed
Domestic
Dry Recycling
Garden
18%
40%
42%
Number of Missed Bins
Jan 19
Feb 19
Mar 19
Select
Ward
All
Assisted
All
Missed Bin Reason
All
From
29-MAR-19
To
28-APR-19
release 1.0
Set Screen Reader Mode On

Final Overall Performance page - Missed Container Reasons view


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
Overall Map
Crew
Ward
Property Lookup
Missed by Crew
GW04
DR02
GW01
DR05
GW03
GW02
DR07
GW05
DR04
DR03
DR01
DOM02
DR06
DOM03
DOM01
DOM07
DOM06
DOM04
DOM08
DOM05
DR08
0
40
80
120
Reports
NB. Does not include properties on missed streets
Missed Bins by Waste Type
Missed Bin Reasons
5%
6%
6%
27%
35%
21%
Not Available
Not presented by 7a.m.
Not reached property yet
Presented wrong week
Missed in error by crew
Other
Select
Ward
All
Assisted
All
Missed Bin Reason
All
From
29-MAR-19
To
28-APR-19

Following user need to sometimes identify a property from the house number and street alone, the property search criteria was expanded to include street and town.

Final Property Lookup page


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
Overall Map
Crew
Ward
Property Lookup
Go
Rows
50
Actions
Select
Lookup
release 1.0
Set Screen Reader Mode On

No Data Found.

Amend the search criteria on the right, then click Lookup

UPRN

OR

House Number

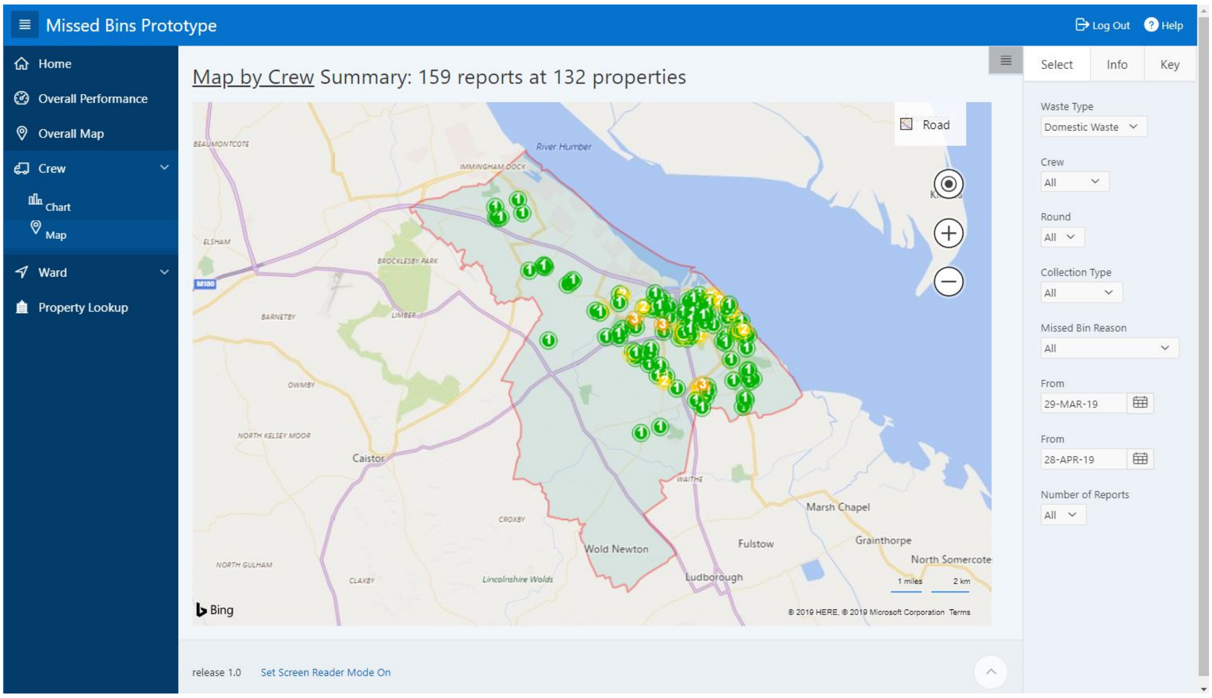
House Name

Street

Town: Grimsby

Following identification of a user need to see the total number of missed container reports on the map pages, we have added a text bar above the map which dynamically changes to match the criteria selected.

Map by Crew final page


Missed Bins Prototype
Log Out
Help
Home
Overall Performance
Overall Map
Crew
Chart
Map
Ward
Property Lookup
Select
Info
Key
Road
River Humber
IMMINGHAM DOCK
BEAUMONTCOTE
ELSHAM
BROCKLESBY PARK
BARNETBY
LIMBER
OWMBY
NORTH KELSEY MOOR
Caistor
CROXBY
WAITHE
Marsh Chapel
Grainthorpe
North Somercote
Fulstow
Wold Newton
Ludborough
NORTH GULHAM
CLAXBY
Lincolnshire Wolds
1 miles
2 km
Bing
© 2019 HERE, © 2019 Microsoft Corporation Terms
release 1.0
Set Screen Reader Mode On

Map by Crew Summary: 159 reports at 132 properties

Waste Type: Domestic Waste

Crew: All

Round: All

Collection Type: All

Missed Bin Reason: All

From: 29-MAR-19

From: 28-APR-19

Number of Reports: All

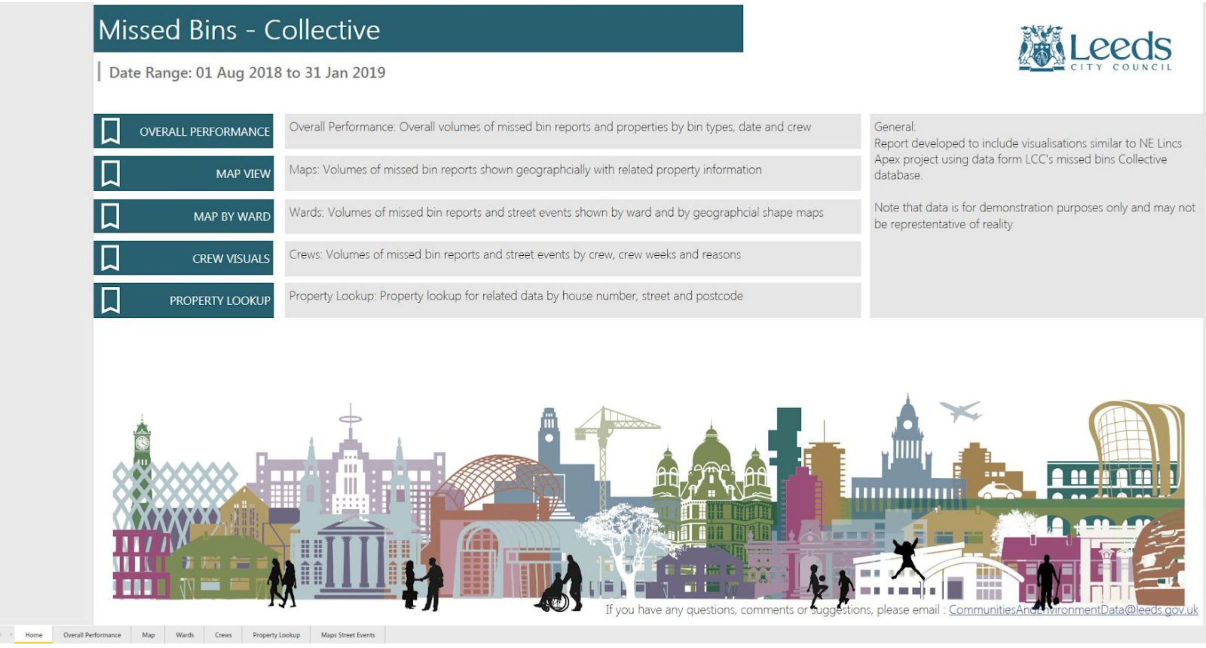
9. Test whether the prototype dashboard can be replicated across councils and different systems

Alongside of this we needed Leeds to test and validate the data model and data extract to test whether this information could be extracted from different waste systems.

Leeds were able to follow the data extract model to get data out of their waste system to be able to replicate the APEX prototype in PowerBI in all areas apart from missed container reasons for individual missed bins as this isn't currently collected.

We also needed Leeds to test whether they could replicate the APEX prototype in PowerBI to test the assumption that this could be replicated across different visualisation tools. APEX to PowerBI dashboard comparison

During Leeds CC's site visit to NELC we looked at the prototype created on PowerBI and compared it to the APEX to make sure that the functionality was largely similar. Agenda.



Missed Bins - Collective

Date Range: 01 Aug 2018 to 31 Jan 2019

Overall Performance: Overall volumes of missed bin reports and properties by bin types, date and crew

Maps: Volumes of missed bin reports shown geographcially with related property information

Wards: Volumes of missed bin reports and street events shown by ward and by geographcial shape maps

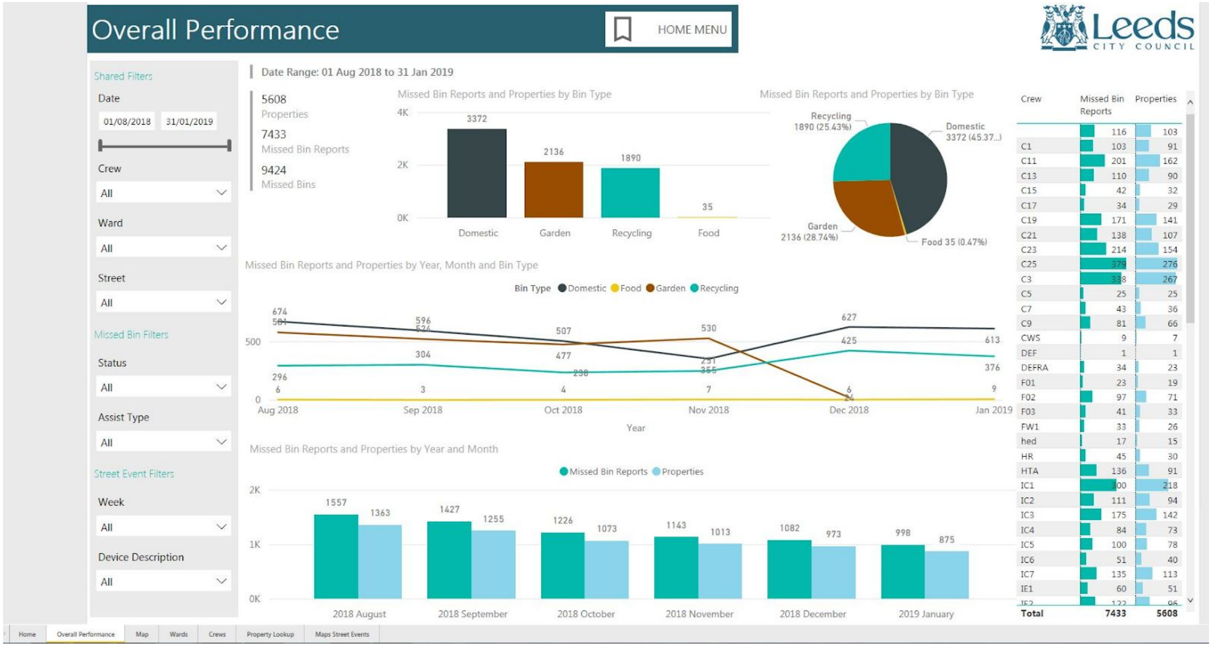
Crews: Volumes of missed bin reports and street events by crew, crew weeks and reasons

Property Lookup: Property lookup for related data by house number, street and postcode

General:
Report developed to include visualisations similar to NE Lincs Apex project using data form LCC's missed bins Collective database.

Note that data is for demonstration purposes only and may not be representative of reality

If you have any questions, comments or suggestions, please email : CommunitiesAndEnvironmentData@leeds.gov.uk



HOME MENU
Leeds
CITY COUNCIL
Missed Bin Reports and Properties by Bin Type
4K
2K
0K
3372
2136
1890
35
Domestic
Garden
Recycling
Food
Missed Bin Reports and Properties by Bin Type
Recycling
1890 (25.43%)
Domestic
3372 (45.37...)
Garden
2136 (28.74%)
Food 35 (0.47%)
Missed Bin Reports and Properties by Year, Month and Bin Type
Bin Type ● Domestic ● Food ● Garden ● Recycling
674
501
596
524
507
530
627
613
304
477
251
425
296
238
355
376
6
3
4
7
6
24
9
500
0
Aug 2018
Sep 2018
Oct 2018
Nov 2018
Dec 2018
Jan 2019
Year
Missed Bin Reports and Properties by Year and Month
● Missed Bin Reports ● Properties
2K
1K
0K
1557
1363
1427
1255
1226
1073
1143
1013
1082
973
998
875
2018 August
2018 September
2018 October
2018 November
2018 December
2019 January
Home
Overall Performance
Map
Wards
Crews
Property Lookup
Maps Street Events

Overall Performance

Shared Filters

Date

01/08/2018 31/01/2019

Crew

All

Ward

All

Street

All

Missed Bin Filters

Status

All

Assist Type

All

Street Event Filters

Week

All

Device Description

All

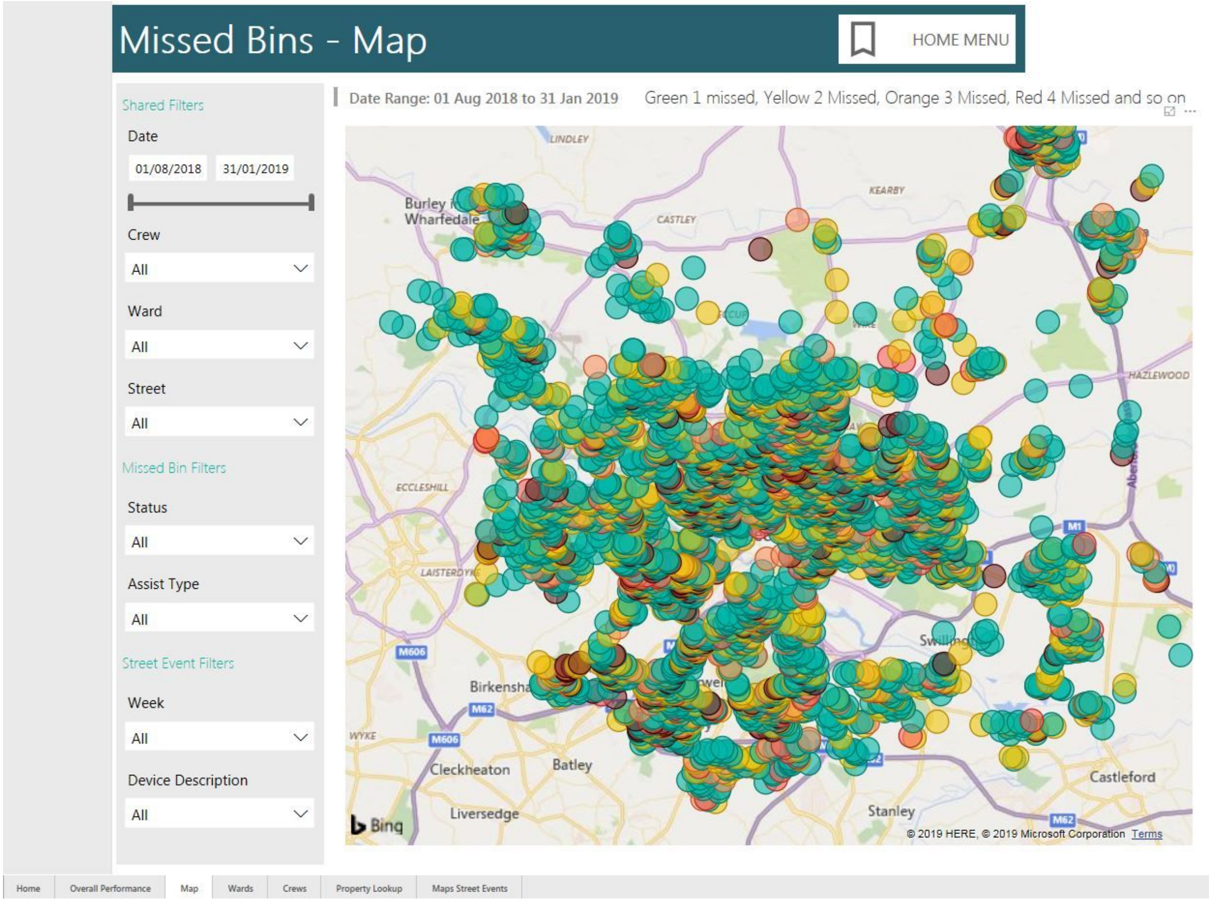
Date Range: 01 Aug 2018 to 31 Jan 2019

5608
Properties

7433
Missed Bin Reports

9424
Missed Bins

Crew	Missed Bin Reports	Properties
	116	103
C1	103	91
C11	201	162
C13	110	90
C15	42	32
C17	34	29
C19	171	141
C21	138	107
C23	214	154
C25	379	276
C3	338	267
C5	25	25
C7	43	36
C9	81	66
CWS	9	7
DEF	1	1
DEFRA	34	23
F01	23	19
F02	97	71
F03	41	33
FW1	33	26
hed	17	15
HR	45	30
HTA	136	91
IC1	300	218
IC2	111	94
IC3	175	142
IC4	84	73
IC5	100	78
IC6	51	40
IC7	135	113
IE1	60	51
IE2	122	96
Total	**7433**	**5608**



HOME MENU
LINDLEY
KEARBY
Burley in Wharfedale
CASTLEY
HAZLEWOOD
ECCLESHILL
LAISTERDYKE
M606
M1
Swillington
Birkenshaw
M62
WYKE
M606
Cleckheaton
Batley
Castleford
Liversedge
Stanley
M62
Bing
© 2019 HERE, © 2019 Microsoft Corporation Terms
Home
Overall Performance
Map
Wards
Crews
Property Lookup
Maps Street Events

Missed Bins - Map

Shared Filters

Date

01/08/2018 31/01/2019

Crew

All

Ward

All

Street

All

Missed Bin Filters

Status

All

Assist Type

All

Street Event Filters

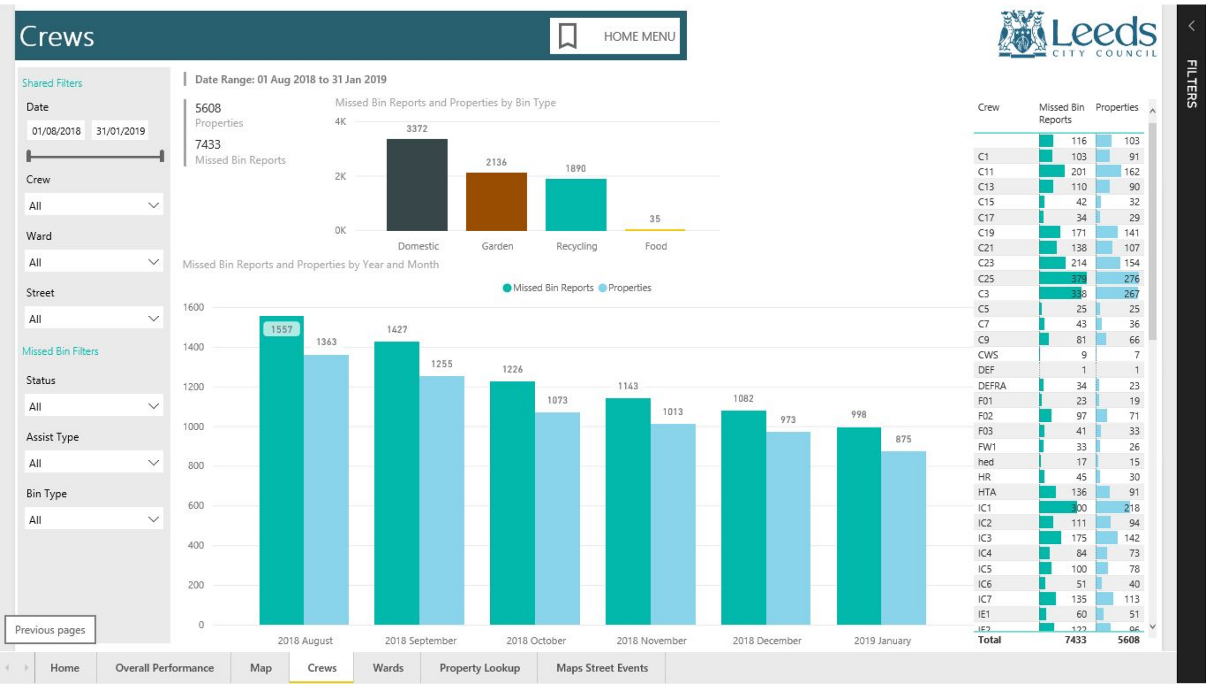
Week

All

Device Description

All

Date Range: 01 Aug 2018 to 31 Jan 2019 Green 1 missed, Yellow 2 Missed, Orange 3 Missed, Red 4 Missed and so on


Crews
HOME MENU
Leeds CITY COUNCIL
FILTERS
Missed Bin Reports and Properties by Bin Type
4K
2K
0K
3372
2136
1890
35
Domestic
Garden
Recycling
Food
Missed Bin Reports and Properties by Year and Month
● Missed Bin Reports ● Properties
1600
1400
1200
1000
800
600
400
200
0
1557
1363
1427
1255
1226
1073
1143
1013
1082
973
998
875
2018 August
2018 September
2018 October
2018 November
2018 December
2019 January
Previous pages
Home
Overall Performance
Map
Crews
Wards
Property Lookup
Maps Street Events

Shared Filters

Date: 01/08/2018 – 31/01/2019

Crew: All

Ward: All

Street: All

Missed Bin Filters

Status: All

Assist Type: All

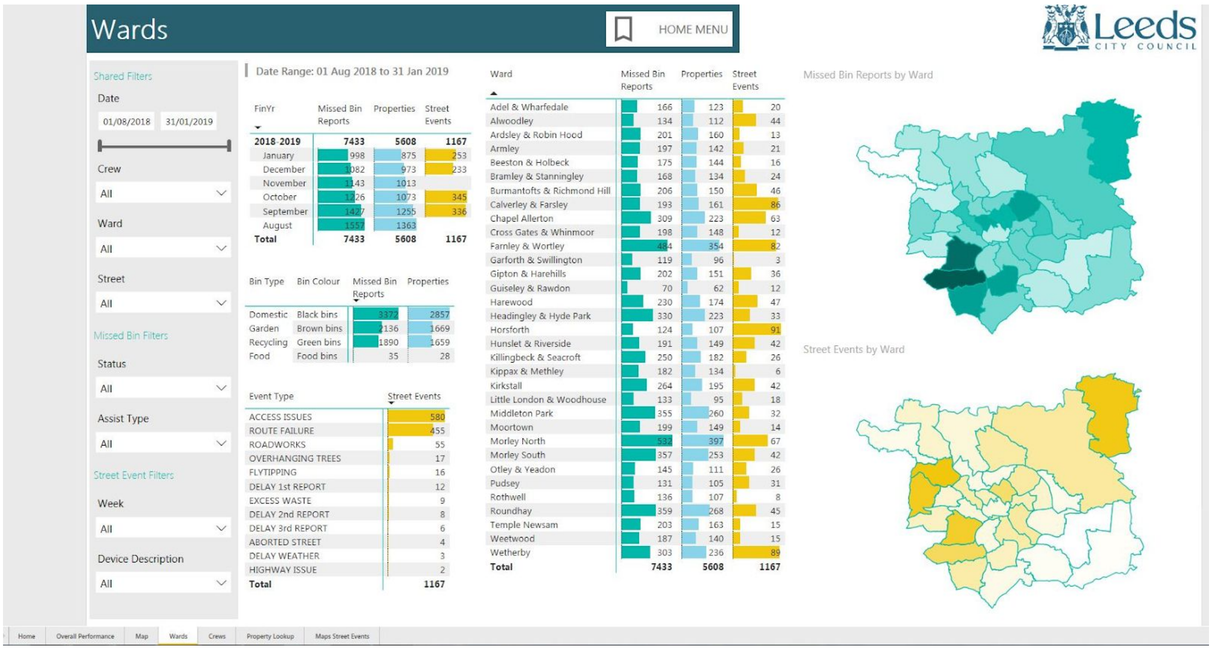
Bin Type: All

Date Range: 01 Aug 2018 to 31 Jan 2019

5608
Properties

7433
Missed Bin Reports

Crew	Missed Bin Reports	Properties
	116	103
C1	103	91
C11	201	162
C13	110	90
C15	42	32
C17	34	29
C19	171	141
C21	138	107
C23	214	154
C25	379	276
C3	338	267
C5	25	25
C7	43	36
C9	81	66
CWS	9	7
DEF	1	1
DEFRA	34	23
F01	23	19
F02	97	71
F03	41	33
FW1	33	26
hed	17	15
HR	45	30
HTA	136	91
IC1	300	218
IC2	111	94
IC3	175	142
IC4	84	73
IC5	100	78
IC6	51	40
IC7	135	113
IE1	60	51
IE2	122	96
Total	**7433**	**5608**


Wards
HOME MENU
Leeds CITY COUNCIL
Missed Bin Reports by Ward
Street Events by Ward
Home
Overall Performance
Map
Wards
Crews
Property Lookup
Maps Street Events

Shared Filters

Date: 01/08/2018 – 31/01/2019

Crew: All

Ward: All

Street: All

Missed Bin Filters

Status: All

Assist Type: All

Street Event Filters

Week: All

Device Description: All

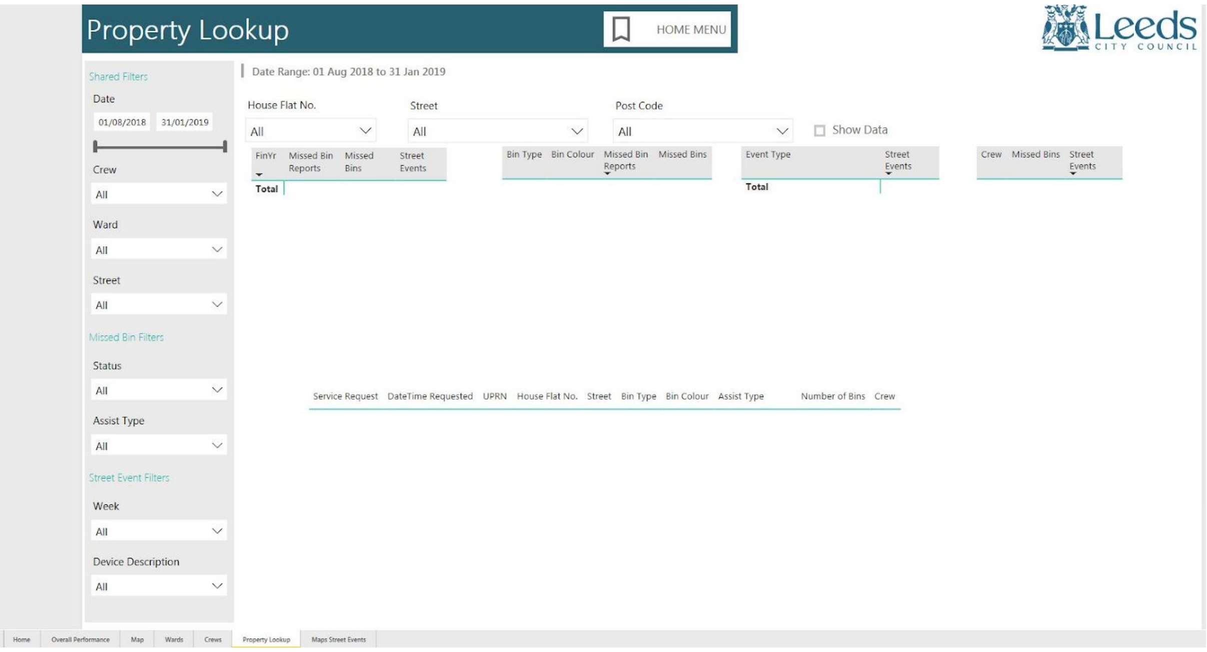
Date Range: 01 Aug 2018 to 31 Jan 2019

FinYr	Missed Bin Reports	Properties	Street Events
2018-2019	**7433**	**5608**	**1167**
January	998	875	253
December	1082	973	233
November	1143	1013	
October	1226	1073	345
September	1427	1255	336
August	1557	1363	
Total	**7433**	**5608**	**1167**

Bin Type	Bin Colour	Missed Bin Reports	Properties
Domestic	Black bins	3372	2857
Garden	Brown bins	2136	1669
Recycling	Green bins	1890	1659
Food	Food bins	35	28

Event Type	Street Events
ACCESS ISSUES	580
ROUTE FAILURE	455
ROADWORKS	55
OVERHANGING TREES	17
FLYTIPPING	16
DELAY 1st REPORT	12
EXCESS WASTE	9
DELAY 2nd REPORT	8
DELAY 3rd REPORT	6
ABORTED STREET	4
DELAY WEATHER	3
HIGHWAY ISSUE	2
Total	**1167**

Ward	Missed Bin Reports	Properties	Street Events
Adel & Wharfedale	166	123	20
Alwoodley	134	112	44
Ardsley & Robin Hood	201	160	13
Armley	197	142	21
Beeston & Holbeck	175	144	16
Bramley & Stanningley	168	134	24
Burmantofts & Richmond Hill	206	150	46
Calverley & Farsley	193	161	86
Chapel Allerton	309	223	63
Cross Gates & Whinmoor	198	148	12
Farnley & Wortley	484	354	82
Garforth & Swillington	119	96	3
Gipton & Harehills	202	151	36
Guiseley & Rawdon	70	62	12
Harewood	230	174	47
Headingley & Hyde Park	330	223	33
Horsforth	124	107	91
Hunslet & Riverside	191	149	42
Killingbeck & Seacroft	250	182	26
Kippax & Methley	182	134	6
Kirkstall	264	195	42
Little London & Woodhouse	133	95	18
Middleton Park	355	260	32
Moortown	199	149	14
Morley North	532	397	67
Morley South	357	253	42
Otley & Yeadon	145	111	26
Pudsey	131	105	31
Rothwell	136	107	8
Roundhay	359	268	45
Temple Newsam	203	163	15
Weetwood	187	140	15
Wetherby	303	236	89
Total	**7433**	**5608**	**1167**


Property Lookup
HOME MENU
Leeds CITY COUNCIL
Shared Filters
Missed Bin Filters
Street Event Filters
Show Data
FinYr
Missed Bin Reports
Missed Bins
Street Events
Total
Bin Type
Bin Colour
Missed Bin Reports
Missed Bins
Event Type
Street Events
Total
Crew
Missed Bins
Street Events
Service Request
DateTime Requested
UPRN
House Flat No.
Street
Bin Type
Bin Colour
Assist Type
Number of Bins
Crew
Home
Overall Performance
Map
Wards
Crews
Property Lookup
Maps Street Events

Date Range: 01 Aug 2018 to 31 Jan 2019

Date: 01/08/2018 31/01/2019
Crew: All
Ward: All
Street: All
Status: All
Assist Type: All
Week: All
Device Description: All
House Flat No.: All
Street: All
Post Code: All

In PowerBI Leeds are able to:

- Differentiate between street and individual missed container collections
- Numbers, locations, dates and any other data elements in the data being taken from Collective (waste data system)
- Visuals can be shown online through websites and embedded in sites
- Click on the map to show missed bin collections and related data
- Show related street events ie. Blocked access/roadworks
- Bring live data into the system by plugging PowerBI to the server database and with a build (live query). This may slow data down if running on live.
- Data can be produced on customers that need contact but this would not be an automated process

To progress the prototype further Leeds will need to:

- Improve analysis of outcomes –only street level has a ‘reason’ for being missed at the moment
- Determine how failure is defined and presented in the data
- Establish how to provide information to customer on next steps. We would need to understand the relationship in timescales andcontainer collection dates and relevant protocols

However, due to other wider business intelligence work Leeds City Council are not able to commit to a Beta development at this stage.

10. Waste Data Standards and using common language

We have considered the waste data standards and applied them to the prototype where appropriate.

At the start of the project we did a call-out on LocalGovDigital Slack channel asking questions about type of receptacles used for waste. We received 4 replies, one of which highlighted a great website http://govbins.uk/ which shows the variation in waste containers and colours used by councils. This together with previous work done on the Waste Data standards highlighted that each council use different processes, boxes, containers and even different coloured receptacles to carry out their waste services. In order to successfully produce a dashboard which could be used cross-councils we would need to concentrate on the commonalities between councils such as waste type, crews and ward areas and not reference container types or colours.

We compared the missed collection events from the waste service standards taxonomies on Github to our missed container reasons to ensure that the language we used matched the standards. Some of the missed container reasons were not available on the standards but where they were, our missed container reasons matched the standards and language used. This is highlighted on the missed container reasons and comparisons to Standards tab of the Waste System Extract document.

We have worked to identify differences in language used between Leeds and NELC and made changes to ensure we are using a common language. Changes have been made such as Crew' instead of 'Gang', 'Performance' instead of 'by Waste type', and 'Reason' instead of 'Outcome'.

11. Regional survey to discover more about which systems other councils use, their data maturity and appetite for a potential Beta.

In order to test the market potential both in appetite and practicality, we shared via MHCLG, Yorkshire & Humber peer group, GDS a snapshot of the prototype dashboard and a short survey to complete. We aimed to understand:

- Current ICT infrastructure across councils
- Data analysis maturity across councils
- Interest in our proposal and if this approach would be a priority

The raw outputs of the survey including comments are available here.

18 councils responded and key findings were:

- Only 3 out of 18 councils have outsourced their waste collection operations
- There is a large amount of duplicity of effort happening across participating councils to achieve the same objective of making the best use of their data

- Levels of maturity and ability to access and process the data seem low at 40% on average across respondents and demonstrates potential to share learning and skills
- 52% of participating councils said that this approach would be a priority to improving service delivery
- There are also some strong commonalities in the systems used across local authorities which mean good potential to share and scale the approach, with 9 authorities out 18 using either Collective or Mayrise as a waste management system

Further analysis of the survey findings is available here.

Summary of our research findings

Our further research beyond the discovery phase has revealed the following:

- Highest volume of failure demand and customer contact at both Leeds CC and NELC
- Current lack of timely data to support service improvement
- Different systems used and container types but common service issues
- That processes and common language across teams is essential
- Clarity about why containers are missed is essential
- Common data can be adopted however data on missed container reasons might not be currently collected by councils
- That using data needs to be in unison with reviewing back office and other procedures
- Data needs to be robust and of a high quality with all reports logged to ensure that dashboard is accurate and can inform decision making
- The view of all user groups is vital to successful delivery ensuring access to the right data and view
- Prototype can be replicated across both APEX and PowerBI

Appendices

- Business and Benefits Case
- Pipeline (including links to all show and tells live streamed using Google hangouts via Youtube)
- Data model
- Project timeline
- Benefits and risks to project
- Agenda for site visit to Leeds
- Link to user personas NELC
- Link to Leeds CC personas
- Data extract document
- Log of dashboard improvement suggestions and iterations
- Survey questions
- NELC customer services feedback from user research
- APEX to PowerBI dashboard comparison
- Agenda for site visit to NELC
- Shared code examples from APEX
- Common data standards
- Raw outputs of the Local Authority survey
- Analysis of survey outputs