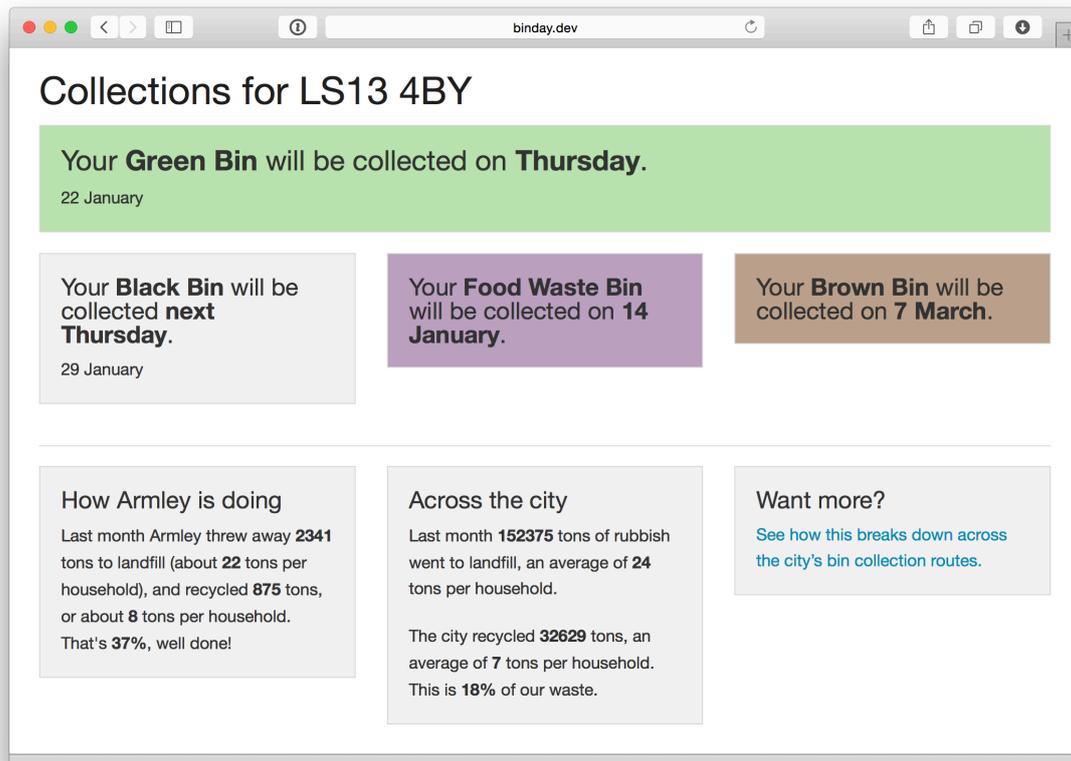


Improving “Check your bin day”

Leeds City Council already has a [web page](#) which people can use to check their bin day, which is consistently amongst the most popular pages on the Council’s website.

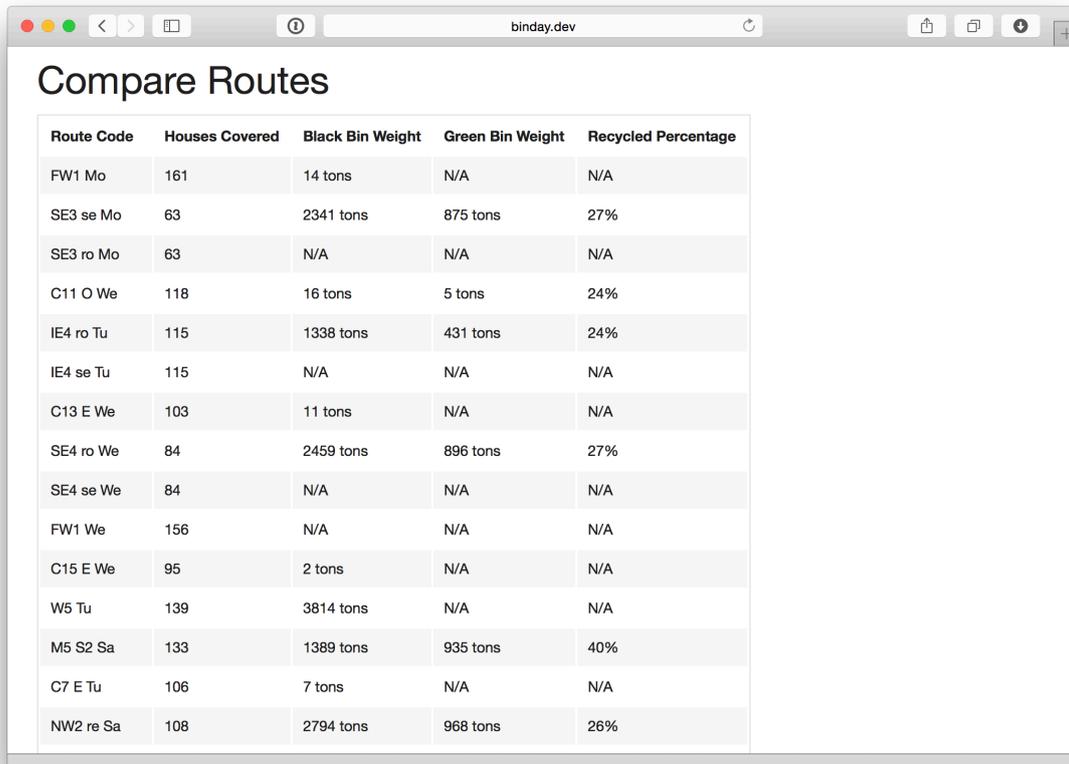
By combining this page with interconnected data from the rest of Waste Services – as well as the Council as a whole – it is possible to create a web page which provides end users with a more comprehensive overview of not only when their bins will be collected, but also how their local area (be that postcode, electoral ward or other administrative boundary) is performing on average with regards to total tonnage of waste, percentage of waste which is recycled and the contamination level of that recycling.



It is a fair assumption that users viewing this page have actively gone seeking information on their bin collection day. By providing not only the user's bin collection information, but also highlighted metrics on their 'performance' as well as intelligent suggestions on ways of improvement (for example, highlighting the list of suitable materials for recycling in areas with high contamination) it may drive reduced overall waste, higher recycling rates, lower contamination and an overall improvement in awareness of waste services and local sites for disposing of recycling and other household waste.

Finally, it has been shown that [the concept of 'gamification' works well](#) in prompting behavioural changes. By showing an area's statistics as related to previous time periods, the city as a whole or by producing a 'league table' of performance across the city it should prompt

competition to improve on results or to outperform other areas.



The screenshot shows a web browser window with the URL 'binday.dev'. The page title is 'Compare Routes'. Below the title is a table with the following data:

Route Code	Houses Covered	Black Bin Weight	Green Bin Weight	Recycled Percentage
FW1 Mo	161	14 tons	N/A	N/A
SE3 se Mo	63	2341 tons	875 tons	27%
SE3 ro Mo	63	N/A	N/A	N/A
C11 O We	118	16 tons	5 tons	24%
IE4 ro Tu	115	1338 tons	431 tons	24%
IE4 se Tu	115	N/A	N/A	N/A
C13 E We	103	11 tons	N/A	N/A
SE4 ro We	84	2459 tons	896 tons	27%
SE4 se We	84	N/A	N/A	N/A
FW1 We	156	N/A	N/A	N/A
C15 E We	95	2 tons	N/A	N/A
W5 Tu	139	3814 tons	N/A	N/A
M5 S2 Sa	133	1389 tons	935 tons	40%
C7 E Tu	106	7 tons	N/A	N/A
NW2 re Sa	108	2794 tons	968 tons	26%

Proposed project

Initially, the data from Waste Services which is currently published on [Leeds Data Mill](#) as well as data which is only made available internally should be inspected for opportunities to produce a cleaner, more structured set of data. Waste Services have recently invested in and are in the process of deploying a new information management system which should make extraction of this data easier and faster. It may be necessary to store this data in a 'working' database which is optimised for the kind of proposed analysis, as well as for the generation of data to be published on Leeds Data Mill.

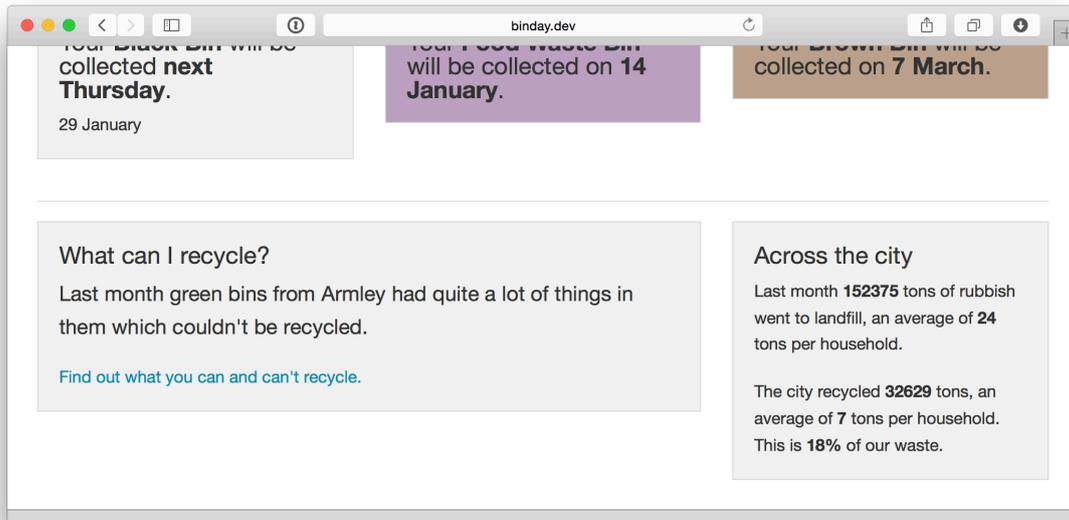
Once a clean, structured data set is available it is possible to run automated analysis – most likely on a daily basis – which would generate statistics for both the city as a whole over a given time period as well as individual collection rounds. From this it is possible to calculate average statistics for each property on any given route (again over a time period as well as individual rounds), and finally from these to extract average statistics for any given geographical boundary (such as postcode or electoral ward).

Alongside the data from individual routes and collection rounds it is possible to perform similar analysis for bring sites such as bottle banks and household waste sites.

The resulting data, generated on a regular basis, can easily be queried using its geographical fields to find information relevant to any given address. Since the finding of an address is an essential first step in the “Check your bin day” page the information can be presented alongside the collection information. Additional information such as a citywide ‘league table’ of performance area-by-area may be linked to from this page.

Further work

A possible second phase of the project would involve making use of thresholds for ‘acceptable’ levels of certain statistics to automatically target behaviour which could be improved on an area-by-area basis.



The advantage of this kind of automated targetting based on hard data means that there is a much shorter feedback loop between the realisation that a behaviour may be improved on and the communication with end users. For example, a person looking to find their bin collection day being prompted by a message about reducing recycling contamination may prompt the removal of unrecyclable material from their green bin.

Publishing of data

Initially and for the purposes of this project the data can remain in a relatively simple structured database used to perform scheduled, automated analysis and resultant property-based queries. This database can also be used to automate the production of datasets and their publishing on the Leeds Data Mill, reducing the delay time in publishing data from months to days.

The ultimate goal of this work should be to produce a set of [Linked](#)

Data which can be used easily as part of larger data driven projects both internally within the Council and externally by the public. Some pieces of the data - such as the list of properties and their geographic locations - may have a significant overlap with other areas of the Council and offer opportunity for collaborative working.