

Collection Service Review & Route Optimisation Case Studies

Executive Summary

Councils now, more than ever, need to ensure their services run as efficiently as possible. Improving some of the most cost-effective waste collection authorities already is not an easy task. It requires robust leadership and a strong partnership between all levels of management and operations. Above all, a desire to make the service work even better.

At WasteConsulting, we understand how to support Councils achieve these goals. Our dedicated, in-house technical and IT teams work with officers and operations staff to deliver sustainable solutions to even the most cost-efficient Councils.

Case studies here for 2 recent projects produced annual savings of c£300,000 as well as significant reductions in CO₂ emissions.

Case Study 1: Gravesham Borough Council

Gravesham, in Kent, had the second cheapest cost of collection per household in England (according to BV86, 2007/08). However, the introduction of a new transfer station within the borough and the withdrawal of 'tipping away' payments threatened to add significantly to the net service cost. The Council decided to carry out a full service reorganisation and route optimisation exercise with support from WasteConsulting.

The Challenge

The key objective was to provide revised street routes using as few operational resources as possible and within the normal weekly working hours of the operatives. The client brief also stipulated:

- The service must operate on a weekly collection basis for recycling and residual waste, as required by Councillors;
- Recycling/residual waste must be collected on the same day;
- Under the terms of the employees contracts, an hour earlier finishing time must be provided for on a Friday;
- The existing fleet vehicles must to be used; and
- New rounds needed to be ready to coincide with the opening of the new WTS.

Achieving these requirements presented considerable technical challenges for the consultants, such as:

- Matching uneven collection rounds for refuse and recycling; and
- Retaining the narrow fleet provision for access to high density urban areas as well as rural villages.

The original collections were operated using 6 single bodied vehicles for residual and 3 for recycling plus one 'mixed' round vehicle.

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The optimisations had to take account of current payloads averaging 7.5 tonnes as the Council had no plans to bring in larger capacity vehicles in the future.

The project was delivered over a four month period. The initial work of the team was to collate existing operational data to form the baseline for the review. Using the Geographical data from the Council's database the property locations and road networks were accurately plotted.

This data was then used to run scenarios in the optimisation system and to produce draft new rounds. The initial work identified the saving of 1 refuse vehicle round and the 0.6 shared vehicle element in the recycling rounds.

The route structures were agreed with the Gravesham management team, and consultations held with operational staff to ensure that the computer generated rounds could be calibrated against 'real world' collection constraints. This underpinned the initial work and confirmed the original savings identified were deliverable.

Minor adjustments to the round structures were made before final consultation. Vehicle savings were agreed with staff and management and the new rounds, street routes and maps were completed in advance of the WTS opening.

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Outcome & Benefits

The rounds were successfully implemented with a supporting communications plan to ensure any changes were notified to householders in advance. Contingency arrangements were put in place by the council's Waste Management Unit to manage any missed bins and customer enquiries. However, due to the clear route lists and close management by the council team, these measures were not required. The settling in period was therefore very short and to date the new rounds are operating very well.

Stuart Alford, Service Manager at Gravesham has been pleased with the outcome.

"The optimised rounds reduced the refuse collection fleet by a whole vehicle, whilst a shared RCV was able to be removed from the recycling collection. In all, this represented a 20% increase in crew productivity with savings of £160,000 per annum".

Case Study 2: Sevenoaks District Council

As part of its ongoing commitment to service delivery improvement, Sevenoaks District Council commissioned WasteConsulting to review and restructure its refuse and recycling collections in late 2009. Since a key objective was to achieve cashable efficiencies for the 2010/11 financial year, Sevenoaks considered that an independent review would be of greatest benefit.

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The Challenge

There were a number of significant constraints that the project team needed to overcome in order to optimise the rounds:

- The Council's ongoing commitment to its existing fleet, a number of which were split bodied vehicles used for collecting waste and recycling;
- Prioritising minimal collection day changes/inconvenience to residents; and
- Build in the collection from difficult access areas while maintaining the use of 2 existing, narrow-bodied vehicles.

The approach, similar to that outlined above for Gravesham Borough Council, used route optimising software which involved detailed calculations of routes to support in-depth crew consultations. The discussions with operatives and supervisors were conducted so as to take full account of the operational impact of the route changes and the practical issues of collecting in urban and rural areas across a large district.

Finally, to ensure this was a fully interactive process, WasteConsulting produced output which could be viewed in electronic maps in one-to-one sessions with the crews.

Outcome & Benefits

Following this extensive and detailed review, the final routes were agreed and then implemented successfully in August 2010. Through the removal of one complete round, the authority was able to make ongoing saving of £100,000 p.a. In addition CO₂ emissions will be reduced by an estimated 7% annually which will provide a significant contribution to the authorities overall NI185 target.

Key components for successful Project delivery

- A clear understanding from the Council of their requirements supported by senior management and Councillors
- Use of an independent consultancy partner with in-house waste operational and technical experience
- Close communication and regular progress meetings with the consultancy team throughout the process
- Provision and use of accurate operational and locational data
- Consultation with the operational staff and trades union throughout
- Suitable contingency arrangements in place during new round implementation to manage missed bins and customer enquiries.