

Interim and Consulting Services for

Local Authority &  
Service Providers



# **Rethinking Waste (in post-recession Britain)**

Via

# **VT**



**Visualising Transformation™**

## **Summary**

A medium sized, quite well performing borough council decided to reinvigorate its waste and recycling collection services while developing its waste strategy in order to address both value-for-money needs and meet European waste diversion targets.

It required an improvement from 38% to around 60% recycling for no more than £300,000 a year.

This paper shows how that authority addressed the review and planning process, enabling a saving of a million pounds in the first year, with a fully detailed plan to achieve 68% recycling for £1,700,000 less per annum than their original budget.

**The book Visualising Transformation™ contains over 100 diagrams, charts and tables to help you see how VT saves money by improving services. It shows how VT promotes the re-investment of released capacity to add even more value to customers, and how, typically, this is achieved with no loss of employment.**

## Introduction

There are many factors to consider when setting the Council Tax for next year, just trying to maintain services within an ever-reducing budget, and reconciling this with ever increasing demands can be enough of a problem on its own.

Waste will, by definition, be a challenging service to address, in that materials presented for collection continue to increase. In addition, a post-recession period has the potential to create a faster increase than previously experienced, as more products are bought through the recovery period and subsequently, more packaging is disposed of.

There is also an increase in the overall population, seeing a rise in the quantity of older & often frail people needing support. There is a general diminishing size of house-holds which again creates more small properties to collect from, and, in general, the collection and separation of materials from flats is more difficult than the same process for waste collected from detached and semi-detached houses.

There is also an array of European legislation targets to achieve over the next few years to divert even more material from landfill, preferably re-using, recycling and gaining energy from the waste.

Behind all of this, the public sector has become less business-like over the last decade, reducing the general capability to achieve innovative improvements to service delivery, relying far too often on the cloning of ideas from a minority of more forward thinking authorities.

The last major influencer for service design is the national media. While most people accept the changing pressures on the world eco-system, with fast diminishing raw materials, and global warming leading to ever more dramatic weather related extremes, some members of the press find it amusing to cause sensationalism to sell papers, rather than consider the wider issues of stewardship for our children's children.

## Achieving the best outcomes

In any form of service delivery, who is to say what the *best solution* is? Waste collection touches virtually every person in a community, therefore there will be a considerable variety of concepts and opinions about the right way to collect waste.

Two extremes could be considered as;

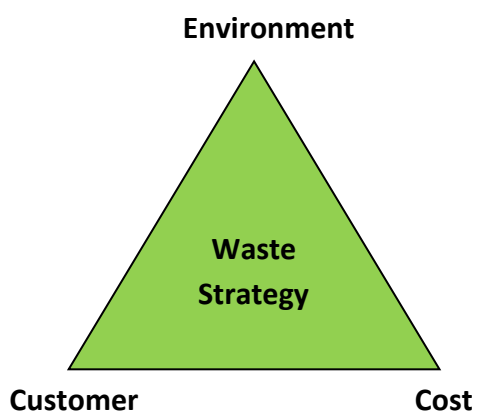
1. All waste is collected in bins with no separation at all, to
2. Every form of material should be collected separately, using ten different containers to maximise environmental benefits.

In order to achieve a perfectly balanced, but acceptable collection service which is efficient and effective, the design needs to address issues which are wider than just environmental and customer facing.

The strategic decisions should give consideration to Customers, Environment and Costs. Whatever your motivators within the waste industry, these three aspects will enable a balanced design with optimised outcomes.

If that simple triangle is the basis for the initial discussions, the next steps would be to flesh out what is important for the customers and the environmental needs, comparing possible next steps against the current starting point.

### CORE WASTE STRATEGY



What are the issues to be addressed regarding the environment? Which are more important, local, regional or national issues? What options are there for collecting and treating waste in your area? What is being developed or could be developed alone or in partnership?

Who is to say what the customer actually wants? There will be many demands, wants and wishes for a new collection strategy. The best way to find out what the opinions are is to ask the public, enabling not only quantitative responses, but also qualitative replies. Effectively you need to map what is wanted with the boundaries of acceptability defined.

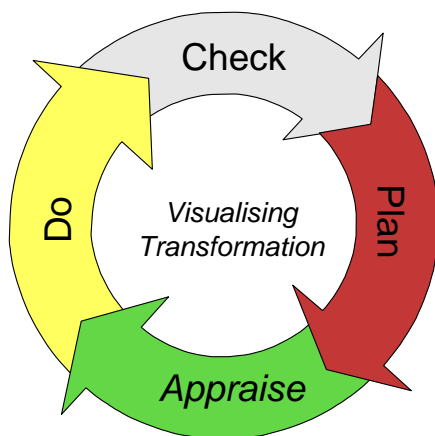
## Project Management

There are many ways to manage a project of this kind, those based on Prince 2 methodologies tend to be quite good. However, there must be considerable emphasis on gathering data to create information with many unknowns to start with, which would make it difficult to plan the work once that data is found.

Experience has shown that a systemic based approach, addressing strategic and operational aspects in combination, viewing this as an end to end project, from both customer and material points of view, will enable the most value to be achieved.

To add further value to the review, the business processes of collection, customer interfaces and material treatment should be included, seeking to improve the quality of the service delivery, to enable the release of capacity to do additional work or treatment to materials.

A new methodology has been developed from Lean Systems Thinking, called Visualising Transformation™, for just such a demand. Visualising Transformation has a core methodology based on the Check Plan *Appraise* Do cycle, which is usually depicted as a continuous circle of events:

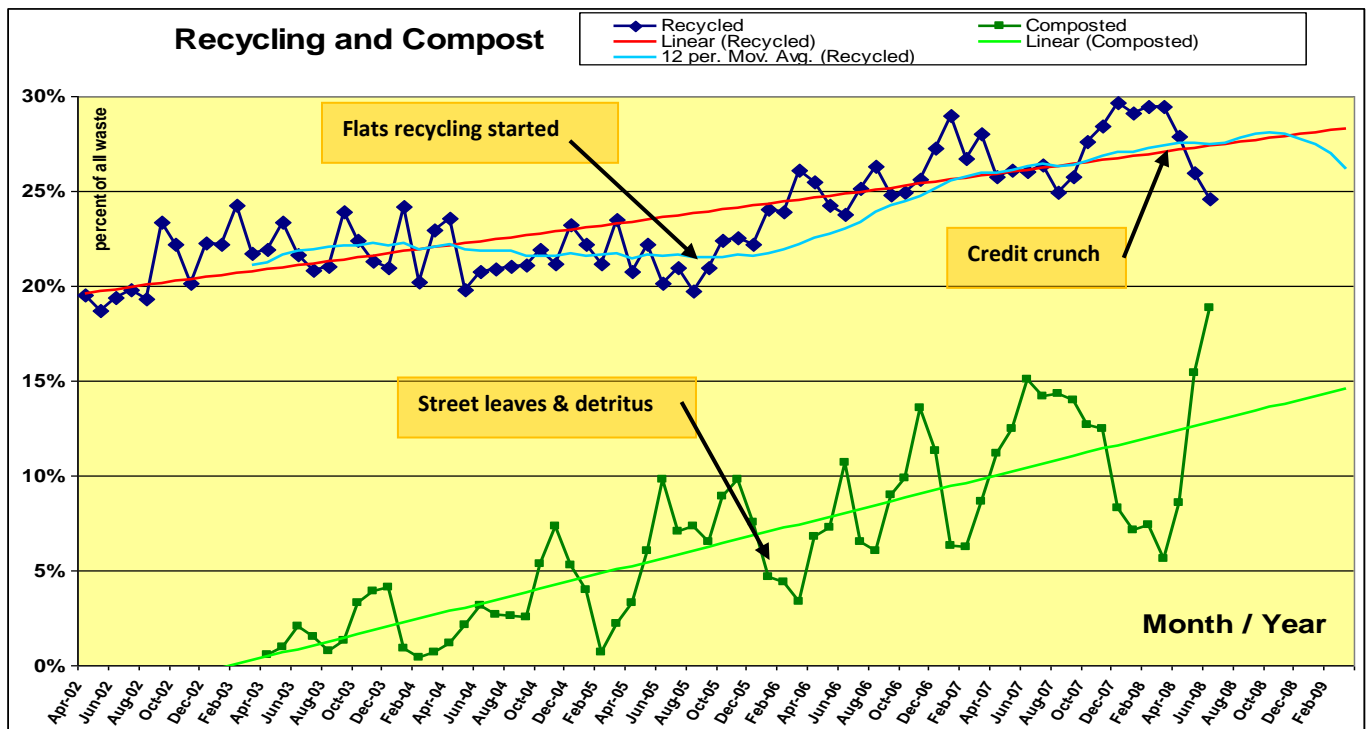


**Check** starts from the initial discussions with a project sponsor, to understand the needs and constraints of the project. What is needed to be achieved, when is it needed by, how will success be defined?

An intervention team will be created using change and waste management experts supported by all colleagues involved in the operations. This team will be trained in change techniques to help create far better awareness of how work is carried out now, what the outcomes are, and what the potentials may be.

Data will be collected and displayed in a number of ways in order to enable new insight for the hosts, so they understand the principles of cause and effect. Work is analysed, mapped with achievements fully understood, and special needs and causes agreed.

Data will be cleaned and transformed into meaningful information. Some previous beliefs will be challenged. Run charts will be produced with comments added to show a change of system, or exception to normal working.



The run chart above shows: How a failing recycling service was invigorated by the flats initiative in June 2005; The long term impact of adding street leaves and detritus to garden waste from Winter 2005/ 06 and; The impact from the looming recession in the summer of 2008 as volumes of cardboard reduced considerably.

What this technique of annotated run charts gives, is the creation of very meaningful information from simple data. Consider how much difference that would make at a board meeting, replacing numbers and explanations.

At the same time the causes of service failure for the customers were being investigated, it was gradually found that poor round designs, and the lack of defined methods of working, created quite different service delivery outcomes for customers which could become confused when teams cross covered, or agency staff were used.

Customers reported defects via a CRM type call centre, this abstract shows several key issues from those systems.

Recycling - Missed		R34THU	21/06/2007	33 Tilers Close
Refuse - Missed Bin		W34THU	21/06/2007	33 Tilers Close
Refuse - Missed Bin		W34THU	03/08/2007	33 Tilers Close
Recycling - Missed		R34THU	07/08/2007	33 Tilers Close
Recycling - Missed		R34THU	09/08/2007	33 Tilers Close
Refuse - Missed Bin		W34THU	12/10/2007	33 Tilers Close
Green - Missed Bag			18/01/2008	33 Tilers Close
Recycling - Missed		R52TUE	10/01/2007	34 St Leonards Rd
Green - Missed Bag		G12TUE	12/01/2007	34 St Leonards Rd
Recycling - Missed		R21MON	12/12/2006	35 Harrison Close
Refuse - Missed Bin		W21MON	12/12/2006	35 Harrison Close
Refuse - Missed Bin		W21MON	14/12/2006	35 Harrison Close
Recycling - Missed	Assist	R65FRI	20/10/2006	36 Manor Way
Green - Missed Bag		G15FRI	13/04/2007	36 Manor Way
Refuse - Missed Bin		W65FRI	29/10/2007	36 Manor Way

Collections for Recycling (R), Waste (W) and Garden waste (G) were totally separate. Although collections should be on the same day of the week. Misses per 100K were around 125, the chances of missed W and R on the same day if there were no blocked roads was around 1 in 14,000,000. They used to be reported about eight times a week!

33 Tilers Close was a 'frequent flyer', always forgetting to put waste out, then reporting it as missed. The call centre thought that the crew were hopeless!! (No the call centre was hopeless!)

Missed waste on 3/8/07 should have been recorded as recycling, that was a CC error. The same applies to Recycling and Garden at 34 St. Leonards. Note also

In general a waste collection crew can collect from two properties every 35 seconds when driving down a suburban road. To go back to a reported missed collection will take around fifteen minutes, thus denying the opportunity to collect from some 51 properties. If 100 properties are missed per week, that's a lost capacity of 5,100 properties or a medium waste round. ***Note: that a failure rate of around 1 in 1,000 can add over ten percent to the cost of collection.***

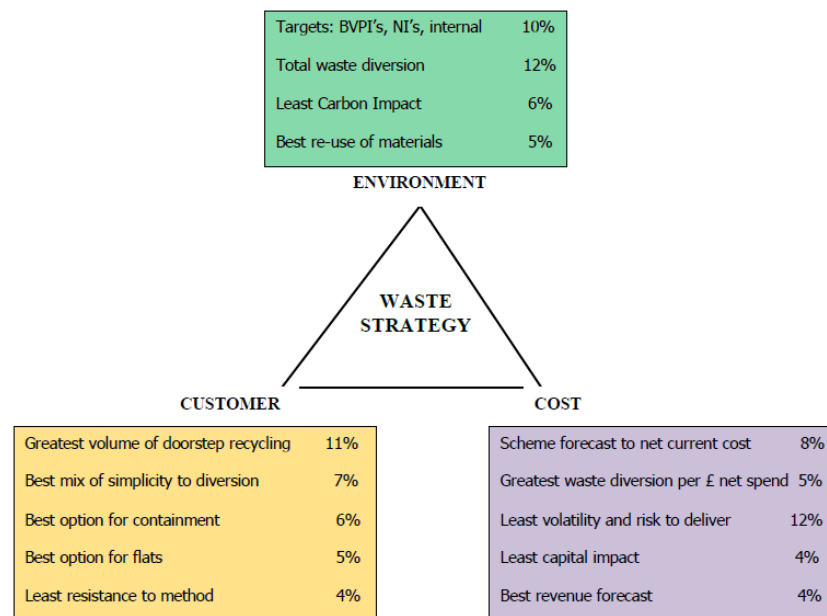
The best way to analyse missed collections is via cause and effect applying pareto analysis to address the 20% of issues that cause the 80% of failures. In the above case the service design was reviewed and missed collections reduced from 125 a week to 17.

Continuing with the Check review, we carried out an analysis of the residual waste material to see what the capacity was for further diversion or treatment. We carried out postal and electronic surveys of the customers to see what they wanted, would accept or not accept in terms of collection systems. We also established a set of focus groups to discuss those issues with them. We reviewed all collection systems available, benchmarking systems against costs and outcomes. This started to move us into **Plan**.

We collated all these options into a master spreadsheet, showing over 150 ways to collect then treat residuals and recyclates, each line being assessed for Cost, Customer and the Environment. We scored these on a one to ten assessment, using Red for 1 to 4, Amber for 5 to 7 and Green for 8 to 10. We averaged these three elements for an overall score with a RAG rating on the same basis. In this way a focus group of senior officers and cabinet members were able to whittle down the 150+ options, to 25, where more detail was added, to six, where even more detail was considered, and then a final two schemes in considerable detail, deciding on one for recommendation to the Council.

The waste strategy continued to evolve as operational improvements started and 'quick wins' started to occur, enabling better service delivery and increasing positive energy for all involved.

## EMERGING WASTE STRATEGY V2



Clearly the waste strategy was taking shape, with a number of parameters to consider, several of which inter-connected. We used an A3 worksheet approach to meetings, most often looking at data from a series of sources to understand how dealing with material in one way would add value downstream.

The core triangle was evolved with weightings attached to a number of parameters derived from experts and customers.

We developed increasing capabilities to analyse information, sometimes from an array of sources.

The table below was again in the form of an A3 worksheet, designed to 'walk through'

Residual waste collected from household wheeled bins From 44,000 houses and 11,000 flats. (*Based on 55,000 properties and MEL waste contents report)			
Composition	Per annum	Percent	*Average property
Total Weight	30,779 Tonnes	100%	10.76Kg
Paper and card	3,863 Tonnes	12.55%	1.35 Kg
Plastics	3,995 Tonnes	12.98%	1.40 Kg
Metals	933 Tonnes	3.03%	0.33 Kg
Garden waste	1,385 Tonnes	4.5%	0.48 Kg
Mixed Glass	1,508 Tonnes	4.90%	0.53 Kg
Food waste	11,157 Tonnes	36.25%	3.90 Kg
Other recyclable	1,287 Tonnes	4.18%	0.45 Kg
(Not recyclable)	6,651 Tonnes	21.61%	2.33 Kg

### Waste analysis: Based on 2007 / 08

Collected from bring sites 57 Communal, 38 School sites, 6 Micro sites		
Composition	Per annum	Each week
Total	4,104 Tonnes	78.9 Tonnes
Paper and Card	1,090 Tonnes	21.0 Tonnes
Cans and Plastics	99 Tonnes	1.9 Tonnes
Glass	2,704 Tonnes	52 Tonnes
Textiles	179 Tonnes	3.4 Tonnes
Fridges	31 Tonnes	.6 Tonnes
Others	1 Tonne	0.02 Tonnes

### Potential household waste collection (09 / 10?)

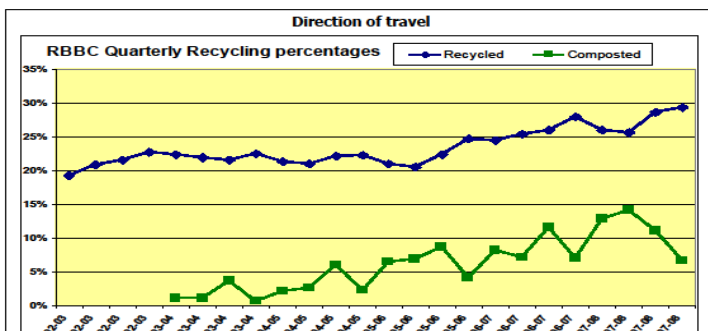
(current recycling plus additional from residual waste, based on current door to door collections, plus 80% of potential residual, x 80% of properties)

Composition	Per annum	Percent	Average property
Total Weight	49,000 Tonnes	100%	15.4Kg
Paper and card	12,200 Tonnes	24.9%	3.83 Kg
Cans and plastics	2,500 Tonnes	5.1%	0.79 Kg
Garden waste	4,700 Tonnes	9.6%	1.48 Kg
Food waste	7,100 Tonnes	14.5%	2.23 Kg
Mixed Glass	3,704 Tonnes	7.6%	1.2 Kg
(Residual waste)	18,796 Tonnes	38.04%	5.9 Kg

Collected from recycling boxes and Garden		
Composition	Per annum	Average property
Total	13,223 Tonnes	4.62Kg
Paper and card	9,331 Tonnes	3.26 Kg
Cans	292 Tonnes	0.1 Kg
Garden Waste	3,600 Tonnes	1.26 Kg

### Change in residual waste content 2002 to 2008

Component / Year	2002	2008
Paper & Card	19.1%	12.4%
Dense Plastic	6.7%	8.0%
Glass	6.2%	5.5%
Weight	13.13 Kg	9.45 Kg



Municipal waste (07 / 08)		
Composition	Per Annum	% Hh
Total weight	53,710 Tonnes	106.9%
Residual domestic	30,779 Tonnes	61.2%
Dry recycling	13,728 Tonnes	27.3%
Compost	5,694 Tonnes	11.3%
Street Cleansing	503 Tonnes	1.0%
Commercial	3,500 Tonnes	7.0%

Municipal waste (09 / 10?)		
Composition	Per Annum	% Hh
Total weight	55,800 Tonnes	108.1%
Residual domestic	18,796 Tonnes	36.4%
Dry recycling	18,404 Tonnes	30.3%
Compost / food	13,900 Tonnes	26.9%
Street Cleansing	500 Tonnes	1%
Commercial waste	2,800 Tonnes	5.4%
recycling	1,400 Tonnes	2.7%

### Where waste comes from at present

<b>Domestic Waste</b>	Household bins and side waste Flats bulk bins and side waste Contaminated recycling
<b>Dry recycling</b>	Household boxes Recycling bring sites (Normal, schools, flats, micro)
<b>Compost</b>	Household Garden collections Municipal leaf fall Street sweeping (detritus)
<b>Street Cleansing</b>	Sweeping and litter picking Litter bins
<b>Commercial</b>	Fly-tip and abandoned cars Business waste collection

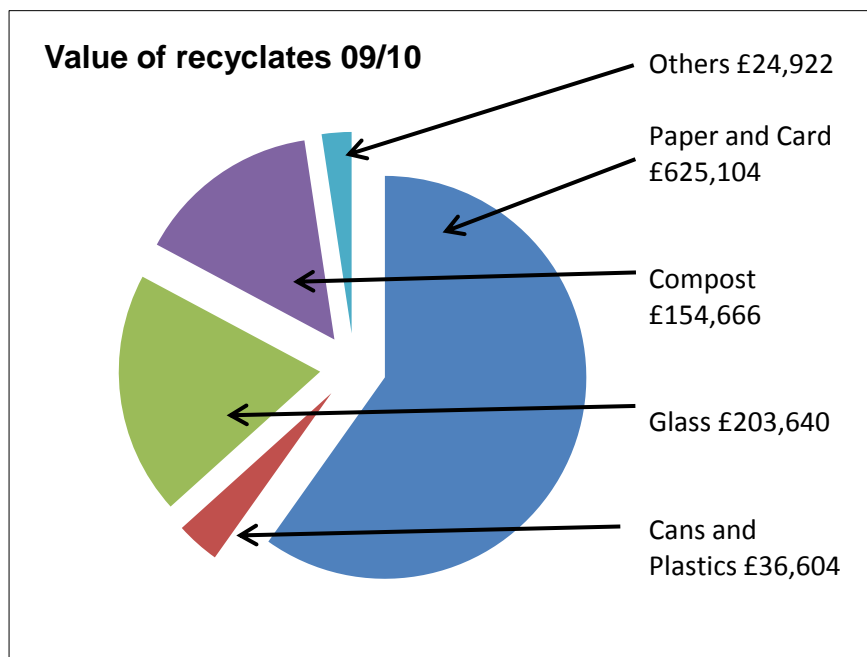


### A3 WORKSHEET ... THE CAPACITY TO RECYCLE

This enabled wide ranging, quite detailed discussions, starting from the most recent actual diversion figures, the awareness of residual waste, and how that changes, to derive an outcomes based on 80% of the people diverting 80% of the additional recyclates as designed.

Having agreed approaches and potentials, the design moved again to containers and collections methods. As was stated above we had agreed what we may do and what the constraints for design were. We had customer feedback showing how they would, or wouldn't separate and contain materials, which led to us introducing glass collections from the homes, despite having a very respectable 'bring system' in place. We also discussed with our existing recyclates processors how we could add value to the materials, and sought to discover where more materials could come from.

#### RECYCLATES VALUES SHOWN TO CREATE HIGH IMPACT



The recycling team used to spend most of their time dealing with customer issues and complaints. It was the analysis of current and potential material values to the council that suddenly enabled the insight that capacity gained from fewer issues would enable £1M a year to be achieved, as a direct result of running that area as a business.

Again, simple high impact information made the decision process very much easier.

Failure modes and special causes were being addressed, helping to reduce both and design out failure as the work went on. The quality of the service improved, capacity to improve increased, momentum to change improved.

## EMERGING WASTE STRATEGY: THIRD A3 SHEET TO DISCUSS SPECIFICATION

### Reigate and Banstead Borough Council ~ Emerging Waste Strategy

This **Waste Strategy** needs to establish realistic, but challenging, targets to radically improve service delivery in terms of Environmental achievement, Value for money and Customer service.

At every point of its development there will be genuine engagement with all stakeholders so as to maximise the potential achievements in a very balanced and customer caring manner.

This first discussion with all Members will be used to 'inform and listen' in such a way as to enable the storage of the scheme options. The planned session in late summer will fine tune ideas and help us to deliver against that widest wisdom.

The broad plans are to:

- Achieve more door to door recycling collection
- Introduce weekly collections of food waste from all households
- Use simple systems with high recycling achievements
- Significantly reduce the amount of waste going to landfill
- Not increase the net cost of the service
- Improve service delivery quality in terms of:
  - Missed bins and rectification
  - Providing positive contact with customers

The proposals will be evaluated against a model similar to the triangle in the centre of this page. Are the weightings correct?

Targets: BVPI's, NI's, internal	7%
Total waste recycling / processed	16%
Least Carbon Impact (haulage +)	6%
Best re-use of materials	4%

ENVIRONMENT



#### ENVIRONMENT ~ One third of the balance:

The Environmental issues are increasing as the complexities of Global Warming and resource availability become increasing focussed on. The world economy is changing quickly with massive demands from China, India and third world economies highlighting the issues started by Europe and America.

The ability to achieve radically improved recycling returns improves daily, which is particularly influenced by the Landfill Tax increase of £8.00 per tonne per annum. This single factor will influence the free market development of recycling and processing plant developments within the next two to three years. Thus our 'optimum' design needs not only look at the technologies and outlets of today or within the WDA plans (Surrey CC), but also to hear those plans from the wider waste industry.

New National Indicators require waste minimisation and recycling achievements, but now also require us to address reductions in CO2 from our services and across the whole council area. These also require better governance and support of businesses within the area. We can no longer take a narrow view of our responsibilities.

Our view must also look downstream for where these materials go, how far will they travel? What is the use of energy per tonne processed? Will the material be used once more or many times?

Lastly our plans need to be sustainable, it is imperative to understand the markets and not invest in contracts and outlets that become superseded within a short while.

#### CUSTOMER

Greatest volume of doorstep recycling	10%
Simple system / maximum recycling	6%
Best mix bins and baskets	5%
Best option for flats	4%
Scheme with best user methods	4%
Easiest scheme to phase start-up	4%

#### COST

Scheme forecast to net current cost	8%
Greatest waste diversion per £ net spend	7%
Least volatility and risk to deliver	10%
Least capital impact	4%
Best revenue forecast	4%

#### CUSTOMERS ~ One third of the balance:

The current recycling achievements are exceptionally good for the scheme in place, which can only be achieved with the positive participation of our customers. Their continued support is seen as imperative for the future.

The service design will be carried out against feedback from consultation and operational contact with our customers. The Simalto type approach to customer needs wants and tolerances may assist our development.

We are aware that there is a broad range of desires ranging from a very intensive service which will recycle 90% of all waste, to customers who just want to get rid of their rubbish. We must achieve a balance which enables virtually all customers to be part of a service which diverts waste well, with little complexity and doesn't cost the earth.

The availability of recycling facilities to flats needs particular work as they are a large proportion of the area, yet have too few easy ways to recycle. We must also remember business owners want to recycle.

#### COST ~ One third of the balance:

Both revenue and Capital budgets need extremely sound management to protect this Council's interest for the long term. This plan is to enable ingenuity for service improvement while retaining a firm grip on the budget. The task is to radically reduce the amount of waste going to landfill while keeping to the current net budget.

All schemes considered will be limited to current budgets, it is anticipated that costs will increase considerably, as will income. The forecasts will show likely Capital costs and Revenue contributions.

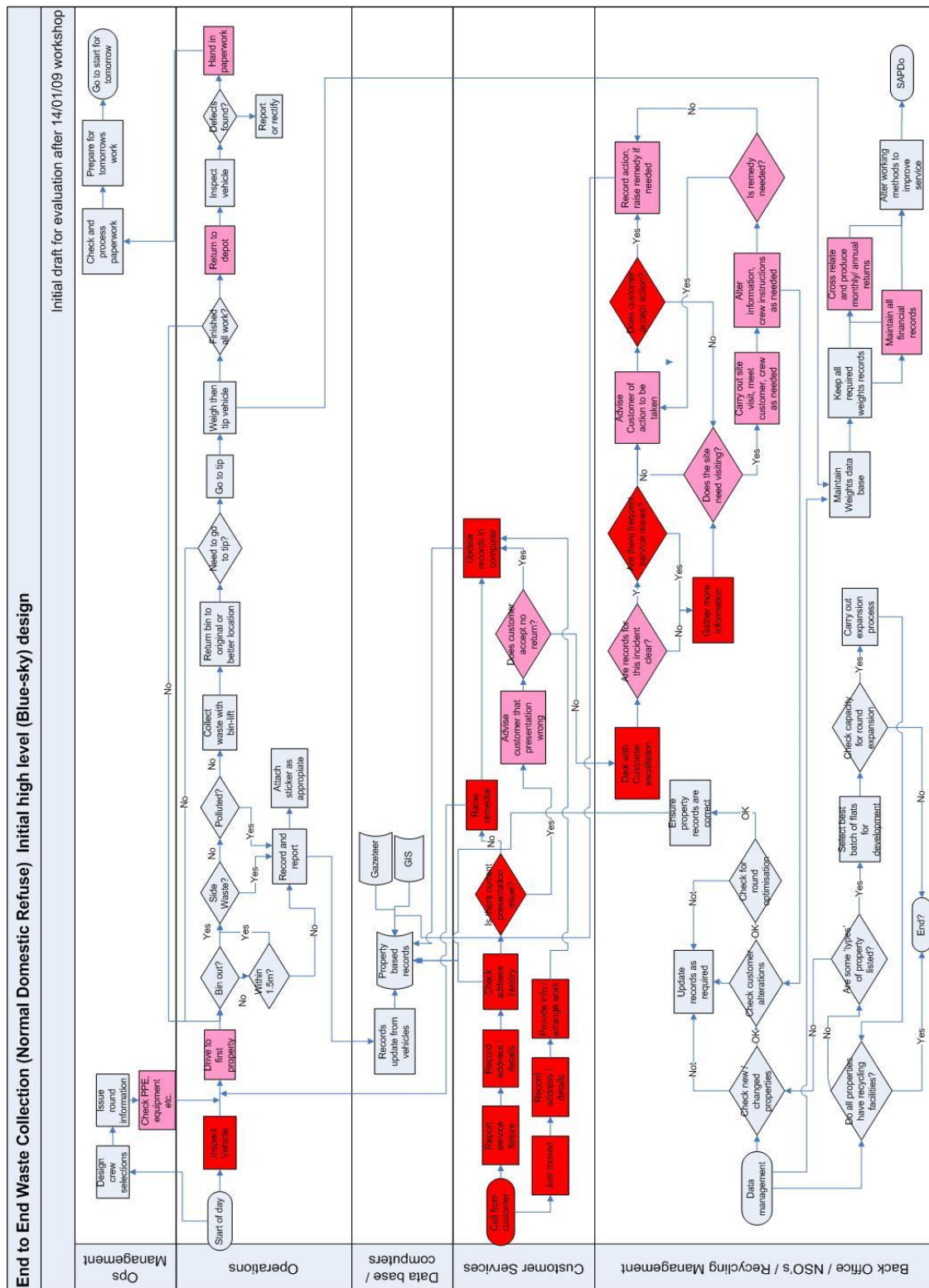
The recycling world has proven to be very volatile, the world demands for plastics, metals and card can leap from week to week. The risks and opportunities of different material mixes and outlets will be assessed against the potential income that could be achieved.

Value for money goes well beyond effectively collecting and passing on materials, the exercise will include various product mixes, differing amounts of segregation by the public or our own staff, and then how that material may be dealt with prior to passing it on to others.

Note that a number of strategic decisions have been taken to flesh out the strategic direction, still on one A3 page

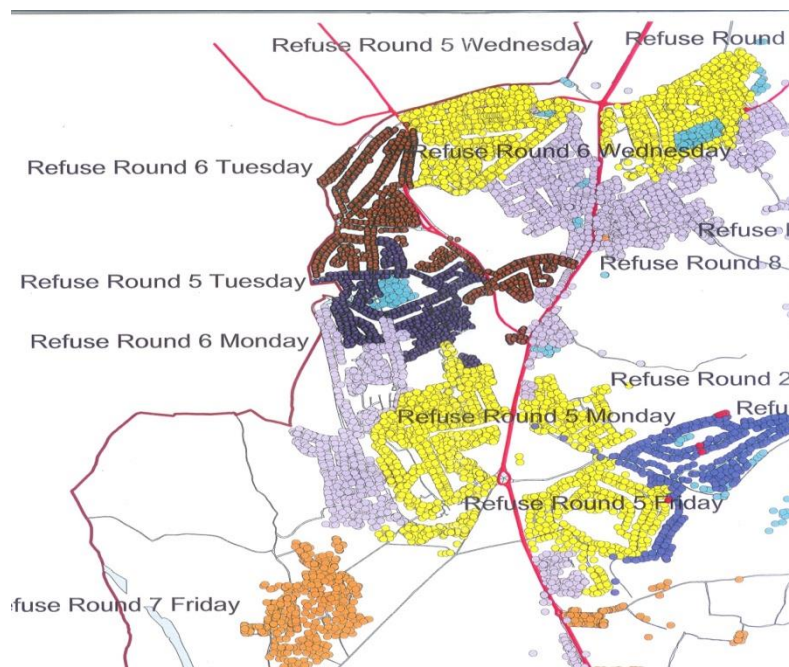
In parallel to the strategic developments, agency staff had been replaced with new permanent relief operatives, an additional correction crew which operated each Saturday was stopped, and additional round which operated on Thursdays was deleted. Instead of increasing the amount of operatives to deal with failure demand, we had started the journey of improving the service delivery to reduce the amount of resources needed.

The first workshop within Plan for the E2E elements created the flowchart for domestic refuse collections as below:



It had been thought that re-design would have 'value work' only, the red areas are non-value aspects so far as customers are concerned while the pink shapes are value enabling; i.e. only the light blue shapes add value for the customer. The prime cause of so much non-value was the decision to retain the customer services call centre! This was considerably better than the existing service designs; however it was the visualisation of rounds via GIS that showed how poor existing round structures were.

## ABSTRACT FROM GIS SHOWING CURRENT ROUND STRUCTURES



Even with that level of saving, several officers would have considerable spare capacity.

This small area of the authority shows how waste was collected randomly on every day of the week, with interconnecting rounds.

Effectively there was no design, and little awareness of how ineffective this was, not only in terms of costs and service delivery, but also in terms of environmental damage and increased congestion.

Thus at the end of 'Plan' we were able to show that we could substantially reduce rounds resources by improving service delivery while increasing recycling.

The table below shows that we could reduce costs by over £1/4M per annum, via improving services and a few minor operational changes.

## TRADITIONAL SAVINGS MODEL AFTER INITIAL REDESIGN

Description	Current resources	Costs	Proposed resources	Cost	Traditional
					Saving £
Veh mtc / finance link	Admin 1 hour per day	£5,981	Reduced to	£2,805	£3,176
Reduced volume of refuse errors	BSO's 36 hours a week	£30,120	BSO's 18 hours a week	£15,060	£15,060
Reduced volume of refuse errors	Rec. Mgt. 25 hours / wk	£46,191	Rec. Mgt. 10 hours / wk	£18,476	£27,714
Reduced volume of refuse errors	Ref. Mgt. 18 hours / wk	£33,257	Ref. Mgt. 10 hours / wk	£18,476	£14,781
Reduced volume of refuse errors	10% of Cust Serv.	£35,000	5% of Cust. Serv.	£17,500	£17,500
Domestic Refuse rounds	8 rounds, Dr. + 2	£1,202,092	7 rounds, Dr. + 2	£1,051,831	£150,262
Collect recyclates from flats	7 rounds, Dr. + 2		7 rounds, Dr. + 2		£0
Stop over-servicing refuse	Collecting wrong side waste		Increase rec / less wst.		
Reduce double handling comm wst	7 people involved		3 people involved		
Align all weighbridge data	From 7 people		50% more data, less people		
Use vehicle tracking to reduce vehicles	Parts of many		Better use, reduces OH's		
Increase Garden Waste services			Diversify and grow services		
Improved information / dashboard	Nearly all NS officers	£48,805	BSO's , then by design	£16,268	£32,537
<b>Total Savings</b>				<b>Traditional</b>	<b>-£261,029</b>

The next phase of the review was the most ambitious; **Appraise** is the process of reviewing the business and material opportunities, seeking to re-invest the capacities released by more efficient / effective designs, but now adding more services, seeking situation responsive designs and future proofing the service.

Opportunities abounded as a result of harvesting good ideas and barriers to change as 'Check Plan' proceeded. We knew that Flats needed a better recycling service, that commercial recycling would be very cost effective, that materials could be cleaned to add value and separated to add value, we just needed to work out how.

Several barriers to improvement were IT related, they had a poor system, which did not address the business issues, failed to monitor performance in real time and created high levels of repetition to produce suspect data.

We designed a simple Dashboard in Excel 2007 to monitor crew performances from existing output fields, which would enable daily updates for each crew. Garden 1 and 2, were the same crews on a fortnightly service. There were considerable design issues with the week two service, especially for crew one.

### WASTE CUSTOMER SERVICE DASHBOARD

		Weighted position						Statistics	
		Refuse	Recycling	Garden 1	Others			Miss / 100K	Current O/D Rems
1		6.0	1 0.5	1 5.5	Trade	0.3	All	67.3	11
2		7.2	2 6.5	2 7.0	Clinical	1.0	Refuse	37.9	5
3		2.3	3 10.5	3 3.0	Bulky	0.2	Recycling	30.6	3
4		9.8	4 7.3	Garden 2			Garden	581.8	3
5		11.5	5 1.5	1 28.7					
6		15.0	6 12.7	2 14.8					
7		4.0	7 1.8	3 10.2					
8		1.2							

We were able to show this as a pareto report, run chart and a weekly bar chart. What it did do, was to give very graphic information to the supervisors and managers on an automatic basis each morning.

Returning to the final designs from *Appraise*, we found that we could re-invest capacity released from fewer failures, into commercial recycling, a vehicle, driver and loader starting a commercial recycling service with a largely pre-paid resource, while the loader was deployed to sort cans from the paper and card in the yard, increasing the paper and card value by £7 per tonne. This enabled a quadruple cost benefit compared to reducing employment by a single operative.

Instead of shipping mixed cans and plastics loose (lightly compacted) in RCV's, we were able to keep cans from plastics and transport them compacted and baled adding over a hundred pounds a tonne to their value, while reducing haulage costs. (Separating aluminium from steel added even more value)



## ACTIVITY BASED SAVINGS, UTILISING SPARE CAPACITY TO ADD VALUE

Current resources	Costs	Proposed resources	Cost	Traditional	Value added	Third year
				Saving £		Saving £
Admin 1 hour per day	£5,981	Reduced to	£2,805	£3,176	Grow commercial waste	-£200,000
BSO's 36 hours a week	£30,120	BSO's 18 hours a week	£15,060	£15,060	Grow commercial waste	
Rec. Mgt. 25 hours / wk	£46,191	Rec. Mgt. 10 hours / wk	£18,476	£27,714	Increase recyclates value	-£15,155
Ref. Mgt. 18 hours / wk	£33,257	Ref. Mgt. 10 hours / wk	£18,476	£14,781	Helps enable round less	
10% of Cust Serv.	£35,000	5% of Cust. Serv.	£17,500	£17,500	Capacity to expand	-£17,500
8 rounds, Dr. + 2	£1,202,092	7 rounds, Dr. + 2	£1,051,831	£150,262	7 rounds, Dr. + 2	-£137,000
7 rounds, Dr. + 2		7 rounds, Dr. + 2		£0	Sell recyclates	-£28,291
Collecting wrong side waste		Increase rec / less wst.			Sell recyclates	-£33,802
7 people involved		3 people involved			Comm waste system	-£10,067
From 7 people		50% more data, less people			Back Office system	-£16,991
Parts of many		Better use, reduces OH's			Vehicle tracking	-£93,757
		Diversify and grow services			More work same resources	-£137,055
Nearly all NS officers	£48,805	BSO's , then by design	£16,268	£32,537	Not 6 people on same job	
<b>Total Savings</b>			<b>Traditional</b>	<b>£261,029</b>	<b>Value added</b>	<b>£689,619</b>

In each case, we were able to reduce the manpower to do work, then re-invest that manpower into added value. The recycling management team were no longer needed to oversee the customer care area, as missed collection and customer faults reduced by around 80%, so they were able to add value to recyclates, oversee the commercial recycling service and introduce enhanced services for flats to get even more materials from those areas.

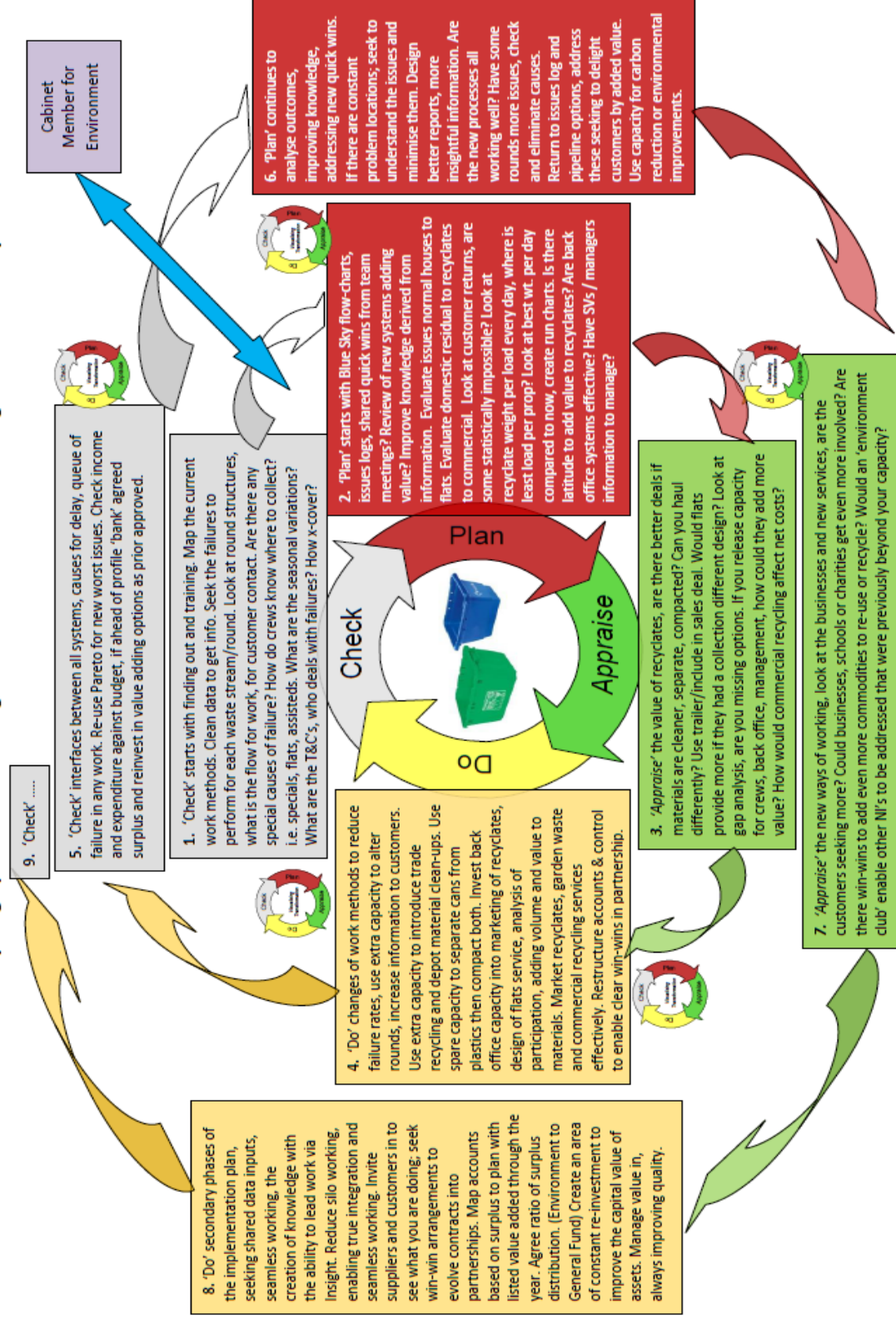
**Thus the initial re-design improved from £260,000 to £690,000 saved per annum**, however, we were examining every aspect of this on an end to end basis, with several threads of work being reviewed in parallel to one another. We had other aspects still to bring into the final designs.

The original concepts for this project were to improve service delivery and to address future mandatory waste diversion requirements for no more than £300,000 a year extra.

In the first year £600,000 revenue plus £400,000 capital was saved, even after the costs of the design intervention, and during a period of reduced recyclates values.

We ensured continuity with no double counting of benefits, we addressed some issues in design and trial several times to ensure optimum design and operations. The overview of this process can be visualised by the following diagram:

## Waste and recycling options ~ Visualising Transformation™ Maximising Value for Money



Visualising Transformation™ applied to Waste and Recycling. Maximise the weight of recyclates on a VFM basis, adding value to materials. Minimise failure demand, and ineffective scheduling. Ensure core and secondary designs meet most needs. The plan is to have the best quality of service provision at the maximum surplus for the council, with no sub-targets for any individual element. All parties work to a holistic plan, all work is done in real time. This is a whole team end to end service delivery. The whole system is self fulfilling with positive energy feedback. © SSD

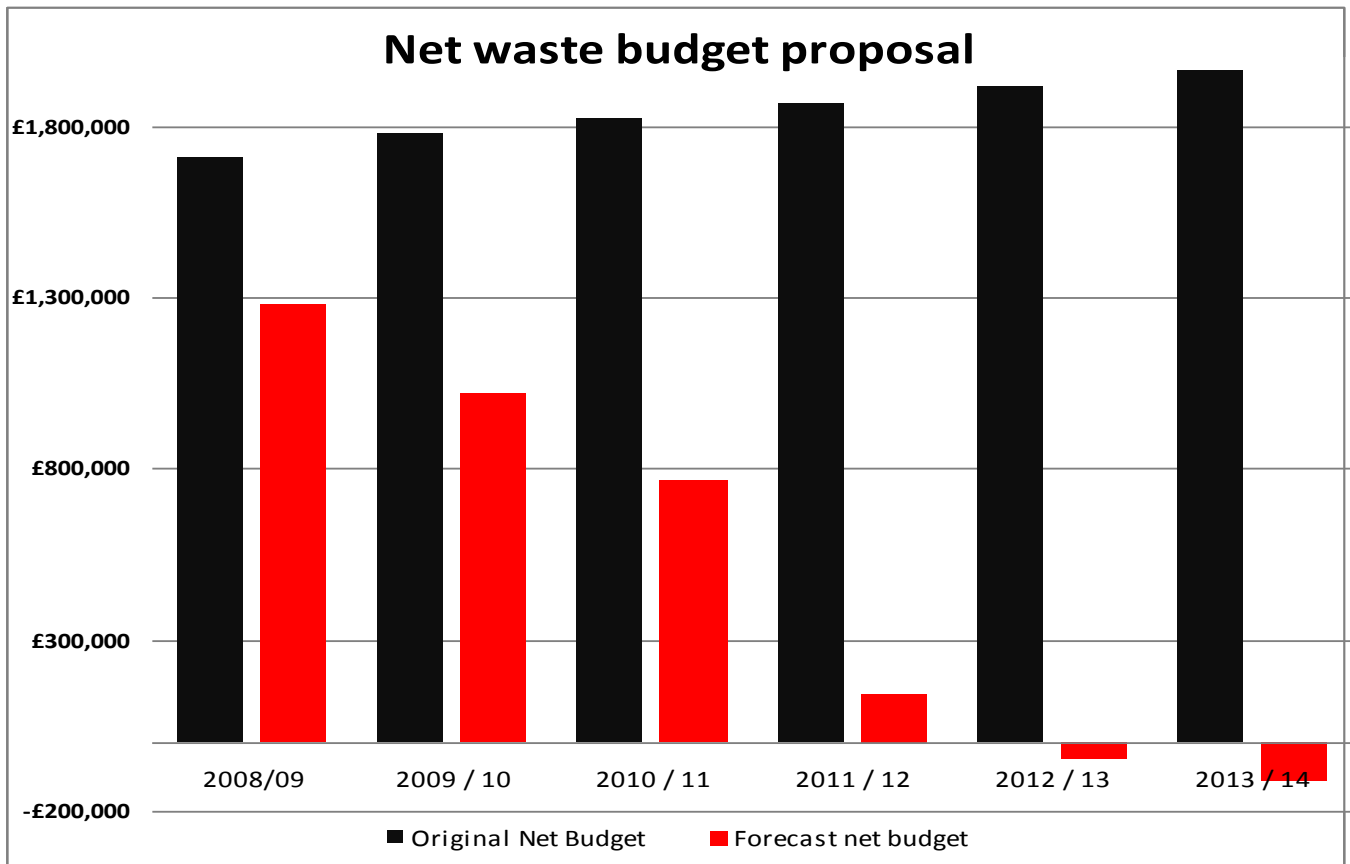
## FORECAST BUDGET AFTER THE APPRAISE STAGE OF THE REVIEW

Budget Flow		2008/09	2009 / 10	2010 / 11	2011 / 12	2012 / 13	2013 / 14
Base Budget	Expenditure	£3,345,678	£3,455,970	£3,542,369	£3,630,928	£3,721,702	£3,814,744
	Income	-1,654,321	-1,695,679	-1,738,071	-1,781,523	-1,826,061	-1,871,712
<b>Original Net Budget</b>		<b>£1,691,357</b>	<b>£1,760,291</b>	<b>£1,804,298</b>	<b>£1,849,406</b>	<b>£1,895,641</b>	<b>£1,943,032</b>
Changes from base budget:							
	Removal of growth refuse round	-£135,678	-£152,178	-£272,678	-£272,678	-£272,678	-£272,678
	Removal of growth recycling round		-£52,020	-£52,020	-£52,020	-£52,020	-£52,020
	Increase in commercial waste surplus	-£75,432	-£119,121	-£187,565	-£275,432	-£275,000	-£275,000
	Increase in recyclates income	-£372,781	-£410,578	-£465,778	-£465,778	-£465,778	-£465,778
	Improvement in garden waste position	-£149,945	-£230,000	-£287,000	-£317,500	-£331,000	-£349,000
	Improved vehicle utilisation		-£7,667	-£16,100	-£23,000	-£23,000	-£23,000
	Increase plastics and values		-£8,851	-£17,702	-£46,502	-£46,502	-£46,502
	Improve values of recyclates		-£15,686	-£31,529	-£47,058	-£47,058	-£47,058
	Increases in recycling to flats + marketing		-£10,104	-£28,291	-£40,416	-£40,416	-£40,416
	Tracking, back office and comm waste system		£20,000	£113,383	-£201,972	-£201,972	-£201,972
	Recycling Plan via phasing				-£229,526	-£459,052	-£459,052
	Systems Thinking intervention and training	£156,789					
	Increase in haulage and collection costs	£72,020	£73,436	£77,842	£82,512	£87,463	£92,711
	Unknown and contingency costs	£75,319	£55,000	£56,375	£57,784	£59,229	£60,710
	Additional costs		£153,832		£100,000	£100,000	
<b>Revised Forecasts</b>							
<b>Forecast net budget</b>		<b>£1,261,649</b>	<b>£1,056,354</b>	<b>£693,235</b>	<b>£117,820</b>	<b>-£72,143</b>	<b>-£136,024</b>

The table above shows how we integrated all development aspects for this project; Thus enabling far more recycling to be diverted, with plans of 68% domestic and up to 50% commercial recycling being achieved for £1,700,000 per annum less than the original budget.

Most concepts had the ability to be achieved straight away, while some, like commercial recycling would develop over three years. The figures above are a mixture of balanced views, none being the most optimistic.





The final implementation plan ran to 27 pages including various charts and tables, it was produced as a paper document and on an inter-active CD, supplied to the whole intervention team, senior officers and the Cabinet.

This had the accounts, detailed operational plans, cost benefit analysis, critical path plan for implementation, and operational case studies for flats, recyclates, use of IT and similar needs.

The borough is still to plan, have rescheduled all major rounds, and have started commercial recycling, with the waste strategy approved.