

Appendix 1

Waste tonnages and other key assumptions used in assessing the PPP Waste Project

Assessment of the value for money for the waste PPP project includes a comparison of the estimated future costs of the project compared to a “Market Proxy” scenario. The key assumptions involved are then tested to establish the sensitivity of the analysis to variations in these assumptions.

The Market Proxy is based on current waste systems, volumes and costs, with growth and other changes included over time. Whilst the PPP project is intended to deal only with residual waste, the model includes other ‘non PPP’ costs to make it directly comparable with the Market Proxy model. Key assumptions in the Market Proxy model are:

- Total household waste grows in proportion to housing forecasts
- Recycling performance is driven by district council projections
- Commercial waste collected by district councils remains a constant at levels collected in 2013/14
- Costs are based on actual contracted costs incurred in 2014/15
- Landfill tax does not increase beyond current rates (except for inflation)
- Landfill is the proxy for an alternative disposal option – NB it is accepted that landfill is unlikely to be the solution adopted long term under the Market Proxy scenario but it is suggested that landfill provides a suitable proxy for alternative disposal costs.
- Landfill costs will be subject to a nominal (£2/t) increase at periods to reflect when existing landfill sites are complete.

Waste Forecasts and Residual Waste Treatment Capacity

York and North Yorkshire produced approximately 436,000 tonnes of municipal waste in 2013/14. Of this, approximately 230,000 tonnes was biodegradable ‘residual’ waste sent mainly to landfill, and 16,000 tonnes was inert waste (soil and brick rubble etc). Included in the definition of Municipal Waste in 2013/14 was approximately 25,400 tonnes of commercial waste collected by district councils and City of York Council, or delivered to household waste recycling centres (NB this is only a

small proportion of the total amount of Commercial waste produced in North Yorkshire and York as most is disposed of through other commercial arrangements).

Amounts of waste presented for recycling and disposal are variable depending on criteria such as the weather, economic climate, collection methodology and frequency, and other societal influences. However household waste production is a function of the amount of housing in an area therefore the NYCC models use housing growth projections derived from Government forecasts as a proxy for waste growth.

The amounts of waste handled by NYCC and CYC are projected to increase by some 19% over the life of the PPP contract to 518,400 tonnes per annum in 2042/43. Residual waste for landfill or treatment is predicted to increase by some 17% over the same period, to 270,000 tonnes per annum. The forecast model used to inform the decision to enter into the Contract in 2010 estimated that North Yorkshire and City of York Councils would produce 278,000 tonnes of residual waste in 2039/40 (the last full year of the contract at that time). The current model forecasts some 265,000 tonnes for this year. The difference is a function of revised Government housing forecasts, and a prolonged economic recession that effectively stifled both housing and waste growth over recent years, although the impact of this difference is partially mitigated by the delay in achieving the start of the Contract. The correlation between economic activity and waste growth was demonstrated in the report presented in 2010 and remains valid, therefore as the economy recovers it is reasonable to assume that waste will return to positive growth to reflect planned new housing development.

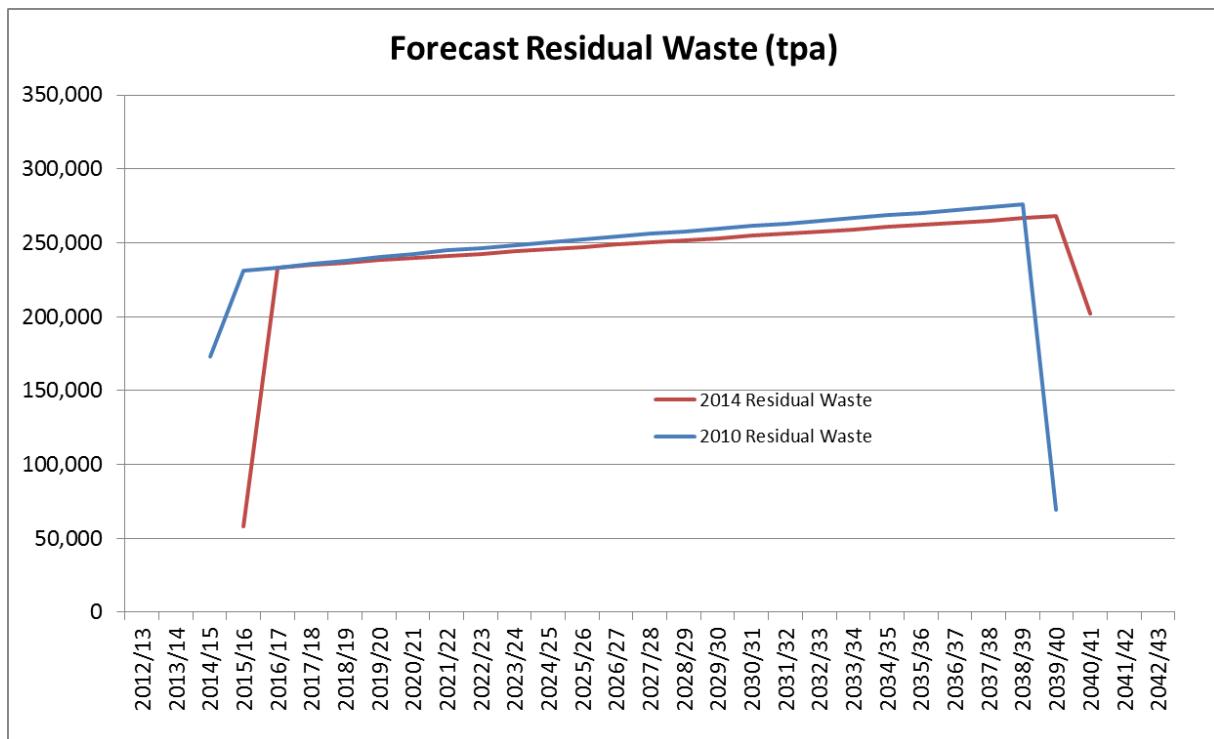


Figure 1 Forecast Contract Waste
(NB data in first and last years = part year figures)

Recycling Performance

District Councils provide estimates of future amounts of waste to be collected for recycling and composting for up to 5 years ahead. This prediction of recycling performance is subtracted from the total predicted household waste to determine residual waste quantities for treatment or disposal under both scenarios. Future estimates of the total amount of waste delivered to HWRCs are also adjusted by the amounts predicted to be recycled to give an estimate of HWRC residual waste to be sent to AWRP.

In 2013/14 approximately 46.99% of the household waste collected by the waste collection authorities in York and North Yorkshire, or delivered to household waste recycling centres was recycled or composted. This compares to 48.35% previously predicted for that year in the model used to inform the decision in 2010 to award the Contract. Both models are broadly consistent in their predictions for future recycling and composting performance although it is notable that current predictions suggest the absolute amounts of waste collected for recycling or composting is reducing. This is likely to be a consequence of reduced amounts being available for collection (i.e. less in the waste in the first

place – perhaps due to the economy), and ‘competition’ from retailers and others targeting higher value recyclable materials. Future recycling performance is likely to be susceptible to changes in waste composition as recyclable packaging becomes lighter and glass containers are substituted for plastic ones or other types of containers. However, residual waste amounts are likely to be less sensitive to these types of changes but will be influenced by changes in collection methodology, frequency and/or the targeting of additional recyclable materials.

Collection practices across North Yorkshire vary in detail but are all based on a fortnightly alternate week collection of residual waste and recyclables, using wheeled bins for residual waste. Green garden waste is collected in all areas although some districts have recently introduced a charge for this service. There is pressure from DCLG to reintroduce weekly collection of residual waste which would carry a significant risk of increasing residual waste quantities, but no fundamental changes are known to be planned to waste collection practices in the area. However, a number of districts are known to be considering a review of their collection service with a view to reducing cost of collection.

The potential to separate food waste was highlighted in the report presented in 2010, together with the opportunities and implications for AWRP. Little has changed since 2010 except that there is an increasing focus on food waste as a way of delivering higher recycling performance. The processing of food waste through anaerobic digestion or composting remains a key focus of Government in helping to reduce the amount of waste sent to landfill.

It is estimated that up to 29% of residual household waste is organic kitchen waste. Residual waste quantities would be reduced significantly if district councils were to introduce separate collections of this material for composting or treatment in anaerobic digestion, although it would be unlikely that separate collections would recover as much organic waste as the mechanical process proposed at AWRP.

There remains no known plans to introduce separate collections of kitchen waste in North Yorkshire as the additional cost to district councils would be significant, and the benefit compared to treatment of the waste

at AWRP marginal. The benefit of separate collections is that the output digestate can be returned to land whereas it is planned to be burnt in the EFW at AWRP as it is from a mixed waste source. Should district councils decide to collect kitchen waste separately then it can still be processed at AWRP and if sufficient quantities are collected it could be kept separate from residual waste with the output returned to land. This would theoretically free up capacity in the EFW for additional commercial waste.

Commercial waste

Waste collection authorities have a duty to collect commercial waste from shops offices and businesses where they are requested to do so. Amounts collected vary depending on economic activity and the competitiveness of the local authority collection service.

NYCC charges its waste collection authorities for the disposal of commercial waste they collect therefore the future amounts of commercial waste collected by district councils will be significantly influenced by the level of charge made. This charge has traditionally been based on the County Council's marginal costs of disposal, plus costs for bulking and haulage, plus a contribution to overheads. This is a fair reflection of the Council's real costs. It is assumed that this approach will continue under the Market Proxy scenario but it would not be an appropriate methodology under the PPP as the marginal cost of disposal will be disproportionately low and not a reasonable reflection of costs (e.g. it would not include any 'fixed' costs associated with the GMT payment). Instead, it is proposed to review the charge made for disposal of commercial waste charge to better reflect an 'average' long term cost to the Council. This long term average cost is likely to be more competitive than the current marginal cost.

The amounts of commercial waste predicted to be collected by waste collection authorities will be variable between the Market Proxy and PPP models although the charging mechanism means it is cost neutral under the Market Proxy scenario. For modelling purposes the amounts of commercial waste collected by waste collection authorities has therefore been assumed to be a constant based on 2013/14 levels under both 2014 models.

The low marginal disposal costs available to the County Council under the PPP contract provide the opportunity to ‘optimise’ commercial waste deliveries and generate a contribution towards the fixed costs of disposing of household waste. The County Council intends to utilise arrangements with Yorwaste (a waste disposal company owned by NYCC and CYC) to achieve this optimum amount of waste. This is different to the approach taken in 2010 but is a better reflection of probably reality where the County Council would want to take advantage of the benefits available to it through AWRP.

The total amount of household and commercial waste that will be delivered to achieve this optimum amount is variable over time between 268,700 tonnes in the first full year of the Contract to 316,800 tonnes in the last full year. The anticipated amounts of commercial waste required in order to achieve this optimum level start at 35,300 tonnes and increase to 48,700 tonnes at the end of the Contract. Yorwaste currently landfill approximately 250,000 tonnes of waste per annum, of which 65,000-70,000 tonnes would be suitable for treatment at Allerton Waste Recovery Park.

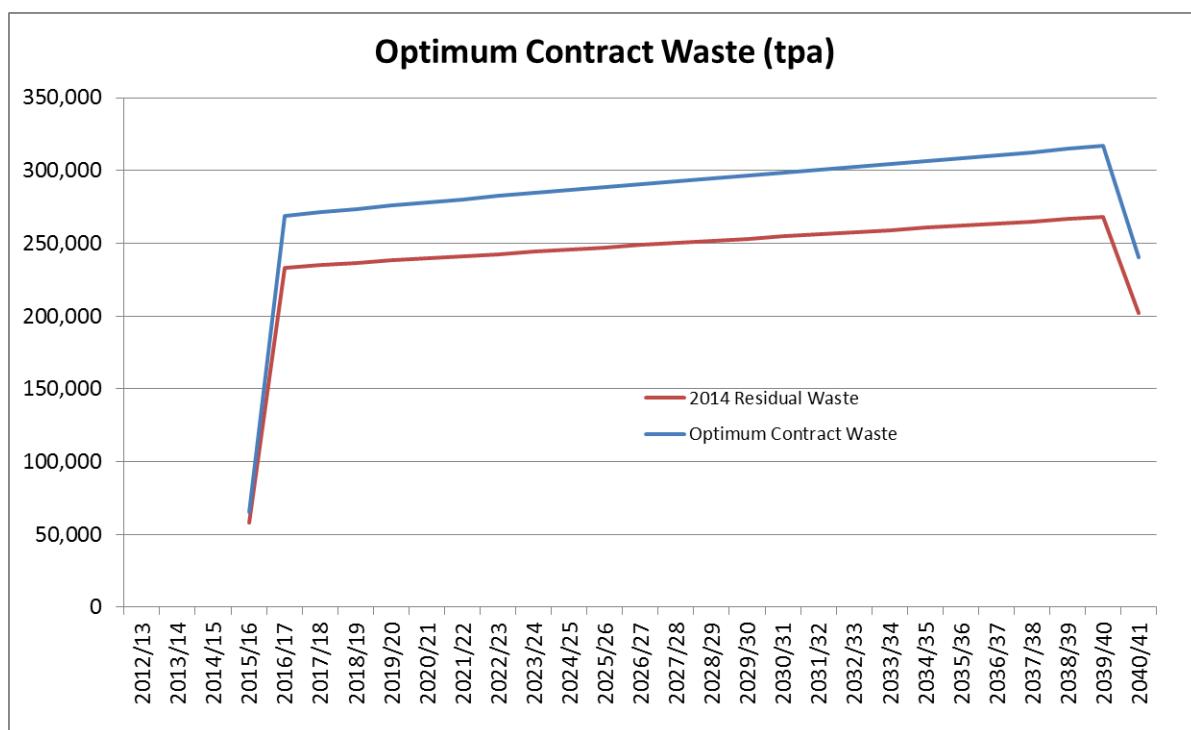


Figure 2 Optimum Contract waste (Residual Waste plus additional Commercial Waste).

The PPP model assumes a prudent income for disposing of commercial waste equivalent to 90% of the prevailing value of landfill tax (i.e. £72/tonne in 2014/15). However, in reality the Councils will have to make a charge equivalent to its costs in dealing with this waste. A charge lower than modelled will impact on overall value for money of AWRP and a charge higher may impact on the competitiveness of the Council's commercial waste service and ability to attract commercial waste. The assumption on income for disposing of Commercial waste is therefore subject to a sensitivity analysis with income being at 80% and 100% of prevailing landfill tax however, Yorwaste have advised that:

Yorwaste's current options for the disposal of its residual commercial and industrial waste is to landfill at Harewood Whin or into a refuse derived fuel (RDF) or Solid Recovered Fuel (SRF) products. The commercial market rates for disposal of these materials range between £77 and £95 per tonne excluding haulage for the RDF/SRF which ranges between £5-10 per tonne.

This would suggest that the assumed income is prudent with adequate headroom to provide confidence that sufficient commercial waste can be attracted to enable the Councils to deliver to the optimum amount.

Guaranteed Minimum Tonnage

AmeyCespa have proposed to build a waste treatment plant sufficient to treat 320,000 tpa of residual waste, with a requirement for a guaranteed minimum tonnage (GMT) equivalent to 80% of residual waste forecast at call for final tenders (CFT).

At the time of final tenders, the waste from York and North Yorkshire was predicted to account for between 61% the provided capacity in year one, to 98% in year 25. The remaining capacity is to be filled using locally available commercial and industrial waste.

Inclusion of commercial waste collected under arrangements with Yorwaste described above will ensure the amount of residual waste delivered to AWRP as Contract Waste will be optimised at a level equivalent to 105% of the amount forecast at CFT. Ignoring this additional commercial waste the amounts forecast to be delivered by the Councils as Contract Waste still exceed GMT with a range from 114% to 111% over the contract period.

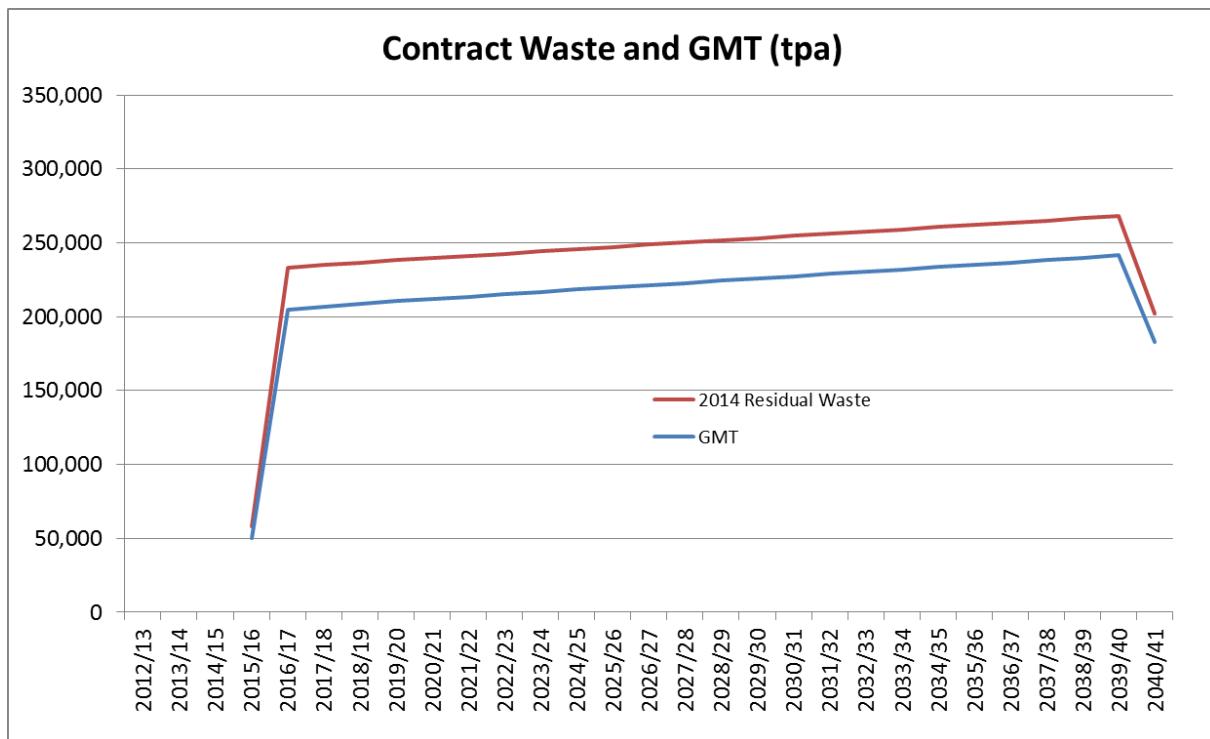


Figure 3 Residual Waste and Guaranteed Minimum Tonnage
(NB Residual Waste excludes additional Commercial waste delivered to achieve Optimum Contract Waste)