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Northumberland
County Council

CABINET
13TH OCTOBER 2020

NORTHUMBERLAND WASTE MANAGEMENT STRATEGY - PROPOSED TRIAL OF KERBSIDE GLASS COLLECTIONS

Report of the Interim Executive Director - Rick O'Farrell
Cabinet Member: Councillor Glen Sanderson, Leader of the Council

Purpose of Report

To outline the modelling and options appraisal work undertaken in 18/19 and 19/20 in order to review and update the Council's Municipal Waste Management Strategy 2003 - 2020. The latest modelling work has sought to more accurately quantify the actual costs of undertaking new waste collection and disposal arrangements that would meet the Government's longer term policy direction, as set out in '*Our waste, our resources, a strategy for England*', which would require local authorities to collect a core set of dry recyclables and a weekly collection of food waste. In particular, the implications of introducing a new four weekly kerbside glass collection service have been evaluated, to see if this service could be introduced cost effectively in advance of food waste collections to enhance the County's recycling performance.

Recommendations

It is recommended that the Cabinet:-

1) notes the key findings of the waste service modelling work that has been undertaken to date;

2) notes that the modelling has shown that continuation of alternate weekly comingled and refuse collections, with the addition of monthly collection of glass and weekly food collection meets the obligations of the Resources and Waste Strategy and achieves the Council's recycling ambition of a +50% recycling rate;

3) notes that the Resources and Waste Strategy is subject to further consultation, and the preferred approach in Northumberland may change once the final obligations and

arrangements for funding support are known; and

4) approves the introduction of a 12 month kerbside glass collection trial to test the modelling assumptions and long term viability of adding glass to the existing kerbside collection arrangements. The estimated cost to roll out a trial to approximately 4,000 properties covering 4 different areas in order to provide a statistically significant and demographically representative sample size is £43,000 revenue (to be funded from the transformation reserve) and capital of £62,000 (to purchase the containers for which capital provision has already made in the MTFP) .

Link to Corporate Plan

This report is relevant to the following key themes in the draft Corporate Plan for 2017-2021:-

- 'Enjoying' - We want you to love where you live

Key Issues

1. The Municipal Waste Management Strategy for Northumberland extends to 2020. In order to prepare a new strategy the Council secured free consultancy support from the Waste & Recycling Action Programme (WRAP) to undertake detailed modelling and evaluation of possible different options to improve its recycling services.

2. The first stage of modelling identified two different approaches; either the continuation of comingled recycling collections with the addition of new materials collected separately, or a 'multi stream' approach whereby residents are issued with multiple waste containers to segregate their dry recycling at source.

3. The second stage of modelling addressed how the two different collection approaches affect the waste PFI contract in terms of the existing payment mechanism, contractual obligations for both the Council and the contractor, and the contractor's ability and willingness to adapt the existing infrastructure to process current and new waste streams to meet the aims of the Government's Resources and Waste Strategy.

4. The whole system revenue costs associated with comingled recycling collections with separate glass and food collections are broadly comparable to those of the baseline, whereas comingled recycling collections with separate fibres and the multi stream approach are significantly more expensive. It is important to recognise that :
    a. all modelling options assume that the addition of food waste collections that remove the putrescible element of the rubbish allows a reduced frequency of residual waste collections which move from once every 2 weeks to once every 3 weeks to help offset the cost of the new services, and
    b. that the removal of food waste generates additional spare processing capacity at the energy from waste plant which can be sold to increase third party income, helping to offset the cost of providing new services.

The purpose of this report is to set out an appraisal of the options most likely to deliver the Council's objectives and provide an indication of cost relative to the existing services. Further detailed cost analysis will be required prior to implementing any changes to the collection systems to understand the risks and sensitivities, particularly those associated with the energy from waste plant and the benefit to the Council should additional capacity be generated. These sensitivities relate to both the market conditions for securing third party waste inputs and also the operational implications for the facility as the removal of food waste will affect the calorific value of the input waste materials, which in turn has a bearing on the amount of waste that can be processed through the plant.

5. The introduction of a new collection service requires significant capital investment in containers and vehicles.The capital investment needed to secure changes at the Material Recycling Facility would need to be established if plastic Pots, Tubs & Trays (PTTs) and cartons are added to comingled materials or glass is added to the comingled bin. This work was outside the scope of this exercise.

6. The next round of cyclic replacement of the RCV fleet starts in 2024/25 through to 2026/27. This key milestone must be accommodated when setting out timescales to change the collection systems to avoid the significant financial impacts associated with having to dispose of vehicles prematurely (the capital cost of the RCV fleet is ~£8.2m).

7. All options that are compliant with the consistent collection of core materials proposed by the Resources and Waste Strategy by targeting pots, tubs and trays, cartons, glass and food waste surpass 50% recycling. The most cost-effective compliant model in terms of revenue is to continue comingled recycling collections with the addition of new, separate weekly collections of food waste and monthly glass collections. It should be noted that the Resources and Waste Strategy refers to residual collections being no greater than fortnightly, whereas this option models 3 weekly collections as the putrescible content of the residual bin is removed. The Council will closely monitor the Government's response to the consultation process with regard to mandatory collection frequencies.

8. It is recommended that the Council conducts a trial of kerbside glass collections in 2020/21 without incurring excessive cost. It is proposed to roll out a kerbside glass recycling trial in four areas each collecting from up to 1,000 households (~4,000 in total) to get a better understanding of set-out rates, participation rates, container numbers, glass particle size and Health & Safety implications across a range of different property types and demographic groups. This approach enables the council to utilise its existing refuse collection vehicles, with a driver and two loaders at each of the four selected depots being asked to undertake one day's overtime on one Friday per month to deliver the glass collection pilot. The areas proposed are Morpeth, Bedlington, Alnwick and Hexham.

9. The initial trial duration is 12 months with a review after 9 months to inform officers and members of the costs and benefits so that an informed decision can then be

made about the scheme's longevity. A trial delivered in 4 areas incurs revenue costs of £43,000 (labour, fuel and communications campaign); the capital cost of purchasing the bins is £62,000.

10. Until the new obligations placed on local authorities and the funding support available to meet these are confirmed, it is not considered appropriate for the Council to make very expensive long-term changes to its waste services. In the meantime, there is benefit in establishing a small scale trial to collect glass at the kerbside, so that the Council is able to accurately assess new collection arrangements and be in a strong position to bid for funding support should the Government, as is widely expected, require local authorities to collect glass at the kerbside.

1. Background

The County Council has significantly improved the overall environmental performance of its waste management services since the adoption of the Municipal Waste Management Strategy for Northumberland 2003 - 2020. However, as the existing strategy runs until 2020 it needs to be reviewed and updated in light of changing circumstances, emerging Government policy and the desire to further improve our recycling performance.

The Council secured free consultancy support from the Waste & Recycling Action Programme (WRAP) to undertake detailed modelling and evaluation of possible different options to improve its recycling services. The theoretical modelling in the early stages identified two different approaches:

a. **Comingled recycling with additional materials collected separately** - this approach builds upon the existing collection system whereby residents deposit recyclables in one 'comingled' recycling bin. The range of comingled materials is extended to introduce additional plastic packaging in the form of pots, tubs and trays and food/beverage cartons, as well as the separate collection of glass and then organic food waste. To achieve the Government's ambition of all local authorities collecting a core set of dry recyclables and to attain a recycling rate in excess of 50%, additional services are progressively rolled out to separately collect glass and food waste. This progressive approach improves the range of comingled materials and gradually introduces new separate collections of glass and food waste at a different collection frequency than the current fortnightly service.

   A key component of the modelling centred around the separate collection of glass. Consideration was given to a number of variables including the type of collection vehicle, the collection frequency, the glass yield, the suitability of the glass for remelt, the container type and size, and the potential health and safety implications on manual handling and noise.

b. **Multi-stream** - this approach involves residents being issued with multiple waste containers for them to segregate their dry recycling at source. Dry

recycling is then co collected weekly in a vehicle with multiple compartments along with a separate container for food waste. The remaining materials not segregated for recycling/ composting are collected as residual waste at a reduced frequency than the existing once per fortnight arrangements, the reduced frequency being made possible as the putrescible food waste has been removed via a separate weekly collection service. This option would involve the complete reconfiguration of existing collection services, which carries a significant risk in terms of public participation, contamination rates and acceptability (due to the need to make use of multiple waste containers in the home).

To assist in the modelling exercises, an analysis of the contents of the kerbside residual bin was undertaken. The data showed that the amount of glass being deposited in the residual kerbside bin for disposal at 7% (or 0.41kg/hh/wk), has remained largely unchanged since the previous analysis in 2014 and that the assumptions used in the modelling are appropriate. Food waste at 28% by weight of the bin contents is the single largest category being disposed of, albeit the amount had decreased from the previous sampling exercise.

The second stage of modelling addressed how the two different collection approaches affect the waste PFI contract. This was in terms of the existing payment mechanism, contractual obligations for both the Council and the contractor, and the contractor's ability and willingness to adapt the existing infrastructure to process current and new waste streams in order to meet the aims of the Government's Resources and Waste Strategy. A constructive and positive meeting with the contractor was held in October 2019. This set out the work undertaken to date and secured their agreement to jointly undertake further financial modelling to calculate the cost of varying volumes and material types delivered to the contractor for processing under the different options.

2. Results

There is almost an infinite number of permutations of frequency, vehicle type, container type and waste type that could be modelled. As the work progressed and new information emerged which informed the direction of travel, the number of models considered increased. A total of 24 different models were evaluated. The options with the most potential to meet the requirements of the Resources and Waste Strategy and provide a cost effective and pragmatic solution to Northumberland County Council are summarised in the following table. It is important to note however, that once the Resources and Waste Strategy consultation is complete and the obligations on local authorities are transposed into UK legislation, that these preferred models may no longer align with the Resources and Waste Strategy. In this eventuality the Council will amend the existing preferred models, re-evaluate the remaining models or look to undertake new modelling.

Table 1: Current Recycling Service Configuration and Modelling of Enhanced Options

Option	Residual	Dry Recycling	Food Waste	Approach
Current	Fortnightly 240l RCV	Fortnightly 240l comingled. RCV.	None	Progressive approach - comingled - separate glass
1a	Fortnightly 240l RCV	Fortnightly 240l comingled adding PTTs & cartons. RCV	None	
1b	Fortnightly 240l RCV	Fortnightly 240l comingled. Four weekly 140l glass. RCV.	None	
1c	Three weekly 240l RCV	Fortnightly 240l comingled adding PTTs & cartons. RCV. Four weekly 140l glass. RCV.	Weekly, 7.5t vehicle	
2a	Fortnightly 240l RCV	Fortnightly 240l comingled adding PTTs, cartons & glass. RCV. Fortnightly 44l box separate fibres. 7.5t dedicated.	None	Progressive approach - comingled - separate fibres
2b	Fortnightly 240l RCV	Fortnightly 240l comingled adding PTTs, cartons & glass. RCV. Fortnightly 44l box separate fibres. 7.5t dedicated.	Weekly, 7.5t vehicle	
3a	Three weekly 240l RCV	Weekly multi-stream – 3 boxes (fibres; cans, plastic bottles, PTTs & cartons; and glass). Resource Recovery Vehicle.	Weekly, co-collected on RRV.	Multi-stream
3b	Three weekly 240l RCV	Weekly – comingled (fibres, cans & plastic bottles, PTTs & cartons). Weekly glass. One Pass RCV (twin compartment with food pod).	Weekly, co-collected on One pass.	

a. Option 1 - comingled recycling with separate glass. The scope of the existing comingled collections is extended to include pots, tubs and trays (option 1a), with glass separately collected once every 4 weeks in a Refuse Collection Vehicle (RCV) (option 1b). Option 1c is as per 1b adding PTTs plus the separate collection of food waste in 7.5 tonne dedicated vehicles, and the reduction in residual waste collections from fortnightly to three-weekly as the putrescible content of the residual bin is removed.

b. Option 2 - comingled recycling with separate fibres. The scope of the existing comingled collections is extended to include pots, tubs and trays, however instead of adding glass as a separate collection (as detailed in option 1), fibres such as paper and cardboard are collected separately and glass is collected comingled with cans and plastic bottles (option 2a). Significant capital investment is needed at the Material Recycling Facility

(MRF) to enable glass to become a target comingled material. However, this could be a more efficient way of collecting materials, in that each household is provided with a bin dedicated to paper and cardboard which constitutes the majority of dry recycling recovered from the comingled bin, whilst mixing glass with plastic bottles and cans ensures that a high recycling yield is collected. Option 2b is 2a plus the separate weekly collection of food waste in 7.5 tonne dedicated vehicles.

c. Option 3 – multi-stream collections where dry recycling and food waste is co-collected by the same vehicle. Option 3a evaluates residents sorting dry recyclables into 3 boxes. These materials are then further hand sorted by the collection crew at the kerbside and loaded into multi-compartment Resource Recovery Vehicles (RRVs). Appendix 1 illustrates the multi stream vehicles considered in option 3. Food waste is co-collected by the RRVs and residual waste collection frequency reduces from fortnightly to three-weekly as the putrescible content of the residual bin is removed. Option 3b assesses a 'one pass' vehicle which is a split compartment RCV which allocates one compartment for comingled recycling, one compartment for glass and a separate 'pod' for the collection of food waste, all collected on a weekly frequency. The residual waste collection frequency reduces from fortnightly to three-weekly as the putrescible content of the residual bin is removed.

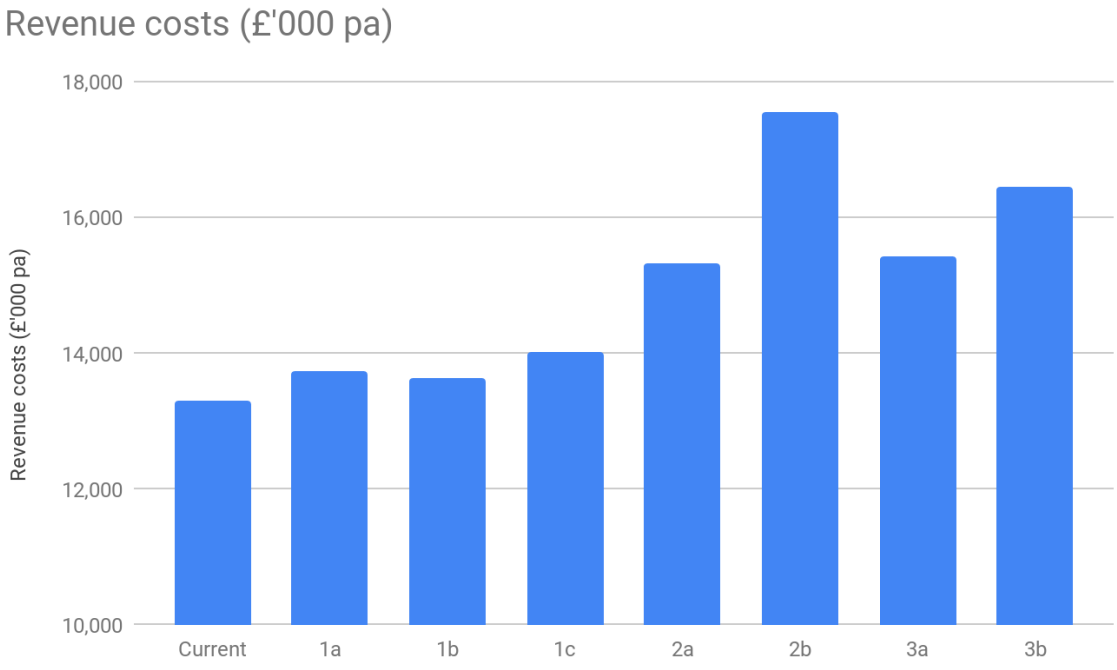
The whole system revenue costs of these approaches are detailed in Table 2.

Table 2: Modelling results - whole system revenue costs (£'000 pa)

Option	Current	1a	1b	1c	2a	2b	3a	3b
Annual gross collection cost	£5,970	£6,376	£7,100	£9,418	£7,895	£10,545	£8,597	£11,608
Dry Recycling income	-£1,934	-£2,220	-£2,731	-£3,010	-£1,872	-£1,872	-£1,262	-£3,047
Dry Recycling Handling	£0	£0	£0	£0	£0	£0	£0	£0
Food waste treatment	£0	£0	£0	£163	£0	£135	£163	£163
Food waste haulage	£0	£0	£0	£136	£0	£112	£136	£136
PFI contract payments	£9,885	£9,708	£9,619	£8,981	£9,620	£9,619	£9,293	£9,125
EfW 3rd party income	£0	-£122	-£351	-£1,681	-£309	-£980	-£1,510	-£1,523
Net Cost	£13,291	£13,742	£13,637	£14,007	£15,334	£17,559	£15,417	£16,462

The ‘annual gross collection’ costs are derived from the annual vehicle operating cost and the annual staffing costs. The ‘dry recycling income’ is a function of the expected tonnage collected and the price achieved, which reflects the average revenue through the waste PFI contract over the past three years. The value per tonne does not vary between the options modelled. However, the Council and the waste PFI contractor have discussed the implications of collecting materials sorted at the kerbside in a resource recovery vehicle (option 3a). The contractor’s experience of kerbside sort schemes is that there is a significant reduction in the value of mixed paper, mixed cans and mixed plastic bottles because they need further sorting prior to delivery to a reprocessor. There is little benefit therefore, in the additional costs associated with separately collecting and sorting materials at the kerbside given the expectation that further sorting will still need to be undertaken at the material recycling facility, as opposed to the comingled approach whereby all of the sorting activity is undertaken at the material recycling facility and more cost effective collection arrangements are used.

It is assumed that any additional ‘dry recycling handling fee’ (being the cost of receiving recyclables at the waste transfer stations) is zero or insignificant compared to the existing arrangements. Models which include the collection of food waste have a gate fee of £15/tonne in line with current market values. The waste PFI contract payments reflect the impacts on the different elements that make up the charge from Suez, which are affected by overall waste volumes and variations in dry recyclables, residual waste and glass. The impact on the PFI Contract payments of separately collecting glass and food waste is to reduce the volume of residual waste delivered to the EfW plant, creating spare capacity for the contractor to sell to third parties. Discussions with the contractor indicate that the additional revenue generated would return to the Council, but also that the value is subject to market forces. The estimated value of £90/tonne in the modelling reflects the current price achieved for processing third party waste at the EfW.



In terms of whole system revenue costs, the three option 1 variants (comingled with separate glass and food collection) are broadly comparable to those of the baseline, whereas option 2 (comingled with separate fibre) and option 3 (multi stream) are significantly more expensive.

Table 3 : Modelling results - capital costs (£'000 pa)

Option		Current	1a	1b	1c	2a	2b	3a	3b
Vehicle numbers and costs	RCV	43	45	56	45	42	40	19	19
	7.5 tonne				34	17	43		
	RRV							41	45
	Spare	6	7	8	11	9	13	9	11
	Capital cost	£8,183	£8,684	£10,688	£11,052	£9,316	£10,932	£9,784	£10,564
Containers	Number	0	0	149175	149175	149175	149175	149175	149175
	Capital cost	£ -	£ -	£2,730	£3,252	£448	£970	£1,865	£3,252
Total Capital Cost		£8,183	£8,684	£13,418	£14,304	£9,764	£11,902	£11,649	£13,816

It is evident that apart from extending the target materials in the comingled bin (option 1a), that the introduction of a new collection service requires significant capital investment in containers and vehicles. To collect food and glass, the option with the lowest capital cost (but the highest revenue costs) is 2b (fibres and food waste are collected in 7.5t vehicles) and option 3a (utilising resource recovery vehicles). The capital investment needed to secure changes at the Material Recycling Facility would need to be established if PTTs and cartons are added to comingled materials (options 1a, 1c, 2a, 2b & 3b), or glass is added to the comingled bin (options 2a & 2b). This work was outside the scope of this exercise.

It should also be noted that the £8,183,000 capital cost for vehicles in the 'current' service configuration reflects the approved investment in the Medium Term Financial Plan for the cyclic replacement of the RCV fleet, with RCV's having a 6 year economic lifespan and the phasing of renewals of our current fleet being over a 3 year period. The latest phased renewal of the existing RCV fleet started in 2018/19 and will be completed by the end of 2020/21. The timing of the next round of cyclic replacement of the RCV fleet would therefore start in 2024/25 through to 2026/27. For options 1a, 1b, 1c this is not an issue as the existing RCV fleet would still be required. For options 2a and 2b it has some cost impacts as the number of RCV's would need to be reduced marginally ahead of the next replacement cycle through the increased use of smaller 7.5 tonne collection vehicles for separate collection of fibres (paper & card) and food waste. For option 3a and 3b it would

be necessary to fundamentally alter the type of vehicles used in the provision of the refuse collection service. The make-up of the current fleet is therefore a major financial constraint to the timing of the implementation of this option, as it would be necessary to align the planned cyclic replacement of the fleet to avoid the significant financial impacts associated with having to dispose of vehicles prematurely.

The individual recycling performance of each option has been modelled by the consultants based on the performance data from other LA's operational schemes and taking into account Northumberland's waste composition and demographic data.

A red, amber and green criteria has been used to assess the relative recycling, financial, policy compliance, public and contractual impacts of each of the options, as follows:

Table 4 - Relative Performance of the Enhanced Waste Service Options

	Net annual revenue cost	Kerbside recycled tonnage	Overall recycling rate	Compliance with Resources & Waste Strategy	Material quality	Household impact	Contractual impact
Current	£13,291	16,500	41%	No separate collection of food. Fibres and glass kept separate but no separate collection of glass	Comparable to a two-stream except glass not collected at kerbside	No change to current service	No change to current service
1a	£13,742	19,000	43%	No separate collection of food. Fibres and glass kept separate but no separate collection of glass. Addition of PTT in DMR mix	Comparable to a two-stream except glass not collected at kerbside	Extends the range of materials that householders can recycle	To target PTTs and cartons requires significant capital investment at the MRF. Adding new dry recyclables are unlikely to benefit the waste mix obligation.
1b	£13,637	23,000	45%	Kerbside collection of glass offered. Glass and fibres stream kept separate. No separate collection of food.	Two-stream	Extends the range of materials collected to include glass, albeit via an additional container.	MRF already accepts DMR. Glass kept separate, therefore no change required.
1c	£14,007	36,600	55%	Separate collections of all key recycling materials, with glass and fibres separate as well as separate collection of food. Expected compliant	Two-stream	Separate glass and addition of food. Householders require information to engage with new services	MRF already accepts DMR. Glass kept separate, therefore no change required. Food waste would also be treated separately
2a	£15,334	23,600	44%	Glass & fibres stream kept separate. No separate collection of food	Two-stream	Addition of glass in DMR and separate collection of fibres will require significant engagement	Removal of paper from DMR stream and replaced with glass will require changes to contract and reconfiguration of MRF
2b	£17,559	32,600	51%	Separate collections of all key recycling materials, with glass and fibres separate as well as separate collection of food. Expected compliant	Two-stream	Addition of glass in DMR and separate collection of fibres and food will require significant engagement	Removal of paper from DMR stream and replaced with glass will require changes to contract and reconfiguration of MRF
3a	£15,417	34,500	52%	Separate collections of all key recycling materials, with glass and fibres separate as well as separate collection of food. Expected compliant	Multi-stream	All materials are source segregated (including food) plus residual frequency reduced. Significant engagement with householders required	Opting for a multi-stream service will require significant configuration of MRF

3b	£16,462	36,900	53%	Separate collections of all key recycling materials, with glass and fibres separate as well as separate collection of food. Expected compliant	Two-stream	Reduced residual frequency coupled with a weekly collection MDR. Separate collection of glass and food will require additional householder engagement	MRF already accepts DM but will require some reconfiguration to accept PTTs & cartons. Glass kept separate, therefore no change required. Food waste will be required to be treated separately

Options 1c, 2b and 3a & 3b are compliant with the consistent collection of core materials proposed by the Resources and Waste Strategy by targeting pots, tubs and trays, cartons, glass and food waste and all surpass 50% recycling. The most cost-effective compliant model in terms of revenue is 1c, the least capital intensive option is 3a (albeit the capital cost of reconfiguring the MrF to facilitate this option has not been quantified at this stage, but would be significant). It should be noted that the Resources and Waste Strategy does refer to residual collections being no greater than fortnightly, whereas option 1c, 3a and 3b are modelled on 3 weekly collections as the putrescible content of the residual bin is removed. The earlier modelling initially assessed continuing to collect residual waste on a fortnightly basis whilst collecting food waste weekly. This approach was ruled out from further modelling as other local authorities have already successfully implemented 3 weekly collections for residual waste, which acts to incentivise residents to use the recycling & food bins provided (critical to securing high recycling rates) and to help reduce the overall costs incurred in providing a high performing waste service. The Council will closely monitor the Government's response to the consultation process with regard to mandatory collection frequencies.

The impact on residents is greater for models introducing new materials such as glass and food waste, and where there are changes to the existing fortnightly collection frequency. A greater degree of engagement and behaviour change is needed to minimize the risk of confusion, falling participation and increased contamination. All options require some reconfiguration at the materials sorting facility, ranging from targeting pots, tubs and trays and cartons to the inclusion of glass in options 3a and 3b. The capital investment required is significant. The Council's exposure to these costs is dependent on whether the Government delivers the commitment stated in the Resources and Waste Strategy that local authorities required to deliver new obligations will not incur the financial burden.

3. Outcomes

The modelling suggests that in terms of revenue, option 1c is the most cost-effective way to deliver the Resources and Waste Strategy objectives of collecting a core set of dry recycling and food waste as well as delivering the Council's ambition of a +50% overall recycling rate. The additional gross annual collection costs are largely offset by the increased dry recycling income generated by targeting additional materials, the reduced PFI payments as a consequence of lower volumes of residual waste collected through 3 weekly collections, and new revenue secured from third parties at the Energy from Waste plant. Option 1c builds upon the existing collection system, allowing the Council to

progressively roll out new services and thereby limiting the risks associated with undertaking major operational changes to waste services, which can cause confusion among residents, falling participation and increased contamination rates and undermine public satisfaction and support for this key front line service.

4. Next Steps

It is considered that Option 1c is the most appropriate and cost effective way forward for the Council to enhance the performance of its waste recycling services in line with emerging Government waste policy. However, the implementation of Option 1c would require the Council to commit significant capital investment and additional on-going revenue costs. The Government has indicated in its Resources and Waste Strategy Review that local authorities would not have to bear new financial burdens associated with implementing enhanced recycling services and that financial support would be made available, linked to the implementation of enhanced producer responsibility obligations on retailers and manufacturers to meet a greater proportion of the full life cycle costs of the products that they make and sell. It would therefore be prudent for the Council to wait for confirmation of the Government's proposals following the Resources and Waste Strategy Review, before making key strategic long term decisions on the future configuration of the Council's waste services.

The approach taken in the modelling undertaken by the Council was designed to enable the phased implementation of additional recycling services to the public, with kerbside glass collections being the most straightforward to implement and having strong public support. It is therefore recommended that the Council should conduct a trial of kerbside glass collections in 2020/21 without incurring excessive cost. The trial would enable the Council to test many of the assumptions applied to the options modelling, such as the 'set-out' rate and glass yield which are currently unknown in Northumberland. The participation rate will vary according to property types and will affect the number of containers and cost required to deliver the scheme. It is important to establish the extent to which glass breaks up during the collection and transportation process, as this affects the potential end use/market. If the glass collected in Refuse Collection Vehicles has more than 5% of the load consisting of small (below 10mm in diameter) glass shards, then part/all of the load could be sent for aggregate displacement rather than glass remelt, delivering significantly less environmental (and climate change) benefit and less revenue to the Council. At a national level there is also growing concern over the Health and Safety implications of collecting glass at the kerbside, so undertaking a trial also gives the Council the opportunity to assess noise levels, manual handling issues and appropriate mitigation measures. Undertaking a trial therefore has considerable merit, as it would enable the Council to test the modelling assumptions over scheme cost and performance, identify and address any operational and health and safety issues over delivery, placing the Council in a strong position to submit a robust and deliverable business case for the implementation of a countywide service once Government funding arrangements are clarified.

It is therefore proposed to roll out a kerbside glass recycling trial in four areas each collecting from up to 1,000 households (~4,000 in total) to get a better understanding of set-out rates, participation rates, container numbers, glass particle size and Health & Safety implications from the trial across a range of different property types and

demographic groups. This approach enables the council to utilise its existing refuse collection vehicles, with a driver and two loaders at each of the four selected depots being asked to undertake one day's overtime on one Friday per month to deliver the glass collection pilot. The areas proposed are Morpeth, Bedlington, Alnwick and Hexham (Appendix 2). The areas were chosen to :

- ensure close proximity to the depots to minimise drive times,
- to reflect collections from a mixture of socio-economic groups that is consistent with the county as a whole, so that differences in set out rates are established should the trial be extended across a wider area,
- to identify discrete housing estates to minimise resident's confusion as to who receives the collections and to provide clear operational boundaries for the refuse collection staff delivering the service,
- to achieve a pass rate of approximately 1,000 properties per area, and
- to reflect areas where waste staff have indicated a willingness to commit to working overtime to undertake glass collections.

Of paramount importance is the well being of the collection crews. In order to avoid manual handling and musculoskeletal injuries associated with lifting potentially heavy boxes of glass, the Council proposes to provide 140 litre wheeled bins (half the size of the standard wheeled bins issued to householders). The noise impact of glass collections is also a health and safety concern, so the trial will also establish the effectiveness of abatement measures and personal protective equipment to ensure that noise levels do not exceed safe working levels for staff, whilst also being conscious of the need for staff to have an awareness of their surroundings and in particular other vehicle movements. A full assessment of the Health & Safety implications of collecting glass will be made prior to commencing the trial.

The glass collection trial has an initial duration of 12 months. Key milestones are:

Milestone	**Start Date**	**End Date**	**Duration**
Cabinet Decision	13th October 2020	13th October 2020	1 day
Leaflet to residents	14th October 2020	21st October 2020	1 week
Bins delivered to residents	17th October 2020	24th October 2020	1 week
First/ last collection dates	13th Nov 2020	15th October 2021	12 months
Second & third leaflets to residents	22nd March 2021, 12th July 2021	22nd March 2021, 12th July 2021	2 days

The Council will work with WRAP to develop an effective communications campaign using the latest insights into encouraging participation and behaviour change. Prior, during and

toward the end of the trial the Council will distribute leaflets, utilise social media and the Council's website to inform residents of the reasons for introducing the trial, set out the environmental benefits, issue a calendar with collection dates, and provide feedback on how the scheme is progressing to ensure residents are engaged and fully participate. The initial trial duration is 12 months with a review after 9 months to inform officers and members of the costs and benefits to make an informed decision about the scheme's longevity. A trial delivered in 4 areas incurs revenue costs of £43,000 (labour, fuel and communications campaign); the capital cost of purchasing the bins is £62,000. It is envisaged that black bodied bins with different coloured lids will be purchased so that if the trial is discontinued the bins can be recovered and reused for front line collection services.

7. Summary

The Council is currently providing cost effective waste recycling and disposal solutions to residents which are compliant with current legislative requirements. Modelling suggests that the Council can progressively add separate collection services for glass and food waste and expand the materials residents can place in the comingled bin to cost effectively deliver the aspirations set out in the government's long-term strategy. However, the first of several Government consultation processes only closed in May 2019. Given the high number of responses, the detailed nature of the consultation process, and the global nature of the corona virus pandemic, the Government is unlikely to consolidate its position until late 2020 which will probably be followed by a further consultation period. Until the new obligations placed on local authorities and the funding support available to meet these are confirmed, it is not considered appropriate for the Council to make very expensive long-term changes to its waste services. In the meantime, there is benefit in establishing a small scale, short term trial to collect glass at the kerbside so that the Council is able to accurately assess new collection arrangements and be in a strong position to bid for funding support should the Government, as is widely expected, require local authorities to collect glass at the kerbside.

Implications Arising out of the Report

Policy	The Council will need to review and update its Municipal Waste Management Strategy which ends in 2020 and take into account the policy direction and targets identified in the Government's new waste strategy for England published in December 2018 and subsequent responses to its consultation exercise.
Finance and value for money	The revenue cost of undertaking the 12 month kerbside glass collection trial across 4 areas is £43k, to be funded from the transformation reserve. Provision for the capital investment of £62k in wheeled bins has already been made in the MTFP and if necessary at the end of the trial the bins can be redeployed for use in other waste collection services.
Legal	None at this stage.
Procurement	A bin procurement exercise has been completed. The order for new bins will be placed with the successful supplier to ensure the Council achieves value for money.
Human Resources	None at this stage.
Property	None at this stage.
Equalities (Impact Assessment attached) Yes No X N/A ☐	A kerbside collection of glass avoids residents transporting glass to their local bring site which will benefit older residents and residents with physical impairments.
Risk Assessment	A risk assessment will be undertaken to ensure crews and residents are not adversely affected by the health & safety impacts associated with glass collections.
Crime & Disorder	None at this stage.
Customer	Consideration will be given to ensuring collection rounds do not

Consideration	start before 8am to avoid disruption to residents. Any proposed changes to waste services will include a detailed and comprehensive programme of engagement and awareness raising activity prior to their implementation.
Carbon reduction	Improved recycling performance supports carbon reduction.
Wards	All

Background papers:

'Our waste, our resources, a strategy for England' HMSO 17 December 2018

Review of Waste Strategy - kerbside collection of household waste, February 2019

Report sign off.

Authors must ensure that relevant officers and members have agreed the content of the report:

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Appendix 1 : Multi stream vehicles

Option 3a : Resource Recovery Vehicle

Option 3b : One pass vehicle

Appendix 2 : Potential trial glass collection areas

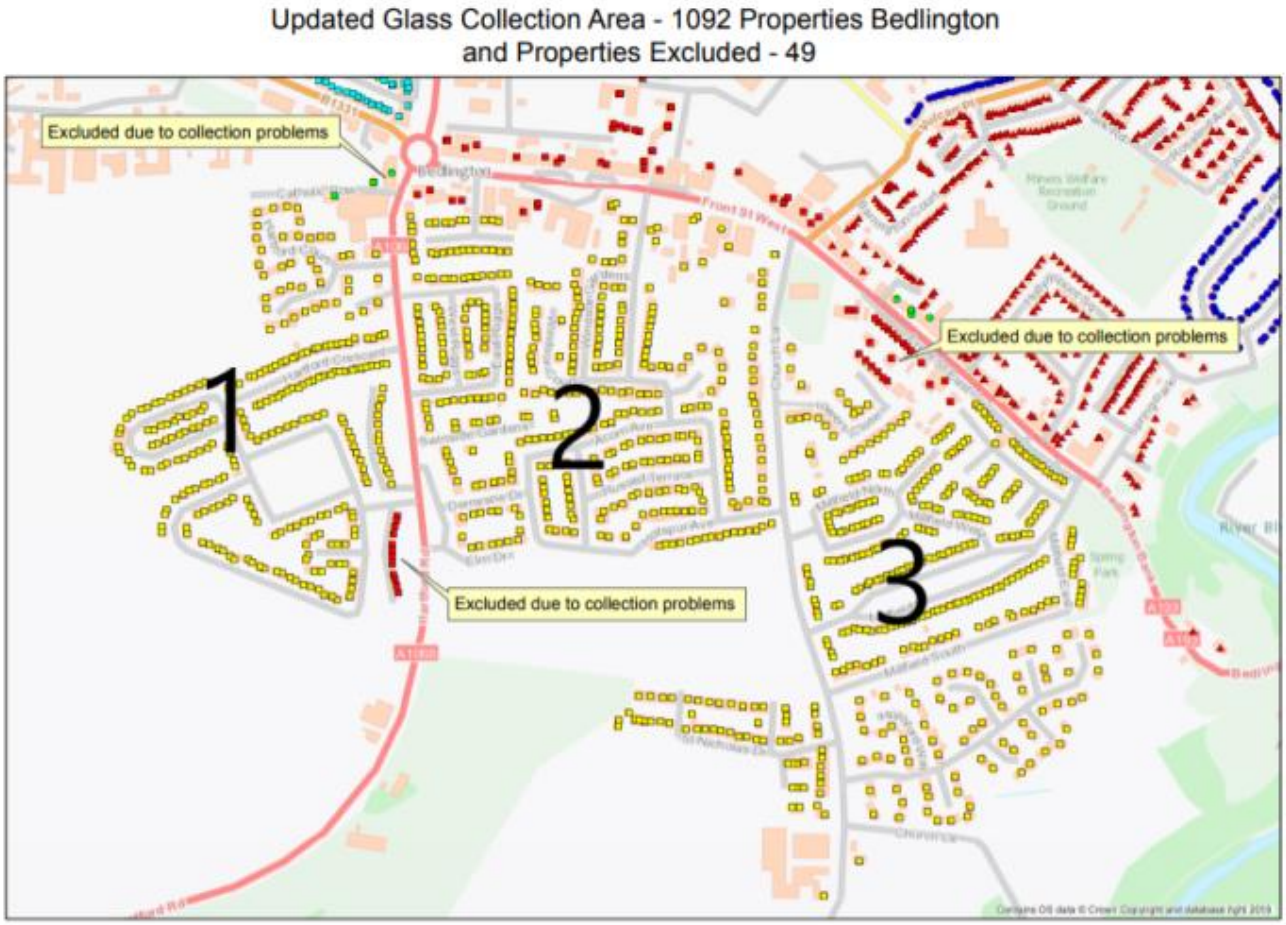
Bedlington area : 1,092 properties (shown in yellow), a mixture of private households and council households

Ward: Bedlington Central, Cllr Russell Wallace

Area 1: Hartford Crescent, mostly privately owned houses with some privately let. The Hartlands is a mixture of housing associations, privately let and privately owned houses.

Area 2: Acorn Avenue, Russell Terrace, Hotspur Avenue, Demesne Drive Horton Avenue, Windsor Gardens, Windsor Court, Swinside Gardens, South/North/West Riggs & Nergerton Riggs. This area is made up of privately owned houses, some of which are privately let, and no social housing.

Area 3:Millfield North/South/East/West are mainly social housing with the same private owned/ privately rented properties. Tower Close is mainly privately owned/ privately rented properties.



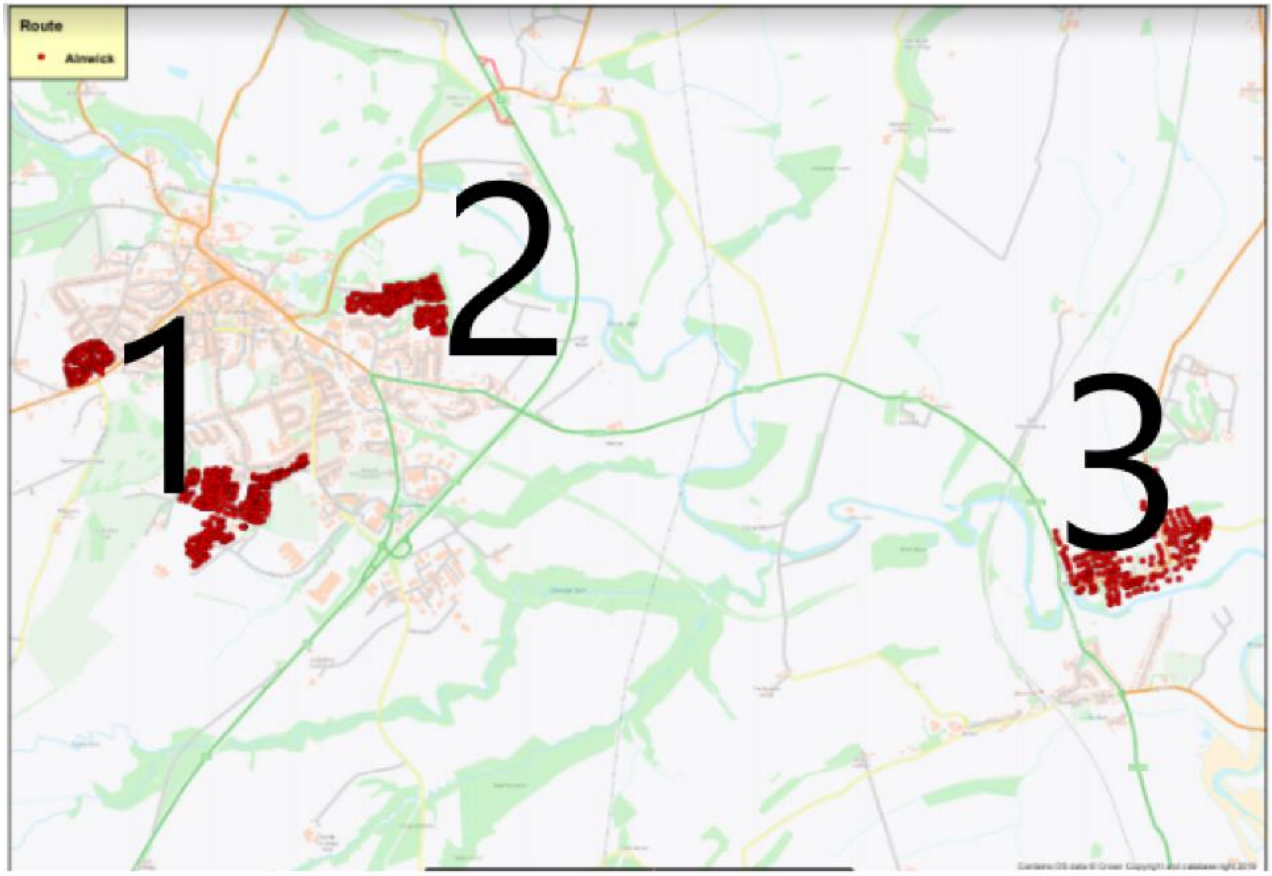
The 49 excluded properties have limited storage space available to accommodate a third wheeled bin, are assisted collections from older residents and would require crews to lift a glass bin over a wall raising manual handling concerns. Should the trial be rolled out to the wider community, alternative collection arrangements from such properties would be considered.

Alnwick & Lesbury Area : 1,016 properties.

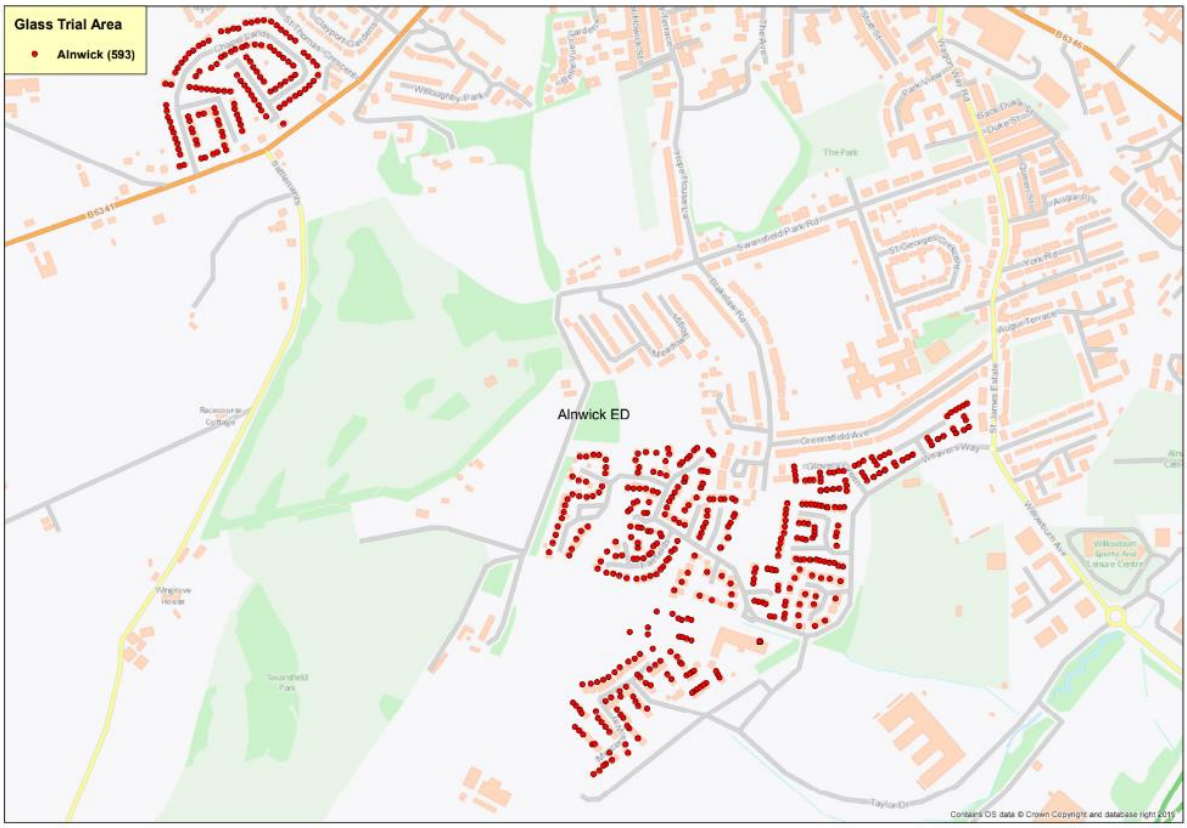
Ward: Alnwick, Cllr Gordon Castle

- Area 1: Streets/ Info: Alnwick; Chapel Lands, Fairfields, Reivers Way- privately owned. Barrasdale Estate- social housing
- Area 2: Streets/ Info: Alnwick; Allerburn Lea - privately owned/ rented, no social housing
- Area 3: Streets/ Info: Lesbury; Lealands - privately owned

Overview map : Alnwick & Lesbury

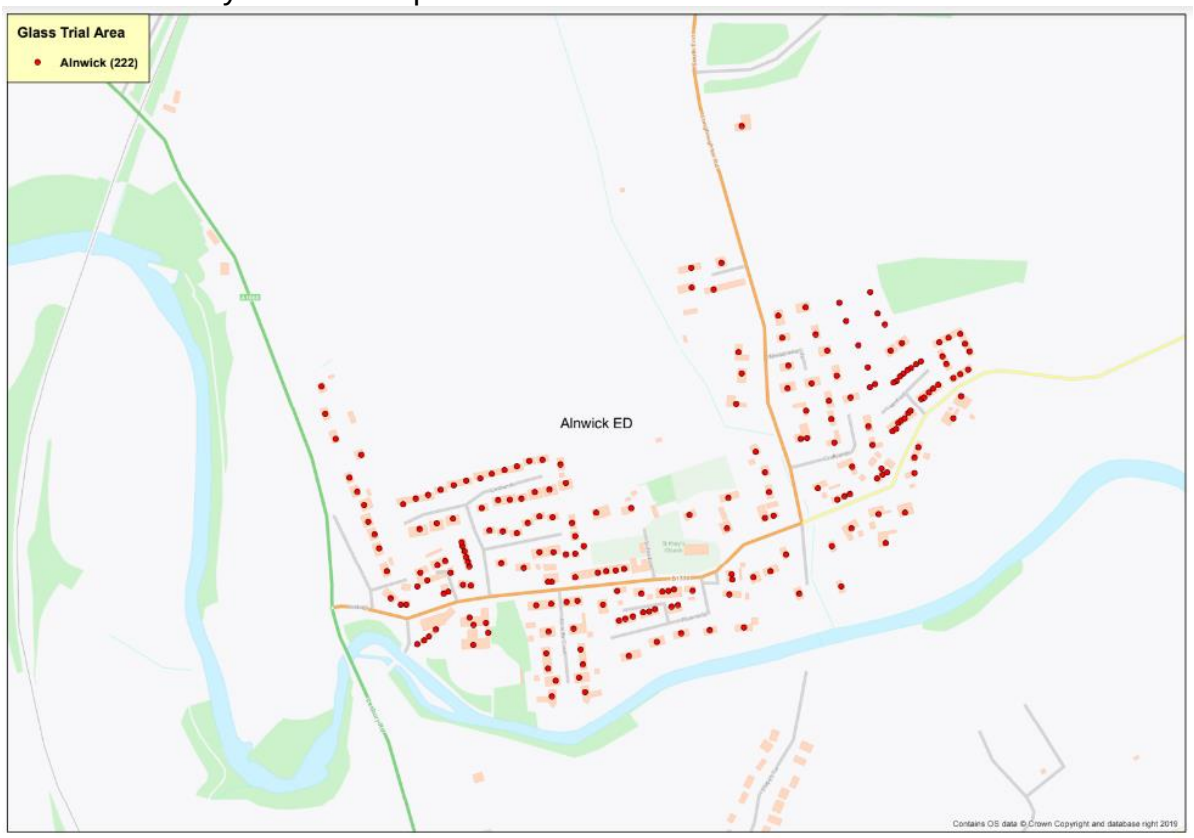


Area 1 - Alnwick detailed map - Chapel Lands, Fairfields, Reivers Way



Area 2 : Alnwick detailed map - Allerburn Lea

Area 3 - Lesbury detailed map - Lealands

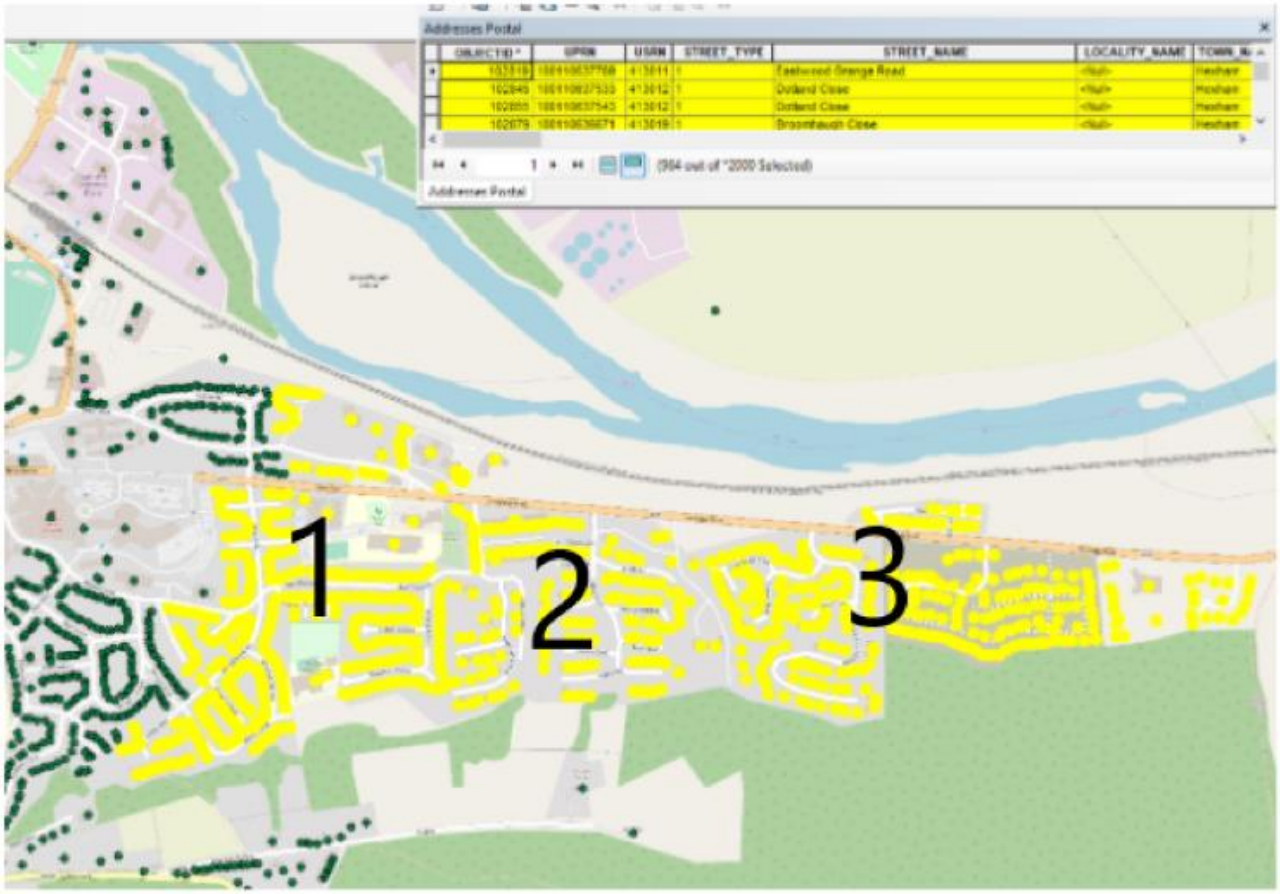


Hexham : 964 properties (shown in yellow) of mixed property types.

Ward: Hexham East, Cllr Cath Homer

A mixture of privately owned/ rented properties & social housing

- Area 1: Dean Avenue, Dene Park, Bywell Avenue, Dilston
- Area 2: Edgewood, Eastfields, Edgewood
- Area 3: Hornbeam Crescent, Anick View, Laurel Road



Morpeth area : 925 properties (shown in yellow) of mixed housing types

Ward: Areas 1,2 & 3, Morpeth Stobhill, Cllr John Beynon;

A mixture of privately owned/ rented properties:

- Area 1: Low Stobhill, Stobhillgate, Grange Road, Heathfield, Moorlands, Edgehill, High Stobhill, Rookswood, Eden Grove, Whiteacres.
- Area 2: Green Lane, Charlton Gardens, Broom Close.
- Area 3: Whinham Way, Norham Drive, Thornton Close, Swinton Close Felton Close, Chathill Close, Eglingham Way Eglingham Close, Acomb Close, Whalton Close, Glanton Close, Crookham Grove