WASTE FORECASTING MODEL

Findings and Methods

Redacted
personal data

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Report for Euston Ling, North London Waste Authority

Prepared by (Redacted personal data)

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Executive Summary

E.1.0 Introduction

In order to develop cost-efficient and sustainable waste management plans, North London Waste Authority (NLWA) need accurate waste forecasts to understand likely future trends in the volume and composition of waste.

In the summer of 2019, Eunomia was asked to update modelling previously carried out for NLWA, extending forecasting of waste arisings to 2050 across multiple scenarios set out in Table 1. These scenarios were based on the existing performance and projections of the authorities, proposed local service changes and potential national-level policy changes.

This report sets out the methodology used in the waste model and the results produced. It explains the assumptions underpinning the modelling, which were discussed and agreed with NLWA and borough officers. Growth projections were based on conservative assumptions to reduce the risk of over estimating waste tonnages. All assumptions were based on the best available information at the time of developing the model.

Table 1 Summary of Model Scenarios

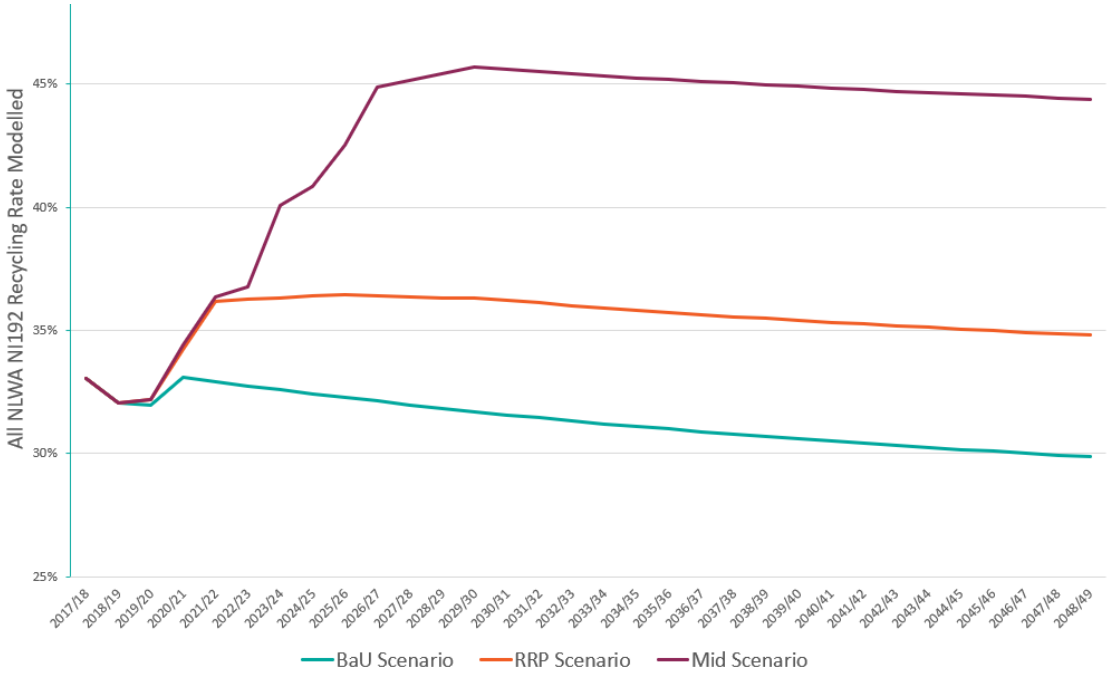
Scenario	Details
Business as Usual (BaU)	This scenario maintained existing performance levels, except where service changes are definitively planned with a good level of confidence regarding the expected outcome and accounts for boroughs household growth projections.
Reduction and Recycling Plans (RRP)	This scenario builds upon the BaU modelling, by modelling the effect of implementing changes boroughs had supplied in their RRPs e.g. communication campaigns to increase participation and increasing container capacity for recycling. These either took the form of projected changes in kilograms per household for the more detailed models or higher-level NI192 target rates.
Mid	This scenario builds upon the BaU and RRP modelling, by introducing the impact of boroughs changing to the Collections Blueprint[1] previously modelled for NLWA, increased recycling performance in communal bin properties, and a national-level Deposit Return Scheme[2] (DRS) for beverage containers.

[1] The Collections Blueprint describes the Welsh Government's recommended service profile for the collection of household waste. Published in 2011 as part of the Municipal Sector Plan, it provides a system that is now achieving high rates of high-quality recycling, significant cost savings and improved sustainable development outcomes.
[2] A recycling system in which consumers pay a small deposit for plastic and glass bottles, which can be refunded upon return to a shop. Such schemes are underway in Scandinavian countries such as Denmark and Norway, are is due to be implemented in the UK from 2023.

E.2.0 Key Findings

Figure 1-1 shows the overall recycling performance (NI192[3]) results for NLWA in all scenarios. The Reduction and Recycling Plans (RRP) and Mid scenarios show significant improvement over the current baseline. However, there is a tendency in all scenarios for performance to decrease over time. This reflects the expectation that new build housing will increase the percentage of Communal Bin (CB) properties in all boroughs. As recycling performance is generally lower in flats than in street-level (SL) housing, the net effect of this to reduce performance.

Figure 1-1: All NLWA NI192 by Year



In terms of total tonnages, all scenarios see a rise between the baseline years and 2050/51. However, both the RRP and Mid scenarios result in less overall waste than is found in the Business as Usual (BaU) scenario. Under the Mid scenario, residual waste arisings in 2050/51 would be lower than in 2018/19, despite the expected increase in households. Table 2 shows the tonnages of local authority collected waste[4] by waste stream and scenario in key years over the modelled period.

[3] NI192 is a national indicator for the percentage of household waste that is sent for reuse, recycling or composting by local authorities. Description Household waste as defined under EPA 1990 and the Controlled Waste Regulations 1992 and described in the CLG guidance. 'Sent for' means delivered to and accepted for re-use, recycling or composting.
[4]Local authority collected waste includes household waste, commercial waste and some non-household waste including fly-tipped waste, C&D waste, Ground clearing waste, Highways waste; and Asbestos waste.

Table 2: Total Local Authority Collected Waste[5] in Milestone Years (tonnes)

Waste Stream	Scenario	2017/18	2018/19	2024/25	2050/51
Total recycling (dry, food and composting)	BaU	247,890	240,871	259,331	285,387
	RRP	247,890	240,871	285,435	326,006
	Mid	247,890	240,871	306,237	378,365
Residual	BaU	581,927	582,800	602,671	718,144
	RRP	581,927	582,800	569,716	667,893
	Mid	581,927	582,800	522,975	556,961
Total	BaU	829,817	823,671	862,002	1,003,530
	RRP	829,817	823,671	855,152	993,899
	Mid	829,817	823,671	829,212	935,326

E.3.0 Key Limitations

The modelling work that was carried out for this study reflected an understanding of the best information available at the time, while recognising that the analysis was being conducted at a time of considerable change.

In the course of the development of the model, Eunomia and NLWA discussed a "High" scenario, which included all changes modelled in the first three scenarios, plus the potential impact of a new Extended Producer Responsibility[6] (EPR) system. However, due to the lack of clarity about how EPR would be implemented, the service changes that might result, and the impacts on waste, this scenario was not ultimately included in the analysis. NLWA may wish to look again at the modelling once there is greater clarity regarding the implications of EPR, and the tools that it may give local authorities to improve recycling performance.

A further change, not reflected in the modelling, is the COVID-19 pandemic, which has affected both the quantity and composition of household and commercial waste in north London. It is difficult to predict what long term impacts COVID-19 will have on patterns of household consumption, business activity and employment. The initial impact of lockdown measures was to increase household waste (because people were spending more time at home) and a significant reduction in commercial waste (due to a reduction in business activity and a displacement of retail activity to online platforms). These changes are not yet fully reflected in available waste data, and the modelling will need to be revisited as greater clarity is gained regarding the "new normal".

[5]Local authority collected waste includes household waste, commercial waste and some non-household waste including fly-tipped waste, C&D waste, Ground clearing waste, Highways waste; and Asbestos waste.

[6] EPR is a strategy designed to promote the integration of environmental costs associated with goods and/or packaging throughout their life cycles into the market price of the products.

Contents

1.0 Introduction

The North London Waste Authority (NLWA) manages waste transportation and disposal on behalf of seven London boroughs[7] in the north London area. In order to develop cost-efficient and sustainable waste management plans, NLWA need accurate waste forecasts to understand likely future trends in the volume and composition of waste. For example, NLWA need to establish the levels of residual waste that are expected in the coming years before undertaking an infrastructure improvement programme, such as the introduction of new waste management facilities, so as to ensure that the development will meet future capacity requirements.

In the summer of 2019, Eunomia was asked to update modelling previously carried out for NLWA, extending forecasting of waste arisings to 2050 across multiple scenarios. These scenarios were based on the existing performance and projections of the authorities, proposed local service changes, and potential national-level policy changes.

The NLWA waste forecast model was created by bringing together current waste management data as reported by boroughs to Waste Data Flow[8] (WDF) and boroughs' own waste models and plans for the future. The NLWA waste forecast model produces:

- projected tonnages that boroughs will deliver to NLWA for treatment and disposal;
- a forecast of waste management costs (levy charges), to enable them to be shared fairly and in a transparent way across all seven north London boroughs; and
- projected household waste recycling and composting performance (against the NI192[9] indicator) associated with each scenario.

One reason to forecast the tonnage of waste collected, particularly of residual waste, is to enable an assessment of the capacity required at the NLWA's Edmonton energy from waste (EfW) facility and the net costs of residual waste treatment.

This report sets out the methodology used in the waste model and the results produced. It explains the assumptions underpinning the modelling, which were discussed and agreed with NLWA and borough officers. Various iterations of the model were shared as

[7] NLWA manages transportation and treatment of waste from the London boroughs of Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest.
[8] WasteDataFlow is the web based system for municipal waste data reporting by UK local authorities to government.
[9] NI192 is a national indicator for the percentage of household waste that is sent for reuse, recycling or composting by local authorities. Description Household waste as defined under EPA 1990 and the Controlled Waste Regulations 1992 and described in the CLG guidance. 'Sent for' means delivered to and accepted for re-use, recycling or composting.

a draft through the process to ensure agreement between all parties. Projections regarding waste arisings were based on boroughs' expectations regarding the change in the numbers of households in their area over time, taking account of differences in waste generation between housing types. All assumptions were based on the best available information at the time of developing the model.

This report has been prepared to set out the key findings of the modelling, the assumptions it is based on, and the methodology employed within it. It also discusses events that have occurred since the modelling was undertaken that are likely to affect the findings. As new information about future patterns of waste arisings and the impact of emerging waste policy in England becomes available, NLWA proposes to update the model accordingly. Amongst these events is the COVID-19 pandemic, which has affected both the quantity and composition of household and commercial waste in north London.

2.0 Baseline Modelling

NLWA and the boroughs were asked to supply baseline waste flow data, household numbers, and details of any planned service changes or initiatives that might impact tonnages and recycling performance.

The modelling included two full years of baseline data, covering 2017/18 and 2018/19. For both years, actual tonnages of waste collected were supplied by the boroughs and NLWA. For each borough, the kerbside collected tonnages were converted to kilograms per household, based on the number of households as agreed with each authority. This step allowed for later policy changes to be modelled as changes in kilograms per household, as well as allowing for the model to account for the impact of housing growth and housing mix change. The kilograms per household figures were then converted back into tonnages, and compared against both borough-supplied recycling performance (NI192 data) and NLWA-supplied levy tonnage data.

The boroughs and NLWA categorise waste in slightly different ways; NLWA groups waste as household, chargeable household, and non-household; the boroughs' data is formatted, as per WDF, in terms of kerbside and non-kerbside waste. There were also some variations in the data supplied by the boroughs and NLWA, mostly due to differences in the attribution of waste between fly-tipping and kerbside residual where clear-all policies are in effect. This does not have an impact on the levy tonnages, because both streams (kerbside and fly-tipping) are in scope. However, there is a potential impact on the boroughs' NI192 figures because kerbside residual waste counts towards this figure whereas fly-tipping does not. For this reason, the borough-supplied data is given priority within the model.

Some adjustments had been made in the attribution of collected waste between household and non-household sources. For 2017/18, Eunomia holds data on those adjustments. However, for 2018/19, that data is not available. Consequently, there are some differences in the 2018/19 baseline NI192s and those supplied by boroughs (see Table 3).

Table 3 Supplied vs Calculated NI192 Rates, All Boroughs

	2017/18			2018/19		
	Supplied	**Calculated**	**Difference**	**Supplied**	**Calculated**	**Difference**
Barnet	36.9%	37.0%	0.1%	34.6%	34.6%	0.0%
Camden	30.3%	30.4%	0.1%	31.1%	30.5%	-0.6%
Enfield	35.9%	35.9%	0.0%	N/A	35.0%	N/A
Hackney	27.4%	27.5%	0.1%	27.9%	26.9%	-1.0%
Haringey	33.2%	33.1%	-0.1%	29.1%	30.3%	1.2%
Islington	29.4%	29.4%	0.0%	29.3%	32.5%	3.2%
Waltham Forest	32.5%	32.5%	0.0%	31.4%	31.4%	0.0%

3.0 Scenario Modelling

Three future scenarios were considered for the modelling, based primarily on the boroughs' expectations regarding changes in waste collections and mix of household type. These were supplemented with Eunomia's assessment, at the time of developing the model, of the impacts national policy changes might have on waste arisings and recycling performance. The scenarios considered were:

- BaU (Business as Usual) scenario – No change to existing performance levels;
- RRP (Reduction and Recycling Plans) scenario – Boroughs' existing plans for waste reduction and increased recycling are implemented, resulting in recycling rates ranging from 28% - 42.5%;
- Mid scenario – Additional service changes and the implementation of a Deposit Return Scheme New policies result in a modest increase in performance levels over the RRP Scenario, with boroughs reaching recycling rates of 28% - 48.6%.

These scenarios are explained in more detail in Sections 3.1 to 3.3 below.

As part of the planning process for the development of NLWA's new incinerator in Enfield, the planning inspector made it a condition of the planning consent that NLWA

should achieve a recycling rate of 50%. This was set out in the Development Consent Order in 2017[10].

NLWA and its boroughs consider that reaching the 50% target using only the powers and resources currently available to local authorities will be very challenging due to the specific circumstances in North London. Socio-economic factors, such as low income and high housing density are widely associated with low recycling rates. It is more difficult to restrict residual waste capacity in communal bins (which are provided to high density housing) and more difficult to monitor and engage with households not using the services as they should be. Factors such as a lack of space for recycling containers, and challenges in engaging with householders are widely considered to contribute to lower recycling performance[11]. Census data shows London has the highest percentage (22%) of people for whom English is not their first language. This makes engagement with communication campaigns around recycling and waste prevention more difficult therefore having a negative effect on performance.

Another important factor is garden waste, which in suburban and rural areas often contributes almost half of recycling tonnage. Far less garden waste is available in areas of high household density, where gardens are fewer and smaller. Urban areas therefore need to perform better than suburban and rural ones in respect of the collection of dry recycling and food waste in order to achieve the same recycling rate, without the benefit of garden waste recycling.

3.1 Business as Usual Scenario

This scenario maintained existing performance levels (in terms of kilograms of waste collected per household), except where service changes are definitively planned with a good level of confidence regarding the expected outcome. Examples of such changes include Barnet's removal of food waste collections and Enfield's residual and recycling frequency changes.

Housing growth projections were agreed with each borough and were generally based directly on household numbers provided by the borough (Barnet, Hackney) or on GLA projections (Camden, Enfield, Haringey, Islington, Waltham Forest). Housing growth figures were split into street-level (SL) households (i.e. those that have a single waste collection per household) and communal bin (CB) households (i.e. those that have waste collected from communal bins such as flats and houses in multiple occupation). This household split was agreed with each borough and is shown in Table 4. This distinction is important for the waste flow modelling because the recycling containment and performance differs significantly between these two housing types. Communal bin

[10] https://www.nlwa.gov.uk/news/secretary-state-grants-amendment-development-consent-order-dco
[11] WRAP (2018) *Increasing Recycling in Urban Areas*, June 2018, http://www.wrap.org.uk/sites/files/wrap/RCY104%20Urban%20Project%20Report%20FINAL.pdf

households, on average, currently achieve a lower recycling rate than street level households. As communal bin households are expected to increase in number at a far faster rate than street level households this will have a negative effect on recycling rates.

Table 4 Proportion of New Properties in Each Borough Expected to be Street Level or Communal Bin

	Street Level Collection	Communal Bin Collection
Barnet	5%	95%
Camden	10%	90%
Enfield	15%	85%
Hackney*	-37*	1,419*
Haringey	10%	90%
Islington	10%	90%
Waltham Forest	15%	85%
Notes:	**Hackney's projections are based directly on data provided by officers, and thus has a slightly different format to the other boroughs. Housing growth is modelled as an increase in the number of households per year as displayed in this table, rather than a percentage growth. Hackney is projecting 37 fewer street level collection sites and 1,419 additional communal bin collection sites each year.*	

3.2 Reduction and Recycling Plans (RRP) Scenario

This scenario builds upon the BaU modelling, by modelling the effect of implementing changes boroughs had supplied in their RRPs. These either took the form of projected changes in kilograms per household for the more detailed models, or higher-level NI192 target rates. In the latter case, Eunomia introduced kilogram per household changes to meet those targets, based on borough-wide policies such as increasing recycling from communal bin properties.

3.3 Mid Scenario

This scenario builds upon the BaU and RRP modelling, by introducing the impact of boroughs changing to the Collections Blueprint[12] previously modelled for NLWA, increased recycling performance in communal bin properties, and a national-level Deposit Return Scheme[13] (DRS) for beverage containers.

The modelled dates of these changes are based on either contract end dates or the political cycle. In most cases, officers indicated that it was unlikely that a decision to move to the Blueprint would be made prior to the next local election, and so an implementation year was chosen one or two years after that date. Eunomia used the previous NLWA blueprint as a guide for this modelling, but assumed one key difference: where previously we had assumed all boroughs would implement a charged garden waste collection, in this model we assume that they continue with BaU garden waste services. This change is due to the waste strategy consultation indicating a strong preference from the Government for free garden waste services. While responses to the consultation raised concerns about reverting to free garden waste services, it is uncertain whether this will remain a matter that is determined locally.

The mid scenario also models further recycling performance improvements from estates (such as increased capacity for recycling containers and increased participation as a result of communication campaigns), beyond those planned in the context of RRPs. We have assumed that, with some estate-specific interventions and adaptions, performance increases as a result of improved dry recycling collection alongside the implementation of separate food waste collections where these are not currently available to CB properties.

This is higher than the level of performance that it is currently reliably achievable by the boroughs. Reaching it would require new interventions. Some might be deliverable locally: WRAP is currently exploring options such as provision of recycling bags to residents alongside communications, together with changes in bin design and configuration. There may also be opportunities to place greater responsibility on building managers to minimise residual waste generation. However, other measures that might assist in reaching these higher levels of recycling would require national changes and new powers for local authorities. An example would be the introduction of “pay as you throw” to change individual incentives regarding waste generation and recycling.

[12] The Collections Blueprint describes the Welsh Government’s recommended service profile for the collection of household waste. Published in 2011 as part of the Municipal Sector Plan, it provides a system that is now achieving high rates of high-quality recycling, significant cost savings and improved sustainable development outcomes.

[13] A recycling system in which consumers pay a small deposit for plastic and glass bottles, which can be refunded upon return to a shop. Such schemes are underway in Scandinavian countries such as Denmark and Norway, are is due to be implemented in the UK from 2023.

The DRS modelling is based on NLWA waste composition analyses and Eunomia's extensive experience in the implementation of DRSs in Europe and worldwide. It is based on a 90% return rate assumption, with drinks containers being diverted away from both the recycling and residual streams in which they are currently collected (as identified in NLWA residual and recycling composition data). The DRS is assumed to include glass, ferrous, aluminium, PET, and Tetrapak drinks containers. The NI192 calculation includes the recycling tonnage collected via the DRS.

3.4 Limitations of this Modelling Exercise

The modelling work that was carried out for this study reflected an understanding of the best information available at the time, while recognising that the analysis was being conducted at a time of considerable change.

In the course of the development of the model, Eunomia and NLWA discussed a "High" scenario, which included all changes modelled in the first three scenarios, plus the potential impact of a new Extended Producer Responsibility[14] (EPR) system. The modelled impact of EPR on recycling rates in NLWA authorities was based on previous analysis carried out by Eunomia for the London Environmental Directors Network (LEDNet). However, due to the lack of clarity about how EPR would be implemented, the service changes that might result, and the impacts on waste, this scenario was not ultimately included in the analysis.

NLWA may wish to look again at the modelling once there is greater clarity regarding the implications of EPR, and the tools that it may give local authorities to improve recycling performance.

EPR will also incentivise producers to change the packaging they use so as to make it lighter and/or more readily recyclable. Again, once there is greater clarity, NLWA may wish to revisit the modelling to explore the impact of this on waste tonnages and composition.

A further change, not reflected in the modelling, is the COVID-19 pandemic, which has affected both the quantity and composition of household and commercial waste in north London. It is difficult to predict what long term impacts COVID-19 will have on patterns of household consumption, business activity and employment. The initial impact of lockdown measures was to increase household waste (because people were spending more time at home) and a significant reduction in commercial waste (due to a reduction in business activity and a displacement of retail activity to online platforms). These changes are not yet fully reflected in available waste data, and the modelling will need to be revisited as greater clarity is gained regarding the "new normal".

[14] EPR is a strategy designed to promote the integration of environmental costs associated with goods and/or packaging throughout their life cycles into the market price of the products.

In addition, NLWA and the boroughs may wish to update the model to reflect any new information that is obtained regarding:

- new minimum collection standards required of local authorities, including new source separation rules, contained in the Environment Bill 2020;
- new requirements on businesses to source separate waste, and emerging proposals on commercial waste zoning, which may affect the amount of non-household waste collected by boroughs;
- the extent and nature of expected housing growth;
- changes in the tonnage and composition of waste;
- new service changes proposed by boroughs, which may be necessitated by the financial challenges many authorities currently face or by the commitments many have made regarding reducing CO_2 emissions, including from waste; and
- new learning on best practice in urban areas regarding maximising recycling from estates, streets and commercial premises.

4.0 Results

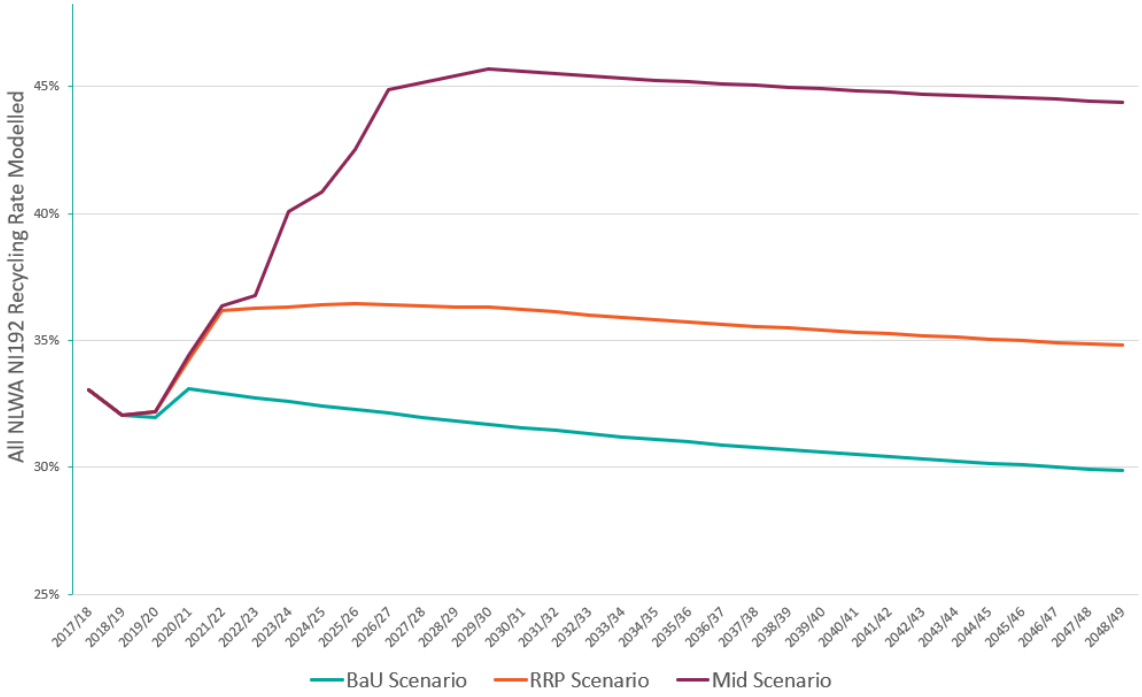
This section presents the waste flow modelling results for the NLWA as a whole. Individual borough results can be found in the Appendix.

4.1 NLWA Household Waste

Figure 4-1 shows the overall household waste recycling performance (NI192) results for NLWA in all scenarios. The RRP and Mid scenarios show significant improvement over the baseline. The RRP scenario shows the level of performance associated with boroughs meeting their current targets, which peaks at 36% recycling (compared to 32% in 2018/19). Even higher performance is seen in the Mid scenario, where the combination of a national DRS scheme and boroughs implementing the previously-modelled Collections Blueprint increases recycling to 46% before the impact of housing mix change reduces it in later years.

In general, across all scenarios, recycling performance peaks and then decreases towards 2050. This reflects the assumptions provided by the boroughs regarding the composition and recycling performance of new build housing. New build housing is planned to increase the percentage of communal bin properties in all boroughs (with some boroughs projecting higher levels of new communal bin properties than others). The modelling assumes that, as is the case today, recycling performance is generally lower in communal bin properties than in street-level housing. It follows that the net effect of these two factors will reduce performance. However, there is scope for the additional, unmodelled policy changes discussed in section 3.4 to result in a higher level of recycling than modelled.

Figure 4-1: All NLWA NI192 by Year



In terms of tonnages delivered to NLWA, the assumptions used in each of the modelled scenarios result in a rise between the baseline years and 2050/51. This is because it is assumed, for all scenarios, that the waste generated per household remains constant while the number of properties grows. However, there is scope for the additional, unmodelled policy changes discussed in section 3.4 to result in a reduction in per-household waste arisings compared with the assumptions used in the model.

Both the RRP and Mid scenarios result in less overall waste than is found in the BaU scenario. Under the Mid scenario, residual waste arisings in 2050/51 would be lower than in 2018/19, despite the expected increase in households.

4.2 NLWA Local authority Collected Waste (LACW)

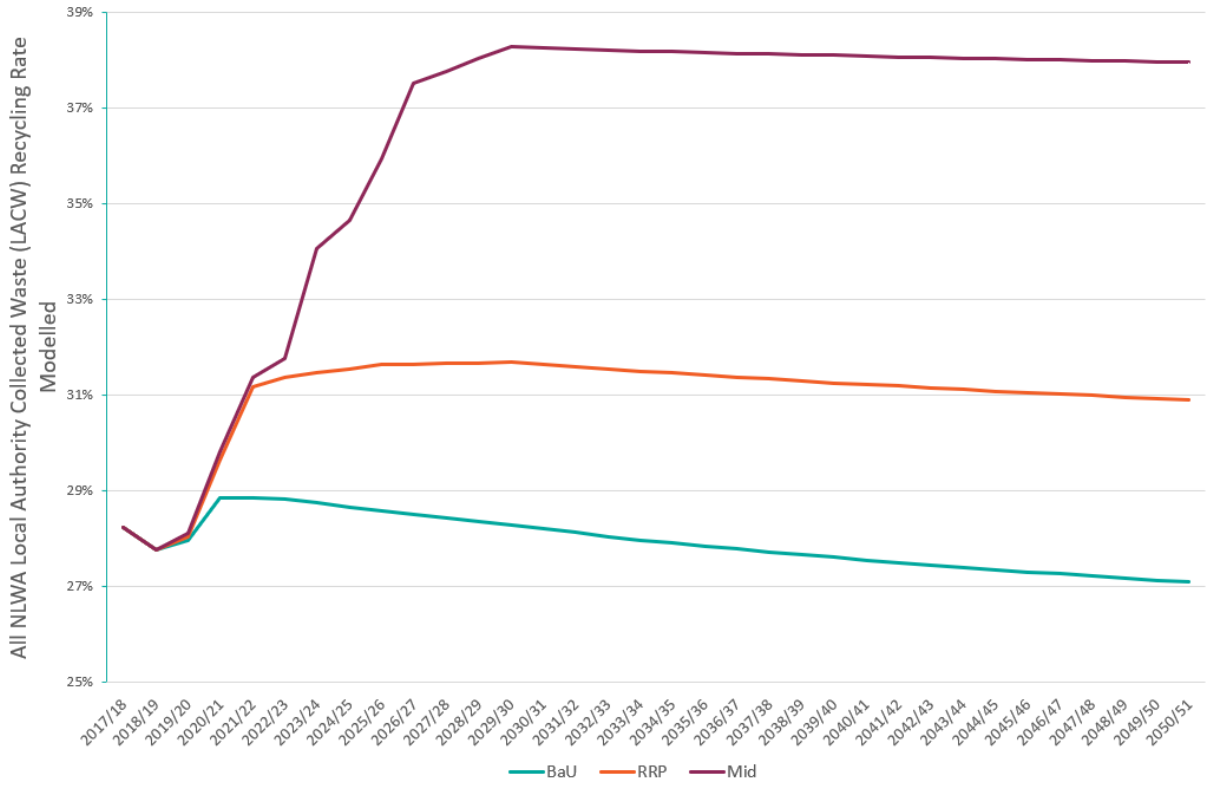
Table 5 shows tonnages of local authority collected waste (LACW) by waste stream for each scenario in key years over the modelled period. LACW includes household waste, commercial waste and other non-household waste including fly-tipped waste, C&D waste, ground clearing waste, highways waste; and asbestos waste.

Table 5 - Total Local Authority Collected Waste (LACW) in Milestone Years (tonnes)

Waste Stream	Scenario	2017/18	2018/19	2024/25	2050/51
Total recycling (dry, food and composting)	BaU	247,890	240,871	259,331	285,387
	RRP	247,890	240,871	285,435	326,006
	Mid	247,890	240,871	306,237	378,365
Residual	BaU	581,927	582,800	602,671	718,144
	RRP	581,927	582,800	569,716	667,893
	Mid	581,927	582,800	522,975	556,961
Total	BaU	829,817	823,671	862,002	1,003,530
	RRP	829,817	823,671	855,152	993,899
	Mid	829,817	823,671	829,212	935,326

Figure 4-2 shows the LACW recycling rate for all three scenarios.

Figure 4-2 - Local Authority Collected Waste Recycling Rate



A.1.0 Appendix

A.1.1 Borough Results

Barnet (A.1.1.1), Camden (A.1.1.2), Enfield (A.1.1.3), Hackney (A.1.1.4), Haringey (A.1.1.5), Islington (A.1.1.6), and Waltham Forest (A.1.1.7).

A.1.1.1 Barnet

This section presents the expected household waste recycling performance (Figure 4-3) and key modelling assumptions (Table 6) for LB Barnet.

Figure 4-3: Barnet NI192 by Year

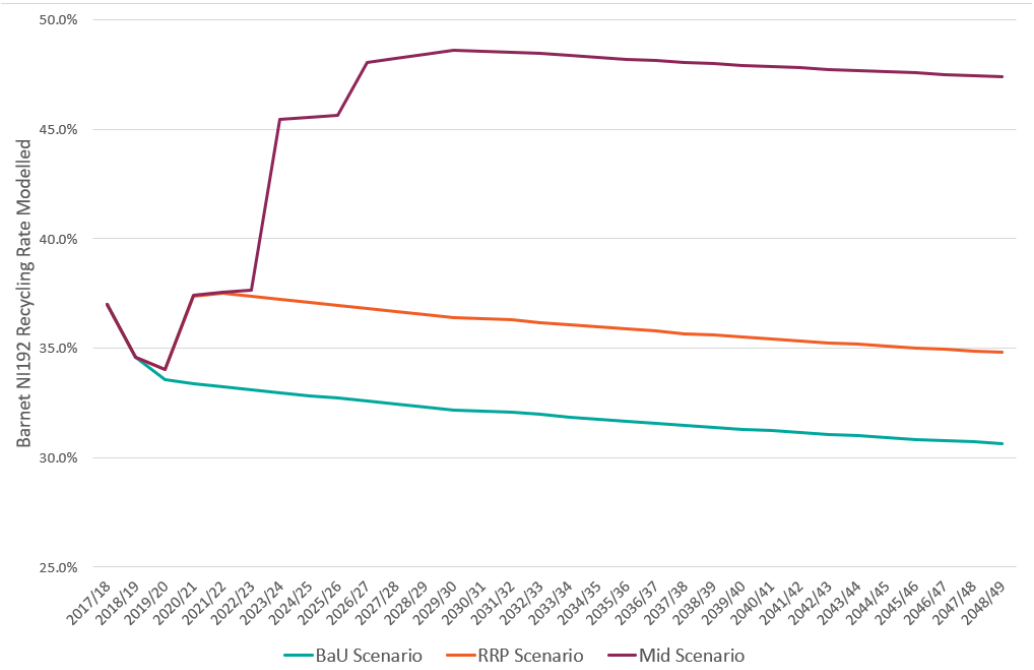


Table 6 Barnet Key Changes by Scenario

Scenario	Key Changes (Date)
BaU	Declining performance from trend towards flats in housing mix (ongoing); complete removal of food waste collections (2019/20)
RRP	As above, plus: reintroduction of food waste collections (2020/21); improvements to flats recycling through a communications campaign to increase participation; and increasing recycling container capacity (from 2019/20)
Mid	As above, plus: Collections Blueprint implementation (2023/24); DRS introduction (2026/27)

A.1.1.2 Camden

Table 7) for LB Camden.

Figure 4-4: Camden NI192 by Year

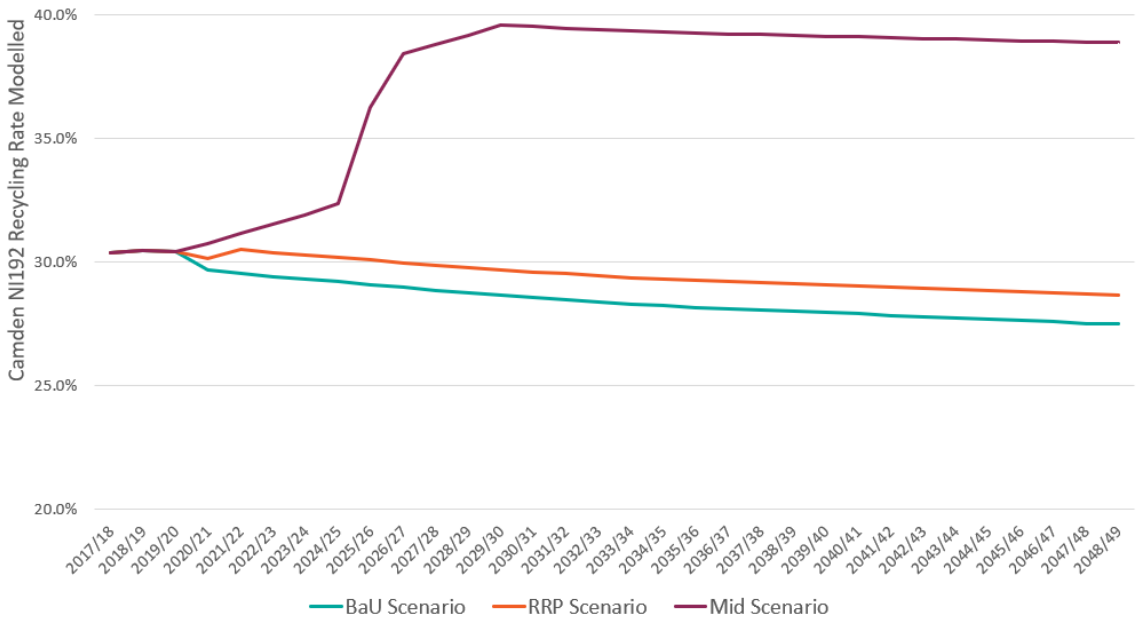


Table 7 Camden Key Changes by Scenario

Scenario	Key Changes (Date)
BaU	Declining performance from trend towards flats in housing mix (ongoing)
RRP	As above, plus: recycling reward scheme (2019/20); borough-wide communication campaign to increase participation; and increasing recycling container capacity (2020/21)
Mid	As above, plus: Collections Blueprint implementation (2025/26); DRS introduction (2026/27), further improvements to flats recycling (from 2022/23)

A.1.1.3 Enfield

Table 8) for LB Enfield.

Figure 4-5: Enfield NI192 by Year

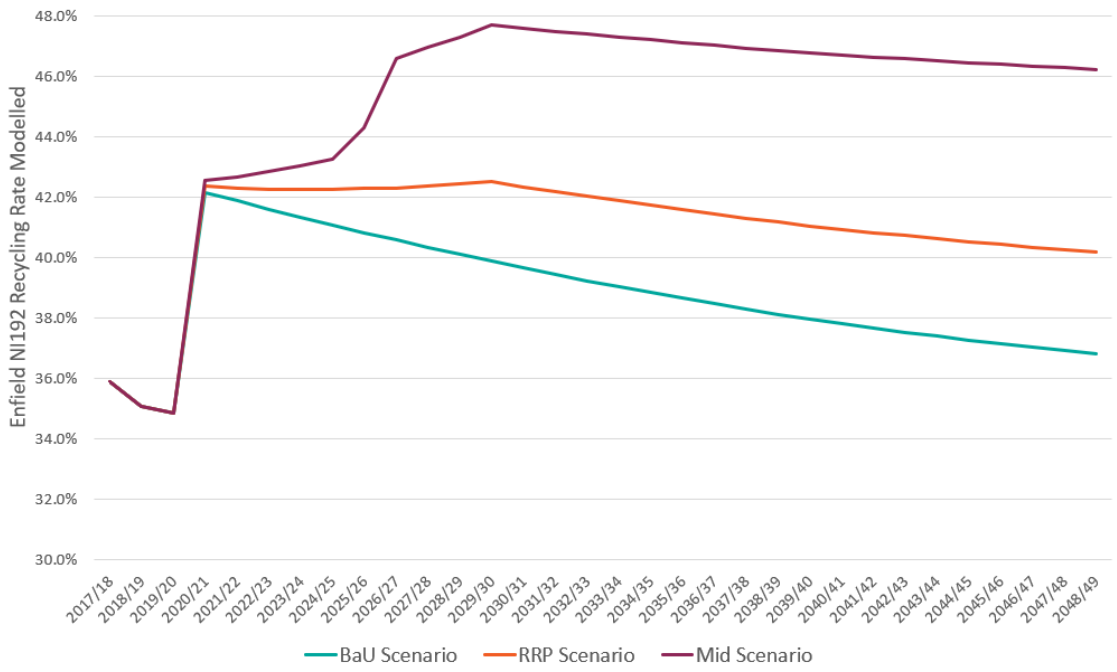


Table 8 Enfield Key Changes by Scenario

Scenario	Key Changes (Date)
BaU	Declining performance from trend towards flats in housing mix (ongoing);
RRP	As above plus: improvements to flats recycling through adding batteries and textile collections, borough-wide communication campaign to increase participation; and increasing recycling container capacity (2020/21)
Mid	As above, plus: introduction of Collections Blueprint (2020/21); further increases in flats recycling 2020/21); DRS introduction (2026/27)

A.1.1.4 Hackney

Table 9) for LB Hackney.

Figure 4-6: Hackney NI192 by Year

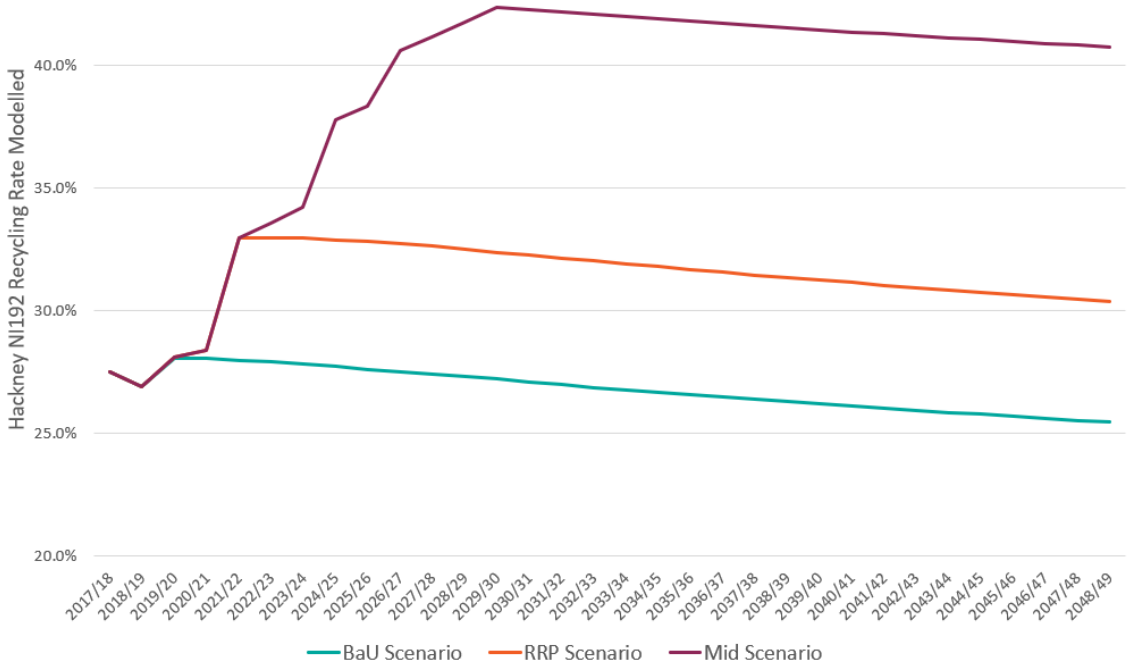


Table 9 Hackney Key Changes by Scenario

Scenario	Key Changes (Date)
BaU	Declining performance from trend towards flats in housing mix (ongoing)
RRP	As above, plus: planned service change (residual restriction) (2021/22); improvements to flats recycling based on trial schemes through communications campaigns and increasing recycling container capacity (2020/21)
Mid	As above, plus: Collections Blueprint implementation – remaining impact after residual restriction (2024/25); additional improvements to flats recycling (2022/23); DRS introduction (2026/27)

A.1.1.5 Haringey

Table 10) for LB Haringey.

Figure 4-7: Haringey NI192 by Year

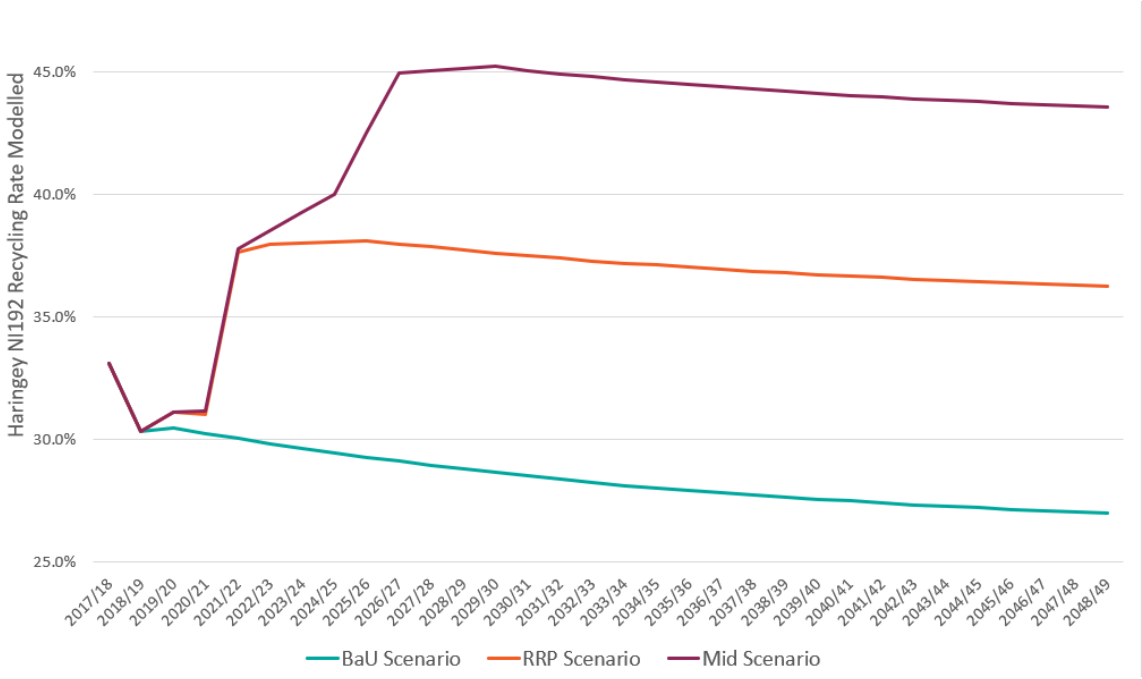


Table 10 Haringey Key Changes by Scenario

Scenario	Key Changes (Date)
BaU	Declining performance from trend towards flats in housing mix (ongoing)
RRP	As above, plus: tonnage changes set out in RRP (2021/22) and other performance improvements designed to meet RRP recycling rate target, such as restrictions on residual container capacity and a communication campaign to increase participation
Mid	As above, plus; Collections Blueprint implementation (2025/26); DRS introduction (2026/27)

A.1.1.6 Islington

This section presents the expected household waste recycling performance (Figure 4-8) and key modelling assumptions (Table 11) for LB Islington.

Figure 4-8: Islington NI192 by Year

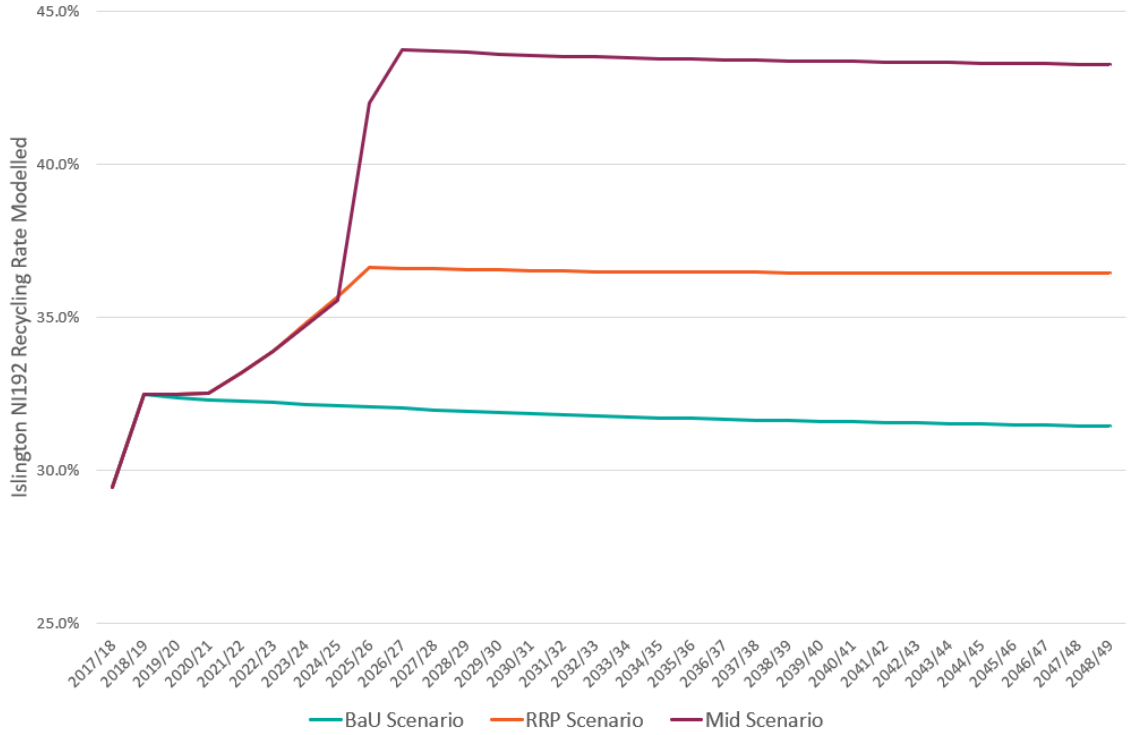


Table 11 Islington Key Changes by Scenario

Scenario	Key Changes (Date)
BaU	Declining performance from trend towards flats in housing mix (ongoing)
RRP	As above, plus: improvements to flats performance (2020/21) and other performance improvements designed to meet RRP target such as increase in recycling capacity, 'recycling champion' campaign and mini recycling sack trial on estates
Mid	As above, plus: Collections Blueprint implementation (2025/26); DRS introduction (2026/27)

A.1.1.7 Waltham Forest

Table 12) for LB Waltham Forest.

Figure 4-9: Waltham Forest NI192 by Year

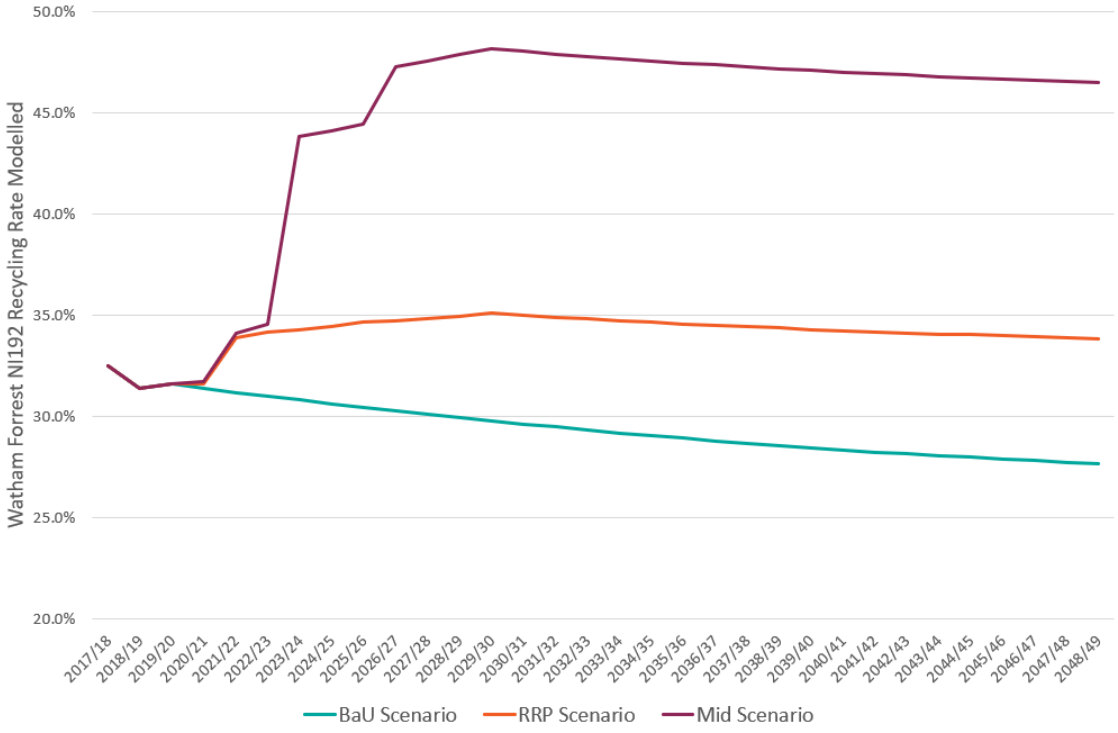


Table 12 Waltham Forest Key Changes by Scenario

Scenario	Key Changes (Date)
BaU	Declining performance from trend towards flats in housing mix (ongoing)
RRP	As above, plus: some residual restriction (2021/22); borough-wide communication campaign to increase participation; and increasing recycling container capacity (2020/21); introducing flats food waste (2022/23)
Mid	As above, plus: remaining Collections Blueprint implementation (2023/24); DRS introduction (2026/27)