Appendix 4

FRITH RESOURCE MANAGEMENT

Environmental Report for the Joint Waste Strategy for North London

April 2025

Acknowledgements:

Frith Resource Management would like to thank the essential contributions from waste management officers at North London Waste Authority and the seven north London boroughs of Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest and the stakeholders that attended meetings for their support in developing the Strategic Environmental Assessment.

Disclaimer:

Frith Resource Management Ltd (FRM) is an independent waste and resource management consultancy providing advice in accordance with the project brief. FRM has taken all reasonable care and diligence in the preparation of this report to ensure that all facts and analysis presented are as accurate as possible within the scope of the project. However, no guarantee is provided in respect of the information presented, and FRM is not responsible for decisions or actions taken on the basis of the content of this report

55a Unit 2
High Street
Bridgnorth
Shropshire
WV16 4DX
United Kingdom

www.frithrm.com
+44 (0) 1746 552423

Contents

Abbreviations/ Acronyms

AD	Anaerobic Digestion
AHP	Absorbent Hygiene Products
AONB	Area of Outstanding Natural Beauty
AQFA	Air Quality Focus Zone
AQMA	Air Quality Management Areas
BAP	Biodiversity Action Plan
BNG	Biodiversity Net Gain
CH_4	Methane
CO_2	Carbon Dioxide
CCUS	Carbon Capture and Storage
CHP	Combined Heat and Power
DEFRA	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DRS	Deposit Return Scheme
EA	Environment Agency
EFW	Energy from Waste
EPR	Extended Producer Responsibility
EQA	Equality Assessment
FLASH	Flats Above Shops
GHG	Greenhouse Gas
GLA	Greater London Authority
GAV	Gross Added Value
HH	Household
HPA	Health Protection Agency
IoD	Indices of Depravation
JWS	Joint Waste Strategy

LACW	Local Authority Collected Waste
LFRMS	Local Flood Risk Management Strategy
LNR	Local Nature Recovery
LNRS	Local Nature Recovery Strategy
LSDAP	London Sustainable Drainage Action Plan
MGCLG	Ministry of Housing, Communities and Local Government
MRF	Materials Recycling Facility
NCA	National Character Area
NERC	The Natural Environment and Rural Communities Act
NLWA	North London Waste Authority
PPB	Parts per billion
NLWP	North London Waste Plan
PPM	Parts per million
R&D	Research and Development
RRC	Reuse and Recycling Centre
RRP	Reduction and Recycling Plans
RWS	Resources and Waste Strategy, 2018
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SINC	Sites of Importance for Nature Conservation
SMES	Small Medium Enterprises
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific interest
WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WFD	Water Framework Directive

WRAP	Waste & Resources Action Programme
VAT	Value added tax

Non-Technical Summary

Introduction

The North London Waste Authority (NLWA) have prepared a Joint Waste Strategy (JWS) in partnership with the seven north London boroughs of Barnet, Camden, Enfield, Hackney, Haringey and Waltham Forest. The new strategy runs from 2025 to 2040 and has been developed due to the expiration of the previous strategy in 2020. In addition, it is a requirement for two-tier authority areas to have a joint strategy for the management of waste, in line with the Waste and Emissions Act 2003. The following section provides the non-technical summary of the Environmental Report that documents the Strategic Environmental Assessment (SEA) for the North London joint waste strategy. This SEA involves a review of key central and local Government plans and strategies that have the potential to influence the management of waste, as a basis for considering the suitability of the Strategy. The assessment also considers the local environmental, social, and economic context of north London with relevance to waste management services and their impacts. This is described as the 'Baseline' within the SEA.

The key parts of the JWS are assessed against a wide range of (mostly environmental) SEA Objectives which are measured using SEA Criteria to assist with the scoring process and, to ensure an appropriate strategy is developed. All of these aspects have been subject to consultation and this Environmental Report represents the public consultation stage of the SEA process.

SEA Context

All central and local Government plans, policies and strategies that have potential to have a significant effect on the environment are required to be assessed regarding how they contribute to sustainable development. This is carried out via the completion of an SEA. The requirements for an SEA are defined in the 'Environmental Assessment of Plans and Programmes (SEA) Regulations 2004'[1].

The UK Government's Sustainable Development Strategy[2] states that:

"The goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations."

One of the preliminary stages of an SEA is to scope out the key 'sustainability' issues relevant to a plan or strategy and the particular area in which that plan, or strategy is due to be implemented. This was contained in the Scoping Report of the SEA. These aspects have been subject to consultation with statutory consultees.

Key aspects of the Scoping Report, and subsequently this Environmental Report, have been informed by presentations & workshops which were held in February 2024, March 2024 and June 2024. The workshops involved local authority officers and were designed to raise awareness and seek views on the following:

[1] SI 2004 No. 1633
[2] 'Securing the Future: The UK Government Sustainable Development Strategy', HM Government, March 2005

- Sustainability issues for north London from a review of the baseline
- Key influencing programmes & plans (local, regional and national)
- Sustainability objectives
- Proposed mitigation of options
- Monitoring

This Environmental Report was subject to wider (public) consultation (1st November 2024 to 23rd January 2025) and includes the following aspects:

- Baseline Position (Section 3)
- Key Sustainability Issues and Interrelationships (Section 4)
- SEA Objectives and Criteria (Section 5)
- Strategy Aims & Objectives (Section 6)
- Strategy Waste Management Alternatives (Section 7)
- SEA Conclusions and Mitigation (Section 8)
- Monitoring implementation (Section 9)

Methodology

The SEA process adopted for the review of the NLJWS follows that set out in the Practical Guide to the Strategic Environmental Assessment Directive.[3] The key stages of the SEA process are as follows:

- **Stage A: Scoping -** collecting and presenting baseline environmental information.
- **Stage B: Assessment -** predicting the significant environmental effects of a plan and addressing them during its preparation.
- **Stage C: Reporting -** Identifying the strategic alternatives and their effects.
- **Stage D: Consultation -** consulting the public and authorities with environmental responsibilities as part of the assessment process.
- **Stage E: Monitoring implementation** - monitoring the actual environmental effects of the plan during its implementation.

In addition to the key stages outlined in the Practical Guide to the Strategic Environmental Assessment Directive, an options appraisal was also undertaken to gain an understanding of alternative collection options for the purposes of service delivery, procurement and planning. The Kerbside Analysis Tool (KAT) was used to provide a comparative assessment of cost and operational requirements for the baseline and

[3]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7657/practicalguidesea.pdf

three agreed collection scenarios. In addition, the overall carbon performance of each collection scenario was calculated using the Emissions Performance Standard (EPS) tool[4].

Sustainability Issues

As part of developing the SEA for the review of the JWS, local environmental, social, and economic circumstances, (known as the 'baseline') has been considered for north London. From this assessment, the key sustainability issues identified for the JWS review include:

- Mitigating climate change by reducing the carbon impact of resources and waste management
- Adapting to climate change, e.g. potential weather related and flooding issues
- Effective waste management and climate change benefits
- Changing waste streams after Covid-19 and as part of lifestyle changes and Government policy
- Landfill diversion, reuse, repair and prevention, energy recovery from waste, recycling & composting
- Reducing fly-tipping and litter
- Reducing local air pollution and improving water quality
- Supporting the circular economy
- Providing services for a growing, aging and transient population and for those with long term health problems & disabilities
- Addressing environmental impacts including harm to human health and natural environment
- Managing the impact of food waste and garden waste

SEA Objectives

Sustainability issues are used to inform the SEA Objectives, by which the strategy options for delivery are assessed. The SEA Objectives have been derived from:

- Review of Programmes and Plans – this gives rise to the identification of key themes
- The Baseline review & sustainability issues for north London
- The Environmental Assessment of Programmes & Plans Regulations for England (2004)

[4] The EPS performance methodology calculates the carbon intensity of different waste management methods in kilograms of carbon dioxide emitted per tonne of waste managed. https://www.eunomia.co.uk/reports-tools/eps-ready-reckoner-greenhouse-gas-guidance/

- Consultation with Council & NLWA stakeholders
- The Scoping Report Consultation undertaken as part of this SEA process

The SEA Objectives applied in the assessment are:

SEA Objectives for the NLJWS
1. To increase the positive carbon impacts and reduce the negative carbon (and other greenhouse gases) impacts of the waste collection, reuse, recycling, transportation, treatment and disposal service
2. To adapt to the unavoidable consequences of climate change
3. Increase the use of clean renewable fuels and low carbon or renewable energy
4. To reduce waste and resource use and maximise reuse recycling and recovery rates
5. To continue to divert waste away from landfill
6. To maintain and enhance good air quality for all
7. To maximise the health and wellbeing of the population
8. To promote sustainable economic growth and employment
9. To protect and enhance the quality of water and soils
10. To protect and increase biodiversity, flora and fauna
11. To protect and enhance the landscape and geodiversity of North London
12. To protect the significance of heritage assets of archaeological, cultural and historic value
13. To maximise the accessibility and equality of services.
14. To promote civic participation, ownership and responsibility and enable individuals, groups and communities to contribute to improving their environment.
15. To support a strong, diverse and stable economy.

The SEA Objectives are used to assess the alternative options for delivery of the strategy. These are distinct from the strategy aims, objectives and priorities which set the direction for the services over the period of the Strategy.

Strategy aims, objectives and priorities

The strategic aims, objectives and priorities for the NLJWS are as follows:

NLJWS aims, objectives and priorities
Aims
• To promote overall waste reduction and avoidance; • To promote sustainable municipal resources and waste management policies in north London and create a more Circular Economy; • To minimise the overall environmental impacts of resource and waste management and mitigate the effects of climate change; • To engage residents, community groups and local businesses in the development and implementation of resources and waste management; • To work together to provide resident-focused, cost-effective, best value services.
Objectives
• To work together with our boroughs, residents and the north London community to minimise the amount of residual wastes arising; • To work together with residents and the north London community to increase reuse and recycling rates; • To diverge resources and waste from landfill and support more sustainable initiatives for disposing of waste; • To support the NLHPP project and development of the EcoPark, and work with the local community to maximise the benefits of the new facility and ensure it is the greenest hub of its kind; • To work together with our boroughs, residents and the community to ensure waste management policies contribute to meeting the challenges of the climate emergency. This will include improving air quality and achieving net-zero targets; • To explore innovative ways of managing municipal wastes in the most environmentally and economically efficient ways possible, which will help to achieve wider environmental goals; • To ensure that our services and information are fully accessible to all members of the community; • To maximise all opportunities for local regeneration and increased social value benefits from waste and resource management, including employment, skills and wellbeing.
Priorities
• To support the reduction in household waste by promoting prevention, repair and reuse. • To reduce the environmental impact of disposal, and recycle where there is no option to prevent or reuse waste. • To deliver collaborative, community-focused services which provide value for money and maximise social value.

Strategy Waste Management Alternatives

Three strategy alternatives have been produced as mechanisms to deliver the strategy aims, objectives and priorities and can be viewed below:

Alternative/option	Description/ Comments
• High Reuse, repair and waste prevention	Focus on waste awareness / education / repair & reuse and waste prevention initiatives.
• High recycling & reduced frequency of residual waste collection.	A focus on increasing recycling rates via waste services provision, education and awareness.
• Low impact residual waste treatment	A focus on how residual waste is disposed of with minimal environmental impact i.e. if promoting EfW, best practice approaches should be used in line with emissions control procedures i.e. exploring the use of carbon capture and storage.

Assessment of Alternatives

The various strategic alternatives have been assessed against the SEA Objectives and analysed according to an impact/effect scale. The nature of impacts will vary between the alternatives being considered and not all measures will be relevant in each case. Impacts on the environment can vary from those that have a direct impact to those exhibiting indirect, cumulative, or one-off, temporary, permanent, and short/medium/long term impacts and these are summarised in accompanying assessments within the report (See Appendix H).

SEA Conclusions and Mitigations

The following points are the key conclusions and mitigations arising from this SEA of the JWS. The strategy seeks to improve on the current environmental baseline through enhanced resource management, focusing on the movement of waste management practices in north London up the waste hierarchy in line with good practice.

The Strategic Environmental Assessment (as documented in this Environmental Report) identifies a number of areas to be considered in the JWS and its implementation. These are described as 'mitigations' as they aim to reduce or avoid potential negative impacts of the JWS and improve on any potential positive impacts. The outputs of the JWS have been aligned into the following themes (lowering emissions, good practice initiatives, behaviour change via education & awareness, lobbying government/influence, outreach and technology enhancement) relating to the three proposed alternatives for the strategy. Specific points arising from the assessment are:

Lowering emissions

High repair, reuse and waste prevention

- Waste prevention and reuse should have the effect of lowering vehicle emissions (to a relatively small degree) as collection vehicles will take longer to fill and therefore can undertake more efficient rounds.
- It should however be recommended that the constituent boroughs / NLWA should use renewable energy / fuels for any inhouse reuse / repair initiatives and could also liaise with contractors to adopt the same practices.
- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment.
- The carbon impact of Strategy actions should be measured and considered holistically to ensure that the service contributes effectively towards net zero carbon targets and climate emergencies of the NLWA and constituent Boroughs.
- To facilitate an active waste prevention, repair, and reuse community in north London (for lowering emissions).
- There are a range of good practice initiatives that can be used to prevent waste and reuse and repair good / items. The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change. Specific examples include reuse drop off points and shops at RRCs, working with third sector on reuse of bulky waste, refill, reuse, zero waste shopping.
- Signposting of organisations and individuals to websites/ directories of those that undertake repair/reuse/refill and zero waste initiatives in their locality.

High recycling

- It is important to consider the markets for recyclate and compost collected. For example, sending compost to agriculture has a net carbon emission (of around 86kgCO_2 per tonne), whereas sending the same material to horticulture would be envisaged to save (avoid) 15kgCO_2/tonne)[5].
- Collection impacts on air quality can be mitigated through low emission fuels. Furthermore, an efficient balance of collection frequencies and good operational logistics (e.g. route optimisation) will also lower vehicle emissions.
- Utilising renewable electricity at materials recycling facilities, maximising opportunities for renewable energy generation (e.g. PV arrays on MRF roof) and electric / low emission fuelled handling equipment / mobile plant will all lower emissions from recycling infrastructure operations.

[5] Carbon Waste & Resources Metric (WARM), WRAP 2021

- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment

Low impact residual waste treatment

- There are several ways of reducing the carbon emissions from the Energy from Waste process: firstly, improving electrical or heat recovery from the facility; secondly removing fossil carbon derived products (e.g. plastics) from the feedstock; thirdly using non fossil fuels to start up fuel for the EfW plant; fourthly recycling an element of residual waste either pre or post combustion; fifthly, maximising opportunities for renewable energy generation (e.g. PV arrays on EfW roof), and; lastly, capturing carbon (otherwise emitted from the stack) for long term storage or utilisation (CCUS). NLWA should explore the viability of each of these as regards the new Eco Park facility.
- Explore the use of low emission vehicles for transfer and transport of residual waste.
- Seek best practice in emissions control from the EfW.
- The new EfW facility has modern flue gas treatment systems and would be envisaged to improve the air quality relative to the existing plant. Conversely it has a larger maximum throughput than the current plant and therefore emissions need to be well managed to ensure a lower impact overall.
- NLWA report that a lower (than maximum) tonnage can be processed in the new plant and therefore any reduction in overall residual waste (e.g. through reuse and recycling) would have beneficial environmental impacts.

Maximising opportunities for positive waste management

High repair, reuse & waste prevention

- The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change. Specific examples include reuse drop off points and shops at RRCs, working with third sector on reuse of bulky waste, refill, reuse, zero waste shopping.
- Signposting of organisations and individuals to websites/ directories of those that undertake repair/reuse/refill and zero waste initiatives in their locality.
- Deliver / continue to deliver behaviour change campaigns on food waste prevention.
- The constituent boroughs / NLWA to lead by example through adopting reuse practices, waste prevention initiatives and green / sustainable procurement practices to support waste prevention, reuse and repair.

High recycling

- Offering a full suite of recyclable materials consistent with Simpler Recycling to all viable households and where appropriate businesses.

- Adopt collection systems that are accessible and ergonomic. Some individuals may struggle to lift a box but may be able to move a wheeled bin for example.
- Maintain and / or implement clear, effective and efficient collection methods to enhance levels of recycling.
- Consider sustainable (environmentally positive) outlets for digestate / compost from the treatment of organics from north London.

Low impact residual waste

- To explore the viability of greater materials recovery from residual waste.

Good practice initiatives

High repair, reuse & waste prevention

- Implement both good practice waste prevention initiatives opportunities and deliver effective signposting (digital & non digital) to zero waste shops, repair and reuse initiatives.
- The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change. Specific examples include reuse drop off points and shops at RRCs, working with third sector on reuse of bulky waste, refill, reuse, zero waste shopping.

High recycling

- Deliver good practice approaches to recycling at Reuse & Recycling Centres (RRCs) and from kerbside / communal collections.
- Adopt collection systems that are accessible and ergonomic. Some individuals may struggle to lift a box but may be able to move a wheeled bin for example.
- Adopt good practice in recycling traceability and seek markets within the UK.

Low impact residual waste treatment

- Adopt best practice with regards to waste water management in the EfW facility[6].
- Seek best practice in emissions control from the EfW[7].
- Lobby government to facilitate carbon, capture and storage infrastructure.
- Lobby government to facilitate carbon, capture and storage infrastructure.
- Lobby government to support District Heating and related combined heat and power networks to maximise the usable output from the EfW facility.

[6] Best Available Techniques (BAT) Reference Document for Waste Incineration, JRC, 2019
[7] Best Available Techniques (BAT) Reference Document for Waste Incineration, JRC, 2019

Behaviour change via education & awareness

High repair, reuse & waste prevention

- Raise awareness to facilitate behaviour change.
- Deliver / continue to deliver behaviour change campaigns on food waste prevention.
- The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change.
- Signposting of organisations and individuals to websites / directories of those that undertake repair/reuse/refill and zero waste initiatives in their locality.
- To deliver campaigns and communications activity that will engender strong and sustained participation in waste minimisation, reuse or recycling systems.
- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment.

High recycling

- Improved recycling performance and associated benefits can be delivered through communications to tackle contamination in recycling.
- Undertake education and raising awareness to increase materials capture (correct recycling) and participation in services.
- To deliver campaigns and communications activity that will engender strong and sustained participation in waste minimisation, reuse or recycling systems.
- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment.
- There is the potential to offer compost back to households for domestic horticulture and raise awareness of the benefits of the garden waste service.
- Design systems that support behaviour change, are clear and easy to use.

Lobbying government/ Influence

High repair, reuse and waste prevention

- Lobby government to take account of the environmental benefits of the waste hierarchy, repairability, & develop EPR measures for waste at producer level to ensure the polluter pays principle is followed.
- The constituent boroughs / NLWA to lead by example through adopting reuse practices, waste prevention initiatives and green / sustainable procurement practices to support waste prevention, reuse and repair.

High recycling

- Lobby government to take account of the environmental benefits of the waste hierarchy, repairability, & develop EPR measures for waste at producer level to ensure the polluter pays principle is followed.
- Lobby government to develop more legislation to ensure the greater use of secondary materials within products and packaging (e.g. plastic packaging tax)

Low impact residual waste treatment

- Lobby government to facilitate carbon, capture and storage infrastructure.
- Lobby government to support District Heating and related combined heat and power networks to maximise the usable output from the EfW facility.

Outreach

High repair, reuse and waste prevention

- To facilitate an active waste prevention, repair, and reuse community in north London.
- The constituent boroughs / NLWA to lead by example through adopting reuse practices, waste prevention initiatives and green / sustainable procurement practices to support waste prevention, reuse and repair.
- Supporting and signposting organisations that provide volunteer / community engagement opportunities and sustainable reuse / repair activities. Supporting the community (in liaison with social services colleagues).
- Using community groups / outreach to raise awareness of reuse / repair initiatives.
- Ensure social value is incorporated in arrangements with contractors and the third sector for reuse and repair services.
- The constituent boroughs / NLWA to use its influence, buildings, funding and powers to help third sector and other organisations in the development of the circular economy.
- The NLWA and constituent Boroughs can support upskilling for aspects like repair and refurbishment activities to support a circular economy.

High recycling

- Using community groups / outreach to raise awareness of recycling initiatives.
- The constituent boroughs / NLWA to use its influence, funding and powers to help third sector and other organisations in the development of the circular economy.
- Adopt collection systems that are accessible and ergonomic. Some individuals may struggle to lift a box but may be able to move a wheeled bin for example.

Technology Enhancement

High repair, reuse & waste prevention

- It should however be recommended that the constituent boroughs / NLWA should use renewable energy / fuels for any inhouse reuse / repair initiatives and could also liaise with contractors to adopt the same practices.

High recycling

- Continuing to explore technology and options for separation of recycling from residual waste.
- Use an appropriate recycling collection system recognising the changing climate (climate resilience, carbon emissions).
- Any new infrastructure associated with recycling should accommodate, and where practicable exceed, the requirements of Biodiversity Net Gain.

Low impact residual waste treatment

- Facility efficiency improvements and explore installation of CCUS.
- Greater amounts of low carbon heat and / or electricity could be delivered via the following:
    - expanding district heating
    - reducing the amount of plastic in the feedstock (will lower the carbon impact)
- To explore the viability of greater materials recovery from residual waste.
- The new EfW facility has modern flue gas treatment systems and would be envisaged to improve the air quality relative to the existing plant. Conversely it has a larger maximum throughput than the current plant and therefore emissions need to be well managed to ensure a lower impact overall.
- NLWA report that a lower (than maximum) tonnage can be processed in the new plant and therefore any reduction in overall residual waste (e.g. through reuse and recycling) would have beneficial environmental impacts.

These elements should be applied in the NLJWS during implementation in order to reduce negative environmental impacts and enhance positive impacts, as identified by the Strategic Environmental Assessment.

Monitoring

A programme of monitoring is proposed in order for unforeseen, significant effects of the strategy to be identified quickly and remedial action to be taken. Monitoring will also enable the NLWA to measure performance of the strategy against key environmental targets. A set of proposed monitoring indicators can be found in Section 9 of the report.

1 Introduction

The North London Waste Authority (NLWA) have prepared a Joint Waste Strategy (JWS) in partnership with the seven north London boroughs of Barnet, Camden, Enfield, Hackney, Haringey and Waltham Forest. The JWS outlines local authority aspirations for waste management in line with the waste hierarchy, focusing on waste reduction/prevention; reuse; recycling; recovery, disposal and the delivery of waste management services. The strategy runs from 2025 to 2040. The JWS is being developed due to the expiration of the previous strategy in 2020. In addition, it is a requirement for two-tier authority areas to have a joint strategy for the management of waste, in line with the Waste and Emissions Act 2003.

1.1 Strategy Background

The key aims of the strategy are firstly to reduce waste in north London and secondly, to address the climate emergency. Together, the NLWA and the seven north London boroughs provide waste and recycling services for around two million people living in north London. The seven local authorities are responsible for collecting waste and recycling in the boroughs, whilst the NLWA is responsible for managing the recyclables collected, waste transportation and treatment and disposal on behalf of the north London boroughs. The JWS, sets out the vision and direction for achieving these responsibilities.

1.2 Purpose and Context of the SEA

All central and local government plans and strategies that may have a significant impact on the environment can be assessed by addressing how they contribute to Sustainable Development, which is one of the key directives of the SEA. In 2005, the UK government published a Sustainable Development Strategy that stated:

'The goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.'

An assessment of how the strategy meets the aims of sustainable development can be delivered through an approach known as Strategic Environmental Assessment (SEA). Strategic Environmental Assessment is the term used to describe the application of environmental assessment to plans and programmes, in accordance with the "Environmental Assessment of Plans and Programmes Regulations" (SI 2004/1633, known as the SEA Regulations 2004'[8]). These Regulations introduced a requirement for an SEA to be produced for a number of statutory plans and programmes, including waste management. The overarching objective of the SEA Directive is:

"To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans…with a view to promoting sustainable development, by ensuring that….an environmental assessment is carried out for plans… which are likely to have significant effects on the environment." (Article 1). The main requirements introduced by the SEA regulations are that:

[8] https://www.legislation.gov.uk/uksi/2004/1633/contents/made

- Consultation with statutory bodies is undertaken on the scope of the SEA;
- The findings of the SEA are published in an Environmental Report, that sets out the significant environmental effects of the plan
- Consultation is undertaken on the plan/programme/strategy and the Environmental Report;
- Results of consultations are taken into account in decision-making relating to the adoption of the plan/ programme/ strategy; and
- Information on how the results of the SEA have been taken into account is made available to the public

The evaluation of the broader policy and strategy of regional, county and district level plans is a systematic process that identifies and predicts the potential significant environmental effects of plans/programmes and strategies, informing the decision-making process by testing different alternatives against the proposed environmental objectives. The first stage of the SEA process is to scope out the key 'sustainability' issues relevant to a strategy and particular geographical area in which the strategy is due to be implemented. This was contained in the scoping report of the SEA. The identified sustainability aspects are subject to consultation from statutory consultees and other parties where appropriate.

This Environmental Report has undergone a consultation with statutory bodies / interested parties, and includes the following material:

Table 1: Structure and content of the Environmental Report

Section	Description
Section1: Introduction	An introduction to the NLJWS and the SEA process
Section 2: Methodology	A description of the SEA approach, process, consultation, and difficulties encountered.
Section 3: Baseline position	The current situation and context (local and national policies) in north London for climate change, waste management, population & households, human health, economics, water, land and soil, air quality transport, biodiversity& natural resources, buildings, heritage and landscape.
Section 4: Key sustainability issues and relationships	The key environmental and sustainability issues identified following a review of the local environmental baseline and local and national plans and policies.
Section 5: SEA Objectives and Criteria	The proposed SEA Objectives and Criteria for the NLJWS
Section 6: Strategy Aims and Objectives	The proposed strategy aims and objectives for the NLJWS
Section 7: Strategy Waste Management alternatives	An overview of strategic alternatives, relevant environmental effects and proposed mitigation measures.
Section 8 SEA Conclusions and Mitigation	An overview of the three strategy alternatives and application of mitigations that will reduce any perceived environmental impacts
Section 9 Monitoring implementation	An assessment of how progress will be monitored towards the key environmental outputs
Appendices	Appendix A – Borough Climate Change Declarations

	Appendix B – Supplementary waste baseline data Appendix C – Air quality data Appendix D – SEA Objectives with proposed measurement indicator, SEA regulations, themes and rationale for inclusion Appendix E – Summary of national plans Appendix F – Summary of local plans Appendix G - Summary of priority areas for the North London Waste Prevention Plan Appendix H - Impact type & mitigations for alternative strategies Appendix I - Core mitigation themes, alternatives & aligning SEA objectives Appendix J – Responses from statutory consultees

1.3 Objectives of the strategy

There are eight core objectives set out in the JWS that all align with high waste prevention/ reuse & repair, high recycling and low environmental impact and disposal themes. The objectives can be viewed below.

1. To work together with our boroughs, residents and the north London community to minimise the amount of residual wastes arising;
2. To work together with residents and the north London community to increase reuse and recycling rates;
3. To diverge resources and waste from landfill and support more sustainable initiatives for disposing of waste;
4. To support the NLHPP project and development of the EcoPark, and work with the local community to maximise the benefits of the new facility and ensure it is the greenest hub of its kind;
5. To work together with our boroughs, residents and the community to ensure waste management policies contribute to meeting the challenges of the climate emergency. This will include improving air quality and achieving net-zero targets;
6. To explore innovative ways of managing municipal wastes in the most environmentally and economically efficient ways possible, which will help to achieve wider environmental goals;
7. To ensure that our services and information are fully accessible to all members of the community;
8. To maximise all opportunities for local regeneration and increased social value benefits from waste and resource management, including employment, skills and wellbeing.

2 Methodology

2.1 The SEA Process & approach adopted

This section provides an overview of the SEA process and the steps undertaken to complete the SEA for the NLJWS.

SEA is an iterative process of gathering data and evidence in order to assess environmental impacts, develop mitigation measures and make recommendations to enhance plans or programmes in view of the outlined predicted environmental effects.

The approach adopted for the SEA of the NLJWS follows that set out in *A Practical Guide to the Strategic Environmental Assessment Directive*[9]. It involves the development of an assessment framework covering a series of SEA objectives, SEA Criteria and key indicators. This framework is developed from an understanding of key environmental issues and opportunities. These factors have been identified via a review of existing local environmental baseline information, plans, programmes, policies, environmental protection and waste management objectives relevant to the plan area. The assessment uses this available information to evaluate how the proposed strategy aligns with each of the SEA objectives. According to the SEA directive guidance, the areas of emphasis for an SEA should be on:

- Collecting and presenting baseline information
- Predicting the significant environmental effects of the strategy and addressing them
- Identifying strategic alternatives and their effects
- Consulting public bodies and authorities with environmental responsibility
- Monitoring of the actual effects of the plan during its implementation

The key SEA process stages outlined in Figure 1 illustrates the steps taken in developing and refining strategic alternatives, assessing environmental effects and the preparation of the Environmental Report (this report).

[9]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7657/practicalguidesea.pdf

SEA Screening report & consultation	**July - October 2023** SEA screening was carried out to inform whether the NLJWS required a full SEA. Screening is a legal requirement for responsible authorities to understand whether a plan/strategy is likely to have significant environmental impacts. Consultation for the screening report with relevant consultation bodies took place in October 2023.
Scoping Report	**January – March 2024** The Scoping Report was issued to the statutory consultees in March 2024 Including details of the environmental baseline, proposed strategy objectives, SEA sustainability objectives, strategy options and relevant plans and programmes.
Scoping Consultation Responses	**April 2024** Scoping opinions were received from Historic England, and the Environment Agency. Responses were considered and incorporated as appropriate into the Environmental Report. Further details can be found in Appendix J.
Draft Environmental Report	**May – June 2024** This draft Environmental Report was issued in July 2024. The report was informed by the statutory consultation process and includes independent testing and impact assessment of the strategy objectives, approach, and potential alternatives, against the SEA Objectives. The report also considers mitigation of any potential adverse effects and identifies monitoring criteria to observe any environmental impacts.
Environmental Report Consultation	**November 2024 – January 2025** A 12-week public consultation period for members of the public, and stakeholders, to review and comment on the proposed JWS and SEA draft Environmental Report.
Environmental Report	**December 2024** Following feedback from the public and consultees the Environmental Report will be finalised and published with the final NLJWS in February 2025.

Figure 1. SEA stages for the NLJWS

2.2 Options Appraisal

A municipal waste management strategy requires an options appraisal to gain an understanding of alternative collection options and prioritise between them, this occurs for the purposes of service delivery, procurement and planning. The Kerbside Analysis Tool (KAT) was used to provide a comparative assessment of cost and operational requirements for the baseline and three agreed collection scenarios. In addition, the carbon performance of each collection scenario was also calculated using the Emissions Performance Standard (EPS) tool.[10] Impacts from recycling, transport, treatment and disposal of the waste were calculated. The individual arrangements for each of the boroughs were taken into account (destinations, tonnages and materials collected). In doing so, the tonnage and transport information entered within the tool was appropriate for each option and borough. The tool was utilised to outline which options had the lowest carbon output.

2.3 Consultation

To comply with SEA regulations, consultation was carried out during the scoping stage and during the environmental report stage of the process. The consultation process for the scoping exercise provided the statutory consultees (Environment Agency, Natural England, Historic England) with an opportunity to comment on the scope of the Strategic Environmental Assessment for the north London Joint Waste Strategy. The environmental report, which was made available at the same time as the draft NLJWS, the public were also made part of the consultation process. The consultation process is summarised in Table 2.

Table 2 Summary of SEA Consultation

Stage	Consulted/ to be consulted	How were they consulted/ how will they be consulted
Scoping Report	Statutory Agencies[11] , the GLA, NLWA Members and constituent boroughs	All consultees were contacted via email and the GLA and the constituent north London boroughs received presentations 5 week consultation period running from 21st March 2024 – 25th April 2024
Environmental Report	Statutory agencies, GLA, NLWA & Constituent boroughs, general public	12 week public consultation period (November 24 – Jan 25)

The consultation process is designed to provide the public and other consultees with an opportunity to comment on the scope of the Strategic Environmental Assessment for the JWS

[10] The EPS performance methodology calculates the carbon intensity of different waste management methods in kilograms of carbon dioxide emitted per tonne of waste managed. https://www.eunomia.co.uk/reports-tools/eps-ready-reckoner-greenhouse-gas-guidance/

[11] Environment Agency, Natural England, English Heritage

This document forms the Strategic Environmental Assessment Environmental Report, designed for external consultation to statutory bodies, the public / interested parties, and includes the following material:

- Baseline Position (Section3)
- Key Sustainability Issues and Interrelationships (Section 4)
- SEA Objectives and Criteria (Section 5)
- Strategy Aims & Objectives (Section 6)
- Strategy Waste Management Alternatives (Section 7)
- SEA Conclusions and Mitigation (Section 8)
- Monitoring implementation (Section 9)
- Appendix A – Borough Climate Change Declarations
- Appendix B – Supplementary waste baseline data
- Appendix C – Air quality data
- Appendix D – SEA Objectives with proposed measurement indicator, SEA regulations, themes and rationale for inclusion
- Appendix E – Summary of national plans
- Appendix F – Summary of local plans
- Appendix G - Summary of priority areas for the North London Waste Prevention Plan
- Appendix H - Impact type & mitigations for alternative strategies
- Appendix I - Core mitigation themes, alternatives & aligning SEA objectives
- Appendix J – Responses from statutory consultees

2.4 Difficulties Encountered

The SEA guidance also states that difficulties encountered whilst producing the SEA must also be acknowledged. Table 3 summarises the difficulties encountered during the SEA process.

Table 3 Summary of difficulties encountered during the SEA process

Stage	Difficulties
Scoping Report	SEA approach understanding. Some difficulties were encountered with demonstrating an understanding of the SEA process to individuals. This was overcome by delivering a second presentation to NLWA and constituent Borough officers.
Scoping Report	The potential challenge of the pre-election period impacting on consultation activity was mitigated by early discussions of any issues.
Scoping Report	Ensuring a good interface with the GLA in developing the Strategy / SEA documents was maintained through provision of relevant documents in good time to the GLA, including the Scoping Report. A presentation on the Strategy supporting documents (Options Appraisal and Waste Growth Projections) and the SEA was beneficial.
Environmental Report	As a non-site specific Strategy, some of the SEA Objectives have limited relevance (e.g. impact on Geodiversity), however they were retained for completeness, and appropriate comments included.

Any further comments on the scope in general are welcomed.

3 Baseline Position

To ensure that the SEA addresses the potential environmental effects of the JWS, it is important to consider the local environmental situation, or baseline.

An assessment of the baseline position for north London has been carried out as part of the scoping phase of the SEA. This report summarises the baseline position and identifies several key environmental/sustainability issues in the context of the waste management service in north London.

The baseline position has been assessed in terms of the key topic areas set out in the SEA guidance[12] and provides the relevant environmental, social, and economic context for the SEA Scoping Report.

3.1 Climate Change

Understanding greenhouse gas (GHG) emissions, trends, in the UK and north London is a key part of the JWS and is therefore important to this SEA process. The following sub-chapter summarises the key emissions trends in the geographical area.

3.1.1 UK Context

Waste management activities can generate significant quantities of carbon dioxide (CO_2) and methane[13](CH_4), which are both greenhouse gases (GHG). Materials within the household waste stream such as kitchen waste, garden waste and paper contain carbon based organic matter. The treatment and disposal of this type of waste has an impact on the emission of GHG. When biodegradable materials are broken down in the presence of air (aerobic), CO_2 is released. In 2019 concentrations of atmospheric CO_2 reached 410 parts per million (ppm) and CH_4 reached 1866 parts per billion (PPB).[14] Methane is produced when the biodegradable material is broken down in the absence of air (anaerobic). The absence of air at landfill sites causes methane to be generated as waste breaks down. Methane is at least 28[15] times more potent than CO_2 as a greenhouse gas measured by global warming potential over a 100-year timeframe. Releasing 1 Tonne of CH_4 is equivalent to releasing at least 28 - 30 Tonnes of CO_2[16]. At a global level, CH_4 concentrations stabilised from 2000 - 2007, however since 2007 concentrations have progressively increased.[17] Moving away from sending waste to landfill via recycling and using a waste avoidance

[12] Office of the Deputy Prime Minister, 2005, 'A Practical Guide to the Strategic Environmental Assessment Directive (Practical guidance on applying European Directive 2001/42/EC "on the assessment of the effects of certain plans and progress on the environment")'https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7657/practicalguidesea.pdf

[13] Law, Y., Ye, L., & Yuan, Z., 2012, Waste incineration processes can also generate Nitrous Oxide (N_20), also a greenhouse gas.

[14] IPCC, 2023: Sections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf

[15] Jones, M. W., Peters, G. P., Gasser, T., Andrew, R. M., Schwingshackl, C., Gütschow, J., & Le Quéré, C. (2023). National contributions to climate change due to historical emissions of carbon dioxide, methane, and nitrous oxide since 1850. *Scientific Data*, *10*(1), 155. https://www.nature.com/articles/s41597-023-02041-1

[16] IEA, 2021, Methane Tracker 2023 – The case for methane policy and regulation (online) https://www.iea.org/reports/global-methane-tracker-2023

[17] Skeie, R. B., Hodnebrog, Ø., & Myhre, G. (2023). Trends in atmospheric methane concentrations since 1990 were driven and modified by anthropogenic emissions. *Communications Earth & Environment*, *4*(1), 317. https://www.nature.com/articles/s43247-023-00969-1

approach (circular economy) has potential to make a significant impact in the reduction of GHG emissions. It is worth noting, however, that only 3% of waste from north London currently goes to landfill.

Our consumption and management of plastics also has a significant impact on GHG emissions. Plastic is a fossil-derived product, therefore there is a 'cradle to grave' burden associated with plastic meaning that there is an environmental impact for each stage lifecycle. This includes from the initial extraction of oil to manufacture products through to the final disposal method.[18] In the UK it is estimated that around 5 million tonnes of plastic are used every year and around half of this (approximately 2.5 million tonnes) is used in packaging[19]. Conservation of resources through waste minimisation, reuse and recycling techniques are key to reducing emissions associated with plastics. For example, in terms of carbon benefit, removing plastic films from a residual waste stream for recycling can have a substantial carbon benefit.

In 1990 waste management accounted for 8.3% of UK GHG emissions, by 2021 this figure had reduced to 4%[20]. In 2020, 1.6% of waste management greenhouse gas emissions were attributable to incineration; 15.3% to wastewater handling; 10% to organic waste treatment, 3.7% to mechanical biological treatment; and 75% to landfill. The most prominent GHG emitted from the waste management sector is CH_4 accounting for 89% of emissions. Most of these emissions are generated from landfill sites.[21]

In 2021/2022, 8.1% of all Local Authority Collected Waste (LACW) in England was sent to landfill, an increase of 4.6% based on the figures for 2020/21.[22] This increase is attributed to further waste diversion to landfill due to a temporarily lower capacity in the EfW sector. Since 1990 total greenhouse gas emissions in the waste sector have decreased significantly by 72%[23]. This decrease is due to several factors primarily a reduction in landfill and also improved standards for landfilling such as methane collection systems. Waste has also been diverted away from landfill via increased recycling and in addition EfW schemes have also been implemented. The actions of the sector have resulted in a total decrease of 57% in methane emissions since 1990. It is thought that CH_4 emissions from waste management account for 37% of all UK CH_4 emissions, however, contributes 5% to all UK GHG emissions[24].

[18] Bernardo, C.A., Simões, C.L. and Pinto, L.M.C., 2016. Environmental and economic life cycle analysis of plastic waste management options. A review. In *AIP conference proceedings*. https://www.semanticscholar.org/paper/Environmental-and-economic-life-cycle-analysis-of-A-Bernardo-Sim%C3%B5es/7a576f918ac9054810596c7ce7671a6d42110b01.
[19] House of commons Library, research briefing, 2022 Plastic waste.
https://researchbriefings.files.parliament.uk/documents/CBP-8515/CBP-8515.pdf
[20] Department for Business, Energy & Industrial Strategy (BEIS), 2019, www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957687/2019_Final_emissions_statistics_one_page_summary.pdf
[21] Department for Business, Energy & industrial Strategy, 2020, UK Greenhouse Gas emissions, Final Figures.
https://assets.publishing.service.gov.uk/media/61f7fb418fa8f5389450212e/2020-final-greenhouse-gas-emissions-statistical-release.pdf
[22] Department for Environment, Food and Rural Affairs, 2023, Local Authority collected waste management – Annual results 20212/22 https://www.gov.uk/government/statistics/local-authority-collected-waste-management-annual-results-202122/local-authority-collected-waste-management-annual-results-202122
[23]Department for Business, Energy and Industrial Strategy Sector, Gas, and Uncertainty Summary Factsheets - Greenhouse Gas Emissions. https://naei.beis.gov.uk/resources/Sector_Summary_Factsheet.html
[24] Department for Business, Energy, & Industrial Strategy, National Statistics, 2018 UK Greenhouse Gas Emissions, 2020: Accessed February 2024

In 2022 transport accounted for 34% of total UK GHG emissions.[25] Although there are climate change impacts associated with transport of waste, these are relatively small in comparison to the impacts from the landfilling of waste described above. Reducing the amount of biodegradable waste landfilled and increasing recycling and composting activity are two prime methods of reducing GHG emissions. Others include carbon capture and storage from point sources (e.g. waste incineration[26]) and reducing the amount of plastics waste sent to combustion processes and fostering greater re-use / repair of goods in society.

3.1.2 North London

The Department for Energy Security and Net Zero (DESNZ) publish local authority estimates of CO_2 emissions. The data is sourced from the UK National Atmospheric Emissions Inventory and DESNZ's National Statistics of energy consumption for local authority areas. Total CO_2 emissions data for the seven boroughs of north London are provided in Table 4 along with CO_2 per capita emissions. Information for England and the totals for London, as a whole, has also been provided for context.

[25] Department for Energy, Security and Net Zero, 2022, 2022 UK greenhouse gas emissions: provisional figures - statistical release.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147372/2022_Provisional_emissions_statistics_report.pdf

[26] This is still an emerging technology for waste treatment processes, and its viability is subject to questions of economics and finding a suitable reservoir / storage environment, proximal to any facility.

Table 4: Total CO_2 emissions estimates (ktonnes) for England, London and the seven borough councils of north London, and total CO_2 tonnes per capita for the seven borough councils of North London for 2006-2021.

Borough	Total CO_2 emissions (ktonnes)															
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
England	421693	410093	370655	383650	351535	369302	360613	328655	328655	316902	299270	288730	283713	271925	242943	260428
London	48880	47389	46971	42833	45325	40863	43522	41963	36678	34581	32473	30460	29739	28082	25072	27221
Barnet	1813	1749	1752	1613	1744	1573	1652	1622	1453	1401	1343	1285	1265	1212	1112	1158
Camden	1867	1809	1762	1601	1683	1536	1634	1577	1346	1241	1163	1063	1036	957	848	978
Enfield	1768	1758	1582	1444	1532	1380	1475	1454	1309	1279	1224	1177	1160	1113	1003	1054
Hackney	939	913	905	828	884	820	908	883	768	733	680	639	620	588	532	575
Haringey	1073	1014	1034	942	985	888	935	907	798	764	731	682	672	639	590	625
Islington	1250	1214	1231	1117	1180	1042	1137	1067	933	856	793	724	696	645	560	620
Waltham Forest	1024	975	992	894	970	868	913	896	794	755	723	681	673	634	580	610
	Per capita emissions (tonnes)															
England	8.5	8.2	7.9	7.1	7.3	6.6	6.9	6.7	6.1	5.8	5.4	5.2	5.1	4.8	4.3	4.6
London	6.4	6.2	6.0	5.4	5.6	5.0	5.2	5.0	4.4	4.1	3.8	3.5	3.4	3.2	2.8	3.1
Barnet	5.5	5.2	5.2	4.7	5.0	4.4	4.5	4.4	3.9	3.7	3.5	3.4	3.3	3.1	2.8	3.0
Camden	8.8	8.6	8.4	7.5	7.8	7.0	7.6	7.4	6.4	5.9	5.3	4.9	4.8	4.5	4.0	4.6
Enfield	6.2	6.0	5.3	4.8	5.0	4.4	4.6	4.5	4.0	3.9	3.7	3.6	2.4	3.4	3.0	3.2
Hackney	4.3	4.1	3.9	3.5	3.7	3.3	3.6	3.5	3.1	2.9	2.6	2.5	2.4	2.2	2.0	2.2
Haringey	4.6	4.3	4.2	3.8	3.9	3.5	3.5	3.4	3.0	2.8	2.6	2.5	2.5	2.4	2.2	2.4
Islington	6.7	6.4	6.4	5.7	5.9	5.1	5.4	5.1	4.5	4.1	3.7	3.3	3.2	3.0	2.6	2.9
Waltham forest	4.4	4.1	4.1	3.6	3.8	3.3	3.5	3.4	3.0	2.8	2.6	2.5	2.4	2.3	2.1	2.2
Source: Local Authority CO_2 emissions estimates 2005-2021 (kt CO2) – Full dataset, Gov.uk[27], Figures for Total CO_2 emissions are rounded																

[27] DESNZ: UK local authority and regional carbon dioxide emissions national statistics: 2005 and 2021 https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2021 DESNZ previously reported as BEIS (UK Department for Business, Energy and Industrial Strategy)

Note that the emissions data do not include aviation, shipping, and military transport emissions as there is no obvious basis for allocating these emissions to local areas.

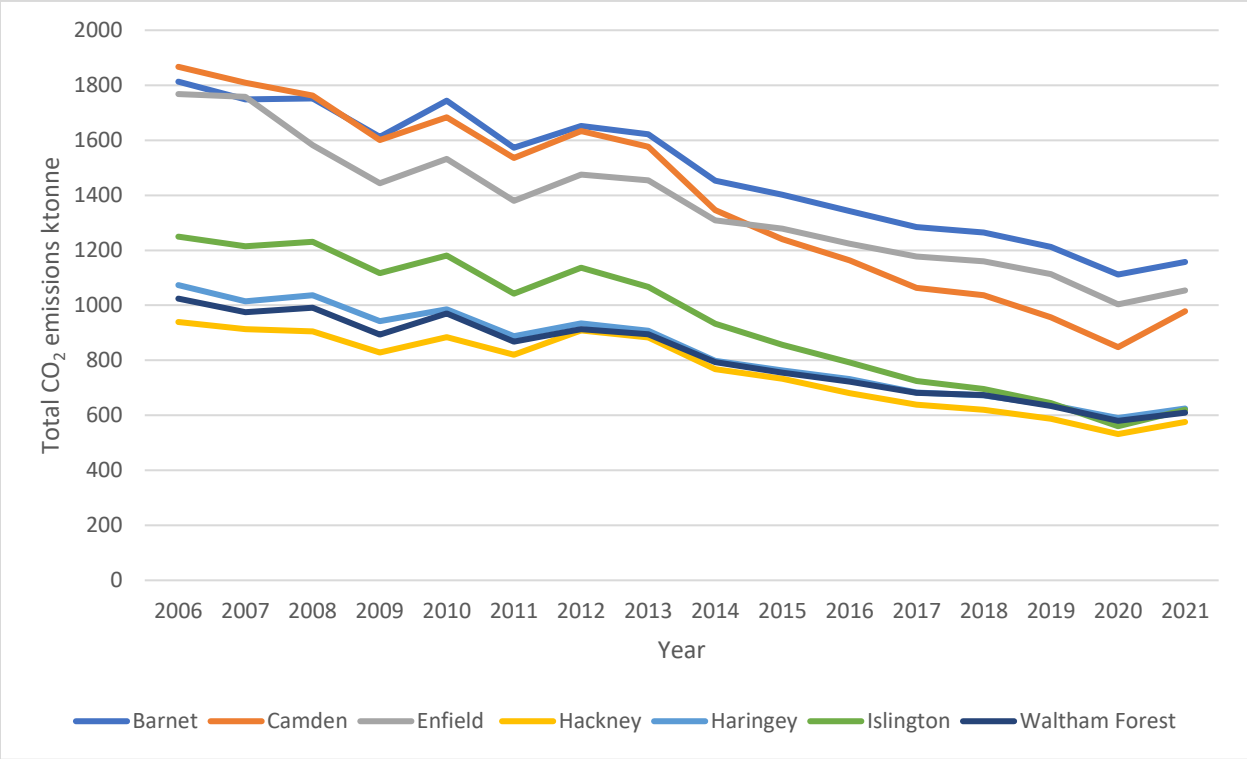

Figure 2: Total CO_2 emissions (ktonne) for each of the seven borough /borough councils in North London between 2006 and 2021

The main drivers for the reduction in UK emissions overall is a change in the electricity energy mix, with an increase in the proportion of renewables, a decrease in the use of coal, a reduction in industrial activities and increased transport efficiency. Estimates show there has been a similar steady, and ongoing reduction in the total emissions from north London since 2006. A slight increase was noted in 2021 largely due to the covid pandemic in 2020 with industrial activity recommencing in 2021 see Figure .

Alongside the full dataset, DESNZ also published a subset which represents CO_2 emissions within the scope of influence of local authorities. The full dataset includes all the emissions that occur within the boundaries of each local authority; however, the dataset of emissions within the scope of local authorities excludes emissions that local authorities do not have direct influence over. The emissions that are removed from the full dataset are:

- Motorways – all emissions from the "Transport (motorways)" sector;
- "Large industrial installations" sector, with the exception of energy suppliers (e.g. power stations), whose emissions are indirectly included via the end-user estimates for electricity use;
- Diesel railways – all emissions from the "Diesel Railways" sector;
- Land Use, Land Use Change, and Forestry – all emissions belonging to the "LULUCF Net Emissions" sector;
- Livestock and soils

Local Authority CO_2 emissions estimates within the scope of influence of Local Authorities from 2006-2021 are presented Table 5 below.

Table 5: Total CO_2 emissions estimates (ktonnes) within the scope of Local Authorities for England, London and the seven boroughs/ borough councils of north London, and total CO_2 tonnes per capita for the seven borough councils of north London for 2006-2019

Borough	Total CO_2 emissions (ktonnes)															
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
England	363089	353357	346574	315856	332395	301774	316982	308020	277667	266442	253388	243146	239069	228061	204999	221022
London	48068	46593	46168	42045	44541	40115	42761	41183	35900	33787	31669	29658	28975	27299	24424	26534
Barnet	1743	1684	1681	1544	1675	1524	1591	1560	1390	1337	1277	1215	1196	1141	1060	1102
Camden	1850	1972	1747	1586	1667	1521	1618	1560	1331	1226	1149	1049	1022	943	837	967
Enfield	1631	1620	1444	1304	1387	1250	1328	1313	1169	1115	1064	1015	996	960	975	914
Hackney	937	911	903	826	882	818	906	881	766	731	678	637	618	586	530	574
Haringey	1068	1009	1031	937	979	883	929	901	792	758	726	677	667	633	586	621
Islington	1245	1210	1226	1112	1176	1038	1132	1062	929	852	789	720	692	641	557	617
Waltham Forest	1022	972	989	891	968	865	911	889	791	753	720	679	672	632	578	608
	Per capita emissions (tonnes)															
England	7.1	6.9	6.7	6.1	6.3	5.7	5.9	5.7	5.1	4.9	4.6	4.4	4.3	4.0	3.6	3.9
London	6.3	6.1	5.9	5,3	5.5	4.9	5.1	4.9	4.3	4.0	3.7	3.4	3.3	3.1	2.8	3.0
Barnet	5.3	5.0	5.0	4.5	4.8	4.2	4.4	4.2	3.7	3.6	3.3	3.2	3.1	3.0	2.7	2.8
Camden	8.8	8.5	8.3	7.4	7.8	6.9	7.5	7.3	6.3	5.8	5.3	4.8	4.8	4.4	3.9	4.6
Enfield	5.7	5.6	4.9	4.3	4.5	4.0	4.2	4.1	3.6	3.4	3.2	3.1	3.0	2.9	2.6	2.8
Hackney	4.3	4.1	3.9	3.5	3.6	3.3	3.6	3.5	3.1	2.9	2.6	2.4	2.4	2.2	2.0	2.2.
Haringey	4.6	4.3	4.2	3.7	3.9	3.5	3.5	3.4	2.9	2.8	2.6	2.5	2.5	2.4	2.2	2.3
Islington	6.7	6.4	6.4	5.7	5.9	5.0	5.4	5.1	4.4	4.1	3.6	3.3	3.2	3.0	2.6	2.8
Waltham Forest	4.4	4.1	4.1	3.6	3.8	3.3	3.5	3.4	3.0	2.8	2.6	2.5	2.4	2.3	2.1	2.2

Source: Local Authority CO_2 emissions estimates 2005-2021 (kt CO2) – Full dataset, Gov.uk[27]
Figures for Total CO_2 emissions are rounded

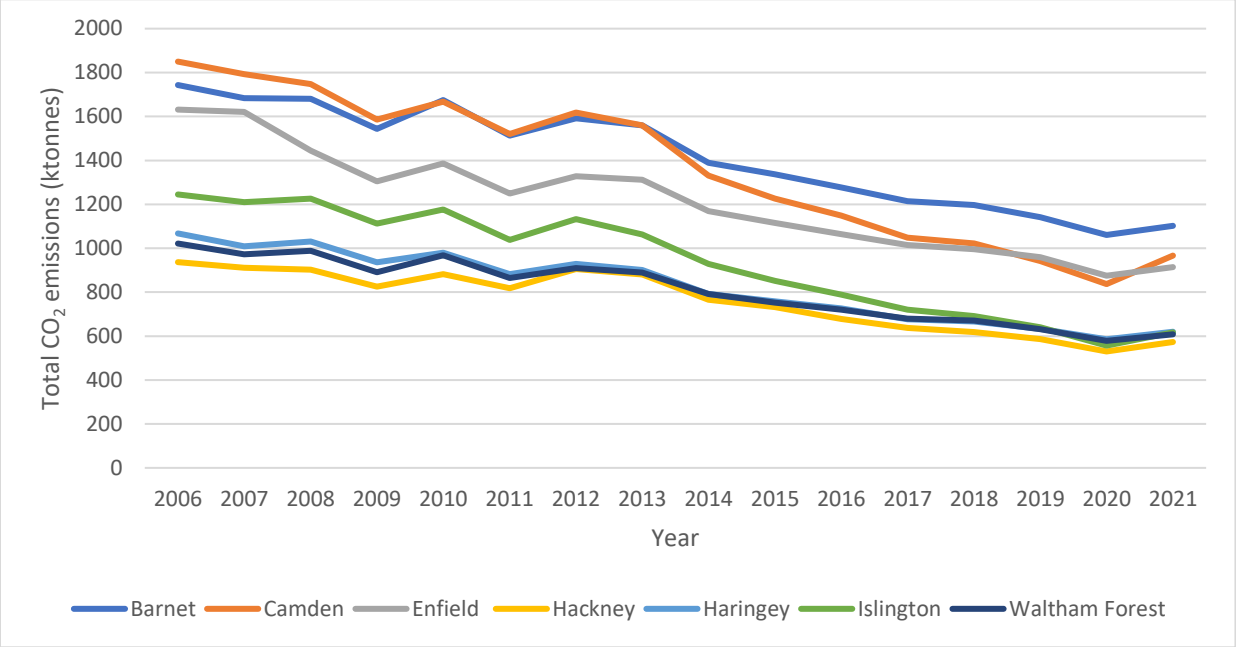

Figure 3: Total CO_2 emissions estimates (ktonne) within the scope of influence of local authorities for England, for each of the seven borough /borough councils in north London between 2006 and 2021.

The total CO_2 emissions within the scope of influence of north London local authorities has decreased steadily between 2006 and 2020, in line with similar reductions seen for England as outlined in Table . However as outlined above, a slight increase was noted in 2021 due to the recommencement of industrial activities after the pandemic.

In 2019, Camden, Enfield, Hackney, Haringey, Islington, and Waltham Forest boroughs declared a climate emergency, with Barnet Council declaring a climate emergency in 2022. The boroughs have pledged and/or developed the following to support their declarations: Each have either developed, or are in the process of developing, climate change / environment strategies (see Appendix A).

3.2 Waste Management

Understanding the current waste arisings, trends, sources and flows in north London is a key part of the JWS and is therefore important to this SEA process. The following sub-chapter summarises waste arisings, waste and recycling collections, waste management and disposal, recycling and voluntary group activity across the boroughs. Supplementary waste data is provided in Appendix B.

3.2.1 Waste Arisings

A summary of the total LACW arisings for all north London boroughs are shown in Figure and Table . LACW includes household waste and other wastes collected by or on behalf of the waste collections authorities (including commercial (also referred to as trade) waste[28], fly-tipped waste etc.). The graph shows that collected waste in all seven of the boroughs has changed, with the boroughs decreasing in waste arisings apart from Waltham Forest and Islington. There are also notable fluctuations in arisings throughout the period. Most notable fluctuations occurred from 2020/21 to 2021/22, in all boroughs, however less noticeably in Barnet. While other boroughs experienced decreases in arisings, Hackney and Islington saw increases, of 4,304 and 1,230 tonnes respectively. The decrease experienced in 2020/21 was influenced by the impact of the COVID-19 pandemic.

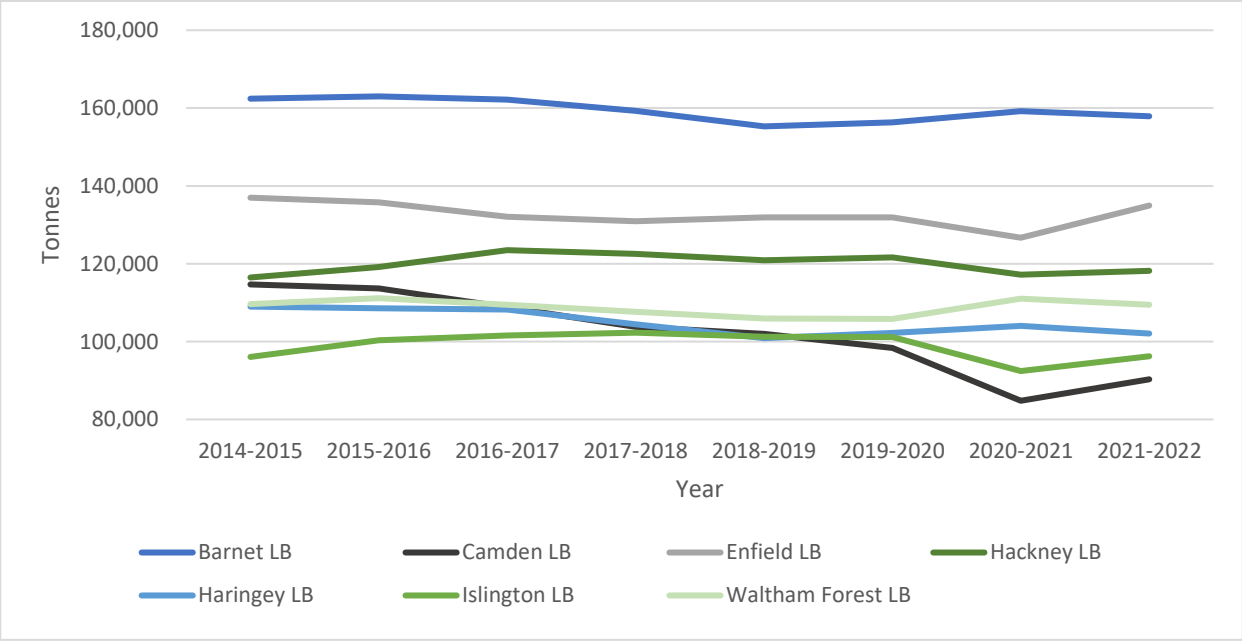

Figure 4: Total Authority collected waste for the seven boroughs within north London, 2014/2015-2019/2020 (tonnes)[29]

[28] For example commercial or industrial wastes collected by or on behalf of the local authority/s.
[29] Source: DEFRA MSW Statistics – LA and Regional Statistics 2021/22

Table 6: Total Local Authority Collected Waste for the seven boroughs within north London, 2014/2015-2019/2020[30] (tonnes).

Borough	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Barnet	162,435	163,007	162,132	159,288	155,299	156,325	159,224	157,888
Camden	114,684	113,687	108,813	103,792	102,007	98,348	84,798	90,315
Enfield	136,975	135,744	132,058	130,917	131,947	131,906	126,689	134,930
Hackney	116,472	119,185	123,489	122,501	120,926	121,657	117,210	118,175
Haringey	108,985	108,595	108,260	104,472	100,887	102,211	104,021	102,037
Islington	96,033	100,314	101,554	102,291	101,252	101,140	92,432	96,207
Waltham Forest	109,616	111,156	109,442	107,662	105,938	105,827	111,007	109,480

When observing general trends within this data, Barnet, Camden, Enfield, Haringey, and Waltham Forest have experienced decreases in collected waste in 2021-22 from 2014-15, however Waltham Forest has experienced a much smaller decrease than the other boroughs at 136 tonnes. On the other hand, Hackney and Islington boroughs have experienced an increase in total collected waste. The total amount of LACW classed as household waste arisings, is illustrated in Table 6.

Table 7: Household collected waste for the seven boroughs within north London, 2014/15-2021/22 (tonnes)[31].

Borough	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2019	2020-2021	2021-2022
Barnet	146,292	147,758	145,574	143,879	140,316	140,904	146,153	144,363
Camden	82,371	79,730	74,602	60,471	56,807	58,919	52,268	63,001
Enfield	123,083	122,027	118,036	117,019	118,449	118,122	103,488	109,510
Hackney	84,286	87,349	88,582	85,902	83,658	85,036	89,907	86,863
Haringey	87,412	86,922	84,990	83,199	81,402	83,064	84,972	83,752
Islington	59,965	61,396	59,117	57,199	55,539	54,786	55,758	58,261
Waltham Forest	99,518	100,477	99,986	98,989	97,284	95,994	101,306	100,835

Table presents the household collected waste for the seven boroughs from 2014 to 2022. For most boroughs the collected waste has decreased, except for Hackney and Waltham Forest. The boroughs of Camden and Enfield experienced the most significant decreases of 19,370 tonnes and 13,573 tonnes respectively within this period.

[30] Source: Defra. Local Authority Collected Waste 2021/22
[31] Source: DEFRA MSW Statistics – LA and Regional Statistics 2021/22

Table 8 Household waste per capita for the seven boroughs of north London 2021/22[32]

Location	Waste arisings per capita (kg)
England Average	417.2
North London Average	325.3
Barnet	370.2
Camden	297.8
Enfield	331.9
Hackney	333.3
Haringey	316.2
Islington	266.9
Waltham Forest	360.9

Table 8 shows the household waste per capita of the north London boroughs against the England average. The north London average is 352.2 kg of waste arisings per capita, which is 64.7 kgs below the England average of 417.2 kgs. As this a significant amount below, this shows how north London has significantly less waste per capita than the National Average.

3.2.2 Residual Waste and Recycling Collections

The seven borough councils within north London are waste collection authorities, responsible for collecting waste from households, while NLWA is the waste disposal authority, responsible for disposing of the collected waste. Four of the boroughs manage the collection service in-house whilst Camden and Haringey use Veolia as their waste management contractor, and Waltham Forest uses Urbaser. A summary of the services for each borough is shown in Table 9. This is excluding the food waste trial currently operating in Waltham Forest and Hackney.

[32] Source: DEFRA MSW Statistics – LA and Regional Statistics 2021/22

Table 9: Collection summary for Street level properties for north London, 2024[33]

Waste type	Street level Properties						
	Barnet	Camden	Enfield	Hackney	Haringey	Islington	Waltham Forest
Residual	Weekly, 240L WHB	Weekly 120L WHB/ Fortnightly 240L WHB[34]	Fortnightly 140L WHB	Fortnightly 180L WHB	Fortnightly 240L WHB	Weekly, Sacks	Weekly, 140L / 240L WHB
Dry Recycling (commingled)	Weekly, 240L WHB	Weekly, Sacks / 240L WHB	Fortnightly 240L WHB	Weekly, Sacks	Weekly, 240L WHB	Weekly, Sacks	Weekly, 240L WHB + Sacks
Garden	Fortnightly (charged), 240L WHB	Weekly (charged), Sacks / 120L WHB	Fortnightly (charged), 140L/240L WHB	Fortnightly (Charged) 140L WHB	Weekly (charged), 140L/240L WHB / sacks	Fortnightly (charged) sacks[35]	Commingled organics, Fortnightly Kitchen caddy / 240L WHB
Food	No service	Weekly, Kerbside + kitchen caddy			Weekly, Kitchen caddy + 240L WHB	Weekly, Kerbside + kitchen caddy	

Table 10: Collection summary for flats and estates properties, 2024

Waste type	Flats & Estates						
	Barnet	Camden	Enfield	Hackney	Haringey	Islington	Waltham Forest
Residual	Weekly, 240L WHB / Sacks / communal	More than weekly, 240L WHB / Sacks / communal	Weekly, Sacks / communal	Weekly / More than weekly, Sacks / communal	More than weekly, Sacks / communal	More than weekly, Sacks / communal	Weekly, 140L / 240L WHB
Dry Recycling (commingled)	Weekly, 240L WHB / sacks / communal	Weekly / More than weekly, Sacks / communal	Weekly, 180L / 240L WHB	Weekly / More than weekly, communal	Weekly / More than weekly, sacks / communal	Weekly / More than weekly, Sacks / communal	Weekly, 240L WHB + Sacks
Garden	Minimal[36]	Minimal service			No service	No service	Minimal
Food	No service	Weekly, Kitchen caddy / communal bin	Minimal service[37]	Weekly 140L WHB	Weekly, 140L WHB	Weekly, Kerbside + kitchen caddy	Weekly 140L WHB

33 (Source: WRAP LA Portal, accessed March 2024)
34 Camden operate combination of weekly 120LWHB & fortnightly 240L WHB residual waste collections (same average capacity)
35 Organics are co-collected across Islington.
36 Minimal garden waste collection, any garden waste arising assumed collected with the street-level collection
37 Minimal food waste collection from flats. Flats food waste arising collected with the kerbside food waste collection.

Dry Recycling Management

All WCAs within north London, currently provide a 'commingled' recycling service. This means all accepted materials for recycling are collected in one container by residents, and subsequently sorted at a Biffa operated Materials Recycling Facility (MRF) at Edmonton in Enfield. Destinations for materials collected are shown in Appendix B.

Garden Waste Management

Four of the boroughs within north London provide a charged (subscription based) garden waste collection, whereas Hackney, Islington, and Waltham Forest, offer this collection free of charge. Waltham Forest allow food waste to be collected 'comingled' alongside the garden waste. A full summary of the charges per borough are provided in Appendix B.

Residual Waste Management

Residual waste collected through the household waste services are treated at a variety of waste treatment and disposal facilities, including EfW plants and landfill. A full summary of residual waste tonnages can be seen in Table 11.

Table 11: Local Authority Collected Waste for all seven WCAs in north London, 2014/15-2021/22. Household - waste not sent for recycling (tonnes)[38]

Borough	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Barnet	90,768	93,327	91,137	90,747	91,739	95,751	103,863	101,357
Camden	60,744	59,935	54,732	42,131	39,155	43,638	37,332	45,322
Enfield	75,739	78,266	74,182	75,040	78,888	79,022	69,145	75,657
Hackney	62,995	65,656	64,656	62,373	60,294	60,976	64,621	61,597
Haringey	54,785	55,488	54,620	55,813	57,563	58,403	58,612	58,456
Islington	40,293	43,373	40,423	40,348	39,435	38,575	38,301	40,717
Waltham Forest	64,226	65,718	65,585	66,836	66,556	65,000	69,021	68,558

[38] Source: DEFRA, Local Authority Collected Waste Statistics 2021/22

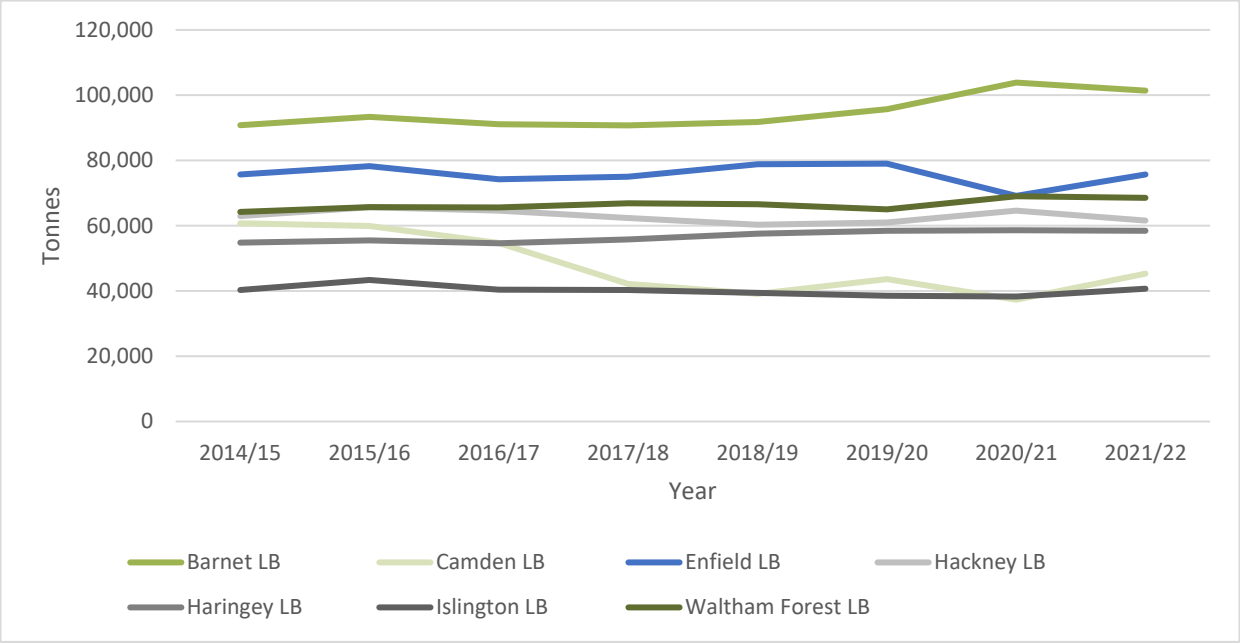

Figure 5. Local Authority collected waste for all seven WCAs in north London 2014/15 - 2021/22. Household waste not sent for recycling[39].

Landfill

In 2018/19 8% of NLWA waste sent to landfill at the Ockenden Area ii & iii landfill and 5% of the waste was sent to the Bletchley landfill site. Since 2019 the percentage of waste sent to landfill has decreased significantly, with 3.6% sent to landfill in 2021/22 and just 0.6% sent to landfill in 2022/23[40].

Table 12: Management of all local authority collected waste (LACW), comparison to region, and England average (2022/23)[41]

Location	Total (%)			
	Landfill	Incineration[42]	Recycled / composted	Other[43]
England average	7.2%	49.1%	40.7%	3.0%
London	0.1%	69.2%	29.0%	5.7%
North London	0.3%	70.8%	27.4%	1.5%

Figures may not add to 100% due to rounding

Table 12 illustrates the management of all LACW by north London, in comparison to London at a regional level, and England at a national level. Statistics from DEFRA show that north London has a LACW recycling

[39] Source: DEFRA MSW Statistics – LA and Regional Statistics 2022/23
[40] https://www.nlwa.gov.uk/sites/default/files/2023-06/03%20NLWA%20Annual%20Report%20-%20reduced%20size.pdf
[41] Source: DEFRA MSW Statistics – LA and Regional Statistics & Waste Data Flow PI reports. Accessed June 2024.
[42] Incineration includes incineration with energy recovery / without energy recovery. This includes incinerator bottom ash (IBA) and metals from IBA.
[43] includes waste treated/disposed of through other unspecified methods as well as process and moisture loss.

rate below the regional and national average. The percentage of LACW sent to landfill in 2022/23 is marginally higher than the regional, but below the national average, at 0.3%. The incineration rate is noticeably higher than the national average and higher than the London average.

Note. LACW recycling is separate from the 'household waste recycling rate' for north London which for 2022/23 was 29.08%. LACW management includes the waste consisting of all 'waste from households', street sweepings, municipal parks and garden waste, beach cleansing waste and waste resulting from the clearance of fly-tipped materials plus some commercial and/or industrial waste. LACW figures for north London have been used to allow comparison against regional and national data.

3.2.3 Commercial Waste Collection

In addition to operating a household waste collection service, five of the local authorities (Barnet, Camden, Enfield, Hackney and Islington) also provide a commercial waste collection service for businesses / commercial customers in their borough area, whilst Haringey and Waltham Forest recommend a disposal service. The available services provided are included in Appendix B.

Businesses cannot currently take trade/commercial waste to any NLWA Reuse & Recycling Centres (RRCs), however, Edmonton Ecopark will also have the capacity to treat waste coming in via the Resource Recovery Facility from businesses as well as residents. At present some types of business and commercial waste can be taken to alternative facilities, see Appendix B, Table B4. Businesses and commercial organisations can apply for a trade/commercial waste account with their local borough, or a waste management contractor can be used. The charge for disposal varies based on the type of waste disposed. Businesses in the boroughs of Camden, Islington and Hackney must use trade/commercial waste facilities in other boroughs, see Appendix B, Figure B1.

3.2.4 Reuse & Recycling Centres (RRCs)

There are eight RRCs across the north London area where residents can take household waste to be re-used, recycled, or disposed of. There are no restrictions on access to RRCs in Boroughs you are not a resident of. Van and trailers must be prebooked no later than the day before the planned visit, however the London borough of Enfield has a different booking website and vehicles such as Vans, trailers, pickup trucks, taxis, and minibuses, seven seats and ambulances require a permit (applied for the day before) and the booking of an appointment[44]. The RRCs are operated by NLWA, with the exception of Barrowell Green which is operated by Suez, their location in relation to the seven boroughs is shown in Table as well as additional materials collected. For hazardous items that cannot be disposed of at any of the RRCs the City of London provides a free hazardous waste collection to residents in north London.

[44] Book your Vehicle | LondonEnergy (vanbookings.co.uk)

Table 13: RRC Across NLWA[45]

Local Authority Location	Site	Address	Additional information
Barnet	Summers Lane	Summers Lane, north Finchley N12 0AR	Water based paint is accepted. DIY materials, accept, mattresses, carpet
Camden	Regis Road	Regis Road, Kentish Town NW5 3EW	Water based paint is accepted, hard plastics trial currently in progress, mattresses, carpet
Enfield	Barrowell Green	Winchmore Hill, London N21 3AR	
Hackney	No site		
Haringey	Western Road	Western Road, London 1N22 6XJ	Water based paint is accepted, carpet, mattresses
Islington	Hornsey Street	40 Hornsey Street, Islington N7 8HU	DIY materials accepted, cement-bonded Asbestos is accepted, a hard plastics trial taking place, carpet, mattresses
Waltham Forest	Kings Road	48 Kings Road, London, E4 7HR	Water based paint is accepted, mattresses, carpet
	South Access Road	42a South Access Road, Walthamstow, London E17 8AX	Water based paint is accepted, DIY materials, mattresses, carpet
Note – Expanded polystyrene is accepted at all sites.			

3.2.5 Bulky waste

Bulky waste collection services are provided by all boroughs. Enfield and Waltham Forest operate a free service, with restrictions, and the other boroughs have a varying charge dependent on the number of items, details of the services and associated charges are included in Appendix B, Table B5.

3.2.6 Waste Management

The management routes for LACW for the seven boroughs within north London are summarised in Figure and are presented as tonnages with a percentage breakdown in Table 14. This shows how the NLWA disposes of the waste.

[45] https://www.nlwa.gov.uk/places-to-recycle/reuse-and-recycling-centres-rrcs

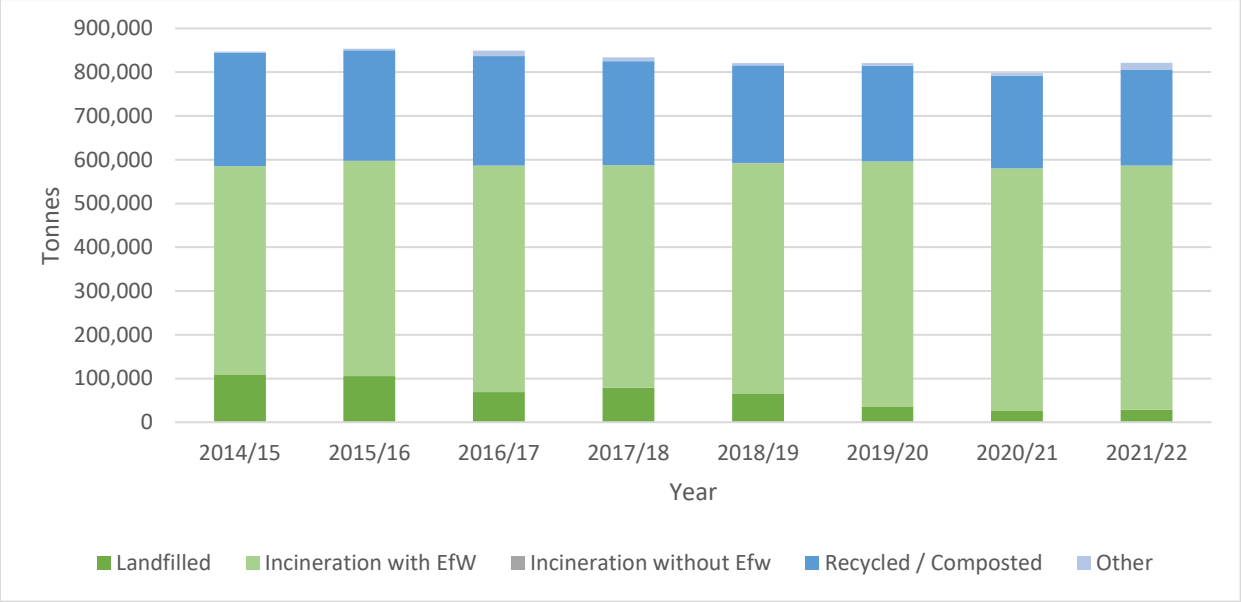

Figure 6: Management of LACW (tonnes) by NLWA 2014/2015 – 2021/2022[46]

[46] LACW management DEFRA Source: https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables Accessed September 2023

Table 14: Management of LACW (tonnes) by north London, 2014/2015 – 2021/2022[47]

Disposal method	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	England Average (2021/22)
Landfilled	108,921	105,516	68,898	78,915	64,778	35,766	25,431	29,047	2,109
	12.86%	*12.36%*	*8.11%*	*9.46%*	*7.89%*	*4.36%*	*3.19%*	*3.54%*	*8.10%*
Incineration with EfW	476,067	491,466	517,396	508,007	526,929	559,947	554,728	557,996	12,294
	56%	*58%*	*61%*	*61%*	*64%*	*68%*	*69%*	*67.95%*	*47.10%*
Incineration without EfW	0	614	693	559	890	413	0	0	99
	0.00%	*0.07%*	*0.08%*	*0.07%*	*0.11%*	*0.05%*	*0.00%*	*0.00%*	*0.40%*
Recycled / Composted	259,981	252,431	249,899	237,933	222,866	219,008	211,786	218,767	10,840
	30.69%	*29.57%*	*29.42%*	*28.53%*	*27.16%*	*26.67%*	*26.53%*	*26.64%*	*41.50%*
Other	2,150	3,688	12,612	8,626	5,051	5,949	6,379	15,366	786
	0.25%	*0.43%*	*1.48%*	*1.03%*	*0.62%*	*0.72%*	*0.80%*	*1.87%*	*3.00%*
Total	847,119	853,716	849,498	834,041	820,514	821,083	798,325	821,176	26,122

Notes:
1. Other includes waste treated/disposed through other unspecified treatment processes as well as process and moisture loss.
2. Total Local Authority collected waste managed may not match total Local Authority collected waste collected as reported in Table 5 due to stockpiling of waste between reporting periods.
3. Inputs to intermediate plants e.g., MBT, Residual MRFs, RDF and other plants prior to treatment and disposal and included in the final treatment and disposal figures.
Source: Department for Environment, Food & Rural Affairs

Waste management can potentially provide different forms of energy (gas, heat, electricity, fuel) if needed to support changing energy demands. This could include conversion of biogas from Anaerobic Digestion (AD) facilities to electricity, or energy recovery from EfW facilities to generate electricity, which can feed into the National Grid; provide heat or power to local networks, or to nearby communities or industrial users (borough heat networks). North London has a very small percentage that goes to incineration without EfW, on average (0.04%), with a much higher percentage to incineration with EfW (63.12%).

3.2.7 Recycling and Composting Performance

For 2022/23, the combined recycling and composting activity of household waste in north London was 29.08%. The UK has a target of 65% for the recycling of municipal waste by 2035[48]. The average percentage recycling rate for England within the same period was 44.1%. meaning that north London is below the average. Barnet, Camden, Enfield, Haringey, and Islington have all decreased recycling rates from 2012/13, whereas an increase in household recycling has been noted in Hackney and Waltham Forest since 2012/13. However, it should be noted that each borough started on different recycling rates, which

[47] Source: DEFRA MSW Statistics – LA and Regional Statistics 2022/23
[48] DEFRA Waste Management Plan 2021 January 2021. Accessed September 2023

could skew the % increase. In addition, the core focus for the boroughs is waste prevention, minimisation and reuse and north London generates significantly below average levels of waste per person, compared with the national average. Therefore, recycling activity is considered as secondary compared to waste prevention, as waste management practices are being driven up the waste hierarchy.

Nationally this reduction will have been a factor of many things including reclassification of street sweeping and wood waste, stopping them from being composted or the implementation of charged garden waste services (reducing the amount of garden waste falling into the local authority collection system and therefore performance measurers).

Recycling rates are typically lower than the national average due to its complex urban environment. Areas of London have highly transient population and low levels of property ownership can have an impact on recycling rates; homeowners tend to recycle more than renters. There is also a high percentage of flats, estates and flats above shops which notably have lower participation rates for recycling. In recent years, impacts on purchasing and working patterns (i.e. more home working, less commuting), as a consequence of COVID-19 may have contributed to declining recycling rates across north London.

A full summary of recycling rates is demonstrated below in Table 15, alongside average figures for England.

Table 15: Household waste recycling rates for north London boroughs between 2012/13 and 2022/23[49]

	Household waste recycling (%)									
Borough	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**
Barnet	33.0	36.4	38.0	36.8	37.4	36.9	34.6	32.0	28.9	29.8
Camden	30.9	29.3	26.3	24.8	26.6	30.3	31.1	25.9	28.6	28.1
Enfield	38.8	39.1	38.5	35.9	37.2	35.9	33.4	33.1	33.2	30.9
Hackney	24.3	25.4	25.3	24.8	27.0	27.4	27.9	28.3	28.1	29.1
Haringey	31.7	35.8	37.3	36.2	35.7	32.9	29.3	29.7	31.0	30.2
Islington	31.4	32.7	32.8	29.4	31.6	29.5	29.0	29.6	31.3	30.1
Waltham Forest	30.8	32.6	35.5	34.6	34.4	32.5	31.6	32.3	31.9	32.0
London Average	34	33.9	33.1	32	33	33.1	33.4	33.5	33	32.7
North London Waste Partnership average	**31.7**	**33.2**	**33.3**	**31.5**	**32.2**	**31.2**	**29.6**	**29.1**	**28.5**	**28.4**
England average	**43.2**	**43.5**	**43.7%**	**43%**	**43.7**	**43.2%**	**43.5%**	**43.8%**	**42.3%**	**42.5%**

[49] Source Defra MSW Statistics – LA and Regional 2022/23 Accessed June 2024

In 2019/2020, around 18,000 tonnes of recycling were rejected due to contamination. North London have attempted to increase recycling rates by decreasing contamination through campaigns. With one campaign "Thanks for Trying" launched in 2020. Furthermore, each borough of north London has developed individual Reduction and Recycling Plans to encourage waste minimisation, promote a circular economy and improve recycling rates.

3.2.8 Fly tipping and litter

Approximately 1 million (1,091,019) incidents of fly-tipping were dealt with in England in 2021/22. This was an increase of 7.9% from 2016/17 (1,011,199 incidents). However, a decrease of 4% from 2020/21 reported incidents (1.14 million) 44.8% of the fly tips involved household waste, a decrease of 2% from the previous year. The most common locations of fly tipping were on highways (pavements or roads). The cost of clearance to Local Authorities in England for 2021/22 was estimated at £10.7 million for large fly-tipping incidents, a decrease from £11.6 million in 2020/21[50]. There can be differences on interpretation and reporting of fly tipping that can influence these results.

Table 15 shows the number of reported fly-tipping incidents and actions across the seven boroughs of north London.

According to Keep Britain Tidy's Litter in England survey[51] (2017-2018), smoking-related litter was the most found type of litter (79% of sites), followed by confectionery packaging (60% of sites) and alcoholic drinks related sites (52% of sites). The Resources and Waste Strategy proposes the introduction of a Deposit Return Scheme (DRS) for England, Wales, and Northern Ireland. As well as the aim to boost the quantity and quality of key recyclables, DRS also aims to reduce the amount of littering. Litter affects how clean an area is and can influence people's willingness to drop litter. Therefore, based on the theory that a DRS could reduce the number of drinks containers it may also have a positive impact on materials littered outside of the scope of a DRS when implemented.

Service restrictions due to the Covid-19 pandemic and the social distancing / lockdown restrictions created the opportunity for increases in fly-tipping. It is important that services and enforcement are suitably delivered to manage unintended negative environmental consequences such as fly-tipping in unusual operating circumstances.

[50] https://www.gov.uk/government/statistics/fly-tipping-in-england/fly-tipping-statistics-for-england-2021-to-2022
[51] https://www.gov.uk/government/publications/litter-and-littering-in-england-data-dashboard/litter-and-littering-in-england-2017-to-2018

Table 16: Number of reported fly tipping incidents and the number of actions (expressed as a percentage of incidents) (In bold) taken across the seven boroughs [52].

Borough	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
London	349,878 **45.4%**	297,370 **56.1%**	324,261 **43.6%**	360,080 **43.4%**	384,834 **36.9%**	405,589 **45.7%**
Barnet	7,029 **1.8%**	6,153 **8.2%**	2,167 **46.9%**	3,420 **54.6%**	4,218 **0.3%**	5,907 **0.3%**
Camden	6,778 **68.7%**	12,170 **104.1%**	25,765 **104.3%**	34,465 **117.4%**	36,696 **80.6%**	32,517 **102.1%**
Enfield	75,614 **14.4%**	3,900 **150.1%**	5,164 **121.6%**	4,979 **126.9%**	7,289 **97.2%**	5,462 **102.1%**
Hackney	3,267 **171.4%**	9,821 **113.8%**	13,504 **13.0%**	12,190 **10.8%**	13,609 **6.9%**	
Haringey	33,333 **15.4%**	23,549 **13.5%**	31,320 **2.0%**	22,972 **2.5%**	21,950 **8.3%**	20,056 **12.0%**
Islington	3,011 **261.6%**	2,588 **279.4%**	1,434 **289.1%**	1,764 **215.8%**	1,982 **3.1%**	1,404 **203.5%**
Waltham Forest	6,772 **272.6%**	7,678 **221.9%**	9,434 **137.2%**	9,260 **155.0%**	8,606 **124.4%**	9,813 **102.3%**

Note:

- percentage of actions taken include investigation actions, warning letters, statutory notices, fixed penalties for fly tipping, fixed penalties for household duty of care, littering fixed penalty notices in conjunction with fly tipping. The multiple actions in some cases result in percentages being above the number of reported incidents.
- Hackney suffered a cyber-attack in October 2020 the data provided for 2020/21 is as complete and accurate as possible, no data is available for 2021/22

3.2.9 Voluntary Group Activity

NLWA is responsible for the North London Community Fund. This fund helps not-for-profit local groups to develop initiatives and strategies to reduce waste generated in London. Since 2017, NLWA has invested £622,000 in 59 local projects (excluding the 2024/25 round of funding). The applications for 2024-2025 Community Funding will provide up to £150,000 to small and medium projects and a further £100,000 for large projects.

Other voluntary group activity within north London includes the Restart Project, with volunteers running fixing events to repair electronics, textiles, or other household items. For example, the Restart HQ, has prevented 2,085kg of waste and 45,759kg of CO_2 emissions through repair cafes and events, which require volunteered hours[53]. Across north London, there are 41 repair and reuse events that operate relying on voluntary group activity. Charities such as Food cycle, which operate in north London, rely on voluntary action from residents and businesses.

[52] https://www.gov.uk/government/statistical-data-sets/env24-fly-tipping-incidents-and-actions-taken-in-england
[53] https://therestartproject.org/groups/restart-hq-2/ Accessed September 2023

Litter picking volunteer groups can be found in all 7 boroughs of north London through Clean up UK. Other organisations such as 'Good Gym' and 'Plogging' can be joined to keep areas clean. Barnet, Camden, Hackney, Haringey, Islington, and Waltham Forest boroughs, all also promote and provide litter picking equipment and or bags and gloves as well as guidance. Enfield litter picking is promoted through Enfield Dispatch a community action group.

3.2.10 Concluding Comments

The waste management service in north London currently operates both above and below the national average in different aspects. Since 2012/13 waste arisings have decreased apart from in the boroughs of Waltham Forest and Islington. In terms of management of LACW, the waste to landfill, incineration with EfW is above the national average, and incineration without EfW, composting and 'other' are below the average. Waste arisings per person are less (better) than the national average by a significant degree.

Household recycling rates across north London were notably below average in all boroughs from 2012/13 to current data 2021/22. For Barnet, Camden, Enfield, Haringey, and Islington boroughs have decreased and increased in Hackney and Waltham Forest from 2012/13. This reduction is a factor of many things including reclassification of street sweeping and wood waste, stopping them from being composted, implementation of charged garden waste, 'light weighting' trends reducing packaging weight.

There are some differences in the collection methods across the boroughs for dry recycling, residual, organic and garden waste, notably around the costs for garden waste or the collection of food waste. LACW not sent for recycling has increased in the boroughs apart from Camden, Enfield, and Hackney from 2014/15 to 2021/22.

NLWA (2021/22) landfills a significantly lower proportion of municipal waste than the national average. Waste management changes which could impact the service over the coming years include implementation of DRS and EPR on all packaging goods. Another change impacting Barnet, in particular, is the introduction of weekly food collections to all households.

3.3 Population and households

It is important to understand the existing population, demographics and economic environment of the people living within the north London area as this will have an impact on the amount of waste produced and the composition of that waste. The number of people living in the north London area, combined with the number of persons in each household, will have an impact on the amount of waste produced in the north London area and therefore requiring management through the JWS.

Based on Office of National Statistics (ONS) classifications, boroughs within north London are all Urban with major conurbation, a full summary is provided in Table 17[54] with Enfield and Hackney also having a very small rural population percentage.

Table 17: Summary of rural / urban classifications for the seven boroughs of north London (2011)[55]

Borough[1]	Urban %	Rural %
Barnet	100%	
Camden	100%	
Enfield	99.5%	0.5%
Hackney	99.7%	0.3%
Haringey	100%	
Islington	100%	
Waltham Forest	100%	
[1]*All north London boroughs are classified by ONS as Urban with major conurbation*		

Table 18 shows census population and household statistics from 2011 – 2021. Table 19 provides population estimates from the 2019-based ONS Subnational Population Projections for Local Authorities in England. Looking ahead, the anticipated population growth rate for all boroughs within north London is above the projected national average of 5.07% except for Haringey, Enfield, and Waltham Forest, which have a growth rate of 2.33%, 0.98% and 4.11% respectively. For all of these boroughs, just over 50% of the population is female, with a north London average of 51.95%.

[54] Source https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/591466/Local_Authority_boroughs_ranked_by_rural_and_rural-related_populations_with_Rural_Urban_Classification.pdf

[55] Source: ONS, Rural Urban Classification (2011) of Local Authority Districts in England. Accessed February 2024

Table 18 Population and household statistics from 2011 and 2021[56]

Area	2011		2021		Change (%)	
	Population	Households	Population	Households	Population	Household
England	53,012,456	22,063,368	58,489,800	23,435,700	6.6%	6.2%
North London	1,854,760	747,468	1,947,863	773,174	5.0%	3.4%
Barnet	356,386	135,916	389,344	148,919	9.2%	9.6%
Camden	220,338	97,534	210,136	92,758	-4.6%	-4.9%
Enfield	312,466	119,916	329,984	120,929	5.6%	0.8%
Hackney	246,270	101,690	259,146	106,080	5.2%	4.3%
Haringey	254,926	101,995	264,238	105,092	3.7%	3.0%
Islington	206,125	93,556	216,589	96,497	5.1%	3.1%
Waltham Forest	258,249	96,861	278,426	102,899	7.8%	6.2%

Table 19: ONS population estimates

	Population (Mid-year 2019)[57]	Population estimates (2018 based)[58]				Change 2022-2035	% Change 2022-2035
		2022	2025	2030	2035		
England	56,286,961	57,282,105	58,060,235	59,181,798	60,183,914	2,901,809	**5.07%**
Barnet	359,869	406,061	413,257	422,214	430,292	24,231	**5.63%**
Camden	270,029	278,798	286,258	296,244	304,943	26,145	**8.57%**
Enfield	333,794	336,886	337,733	338,371	340,219	3,333	**0.98%**
Hackney	281,120	290,891	296,863	304,906	313,565	22,674	**7.23%**
Haringey	268,647	273,155	274,078	276,128	279,665	6,510	**2.33%**
Islington	242,467	248,257	251,954	257,542	264,103	15,846	**5.99%**
Waltham Forest	276,983	280,316	285,653	288,771	292,334	12,018	**4.11%**

[56] 2011 Census data Source: https://www.nomisweb.co.uk/sources/census_2011 Accessed October 2023
2021 Census Profile for areas in England and Wales Accessed October 2023
[57] Office for National Statistics (2020). Source :
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland
[58] Office for National Statistics (2020). Source:
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2018based/relateddata

3.3.1 Population demographics

The number of people aged 65 years and over in England as a whole, is projected to increase from 18.2% to 20.7% of the total population between mid-2018 and mid-2028[59]. The population of those aged 85 and over is estimated to increase by 82.4% to 3.1million by mid-2045 from mid-2020 projections[60].

In mid-2020 there were 1.7 million people aged 85 years and over, making up 2.5% of the UK population. By mid-2045, this is projected to have nearly doubled to 3.1 million, representing 4.3% of the total UK population.[61]

Table 4 shows the household composition of residents aged 66 years and over from the 2021 census data. An older population might increase demands for assisted collections. This could have implications for waste management services in a variety of respects. There may be enhanced issues regarding vulnerability as highlighted by the Covid-19 pandemic. It may also change the composition of the waste, for example a potential reduced level of nappy waste.

Table 4 Household composition of residents aged 66 years and over. [62]

Location	**% of one person households:** 66 years & over	**% of single-family households:** all aged 66 & over
England	12.8%	9.2%
North London average	8.9%	3.6%
Barnet	10.2%	6.2%
Camden	10.5%	3.2%
Enfield	10.1%	5.7%
Hackney	7.1%	1.7%
Haringey	8.5%	3.0%
Islington	7.9%	2.2%
Waltham Forest	8.0%	3.4%

[59] Statistical Bulletin Source: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2018based Accessed October 2023

[60] National population projections: 2020-based interim. Source: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2020basedinterim#:~:text=By%20mid%2D2045%2C%20the%20number,on%20the%20level%20in%202020. Accessed October 2023

[61] https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2020basedinterim

[62] Nomis 2021 Household composition data
Nomis - Official Census and Labour Market Statistics - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)

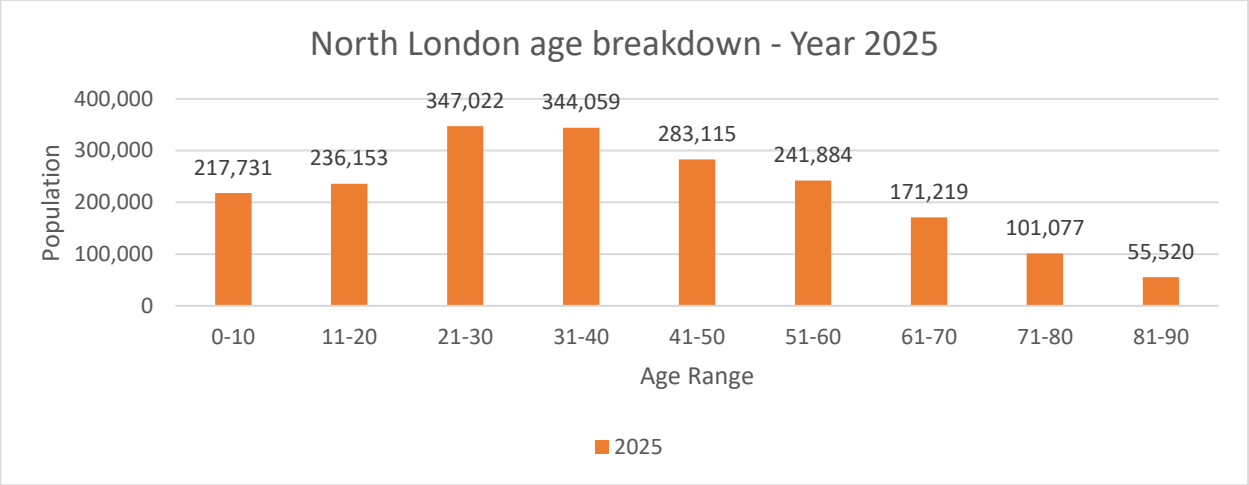

Figure 7 north London age breakdown of population for 2025

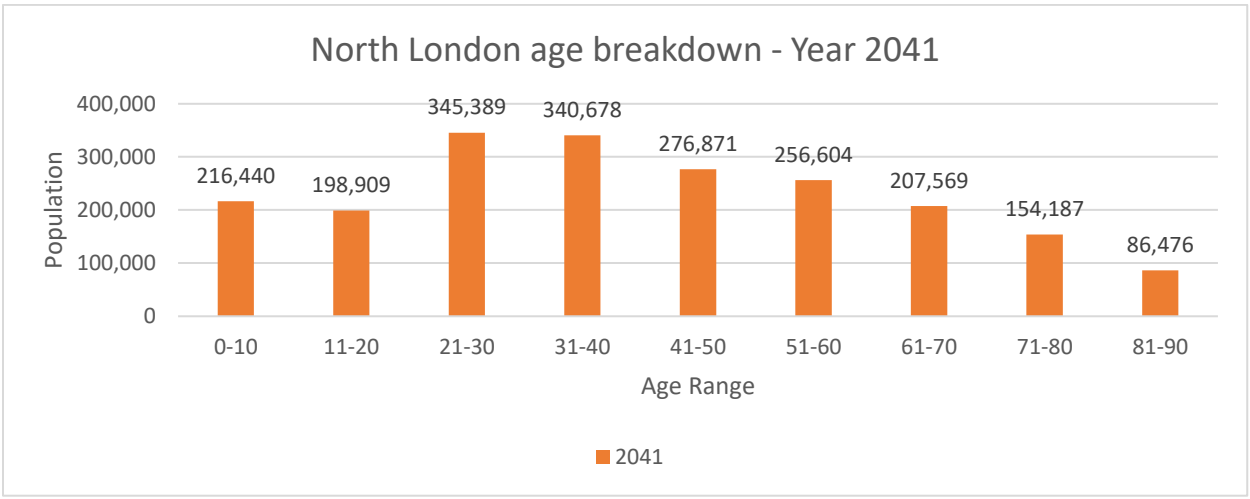

Figure 8 Predicted north London age breakdown for 2041

Population growth for most of the boroughs within north London is projected to be higher than the average growth estimated for England. For north London, the GLA population and ethnic projections indicate that the population is expected to increase gradually, with the highest population in the 21-30 and 31 40 age bracket by 2041 for all the boroughs (Figure 8). There is also an increase in the age brackets of 61-70,71-80 and 81-90. Therefore, it will be important for planning guidance to be provided for developments so that sufficient space is provided for recycling within new homes and externally for the storage of containers for recycling and refuse.

An increase in population and households could lead to an increase in LACW and may lead to a potential change in the composition of waste, i.e., changing demographic of population can lead to an increase/decrease in Absorbent Hygiene Products[63] (AHP).

Table 5 University campuses located within the boroughs and % of students living in communal households.

	Universities[64]	Students living in communal establishments or all-student household[6566]
England		12.9%
Barnet	Birkbeck, University of London Middlesex University University of London Observatory	3.3%
Camden	SOAS, University of London University College London University Of the Arts London ARU, London Campus Ulster University London Campus	25.6%
Enfield	Queen Mary University of London	1.0%
Hackney	Loughborough University, London Campus Staffordshire University London Campus Teesside University London	5.1%
Haringey	None	4.2%
Islington	City, University of London London Metropolitan University Queen Mary University of London	18.3%
Waltham Forest	University of Portsmouth London Campus	2.2%

There are 16 universities within the north London plus additional further educational establishments. This means that high quantities of student populations are typically present here. This transient population can add some challenges in communications and effective use of waste-related services, which can have a direct impact on the recycling performance of the area. Furthermore, there are additional private higher education/university equivalent establishments which can impact the recycling performance as they increase the student population within the boroughs. Additionally, it can pose issues during clear-out of student households at the end of term time, such as increases in bulky waste.

[63] AHP refers to nappies, feminine hygiene products, incontinence pads.
[64] Up to date as of 09/2023, new university campuses and accommodation may open.
[65] The rest of the population are living with parents, alone or in other types of households.
[66] NOMIS Data: RM129 Student Accommodation by Age, Census 2021, Accessed February 2024.

3.4 Ethnicity

Table 22 shows the ethnicity composition of the north London boroughs, in comparison to the average for the London area, as recorded in the 2021 census.

Table 6: Ethnicity across north London, Census 2021

Borough	Asian	Black	Mixed	White	Other
London (average)	20.7%	13.5%	5.7%	53.8%	6.3%
Barnet	19.3%	7.9%	5.4%	57.7%	9.8%
Camden	18.1%	9.0%	6.6%	59.5%	6.8%
Enfield	11.5%	18.3%	5.9%	52.1%	12.1%
Hackney	10.4%	21.1%	6.7%	53.1%	8.7%
Haringey	8.7%	17.6%	7.0%	57.0%	9.7%
Islington	9.9%	13.3%	7.5%	62.2%	7.1%
Waltham Forest	19.9%	15.0%	6.5%	52.8%	5.8%

The ethnic diversity within London is expected to increase as less populous ethnic groups are projected to grow. The White British and Other White population are projected to increase slightly over the period to 2041 and will remain the single largest ethnic group for the entire projection period.

However, it is important to note that ethnic identity does not provide a clear indication of the assistance required to engage in Local Authority service, such as waste management due to proficiency with English. For example, many ethnic minority residents will have been born in the UK or lived in the UK for a number of years and will have a level of proficiency with English. Furthermore the 2021 Census provides some information around English language proficiency, with 53,667,911 speaking English well, very well or it is their main language. However, 1,803,957 chose category -8 stating it does not apply. For example, the 2011 Census shows that a higher proportion of the population reports a British national identity than reported White British ethnic identity.

Table 7 English Language proficiency across the north London boroughs[67].

	Can speak English %		Cannot speak English %	
	Very Well	Well	Well	Cannot speak English
England Average	43.9%	35.8%	17.1%	3.1%
Barnet	45.2%	36.8%	15.7%	2.3%
Camden	58.6%	27.4%	12.0%	2.0%
Enfield	33.8%	38.0%	24.1%	4.1%
Hackney	46.5%	29.6%	20.1%	3.8%
Haringey	37.3%	35.8%	22.7%	4.3%
Islington	56.9%	27.6%	13.3%	2.2%
Waltham Forest LB	37.8%	40.2%	19.2%	2.8%

Table 23 shows the English language proficiency of people within the boroughs of north London. Enfield, Haringey, and Waltham Forest were significantly below the England average for 'can speak English very well'. For 'can speak English well' Camden, Hackney and Islington were notably below the average. The language proficiency of households needs to be considered when promoting or education residents on the waste management services.

Potential barriers around accessing waste management services can be mitigated through translation services, providing communications in different formats (e.g., braille, audio, visual, large print, or easy read), encouragement through community engagement, making communications very visual to make the messaging more accessible and ensuring appropriate accessibility provisions for any services such as RRCs (Reuse and Recycling Centres) and events.

An Equalities Assessment (EQA) will be undertaken as part of the north London JWS. An EQA aims to identify whether a new policy, procedure or service (in this instance the north London JWS) may have any adverse implications on particular groups or parts of society. The assessment identifies any impact (positive or negative) on different groups or protected characteristics within a community, any barriers that might have a detrimental impact on any communities or groups are considered and, wherever possible, are mitigated against or avoided.

[67] 2021 ONS area profile, proficiency in English, dataset ID is TS029

3.5 Human health

Much work has been undertaken to consider the impacts of waste management facilities and practices on human health and to date no specific links have been demonstrated. Reports by DEFRA, the Health Protection Agency (HPA) and WRAP have concluded that present day practices for managing municipal waste in the UK have at most a minor (if detectable) effect on human health and the environment when compared to everyday activities[68] [69]. These reports considered alternate weekly collections and various waste disposal and treatment operations.

The average life expectancy in England was 82.2 years for males and 85.3 years for females in 2020 based projections. This is a decrease in the life expectancy from 2018 based projections of 82.8 for males and 85.7 for females. According to data published by the Office for National Statistics for this same period, the average life expectancy for the seven boroughs within north London were 80.5 for males and 84.7 for females, a full breakdown can be observed in Table 8. Therefore, on average seven boroughs of north London have a life expectancy below the average for England.

Table 8: Life expectancies for males and females within the seven boroughs of north London (2020)[70]

	Barnet	Camden	Enfield	Hackney	Haringey	Islington	Waltham Forest	north London Average
Male	82.0	83.1	80.0	79.3	79.6	79.5	79.8	80.5
Female	85.5	87.7	84.2	83.7	84.4	83.2	84.5	84.7

When analysing the available data for the life expectancies of men within these boroughs, it is evident that all boroughs are below the life expectancy age for England or above. For females, two boroughs (Barnet and Camden) exceed the average England life expectancy with 85.5 and 87.7 years respectively. However, all other boroughs and the average falls below the England average life expectancy.

[68] 'Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes', DEFRA, May 2004;
'Health Impact Assessment of Alternate Week Waste Collections of Biodegradable Waste', DEFRA, March 2007.
'Scoping Study of Potential Health Effects of Fortnightly Residual Waste Collection and Related Changes to Domestic Waste Systems', WRAP, July 2009
[69] 'The Impact on Health of Emissions to Air from Municipal Waste Incinerators', Health Protection Agency (HPA), 2010
[70] Office for National Statistics (2018-2020).
https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/bulletins/nationallifetablesunitedkingdom/2018to2020

Table 9: Population describing themselves as having a limiting long-term illness (2021).[71]

Area	Population	Percentage of population living with a long-term health problem or disability (limited a lot)	Percentage of population living with a long-term health problem or disability (limited a little)
England	56,490,048	**4,140,357**	**5,634,153**
		7.3%	*10.0%*
Barnet	389,334	**22,003**	**27,676**
		5.7%	*7.1%*
Camden	210,136	**14,052**	**17,830**
		6.7%	*8.5%*
Enfield	329,984	**21,415**	**23,731**
		6.4%	*7.2%*
Hackney	259,146	**16,662**	**20,398**
		6.4%	*7.9%*
Haringey	264,238	**16,196**	**19,918**
		6.1%	*7.5%*
Islington	216,589	**15,772**	**19,291**
		7.3%	*8.9%*
Waltham Forest	278,429	**15,993**	**20,829**
		5.7%	*7.5%*

Table 10 Population describing themselves by general health in north London boroughs (ONS 2021)[72]

	Population	Population considering themselves to be in Very Good, Good or Fair health	Population considering themselves to be in Bad or Very Bad health.
England	56,490,046	**53,578,910**	**2,911,136**
		94.8%	*5.2%*
Barnet	389,334	**373,695**	**15,649**
		96%	*4%*
Camden	210,136	**199,466**	**10,670**
		94.8%	*5.1%*
Enfield	329,984	**313,859**	**16,125**
		95.1%	*4.9%*
Hackney	259,146	**246,172**	**12,974**
		95%	*5.1%*
Haringey	264,238	**251,401**	**12,837**
		95.2%	*4.8%*
Islington	216,589	**204,580**	**12,009**
		94.5%	*5.5%*
Waltham Forest	278,429	**266,196**	**12,230**
		95.6%	*4.4%*

[71] Office for National Statistics (2021).
2021 Census Profile for areas in England and Wales - Nomis (nomisweb.co.uk)
[72] Office for National Statistics (2021).
2021 Census Profile for areas in England and Wales - Nomis (nomisweb.co.uk)

As illustrated in Table 25 less than one tenth (6.3%) of residents in the seven boroughs of north London describe themselves as having a limiting long-term illness: these rates are lower than the statistics for England as a whole.

As illustrated in Table 26 across the boroughs on average, less than 4.8% of the population identified as being in Bad or Very Bad health. This can impact the ability to carry out or access waste management services. With long term illnesses and ill health impacting residents' assistance may be required. Table 11 outlines the assisted bin collections operating in north London and the eligibility criteria.

Table 11 Assisted/Supported collections and the criteria for the north London boroughs

	Assisted bin collection?	Criteria
Barnet	Yes	• Unable to move your bins to the boundary of your property for collection due to ill health or a disability, and • there is no other person who can help to put the bins out for collection at the boundary of your property
Camden	Yes, through Veolia	• You have street level collections. • You live in a house or a flat in a house that has been divided up. • Have a disability. • Are pregnant or have recently given birth. • Have an illness or health condition. • Live alone and need support to put your recycling and rubbish out
Enfield	Yes	• There's no one else living with you who could put the bins out. • You don't have a carer who could put the bins out. • You live in a house
Hackney	Yes	• Are not physically able to present their waste to the property boundary in line with our waste disposal policy and who have no support from a family member, carer, or neighbour to help dispose of their waste
Haringey	Yes, through Veolia	• You have street level collections. • You live in a house or a flat in a house that has been divided up. • Have a disability. • Are pregnant or have recently given birth. • Have an illness or health condition. • Live alone and need support to put your recycling and rubbish out
Islington	Yes	• Provide assisted collections to people who are unable to put out their recycling or waste and have no one else to help them.
Waltham Forest	Yes	• If you live alone and you are physically unable to present your two wheeled bins for collection at the front boundary of your property, then you can apply for a supported collection.

The health and safety of the public and waste operators is an important consideration in all waste management operations and is a standard consideration in all day-to-day operations. The potential health effects of waste management facilities are considered at a site-specific level through the planning and permitting processes.

Health impacts across north London will be considered in the SEA as part of air quality considerations see Section 3.8. The Strategy will not specify individual facilities or locations (this would be under the Waste Local Plan), and any potential health impacts associated with individual facilities will be relevant to their type and location and addressed through individual environmental permitting and (where appropriate) Environmental Impact Assessments.

3.6 Economics

London has the largest Gross Added Value (GAV) growth of 4.2%, and a total GAV of 431,161(£ million) which is above other regions and the UK average of 3.6%[73].

The economy of London predominantly consists of Small Medium Enterprises (SMEs), the London area has 525,855 Value Added Tax (VAT) and PAYE based enterprises. Within North London there are 146,655 businesses according to the Inter-Departmental Business Register taken in March 2023. Of those 146,655 businesses, 98% employ less than 49 people.

3.6.1 Employment / Unemployment

Rates of employment and unemployment for those of the working age (16-64) are outlined within Table 28.

[73] GVA (Gross Added Value) 1998-2017 Source: https://www.ons.gov.uk/economy/grossvalueaddedgva/bulletins/regionalgrossvalueaddedbalanceuk/1998to2017 Accessed October 2023

Table 12: Employment statistics for the seven north London boroughs74

	Population (2021)	Working age population: aged 16-64 (2021)	Employment and unemployment (April 2022 – March 2023) *	
			Employed	Unemployed (Model-based)
UK average[75]	67,026,300	42,174,700	31,329,000 (75.6%)	1,196,000 (3.8%)
North London Average	278,229	193,100	160,100 (74.1%)	8,029 (4.7%)
Barnet	388,600	252,400	192,900 (71.4%)	10,300 (5.1%)
Camden	210,400	153,200	141,000 (71.4%)	4,700 (3.2%)
Enfield	329,600	212,000	167,400 (72.3%)	10,200 (5.8%)
Hackney	260,000	189,500	169,400 (75.2%)	9,200 (5.2%)
Haringey	264,100	188,000	157,000 (75.9%)	8,100 (4.8%)
Islington	216,800	163,400	153,100 (82.6%)	4,800 (3.0%)
Waltham Forest	278,100	193,200	139,900 (69.6%)	8,900 (6.0%)

* Percentage figures are a % of 'All people aged 16-64' (2021)

Note. The remaining proportion of people between 16-64 include students, retirees, those unable to work due to temporary or long-term sickness or looking after family/home.

[74] Nomis Official Labour Market Statistics: https://www.nomisweb.co.uk/reports/lmp/la/contents.aspx (Accessed September 2023)

[75] NOMIS: Labour force survey summary, LFS headline indicators, UK. Source - https://www.nomisweb.co.uk/reports/lmp/gor/2092957698/report.aspx Accessed October 2023

3.6.2 Deprivation

Indices of Deprivation (IoD) are produced by the Ministry of Housing, Communities and Local Government (MHCLG) as a means of comparing different areas of England by a variety of deprivation measurements. Data is ranked such that the lower the score, the greater the deprivation. The most deprived local authority ranks 1 and the least deprived 317. The indices are made up of seven deprivation elements, relating to income, employment, health and disability, education, barriers to housing and services, living environment and crime.

Table 13: Indices of deprivation[76]

	Income	Employment	Education	Health	Crime	Living environment	Barriers to housing & services	Local Authority Rank
Barnet	137	201	302	297	111	71	20	184
Camden	87	151	274	207	70	22	132	132
Enfield	30	92	141	221	84	53	5	59
Hackney	5	57	214	67	15	14	3	7
Haringey	31	83	184	154	9	17	9	37
Islington	17	63	244	82	13	13	27	28
Waltham Forest	43	111	155	161	46	19	6	45
North London average	**50**	**108**	**216**	**170**	**50**	**30**	**29**	**70**

On the IoD index all London boroughs have rankings under 200, the north London IoD ranking average is 70. Barnet and Camden rank 184 and 132 respectively. The borough of Hackney has an IoD Local Authority ranking of 7. Of 144 neighbourhoods within Hackney, 62 were among the 20% most income deprived in England[77]. Similarly, 32 of the 133 neighbourhoods in Camden and 18 of the 211 neighbourhoods in Barnet were also within the 20% most deprived areas in England. Specific subject areas are employment, health and education, with the average rank being 108, 170 and 216 respectively. On average across north London the living environment and barriers to housing & services rank the lowest.

[76] IoD 2019 Local Authority Focus Interactive Dashboard: https://app.powerbi.com/view?r=eyJrIjoiOTdjYzIyNTMtMTcxNi00YmQ2LWI1YzgtMTUyYzMxOWQ3NzQ2IiwidCI6ImJmMzQ2ODEwLTljN2QtNDNkZS1hODcyLTI0YTJlZjM5OTVhOCJ9

[77] Exploring local income deprivation (2021) Source: https://www.ons.gov.uk/visualisations/dvc1371/#/E09000012 Accessed October 2023

3.7 Water

3.7.1 Surface Water Overview

The River Thames is the principal river in the Greater London area. The Thames is 205 miles long, with the source being in the Cotswolds, where the river flows west towards to Coast. With a further 65 miles for the Thames estuary. The other rivers within the north London area are the Lea which meets the Thames at Bow creek, and the River Roding, with reaches the Thames at Barking Creek. Bounds Green Brook and Pymmes Brook also being in the north London area as minor tributaries to the River Lea. As observed in Figure north London is situated within the Thames catchment boundary.

Figure 9 Location and extent of the Thames Catchment boundary[78] Environment Agency.

3.7.2 River Quality

At a national level, river water quality has improved over the past 25 years, however has not greatly improved in recent years, since 2016 the improvement has plateaued demonstrating a lack of progress

[78] Thames Catchment Management Plan – Source: https://assets.publishing.service.gov.uk/media/5a7c7f4fed915d6969f454a4/Thames_Catchment_Flood_Management_Plan.pdf Accessed October 2023

towards the target of 100% healthy waters by 2027[7980]. In 2019, just 14% of rivers met the criteria for 'good ecological status', which shows no improvement from the data published in 2016[8182]. In 2019 20% of water bodies in the UK met 'bad' or 'poor' ecological status. A range of pollutants, including sewage discharge, chemicals, and agriculture, were suggested to be having this damaging impact on river quality. 18% of water bodies are prevented from reaching 'good ecological status' due to urban diffuse pollution. This includes pollution from streets, houses, businesses, and highways with surface water runoff drainage overflow[83].

In terms of the river Thames itself, it meets moderate ecological status, however, fails the chemical status. The brackish waters, remain stable for quality, however 92% of samples have significant presence of bacteria, with sewage being pumped into the river, in 2017 undiluted sewage was pumped into the Thames[84]. The river Thames also experiences significant amounts of microplastic pollution. Storm sewage pollution is one of the main forms impacting the Thames Overall, 93.8% of water bodies in the Thames catchment are failing to meet good ecological status[85].

The Water Framework Directive (WFD) was adopted and enacted in 2000 to provide a legislative framework for the protection of rivers, lake, transitional waste (e.g., estuarine), coastal waste and groundwater across the UK. This directive has been transposed into English and Welsh Law through The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

3.7.3 *Flood Risk*

Surface water flooding is the main flood risk in north London. It occurs when the drainage system is overwhelmed, and rain cannot get into local drains, sewers, or watercourses. It can be caused by intense rainfall and/or blockages within the system. It is difficult to predict when and where surface water flooding will occur due to uncertainties in timing, location and intensity. The overall anticipated risk to properties in the boroughs is low as shown in Table 15.

Individual boroughs are responsible for the management of local flood risk, which includes surface water flooding, ordinary watercourse flooding and groundwater flooding, in partnership with the Environment Agency. There is an overarching (Greater London Authority) GLA Region Flood risk Strategy, which informs local plans. All the boroughs have Local Flood Risk Management Strategy (LFRMS) as required by the flood and Water Management Act (2010) (see Section 2).

Following the significant flooding incidents in July 2021, the London Surface Water Strategic Group was formed as part of the London Councils' Transport and Environment Committee. These floods affected 24 boroughs, and more than 1,000 properties, with the worst impacts being felt in east and north London. The flood effected all north London boroughs except for Enfield. This aspect links to climate change

[79] https://deframedia.blog.gov.uk/2020/09/18/latest-water-classifications-results-published/ (Accessed January 2024)
[80] https://www.wcl.org.uk/not-one-river-in-england-in-good-health.asp
[81] https://environment.data.gov.uk/catchment-planning/England/print (Accessed January 2024)
[82] https://deframedia.blog.gov.uk/2020/09/18/latest-water-classifications-results-published/ (Accessed June 2021)
[83] https://publications.parliament.uk/pa/cm5802/cmselect/cmenvaud/74/report.html
[84] https://www.london.gov.uk/who-we-are/what-london-assembly-does/london-assembly-press-releases/thames-water-and-future-londons-waters (Accessed January 2024)
[85] https://environment.data.gov.uk/catchment-planning/RiverBasinDistrict/6/classifications (Accessed January 2024)

(Section 3.1) in terms of adaptation to the effects of climate change, due to increased precipitation and extreme weather events. Flooding events may also entail a significant clean-up effort, generating waste (from silt deposits, water damage, spilled waste containers etc).

Table 14 Surface water flood risk and Critical Drainage Areas within North London

Settlement	1 in 100 Surface Water Flood Risk: Number of properties at risk	Critical Drainage Areas (CDAs)
Barnet	10,059[86]	5
Camden	361[87]	4
Enfield	9,000[88]	18
Hackney	3,616[89]	
Haringey		9
Islington		13
Waltham Forest	30,000[90]	14

Table 15: % properties at flood risk in north London[91]

Borough	% Total properties at risk of flooding				
	% High	% Medium	% Low	% Very Low	% Total at risk
Barnet	0.49	0.71	0.77	0.11	2.08
Camden	0	0	0	0	0
Enfield	0.07	2.93	6.1	0.71	9.82
Hackney	0	0.04	2.05	0.62	2.72
Haringey	0.01	0.44	5.34	0	5.79
Islington	0	0	0	0	0
Waltham Forest	0.88	2.00	1.78	0.01	4.67

[86] Source: Barnet Local Flood Risk Management Strategy, 2023 -2029, Accessed February 2024.
[87] Source: Camden Surface Water Management Plan, 2011, Accessed February 2024
[88] Source: Enfield Level 2 Strategic Flood Risk Assessment, 2013, Accessed February 2024
[89] Source: Hackney Local Flood Risk Management Strategy, 2016, Accessed February 2024
[90] Source: London Borough of Waltham Forest, Surface Water Management Plan, Accessed February 2024
[91] London Flood Risk Map - Guide For 2023 | Urban Water (urban-water.co.uk), accessed February 2024

3.7.4 *Groundwater*

There are small scale, Zone 1, and Zone 2 Groundwater Source Protection Zones (SPZs) across north London, which are designed to protect the groundwater supplies. SPZs are monitored by the EA under the Groundwater Protection Policy.

As visible in Figure most of the north London area is unproductive, low, or medium low risk for groundwater flooding. Some areas are of medium risk and medium high, and high risk in Barnet.

There is one high vulnerability area in Camden and another of medium high risk in the borough of Hackney. The boroughs of Barnet and Hackney both have Secondary A aquifers within the bedrock[92].

Again, this aspect also links to climate change (section 3.1) in terms of adaptation to the effects of climate change, due to increased precipitation and extreme weather events and potential for raised groundwater levels as a consequence of these effects.

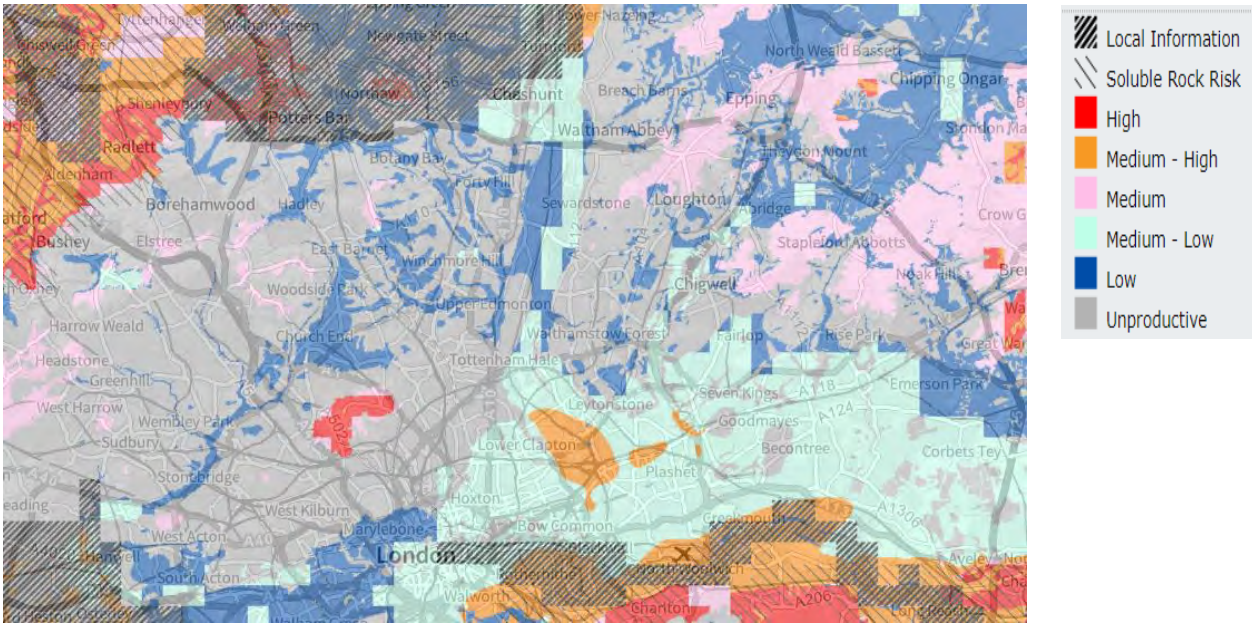

Figure 10. Groundwater Flood Risk and Vulnerability from bedrock Sources across NORTH LONDON (Magic Map)[93]

[92] DEFRA MAGIC Map Tool – Aquifer designation – Source: https://magic.defra.gov.uk/MagicMap.aspx Accessed October 2023
[93] Defra MAGIC Map Tool (Accessed October 2023)

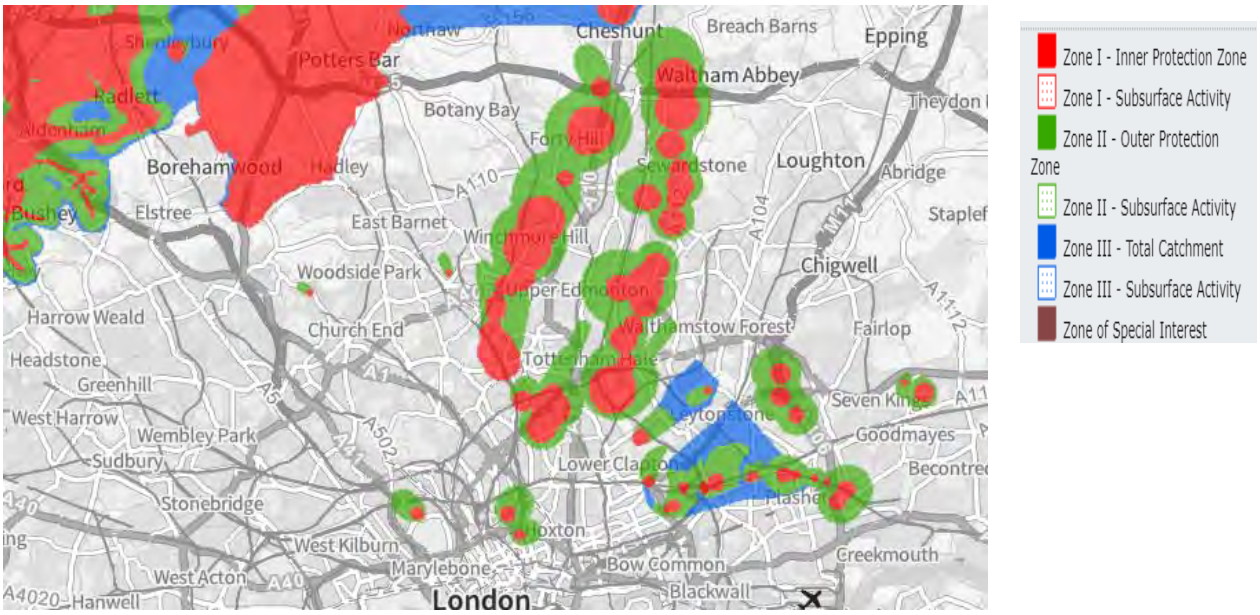

Figure 11: Groundwater Source Protection Zones across north London (Magic Map)[94]

In England, the Environment Agency report that groundwater provides over a third of drinking water. Groundwater is susceptible to contamination from agriculture, mining, transport, housing etc. and cannot be cleaned easily. The SPZs across north London are shown in Figure .

The potential impact of waste management on water quality will be primarily a site-specific issue. Different facility types may have the potential for impacts on water courses or SPZ, e.g. windrow composting sites have the potential for run-off into surface water and contribution to eutrophication or landfill leachate could percolate into the groundwater causing contamination of groundwater. Waste management activities are controlled by strict regulation designed to minimise potential environmental impacts, with locations controlled through the planning process and facility design and operation through the Environmental Permitting system rather than at a waste strategy level.

3.8 Land and Soil

To assess the potential impact that waste management process may have on the land, it is important to understand the geology and soil composition of the local environment. Soil and geology composition influences how susceptible the local area is to pollutants and groundwater contamination. The section below considers the soil and geological composition of the north London area.

3.8.1 Geology

As observed in Figure 12 (below), the bedrock geology for the majority of north London's geographical area is London Clay, Siltstone and Sandstone. The London Clay Formation is mainly comprised bioturbated/poorly laminated, blue-grey or grey, brown, slightly calcareous, silty to very silty clay, with

[94] Defra MAGIC Map Tool (Accessed October 2023)

some layers of sandy clay deposited in the Ypresian age [95]. The Bagshot Formation is composed of pale-yellow brown to pale grey or white, locally orange or crimson, fine-to coarse-grained sand that is frequently micaceous and locally clayey, with sparse glauconite and sparse seams of gravel deposited in the Ypresian age [96]. The Claygate Member is distinguished from the overlying Bagshot Formation by containing finer sand without crossbedding, and in the relative abundance of clay and silt[97]. The Lambeth Group is also present in the north London area, from the Thanetian Age to the Ypresian Age. The bedrock consists of sequences mainly of clay, some silty or sandy, with some gravels, minor limestones and lignite's and few sandstones and conglomerates.

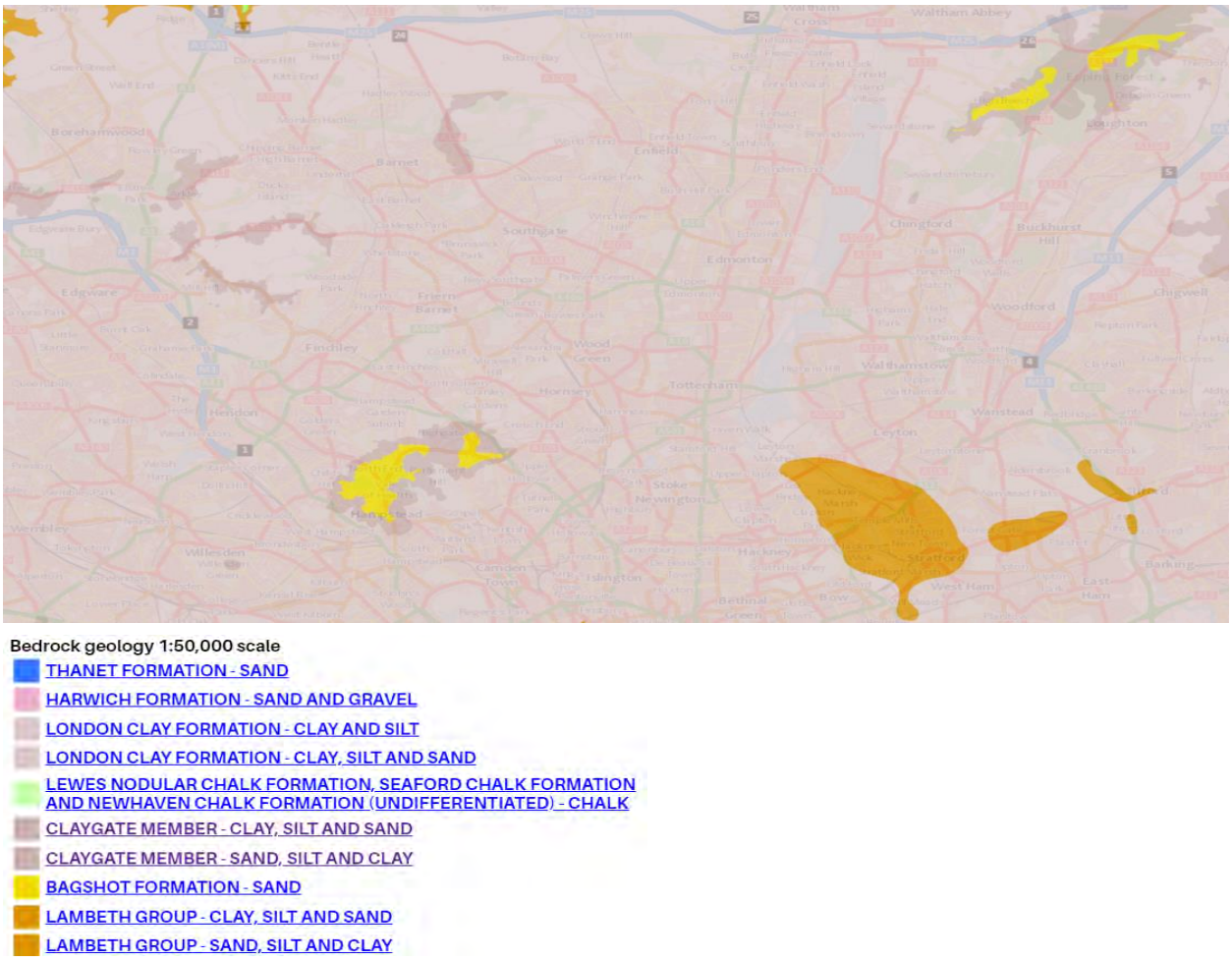

Figure 12: Bedrock Geology of north London (BGS)[98]

[95] BGS Lexicon of Named Rock Units Source: https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=LC Accessed October 2023
[96] BGS Lexicon of Named Rock Units Source: https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=BGS Accessed October 2023
[97] BGS Lexicon of Named Rock Units Source: https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=CLGB October 2023
[98] British Geological Survey, Geoindex onshore (2020): https://mapapps2.bgs.ac.uk/geoindex/home.html Accessed October 2023

3.8.2 Soils

Overall, loamy and clayey soils make up the majority of the soil profile for north London which can be seen in Figure 13 in dark green. In a few areas across the north London the pink areas signify freely draining rich loamy soils. The southern areas of north London consist of loamy soils with naturally high groundwater.

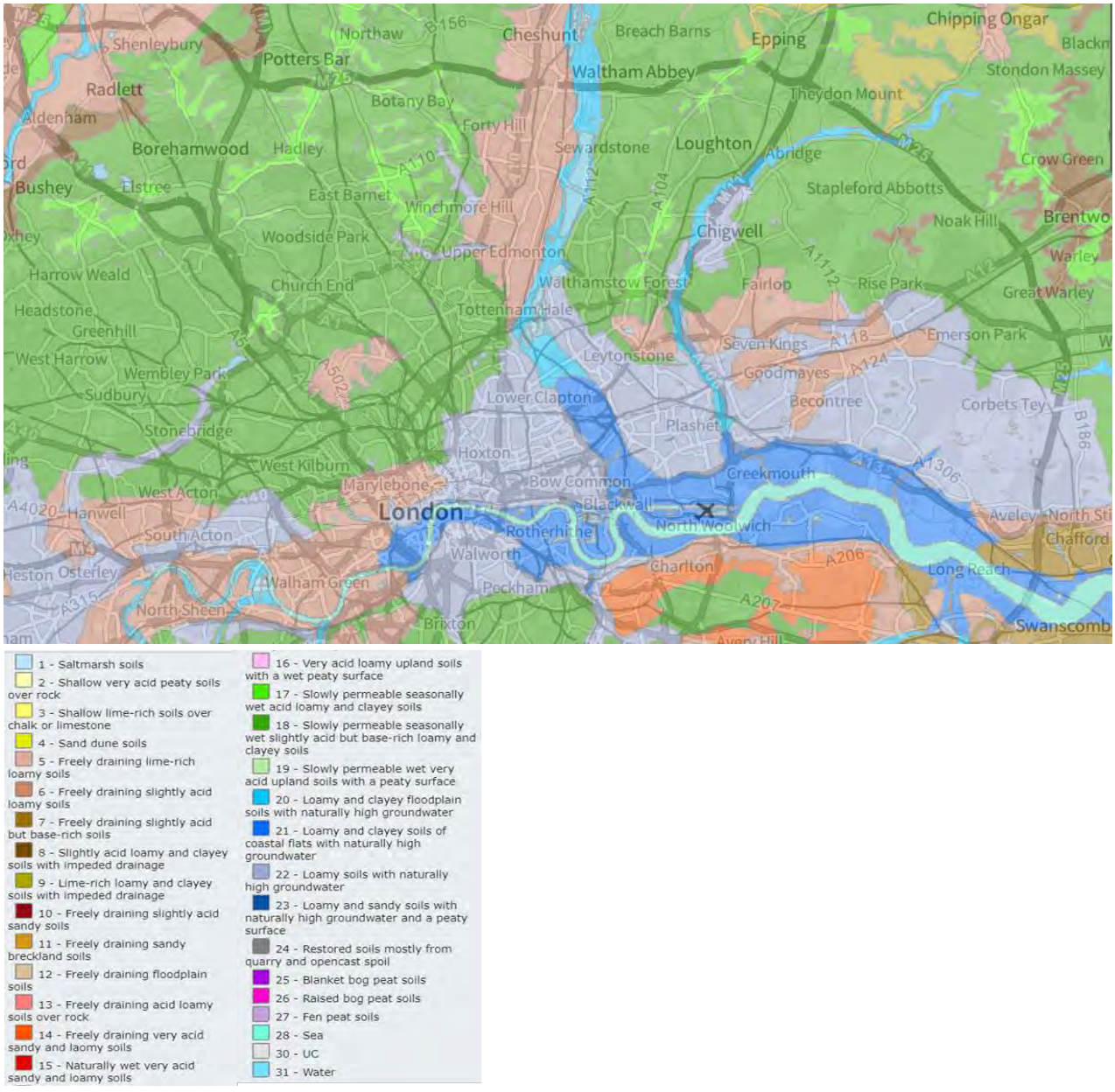

Figure 13: Soils of north London[99]

[99] Soilscape (Magic Map), Defra (Accessed October 2023)

3.9 Air Quality

Road transport emissions accounted for 33% of nitrogen oxides (NOx) emissions across the UK in 2022[100]. The impact of waste management activity on local air quality is most likely to arise through transport impacts, for example, through vehicle movements for household waste collections and the transport of waste and recyclables to transfer/recycling/treatment/disposal facilities. Composting sites, Energy from Waste facilities and other residual waste treatment facilities can all have local emissions to air, regulated through environmental permits by the Environment Agency.

Local authorities are responsible for reviewing local air quality in accordance with the Environment Act 1995. This involves measuring air pollution and predicting how it will change in the future with a view to ensuring that local air quality objectives are achieved and where these are not met then Local Air Quality Management Areas (AQMA) can be declared. In such circumstances local authorities are required to put together a plan to improve local air quality. Road transport is the main source of air pollution in the majority of AQMAs.

Boroughs regularly review and assess pollution levels across their designated areas. As stated in the National Air Quality Strategy, which is under the Environment Act 1995, the 8 pollutants which are recommended to be monitored include: Benzene, 1-3 Butadiene, Carbon Monoxide, Sulphur Dioxide, Lead, Particulates, Nitrogen Dioxide and Ozone. However, the three which are most consistently monitored include Sulphur Dioxide, Nitrogen Oxide and Particulates (PM10). Within the AQMA there are AQFA's (Air Quality Focus Areas) of which there are 51 within north London, these are outlined below in Table 16 and the details of their locations are provided in Appendix C.

Table 16: AQFA's within the north London area.

Borough	Number of AQFAs	Cause
Barnet	16	Nitrogen Dioxide, PM10
Camden	5	Nitrogen Dioxide, PM10
Enfield	7	Nitrogen Dioxide
Hackney	8	Nitrogen Dioxide
Haringey	9	Nitrogen Dioxide
Islington	2	Nitrogen Dioxide, PM10
	4	Nitrogen Dioxide
Waltham Forest	7	Nitrogen Dioxide
Note – All data is up to date as of 02/10/2023		

[100] National Statistics Release: https://www.gov.uk/government/statistics/transport-and-environment-statistics-2022/transport-and-environment-statistics-2022

The impact of waste management activities on air quality is considered on a local rather than national level. Waste management activities may have site specific impacts related to air quality that would be considered through the planning and permitting process rather than at strategy level. Transport baseline is presented in Section 3.10 below.

3.10 Transport

3.10.1 Road

With north London there are several major roads and transport links including the M1 to the Midlands and north, A1 to East Midlands and Lincolnshire. A11 and A12 and to join the M11 north towards Cambridge and East Anglia [101].

3.10.2 Rail and Underground

Services to and from north London are operated by Thameslink, Great Northern, Network Rail, London Overground, and Greater Anglia. Services to central London are operated by Thameslink, London underground and Great Northern. Within north London three mainlines run through to Euston, St. Pancras, and Kings Cross all of which are located in the borough of Camden. The lines which provide transport to and from north London, are as follows:[102]

- The Midland Mainline – runs between London St. Pancras and Nottingham, Derby, and Sheffield
- The West Cost Mainline – runs between London Euston to Liverpool, Birmingham, Glasgow, and the Lake borough
- Caledonian Sleeper Train – Runs between London Euston and Scotland (Fort William, Inverness, and Aberdeen).
- The East Coast Mainline (ECML) - runs between Kings Cross and Edinburgh.
- The Southeast lines – runs between London St. Pancras and Brighton. Runs between Victoria and Ashford (and international), Dover, Brighton, Southampton, and Gatwick Airport. Also runs between Charing Cross and Tunbridge Wells, Dartford, Dover, Hastings, Ramsgate, Margate, and Sevenoaks.
- Eurostar – Runs between St. Pancras and Mainland Europe.

There are also the tube lines within London which are as follows Circle, Bakerloo, Central, District, Hammersmith and City, Jubilee, Metropolitan, Northern, Piccadilly, Victoria, Waterloo and City, London Overground, Elizabeth Line, DLR and Tram. Most tube lines run from 5 am until 12 am, where the trains leave the first station.

As part of the HS2 development, the Phase one development will see the line constructed from London to the West Midlands, where it will re-join the existing West Coast Mainline. The first HS2 services will run

[101] Northern radials- https://www.roads.org.uk/ringways/northern Accessed October 2023
[102] Source: https://uktravelplanning.com/london-train-stations/ Accessed October 2023

between Birmingham Curzon Street and Old Oak Common in London between 2029 and 2033. HS2 will serve 4 stations: London Euston, Old Oak Common, Interchange and Birmingham Curzon Street[103]

3.10.3 Bus

Within London there are approximately 700 bus routes, with over 19,000 bus stops[104]. Most bus routes run from 5 am until 12 am, with the main bus lines running 24 hours a day.

Changes to the bus services within London include zero-emission fleets and hydrogen buses. Proposals are also being developed for the Superloop, which will create express bus routes around the capital to connect outer towns, and transport hubs[105].

3.10.4 Air

Across London there are 6 airports, 5 of which have cargo operations. The north London area does not have an airport located within it, London City, Stanstead and Heathrow are the nearest airports. Heathrow lists a one-hour catchment of 15 million people through road and train due to new public transport facilities such as the Elizabeth Line.

3.10.5 Transport Priorities

Overall, the transport links in and around London are good, with substantial road, rail, underground, bus, and air infrastructure. More sustainable methods such as walking and cycling should continue to be promoted and net zero transport changes should continue to be improved and implemented.

According to the Mayor's Transport Strategy (2018), the central aim is for 80% of all trips in London to be made on foot, by cycle or using public transport by 2041[106]. Further improvements to bus and rail services in outer London, where some of the north London boroughs are located is proposed. One proposal aims to deliver a cycle network, with new, safe and improved infrastructure, which 70 per cent of Londoners will live within 400 metres of by 2041.

Another aim of the Transport Strategy is for London transport to be net zero by 2050, through electric and hydrogen vehicles. There are 9 sections to achieve the vision of shifting away from cars and making London a better place to live in the future.

3.11 Biodiversity & Natural Resources

Although London is heavily urbanised, it contains a wide variety of important wildlife habitats, including sites of national and international importance. The following section outlines the key biodiversity plans and strategies in place the enhance biodiversity and improve the management of natural resources.

[103] HS2 Phase one: https://www.hs2.org.uk/the-route/london-to-west-midlands/ Accessed October 2023
[104] London Datastore (2015): https://data.london.gov.uk/dataset/tfl-bus-stop-locations-and-routes Accessed October 2023
[105] Transport for London: https://tfl.gov.uk/modes/buses/improving-buses?intcmp=42923 Accessed October 2023
[106] Mayors Transport Strategy: https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf Accessed October 2023

3.11.1 Local Nature Recovery Strategies & action plans

A Local Nature Recovery Strategy is currently being produced by the Greater London Authority (see Section 2). This will set out London's strategic biodiversity priorities and produce a fully updated and comprehensive spatial habitat map with London's Strategic Nature Recovery Network. The plan will provide an evidence base for the next London Plan and Environment Strategy using a network of 1,600 designated wildlife spaces known as Sites of Importance for Nature Conservation (SINCs)[107] The aim is for the LRNS to be published in 2025.

The original Biodiversity Action Plan (BAP) for London was carried out as an audit of London's key priority habitats and species. At a borough level, biodiversity action plans (BAPs) or local nature recovery plans have been implemented to guide area specific biodiversity enhancement activities.

In 2020 Barnet declared an ecological emergency and biodiversity will be covered in Barnet's new Local Plan. A technical Paper on Biodiversity from 2022, outlined how Barnet will identify, map and safeguard the wildlife rich habitats across the Borough. Barnet is one of the greenest boroughs in London and has a wide range of different habitats that have been recognised as Sites of Importance to Nature Conservation (SINC). The SINCs include woodland; grassland/acid grassland, pastures and meadows; streams, lakes and ponds; wetlands and bogs; and ancient hedgerows. In addition, it contains the Welsh harp / brent reservoir, this is designated as a Site of Special Scientific Significance (SSSI) and serves as an important refuge and breeding site for waterfowl and other birds. A number of key objectives in the new Local Plan will aim to integrate the natural environment into the urban landscape, improving access to, and enhancing the contribution of biodiversity, green belt, metropolitan open land and green and blue infrastructure.

In 2022, Camden replaced it's BAP 2013 – 2018 with the Creating Space for Nature Strategy 2022. The strategy focusses on Camden's commitment to recognise the value of nature, natural areas and green spaces for biodiversity. The strategy focuses on several areas including the protection of designated sites, protection of habitats and priority species, increasing tree canopy, management and enhancement of green spaces, increasing nature education and achievement of Biodiversity Net Gain (BNG) in urban spaces.

Enfield adopted a BAP in 2011, that was subsequently reviewed in 2021 and acted as an addendum to Enfield's Blue and Green Strategy (2021-2031). The update covers designation of sites, implementation of local ecological management plans, delivery of local habitat targets, raising awareness of biodiversity value and access to green spaces. Since 2011 there have been 25 new SINCS designated.

Haringey produced a BAP2009 that is due to be renewed in 2024. The plan aims to enhance biodiversity across the borough and align with the priorities of the UK and London plans. The BAP includes a programme of actions including enhancing open spaces and council properties, encouraging nature education and reducing light pollution. It also outlines the use of nature positive procurement methods to outline how Haringey will meet its biodiversity duty, as set out in The Natural Environment and Rural

[107] Local Nature Recovery Strategy (2023) https://www.london.gov.uk/programmes-strategies/environment-and-climate-change/parks-green-spaces-and-biodiversity/local-nature-recovery-strategy?ac-188029=188028

Communities Act (NERC) 2006. The NERC ACT 2006 states, that *'Every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'*. In 2023, Hackney implemented a Local Nature Recovery Plan that built on their previous BAP 2002- 2017. The Local Nature Recovery Plan provides a clear framework for how biodiversity and conservation practices can be embedded into council policy and land management process. Hackney is relatively green in comparison to other city boroughs as more than 40% of its land is classified as green cover made up of parks, open spaces, gardens, and other green areas. These key areas provide valuable space for wildlife. The plan outlines 5 areas of conservation including:

- Woodberry Down and Stoke Newington – focused on Woodberry Wetlands, West, Reservoir, Abney Park Cemetery and Clissold Park,
- Springfield and Stamford Hill – focused on the River Lea, Springfield Park and Clapton Common,
- Lea Bridge and Hackney Downs – focused on Millfields and Hackney Downs and
- Hackney Wick and London Fields – focused on the River Lea, Hackney Marshes
- Regents Canal and Hackney South – focused on the Regents Canal, Shoreditch Park and Haggerston Park.

Schemes range from species conservation, planting hedgerows and meadows alongside community-based projects.

Islington's Biodiversity Action Plan 2020 – 2025 is the third biodiversity plan produced by the borough. It draws upon UK biodiversity strategies and the London BAP to produce a plan that is relevant on a local level. The plan identifies the actions required to protect and enhance biodiversity. Islington is a very urban borough, the habitats and species that are significant on a national scale, are often not present therefore the BAP focuses on the built environment, designated sites, parks, housing estates, urban green spaces and access to nature.

Waltham Forest has a BAP, updated in 2020 that outlines the core biodiversity objectives that are relevant to the local area. The objectives and key considerations include an assessment of habitat quality and change, an outline of the increase in habitat size and quality, policies to support the protection of habitats, increasing awareness of habitats and the need to conserve them, increasing the knowledge of species distributions and populations, raising awareness of species conservation and engaging with the local community.

One of the common areas of focus in all London biodiversity plans and strategies is the inclusion of designated areas or SINCs. In London, there are 3 grades of SINC:

- sites of metropolitan importance – important at a London-wide scale, sites which contain the best examples of London's habitats, have particularly rare species or have particular significance in heavily built-up areas
- Sites of borough importance – important on a borough perspective, divided into two grades on the basis of their quality
- sites of local importance – of particular value to people nearby, such as residents or schools

The table below summarises the key biodiversity objectives and characteristic and outlines the number of SINCs found in each north London borough.

Table 17: Local biodiversity objectives summary and SINC

Borough	Sites of Importance for Nature & Conservation (SINCs)	
	Number of SINCs	Notes
Barnet	65	8 - metropolitan Importance 57 - importance to borough, or locally where situated.
Camden	38	Covering almost 414 hectares
Enfield	41	Increase of 25 sites since 2011 BAP
Hackney	24	Consisting of woodland, parks, aquatic environments and playing fields.
Haringey	59	5 - Metropolitan importance 9 - Borough Grade I importance 13 - Borough Grade II 32 - Local importance
Islington	64.	Many are public parks, also include cemeteries, churchyards, school grounds, the Regents Canal, housing estates, railside lands and reservoirs.
Waltham Forest	27	3- Metropolitan 4 - Borough Grade I importance 6 - Borough Grade II 14 - Local importance

3.11.2 Designated sites of scientific interest

An SSSI is an area of particular interest to science due to rare species of flora, fauna or geological and physiological features. These are areas that have significant conservation value and have a higher level of protection than other sites. Within London there are 37 SSSIs. According to a Natural England Assessment of London SSSIs in 2019[108] observations were made regarding the condition of these sites and the following outcomes were noted:

- 45.17% were in *Favourable condition*.
- 41.31% were in *Unfavourable recovering condition*.
- 7.07% were in *Unfavourable condition – no change*.
- 6.15% were in *Unfavourable condition – declining.*

5 of the 37 SSSIs are located within north London and are all of significant scientific interest. The site locations and conditions are outlined below:

- Barnet - Brent Reservoir is in 'Favourable condition'.
- Enfield - Chingford Reservoir is in 'Favourable condition'.
- Camden – Hampstead Heath Woods is in 'Favourable condition'.
- Waltham Forest – Epping Forest has varying conditions including 'Unfavourable recovering condition', 'Unfavourable condition - no change' and 'Unfavourable condition – declining'.
- Waltham Forest – Walthamstow Reservoirs is in an overall Favourable condition with FEN, MARSH, and SWAMP lowland in 'Unfavourable condition - declining'

There are no Areas of Outstanding Natural Beauty (AONB) within north London however there is one Special Area of Conservation (SAC), one Special Protection Area (SPA) and one Ramsar[109] site. The SAC site within north London is Epping Forest in Waltham Forest, which has a variety of important habitats including acid grasslands and broadleaved mixed and yew woodland. Walthamstow Reservoir is both a SPA site as it forms part of the LEE valley and a Ramsar site due to its important range of habitats and species such as rare waterfowl.

3.11.3 Natural Resources

Ecological Footprinting is a monitor of human demand on ecosystems. It shows that humanity is already using nearly 50% more natural resources than the Earth can replenish. By 2050 it is estimated that humans will be using twice as many natural resources than the Earth can replace. For an individual, a sustainable

[108] Source: https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?regionName=LONDON&SiteType=RAMSAR&ReportTitle=LONDON Accessed October 2023

[109] RAMSAR sites are Wetlands of international importance and are designated under the RAMSAR convention. RAMSAR is named after the City in Iran where the convention was signed. fs_6_ramsar_convention.pdf

ecological footprint would be less than two hectares, however in the UK alone each individual is using is over 5[110].

Natural resource use is primarily a national rather than a local issue, as natural resources such as minerals and sources of energy are consumed locally but often derived from non-local sources. The waste strategy review provides an opportunity to look at activity in north London and assess how it can reduce resource depletion. Natural resource use is also linked to the consumption of goods and services by the population of a particular area. The preservation of natural resources can be an important factor when developing waste strategies and drive a focus on the circular economy. The London Environment Strategy 2018 outlines the importance of using a circular approach to the economy, maximising resource efficiency and reducing waste. In addition, the design and efficiency of waste management infrastructure can also provide opportunities to reduce the consumption of natural resources.[111]

Waste prevention, reuse, repair and recycling can contribute to preserving or recovering resources. Therefore, it should be considered as part of an overall assessment on the impact on natural resources. Activity that promotes the waste hierarchy will be an important part of any assessment.

3.12 Buildings, Heritage, and Landscape

This section covers listed buildings (Grade I, II*, II), monuments and heritage assets, such as registered parks and gardens and conservation areas within the north London boroughs in 0 Landscape of the north London area such as National Chartered Areas are included in 0.

[110] https://cat.org.uk/info-resources/free-information-service/green-living/carbon-calculators-ecological-footprints/ (Accessed June 2024)

[111] Mayor of London. Mayor's Transport Strategy (2018) https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf

3.12.1 Cultural Heritage

Cultural heritage within north London boroughs is explored through the number of listed buildings, scheduled monuments, registered parks and gardens, conservation areas, world heritage sites and battlefields to highlight areas for protection within north London.

Table 18: Number of listed buildings, monuments, and heritage assets[112]

Authority	Listed Buildings				Scheduled Monuments	Registered Parks and Gardens				Conservation areas	World Heritage Sites	Battlefields
	Grade I	Grade II*	Grade II	Total		Grade I	Grade II*	Grade II	Total			
Barnet	2	34	614	650	2	1	2	3	6	10	0	1
Camden	57	155	1,753	1,965	1	2	7	7	16	40	0	0
Enfield	3	23	273	299	5	0	1	4	5	22	0	0
Hackney	8	30	514	552	2	0	1	4	5	35	0	0
Haringey	6	20	260	286	0	0	2	2	4	28	0	0
Islington	12	34	1,003	1,049	1	1	0	1	2	41	0	0
Waltham Forest	0	13	104	117	0	0	1	0	1	15	0	0

Cultural heritage within north London boroughs is explored through the number of listed buildings, scheduled monuments, registered parks and gardens, conservation areas, world heritage sites and battlefields to highlight areas for protection within north London.

Table 18, shows there are over 5,000 heritage sites within the seven boroughs of north London which all require protection. Large numbers of Listed Buildings are present in Camden and Islington, with Camden also having the highest quantity of registered parks and gardens and a high number of conservation areas. None of the boroughs have World Heritage Sites, however there is one battlefield in Barnet (Battle of Barnet).

It should be noted that the north London Joint Waste Strategy is not a planning document and doesn't address site specific aspects, therefore the relationship of buildings and site specific issues is not directly related to the strategy, but will be relevant to the waste local plan, associated planning permissions and environmental permits for waste management facilities and activities.

[112]Search the List - Advanced Search https://historicengland.org.uk/listing/the-list/ (Accessed September 2023)

3.12.2 Landscape

There are 159 National Character Areas (NCAs), across England, as defined by Natural England. They are classified as a natural subdivision of England based on the landscape, history, biodiversity, geodiversity, and economic activity[113]. The boundaries of NCAs follow natural lines, as opposed to administrative boundaries. There are two NCAs which intersect the north London area, these include:

- NCA 111: Northern Thames Basin
- NCA 112: Inner London

London has the highest proportion of developed land use to non-developed at 40.6% and 58.7% respectively with the remaining 0.7% classified as vacant in 2022[114]. For north London the average developed land use is 49%. Much of the north London and Greater London land is predominantly in urban use.

It should be noted that the Joint Waste Strategy is not a planning document and doesn't address site specific aspects. Therefore, the relationship of the landscape and site specific issues is not directly related to this strategy, but will be relevant to the waste local plan and associated planning permissions and environmental permits for waste management facilities and activities.

[113] Source : https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making
[114] Land Use in England (Accesssed January 2024)

4 Key Sustainability Issues and Interrelationships

As part of developing the SEA alongside the JWS, it is important to analyse the local environmental baseline and identify environmental problems. A review of relevant local and national plans and policies together with an assessment of the baseline position for north London has therefore been carried out as part of the scoping phase of the SEA. From this analysis, the key environmental and sustainability issues identified for north London cover a range of topics including: climate change; local environmental quality; air quality; economics and; natural resources. The relevant issues will be assessed as part of the SEA.

The environmental and sustainability issues have been presented to representatives of NLWA and the seven borough Councils at a meeting on 19th February 2024. The results take account of the outcomes of these meetings and review and have been subject to further consultation with the NLWA, boroughs & Greater London Authority (GLA) prior to inclusion in the SEA process.

It is also important to take account of interrelationships between issues, for example between climate change and natural resources, as the products that we consume and then discard end up as waste that needs to be managed and disposed of whilst also using up scarce natural resources in their production. The waste services that are provided locally, depending on waste systems and sites for the facilities, could have impacts in terms of environmental quality, air quality and economics that need to be considered in the SEA.

The key environmental issues identified from the baseline assessment and consultations are presented below.

4.1 Climate Change

- **Net Zero** - Total CO_2 emissions for London declined steadily between 2006 – 2020, with a slight increase post 2020 due to the growth in industrial activity after the Covid 19 pandemic. There is a substantial challenge to reach the ambition of net Zero across London by 2030[115]and the respective climate ambitions of the individual boroughs who have all declared climate emergencies and are developing their own approach through their local strategies. Assessing waste management processes will form part of GHG reduction to achieve net Zero target. Carbon impacts using the Emissions Performance Standard (EPS) tool will be undertaken against different Strategy delivery options.
- **Preparing for changing climate, or climate adaptation** – Identifying key risks across the area will be important to ensure adequate measures are put in place to mitigate climate change impacts. Extreme weather events could impact on the operation of waste management facilities, notably landfill and composting, for example in high winds (note: UK has overall target of less than 10% of municipal waste going to landfill by 2030[116] and in 2021/22 north London sent only 3.5% of its waste to landfill). This could also be a factor to consider when considering containers for kerbside collections. In the event of extreme heat, more frequent collections may be required for

[115] Target set by the Mayor of London, Sadiq Khan
[116] Resources & Waste Strategy for England

putrescible waste streams such as food which will be influenced with the requirement for compulsory free weekly food waste collections from all households by 31 March 2026. All boroughs except Barnet already have some form of food waste collections in place. Open containers (e.g. boxes) will be more susceptible to windblown litter or damaged recyclables (e.g. paper and card) by precipitation.

- **Flood risk clean up** – north London boroughs are generally considered to be low risk to properties flooding through surface water, although there was a significant flood event in north London in July 2021 due to a high intensity rainfall event. Flooding events may also entail a significant clean-up effort, generating waste (from silt deposits, water damage etc).
- **Energy from Waste -** Waste management can potentially provide different forms of energy (gas, heat, electricity) if needed to support changing energy demands. Some of these energy forms (e.g. gas or electricity from Anaerobic Digestion of food) is considered low carbon and renewable and can form a base load energy supply where many other renewables do not. In addition, EfW can help to prevent the need for energy from other resources. Energy Recovery Facilities can help north London to reduce the need for more grid capacity and gas boilers etc.
- **Effective waste management & climate change benefits** - through application of the waste hierarchy principles (see below) the service can have strong climate change benefits.

Waste

- **Waste arisings** – The average household waste arising per capita in north London for 2021/22 (352 kg) which is 8% less than the average in England (417 kg). There has been an overall trend for the waste arisings decreasing in north London, although there have been fluctuations, most noticeably in 2020/21 to 2021/22, most likely the result of the Covid 19 Pandemic. Nationally councils reported a rise in domestic waste and recycling and a fall in commercial waste arisings as a result of the Covid-19 pandemic. New waste streams have been introduced and the composition has changed as a result of altered behaviour (e.g. increased takeaway food packaging, DIY waste, office-type waste from homeworking). The longevity of these effects / systems is currently unknown although some boroughs, such as Barnet and Haringey, have seen the covid uplift start to drop.
- **Waste to landfill** - Waste going to landfill in north London decreased by almost three quarters since 2014/15 to 2021/22, from 108,921 tonnes to 29,047 tonnes. In 2021/22 only 3.5% of waste was landfilled in north London compared to 8% on average in England. Any biodegradable waste landfilled will contribute to negative climate change impacts and a chance of potential ground water impacts, so efforts to minimise landfill should be continued (the London Plan 2021-2040 sets the target of no biodegradable or recyclable waste to landfill by 2026).
- **Energy recovery from waste** – since the 2011 waste review[117] the government set considered recovery of energy from waste (after reducing, reuse and recycling in the waste hierarchy) whilst

[117] DEFRA (February 2014 revised edition) Energy from waste, A guide to the debate

mitigating the environmental impacts from the EfW facilities, which are subject to independent Environmental Impact Assessments and monitoring on a site-by-site basis. Since 2020 there has been no incineration of municipal waste in north London without recovery of energy generation (EfW) and 68% of north London waste is incinerated with EfW compared to 47% in England on average.

- **Waste recycling / composting -** Recycling and composting rates are typically lower than the national average across north London. In 2021/2022 the average recycling rate in England was 44%, whilst it was 28.4% in north London. This is strongly influenced by the complexity of the urban environment i.e. transient populations, low property ownership levels and a high percentage of people living in flats/ flats above shops (where it is more challenging to achieve high recycling levels). Apart from Waltham Forest and Hackney, the boroughs have seen a decrease in recycling rates since 2012/13 (although north London boroughs have significantly less waste arisings compared to the average in England). Recycling has significant emissions and climate change benefits, due to the minimisation of resource use and keeping material in the value chain for longer. However, the greatest environmental benefits (per tonne) can be achieved via a reuse and waste minimisation approach, saving virgin resources and removing production processes that contribute to carbon emissions.
- **Waste reuse and prevention** – north London is active in promoting waste prevention and reuse, with 8 reuse and recycling centres (RRCs) across the boroughs. In addition, the NLWA offers direct resident support for reuse, delivered through campaigns, outreach, financial incentives, direct funding support to local projects, and reuse infrastructure. Practical opportunities for residents to repair and reuse items are also provided to prevent items from becoming waste. Waste prevention volunteers and community rewards will also be implemented to encourage waste minimisation practices and the NLWA will work with local schools and higher education establishments to promote waste prevention education.
- **Garden waste -** Garden waste services differ throughout the Boroughs, with different costs, collection containers and waste collected. Waltham Forest operates a mixed garden and food waste collection, whereas all other Boroughs operate a separate garden collection. Garden waste collection is a free service in Waltham Forest, but it is a charged service in the other six boroughs. Efforts could potentially be made on further waste minimisation through home or community composting.
- **Food waste -** Food waste collections are in place in north London for Camden, Enfield, Hackney, Haringey and Islington which operate weekly food collections for kerbside properties. Waltham Forest has a fortnightly comingled food collection (with garden waste) and Barnet does not provide any collection at present. For flats, Camden, Hackney, Haringey, Islington and Waltham Forest provide a weekly collection. Enfield provide a minimal service and Barnet provides no service. Food waste collection and recycling in the form of anaerobic digestion has climate change benefits due to the diversion of food waste away from landfill and incineration. It also had the added benefit of the production of biogas for energy, and digestate for use as fertiliser / soil conditioner and in horticulture.

- **Litter** - All boroughs support community action groups and volunteers with guidance and provisions for litter picking alongside the operation of street cleansing services

Health

- **Life expectancy** - On average across the seven Boroughs, the average life expectancy is below the average for England. However, Barnet and Camden were above the average for females.
- **Long-term health and disabilities -** Across the seven Boroughs, the percentage of the population living with a long-term health problem or disability is below the England average. All Boroughs have over 94% of the population considering themselves to be in very good to fair health.
- **Bad health** - Across the boroughs less than 5% of the population have been identified as having bad or very bad health. All 7 Boroughs provide an assisted bin collection service for those with poor health and / or a disability to improve access to waste management provision. This is important for servicing all areas of the population. Each Borough has assisted collection criteria.
- **Covid** - There is a longer-term uncertainty regarding Covid impacts and the proportions of the population affected by variants, and potential long term effects (e.g. long covid) with possible impacts on waste service demands and provision of services where social distancing or other measures apply. Lockdowns have notable effects on waste arisings in terms of their amount and character.
- **Dietary health** - Dietary health and food waste are a nationwide issue. London Good Food Strategy aims to make London healthier and more sustainable, which will increase awareness and help the JWS objective to reduce food waste. All boroughs have local food strategies, and Waltham Forest has one due to be published.

Population

- **Urban environment -** All seven of the north London boroughs are classified as 'urban with major conurbation[118]', with Enfield and Hackney having a rural percentage of 0.5 and 0.3% respectively. Urban environments may have different waste management challenges such as a lack of storage for bins / containers and specialist requirements for multi-occupancy dwellings; this is particularly relevant for potential future new recycling collections and trying to increase recycling to meet national targets.
- **Transient population & Language issues** – north London houses 16 universities and numerous other higher education establishments. The transient student population can create challenges with waste services / messages. Transiency can also be attributed in north London to high percentages of both inward and outward migration. London, generally has higher migration levels than the rest of England at around 5% but north London specifically has even higher rates of

[118] Source https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/591466/Local_Authority_boroughs_ranked_by_rural_and_rural-related_populations_with_Rural_Urban_Classification.pdf

around 10%[119]. As a proportion of the total population, around twice as many people move in and out of the NLWA area than London as a whole. This alongside ethnicity and language barriers, are also a factor impacting recycling efficiency.

- **Aging population** - The number of people aged 65 years and over in England as a whole, is projected to increase (from 18.2% to 20.7% of the total population between mid-2018 and mid-2028, see Section 3.3.1). The one person or single-family households over 66 years old are on average in England 13% and 9% whilst in north London they are lower at 9% and 4%. However, as the aging population increases, this could have implications for waste management services, for example, increased demands for assisted collections.
- **Overall population growth** – population growth for north London is projected to be above the national average of 5%, except for Haringey, Enfield, and Waltham Forest, which have a growth rate of 2%, 1% and 4% respectively. Therefore, with population increases, it will be important for planning authorities to provide any new developments with sufficient space for waste management, such as recycling within homes and storage of containers for recycling and refuse externally.
- **Growth 21-40 age bracket** - Growth predictions estimate that the highest percentage of residents are thought to be in the 21 – 40 age range this has potential to change in the composition of waste, i.e., in terms of having children with an increase in absorbent hygiene products and nappies. Therefore, this would need to be taken into consideration for waste collection provision. In addition, understanding the key age range of an area can also lead to more effective targeting for waste management service information.

Air Quality

- **Fly tipping** – Some boroughs within the north London area have seen an increase in fly tipping incidents since 2016/17, whereas others have seen a reduction (see Table 17). Although reductions have been noted, there are still a high number of incidents throughout the boroughs. This can impact on local pollution and recreational blight. It is important to note that differences in recording practices for fly tipping incidents can also impact the way in which fly tipping statistics are interpreted.
- **Local air pollution** - Local air pollution can also impact on local environment quality. There are 51 Air Quality Focus Areas (AQFAs) within North London, which are all caused by high levels of Nitrogen Dioxide and PM10.
- **Vehicle movements and air quality -** Refuse Collection Vehicles (RCVs) and other waste collection and transportation vehicles, which are typically diesel fuelled, can contribute to NOx and particulates (in addition to CO_2 and other pollutants); exacerbated by collections typically taking place when the roads are at their busiest, potentially delaying other traffic and having cumulative impacts. Domestic vehicles carrying waste (for example driving to the RRC) can also contribute to detrimental impacts to air. It is important to note that all boroughs have committed to low carbon

[119] 10% inflow and outflow migration in the NLWA north London area in 2019

fleets, with some boroughs low carbon fleets are already in operation. Barnet are working towards a 100% ULEZ compliant fleet by 2024/25, Enfield have committed to electrifying 60% of their council fleet by 2026 and Hackney have committed to a fully electric council fleet. Waltham Forest have a fully operational electric waste and street cleansing fleet and Islington has operational eRCVs. Finally, Haringey have some electric vehicles via Veolia. Therefore, increasingly electric fleets should enhance air quality in the long term.

- **Waste management processes** – waste management processes (e.g. EfW, transfer stations, composting sites, etc) can impact on local air quality through both vehicle movements and / or operations. Emissions from individual sites are controlled through the planning process and environmental permit system rather than the JWS.

Water

- **Catchment location -** North London is situated within the Thames catchment, a river that meets moderate ecological status but fails chemical status. 92% of samples acquired from the catchment have indicated a significant presence of bacteria due to sewage pumping. Microplastic pollution is evident in the river. River pollution can impact population health when they are exposed to the levels of bacteria in the water. Plastic pollution has also become significant problem for the Thames River. Improvement of catchment quality is a site specific issue but the overall objective to reduce waste in the JWS may support improvement in catchment quality.
- **Groundwater quality** – groundwater provides over one third of drinking water and is particularly susceptible to contamination from agriculture, mining, transport, housing etc. and cannot be cleaned easily. The potential impact of waste management on water quality will be primarily a site-specific issue, which is controlled through the planning process and environmental permit system rather than Joint Waste Strategy.

Biodiversity

- **Biodiversity net gain** - Biodiversity net gain (BNG) is a way of creating and improving natural habitats. BNG makes sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before development. Both the 2018 London Environmental strategy and the Transport strategy both focus on biodiversity net gain, which will be important for future waste facility development and any subsequent planning applications, which is controlled through the planning process and environmental permit system rather than Joint Waste Strategy. Biodiversity Action Plan for London was developed in 2021 which runs to 2026, outlines targeted habitats and species for protection. Each of the 7 boroughs have a Biodiversity Action Plan or biodiversity strategy in place to protect and conserve priority habitats, species and enhance biodiversity. The BAPs and Strategies are aligned to the specific borough due to different levels of urbanisation i.e. Islington as a heavily urban borough focuses on the built environment, housing estates and urban green spaces to enhance biodiversity rather than open parks.

- **Protected and conservation sites** - 5 Sites of Special Scientific Interest (SSSIs) are located within north London, all of biological interest, which should be protected, with 45% in favourable condition. Epping Forest in Waltham Forest is a Special Area of Conservation (SAC), the Walthamstow Reservoirs site is a Special Protection Area (SPA) and Ramsar120 site. Sites of Importance for Nature Conservation (SINCs) are an important part of all local borough BAPs and strategies. These are areas of importance for conservation. In London there are three grades of SINC; areas of metropolitan importance, areas of borough importance and areas of local importance. Each of the 7 boroughs have all grades of SINC and a significant number of areas dedicated to conservation. The number of SINC areas in each borough vary from 24 to 65. Protected and nature conservation sites are primarily a site-specific issue, which is controlled through the planning process and environmental permit system rather than the JWS.

Transport

- **Public transport** - A key aim is for London transport to be net zero by 2050, through electric and hydrogen vehicles.
- **HS2** – Phase one from London to West Midlands. The new additional line will influence commuter travel patterns and has the potential to increase workers in north London, which would impact on waste management. Construction activities / workers will influence local waste arisings.
- **Transport links** - Good variety of transport links are evident across the North London – road, rail, bus, air, while cycle and footway usage should be promoted. However, transport can be improved by the new Superloop proposal to further connect the outer city.
- **Sustainable transport** - Central aim of the Mayors Transport strategy (2018) is 80% of all trips to be made on foot, cycle or by public transport by 2041 and London transport to be net zero by 2050 through electric and hydrogen vehicles. This includes working towards improving the quality, connectivity, and accessibility of the public transport system, as well as making London's streets cleaner and people more active. The boroughs all have local sustainable transport plans in place.
- **Alternative vehicle fuelling infrastructure** - Hydrogen, natural gas, electricity infrastructure needs to be increased to meet future demand in terms of usage and supply. There may be the potential for waste management vehicles to operate in synergy with a smarter energy supply system and to link in with energy generation from waste (eRCV batteries exporting back onto the grid in peak demand, charging eRCVs from EfW facilities, using AD gas to power biomethane RCVs, etc).
- **Waste management vehicles** - In 2022, 34% of total UK greenhouse gas emission resulted from transportation. Waste management vehicles (fossil fuelled) will contribute to this impact. Dealing with waste in accordance with the proximity principle and exploring low emission fuels will reduce this.

[120] RAMSAR sites are Wetlands of international importance and are designated under the RAMSAR convention. RAMSAR is named after the City in Iran where the convention was signed.
fs_6_ramsar_convention.pdf

- **Broadband connectivity** is expected to be in continued demand throughout North London, and enhanced connectivity will influence working and living patterns and associated waste arisings.

5 Sustainability Objectives, targets & indicators

5.1 Sustainability Objectives

The original objectives from north London's previous Waste Strategy SEA (2009) and the North London Waste Strategy (2009) have been reviewed, along with the information within this Scoping Report to determine a list of SEA Objectives, as shown in Table 19. Appendix D shows the Objectives alongside a Proposed Measurement Indicator, SEA Regulations Themes and Rationale for inclusion. The objectives and indicators / criteria for measurement have been circulated and have been subject to consultation with the boroughs and via the scoping report.

Table 19: Sustainability Objectives for the JWS

Sustainability Objectives for Joint Municipal Waste Management Strategy	SEA Regulations Themes
1. To increase the positive carbon impacts and reduce the negative carbon (and other greenhouse gases) impacts of the waste collection, reuse, recycling, transportation, treatment and disposal service	Climate Change
2. To adapt to the unavoidable consequences of climate change	Climate Change
3. Increase the use of clean renewable fuels and low carbon or renewable energy	Climate Change Resources & Material Assets and Air
4. To reduce waste and resource use and maximise reuse recycling and recovery rates	Resources & Material Assets
5. To continue to divert waste away from landfill	Resources & Material Assets Climate Change
6. To maintain and enhance good air quality for all	Air and Human Health
7. To maximise the health and wellbeing of the population	Population and Human Health
8. To promote sustainable economic growth and employment	Population and Socio Economics
9. To protect and enhance the quality of water and soils	Water and Soil
10. To protect and increase biodiversity, flora and fauna	Biodiversity, Flora and Fauna
11. To protect and enhance the landscape and geodiversity of North London	Geodiversity and Landscape
12. To protect the significance of heritage assets of archaeological, cultural and historic value	Cultural Heritage
13. To maximise the accessibility and equality of services.	Population and Human Health
14. To promote civic participation, ownership and responsibility and enable individuals, groups and communities to contribute to improving their environment.	Population and Human Health
15. To support a strong, diverse and stable economy.	Sustainable Development (not direct SEA theme)

5.2 Key themes

The review of programmes and plans (Section 2) highlights several key themes of relevance to JWS and the sustainability objectives above. Key themes are included in Table 20 below.

Table 20: Consolidated list of themes for consideration in the JWS

Key Themes	Comments
Waste prevention	Whilst these themes could be combined under the theme of the waste hierarchy, within the JWS it is important that they are considered as individual themes. The elements of waste hierarchy will also contribute to renewable energy generation and the emerging theme of zero avoidable waste.
Reuse, recycling and composting	
Energy recovery from waste	
Landfill diversion	
Reducing the carbon / greenhouse gas impact of waste management to achieve collective net zero ambitions	Covering climate change and including carbon / greenhouse gas emissions from treatment / disposal options, low carbon economy, renewable energy, reducing transport impacts.
Affordability	Including value for money and the potential for delivering cost savings.
Circular economy	Encompassing resource efficiency / productivity, industrial symbiosis, wider collaborative working, developing markets for recyclable materials and sustainable procurement as a means of completing the circle.
Sustainable transport	Waste management, in one sense, is a logistics operation within a wider supply chain of production, consumption and management of materials arising as wastes. Transport is therefore a key aspect of waste management operations.
Limiting environmental impacts and harm to human health	Including environmental protection, sustainable communities.
Improving biodiversity	Whilst not a site specific strategy waste management operations can impact on biodiversity through emissions to air, water and land.
Reducing fly-tipping and litter	Encompassing the quality of the local amenity and contributing to green infrastructure.
Managing the impact of food waste	Two very topical themes, which could be considered under different elements of the waste hierarchy and are specific themes within the JWS.
Managing the impact of plastic wastes	
Management of all municipal waste	With the emergence of municipal waste targets covering commercial wastes similar in nature to household waste.
Raising waste awareness, education and community input.	On-going behaviour change.
Developing clean infrastructure / Build back better / Innovation	This has relevance for waste management strategy decisions (e.g. food waste collection and treatment infrastructure) and services (e.g. collections using electric vehicles, greener fuels).

6 Strategy Aims & Objectives

The vision for the JWS outlines how it will promote overall waste reduction in line with moving waste up the waste hierarchy as far as possible. This includes adopting and promoting the circular economy approach to ensure that waste and resources are managed and contribute to mitigating the effects of climate change. In December 2022, the NLWA and the constituent boroughs agreed on this vision and developed the joint aims, objectives and priorities outlined below:

6.1 Aims

- To promote overall waste reduction and avoidance;
- To promote sustainable municipal resources and waste management policies in north London and create a more Circular Economy;
- To minimise the overall environmental impacts of resource and waste management and mitigate the effects of climate change;
- To engage residents, community groups and local businesses in the development and implementation of resources and waste management;
- To work together to provide resident-focused, cost-effective, best value services.

6.2 Objectives:

- To work together with our boroughs, residents and the north London community to minimise the amount of residual wastes arising;
- To work together with residents and the north London community to increase reuse and recycling rates;
- To diverge resources and waste from landfill and support more sustainable initiatives for disposing of waste;
- To support the NLHPP project and development of the EcoPark, and work with the local community to maximise the benefits of the new facility and ensure it is the greenest hub of its kind;
- To work together with our boroughs, residents and the community to ensure waste management policies contribute to meeting the challenges of the climate emergency. This will include improving air quality and achieving net-zero targets;
- To explore innovative ways of managing municipal wastes in the most environmentally and economically efficient ways possible, which will help to achieve wider environmental goals;
- To ensure that our services and information are fully accessible to all members of the community;
- To maximise all opportunities for local regeneration and increased social value benefits from waste and resource management, including employment, skills and wellbeing.

6.3 Priorities

There are three key priorities, which form the themes of the Strategy:

- To support the reduction in household waste by promoting prevention, repair and reuse.
- To reduce the environmental impact of disposal, and recycle where there is no option to prevent or reuse waste.
- To deliver collaborative, community-focused services which provide value for money and maximise social value.

7 Strategy Waste Management Alternatives

7.1 Sustainability Issues

The development of the SEA involved an analysis of local and national plans, policies, (See appendix E & F) environmental, social and economic factors to assess the environmental 'baseline' for north London; identifying any key environmental sustainability issues. The analysis indicated that the geographical area covered by the JWS had a range of key environmental and sustainability issues. These issues related to waste management services including climate change impacts, local environmental quality; air quality, water quality; natural resources and biodiversity amongst others. All have been assessed as part of the SEA.

The key sustainability issues identified from the assessment are:

- Mitigating climate change by reducing the carbon impact of resources and waste management.
- Adapting to climate change, e.g. potential weather related and flooding issues
- Effective waste management and climate change benefits
- Changing waste streams (after Covid-19) and as part of lifestyle changes and Government policy
- Landfill diversion, reuse, repair and prevention, energy recovery from waste, recycling & composting
- Reducing fly-tipping and litter
- Reducing local air pollution and improving water quality
- Supporting the circular economy
- Providing services for a growing, aging and transient population and for those with long term health problems & disabilities
- Addressing environmental impacts including harm to human health and natural environment
- Managing the impact of food waste and garden waste

7.2 Support from the Options Appraisal

As discussed in section two, a waste management strategy requires an options appraisal to prioritise between alternative options for the purposes of service delivery, procurement and planning. An options appraisal accompanied the review of plans and programs, alongside the development of the JWS and presented alternative collection models and a review of waste prevention and reuse / repair activities. During the options appraisal, different delivery mechanisms were considered alongside environmental concerns i.e. CO_2 impacts. The criteria for each modelled option was agreed during a workshop with council officers on 12th May 2023. The agreed criteria are as follows:

- **Recycling Performance** – as modelled through KAT, using agreed assumptions
- **Cost** – developed through collection costs derived from KAT, in addition to cost information from the councils and notional recycling, treatment and disposal costs based on industry data
- **Carbon** – as modelled through the EPS tool
- **Operational Flexibility** – considers how future proofed the service is in relation to vehicle and container requirements

- **Public Acceptability** – an assessment of how each option will be / is accepted by the householder, this considers the level of change required by residents and the number of containers required
- **Alignment with National Policy Direction** – considers how well each option aligns against proposals within the National Resources & Waste Strategy & Simpler Recycling
- **Social Value** – access to a full recycling service, job creation and any other wellbeing or community benefits
- **Deliverability** – considers the operational changes and resourcing required to deliver the alternative options

A overview of the modelled options can be viewed in Table 37.

Table 37 Modelled options for the NLJWS

	Option 1	Option 2	Option 3
	Baseline in 2030 *+ separate food waste collections, DRS/EPR, simpler recycling*	***Twin stream, year: 2021/22*** *+ separate food waste collections, DRS/EPR, simpler recycling*	***Multi stream, year: 2021/22*** *+ separate food waste collections, DRS/EPR, simpler recycling*
Dry recycling	As per current service, based in 2030.	Alternate weekly twin stream collection (1: paper / card, 2: mixed plastic / metal / glass) via 2 wheeled bins.	Weekly multi stream collection (1: paper / card, 2: cans, plastic bottles and pots, tubs and trays, 3: glass) via 3 boxes.
Garden waste	As per current service, based in 2030.	As per current service.	As per current service.
Food waste	Separate food waste collection for all properties, where not already provided, including flats.		
Residual waste	As per current service, based in 2030.	As per current service.	As per current service.

To complement the options appraisal, and in alignment with the principles of the waste hierarchy (see Figure 14), an appraisal of options for addressing the first two principles of waste prevention and reuse was carried out. An assessment of collection and recycling was also undertaken in line with the North London Waste Prevention Plan 2022- 2025. This plan prioritises waste prevention to preserve resources for future generations and save money for councils. This is achieved through outlining an approach to community engagement, communications and policy to enable a reduction in waste. An overview of the key priorities of the plan can be viewed in Appendix G.

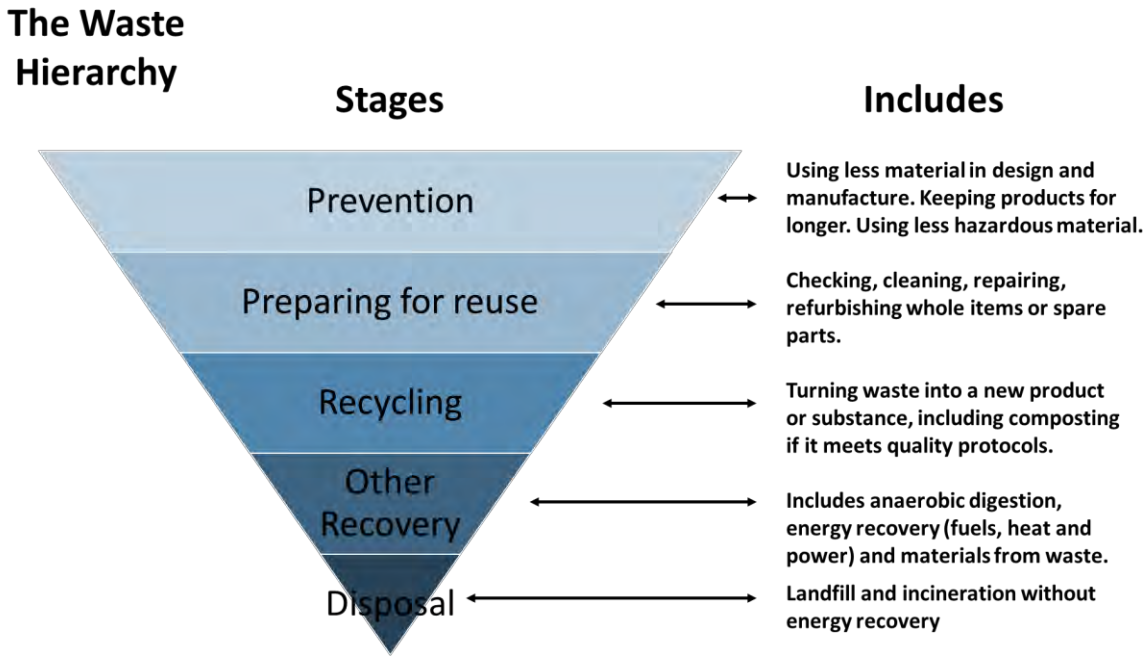

Figure 14. The Waste Hierarchy

7.3 Strategic alternatives & how they were identified

After assessment of the baseline and relevant information collected in the options appraisal it is important to consider alternatives for the JWS. Article 5.1 of the SEA Directive states:

"an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated"

Three strategic alternatives to the strategy have been proposed focusing on waste reduction, recycling and low impact waste disposal as illustrated in Table 38. These were identified as alternatives via a review of local plans and policies and reinforced with the waste hierarchy as illustrated in Figure 14. The alternatives were considered within the parameters of waste hierarchy when compiling the options. The broad principles within the waste hierarchy are included within the strategy and therefore these alternatives examine strategy delivery variations using the SEA objectives.

Table 38. Proposed Strategy Alternatives

Alternative/ Option	Description/ Comments
High Reuse, repair and waste prevention	Focus on waste awareness / education / waste reduction / repair / reuse and waste prevention initiatives.
High recycling	A focus on increasing recycling rates via waste collection services provision, education and awareness.
Low impact residual waste treatment	A focus on how residual waste is disposed of with minimal environmental impact i.e. if promoting EfW, best practice approaches

Alternative/ Option	Description/ Comments
	should be used in line with emissions control procedures i.e. exploring the use of carbon capture and storage.

It is important to note that for the second alternative of *'high recycling'* it is not being considered to collect residual waste less frequently than fortnightly.[121] This is due to the latest government position on waste collection which states that residual waste collection in England should not occur less than every two weeks. However, there could be the potential of moving to fortnightly residual waste collections (where weekly at present) and / or smaller residual waste bins to encourage greater materials separation for recycling.

7.4 Comparison of significant environmental effects of the alternatives

The appraisal of key sustainability issues and strategy alternatives has been carried out using a range of quantitative and qualitative assessments, including the review of local and national plans and policies, options appraisal and carbon modelling. The qualitative assessment was informed by technical judgment whereas the quantitative input has been informed by the options appraisal, and the EPS carbon tool to assess environmental outputs of key waste management activities where appropriate. The use of quantified data to inform decision making has been used where possible.

7.4.1 Other alternatives considered and why they were rejected

As noted above, in view of the recent Government announcement of statutory guidance concerning residual waste collection frequency, the alternative of collecting residual waste less frequently than fortnightly was rejected.

Alternative residual waste treatment options (e.g. Mechanical Biological Treatment, Advanced Thermal Treatment) were rejected due to the procurement and current construction of a long term residual waste treatment facility at the Eco Park in Enfield. This facility is due to open in the short term and anticipated to be operational beyond the duration of this Strategy.

7.5 Assessment Criteria

The three alternative strategy options reflect national, regional, and local government policy (Appendix E & F) and were developed to reflect the needs and relevant sustainability issues of north London. The alternatives for the JWS have been assessed against the SEA Objectives and analysed according to an impact/effect appraisal scale.

The nature of impacts will vary between the proposed alternatives and not all measures will be relevant in each case. Impacts can be indirect, cumulative, one-off, temporary, permanent and/or short/medium/ long term and these are appraised in Appendix H with summary aspects included later in this section.

Impacts against the SEA Objectives are scored based on whether they exhibit a positive or a negative impact. The nature of this environmental impacts assessment means that in some cases, the alternatives

[121] https://commonslibrary.parliament.uk/household-waste-collection-in-england-and-wales/

may have both positive and negative impacts against SEA Criteria. The SEA Criteria used for this scoring exercise can be seen in Table 39 below.

Table 39. SEA Sustainability Impact criteria

Major positive effect	++
Some positive & major positive effects	+/++
Positive / indirect positive effect	+
Neutral effect	0
Negative / indirect negative effect	-
Negative / major negative effect	-/--
Major negative effect	--
Possible positive & negative effects	-/+
Major negative & possible indirect positive effects	--/+
Possible neutral & positive effects	0/+
Possible negative & neutral effects	-/0
Unknown	?
Unknown / positive	?/+
Unknown / negative	?/-

7.6 Scope of the Assessment

The geographical scope of the assessment is limited to north London; however, some environmental impacts i.e. global warming will exhibit impacts wider than the area covered by the NLJWS. The NLJWS considers a number of options for dealing with waste in the future which will require additional waste management sites and facilities. Sites are not identified as part of this assessment and therefore the issues of land use are assessed on a case by case basis, with respect to local development documentation (planning and permitting, outside of scope).

7.7 Strategy Options Assessment Matrix

For further details on the analysis, including causes, mitigations, timescales and whether there are cumulative / synergistic in nature a breakdown of this analysis can be found in Appendix H.

Scenarios 1-3 have been assessed against the SEA objectives as detailed in Table 40.

Table 40. Summary assessment of all scenarios within the SEA

SEA Objective	Alternatives		
	Option 1	Option 2	Option 3
	High repair, reuse and waste prevention	High recycling	Low impact residual waste treatment
1. To increase the positive carbon impacts and reduce the negative carbon (and other greenhouse gases) impacts of the waste collection, reuse, recycling, transportation, treatment and disposal service	+/++	++	--/+
2. To adapt to the unavoidable consequences of climate change	0/+	0	0
3. Increase the use of clean renewable fuels and low carbon or renewable energy	0	-/+	+/++
4. To reduce waste and resource use and maximise reuse recycling and recovery rates	++	++	+
5. To continue to divert waste away from landfill	+	+	++
6. To maintain and enhance good air quality for all	0/+	-/0	--/+
7. To maximise the health and wellbeing of the population	+/++	0/+	0
8. To promote sustainable economic growth and employment	+/++	+	++
9. To protect and enhance the quality of water and soils	-/+	-/+	0

SEA Objective	Alternatives		
	Option 1	Option 2	Option 3
	High repair, reuse and waste prevention	High recycling	Low impact residual waste treatment
10. To protect and increase biodiversity, flora and fauna	+	+	0/+
11. To protect and enhance the landscape and geodiversity of North London	0	0	0
12. To protect the significance of heritage assets of archaeological, cultural and historic value	0	0	0
13. To maximise the accessibility and equality of services.	0/+	0/+	0
14. To promote civic participation, ownership and responsibility and enable individuals, groups and communities to contribute to improving their environment.	+/++	+	0
15. To support a strong, diverse and stable economy	+	+	0/+

8 SEA conclusions & Mitigation

The following points are the key conclusions and mitigations arising from the assessment of the strategy alternatives. Each option has been assessed against the 15 SEA Objectives to ensure that all SEA Criteria are met with any alternative strategy implementation. As a result of the assessment, a series of key themes have been developed with aligning mitigations that cover the core areas of focus in the JWS (a full set of mitigations can be viewed in appendix H). The JWS seeks to improve on the environmental baseline situation via improved resource management and continued movement of waste management practices in north London up the waste hierarchy.

The Strategic Environmental Assessment (as documented in this Environmental Report) identifies a number of areas to be considered in the JWS and its implementation. These are described as 'mitigations' as they aim to reduce or avoid potential negative impacts of the JWS and improve on any potential positive impacts. Specific points arising from the assessment are outlined below:

8.1 Lowering emissions

High repair, reuse and waste prevention

- Waste prevention and reuse should have the effect of lowering vehicle emissions (to a relatively small degree) as collection vehicles will take longer to fill and therefore can undertake more efficient rounds.
- It should however be recommended that the constituent boroughs / NLWA should use renewable energy / fuels for any inhouse reuse / repair initiatives and could also liaise with contractors to adopt the same practices.
- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment
- The carbon impact of Strategy actions should be measured and considered holistically to ensure that the service contributes effectively towards net zero carbon targets and climate emergencies of the NLWA and constituent Boroughs.
- To facilitate an active waste prevention, repair, and reuse community in north London (for lowering emissions)
- There are a range of good practice initiatives that can be used to prevent waste and reuse and repair good / items. The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change. Specific examples include reuse drop off points and shops at RRCs, working with third sector on reuse of bulky waste, refill, reuse, zero waste shopping.
- Signposting of organisations and individuals to websites/ directories of those that undertake repair/reuse/refill and zero waste initiatives in their locality.

High recycling

- It is important to consider the markets for recyclate and compost collected. For example, sending compost to agriculture has a net carbon emission (of around 86kgCO_2 per tonne), whereas sending the same material to horticulture would be envisaged to save (avoid) 15kgCO_2/tonne)[122].
- Collection impacts on air quality can be mitigated through low emission fuels. Furthermore, an efficient balance of collection frequencies and good operational logistics (e.g. route optimisation) will also lower vehicle emissions.
- Utilising renewable electricity at materials recycling facilities, maximising opportunities for renewable energy generation (e.g. PV arrays on MRF roof) and electric / low emission fuelled handling equipment / mobile plant will all lower emissions from recycling infrastructure operations.
- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment.

Low impact residual waste treatment

- There are several ways of reducing the carbon emissions from the Energy from Waste process: firstly, improving electrical or heat recovery from the facility; secondly removing fossil carbon derived products (e.g. plastics) from the feedstock; thirdly using non fossil fuels to start up fuel for the EfW plant; fourthly recycling an element of residual waste either pre or post combustion; fifthly, maximising opportunities for renewable energy generation (e.g. PV arrays on EfW roof), and; lastly capturing carbon (otherwise emitted from the stack) for long term storage or utilisation (CCUS). NLWA should explore the viability of each of these as regards the new Eco Park facility.
- Explore the use of low emission vehicles for transfer and transport of residual waste.
- Seek best practice in emissions control from the EfW.
- The new EfW facility has modern flue gas treatment systems and would be envisaged to improve the air quality relative to the existing plant. Conversely it has a larger maximum throughput than the current plant and therefore emissions need to be well managed to ensure a lower impact overall.
- NLWA report that a lower (than maximum) tonnage can be processed in the new plant and therefore any reduction in overall residual waste (e.g. through reuse and recycling) would have beneficial environmental impacts.

8.2 Maximising opportunities for positive waste management

High repair, reuse & waste prevention

[122] Carbon Waste & Resources Metric (WARM), WRAP 2021

- The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change. Specific examples include reuse drop off points and shops at RRCs, working with third sector on reuse of bulky waste, refill, reuse, zero waste shopping.
- Signposting of organisations and individuals to websites/ directories of those that undertake repair/reuse/refill and zero waste initiatives in their locality.
- Deliver / continue to deliver behaviour change campaigns on food waste prevention.

The constituent boroughs / NLWA to lead by example through adopting reuse practices, waste prevention initiatives and green / sustainable procurement practices to support waste prevention, reuse and repair

High recycling

- Offering a full suite of recyclable materials consistent with Simpler Recycling to all viable households and where appropriate businesses.
- Adopt collection systems that are accessible and ergonomic. Some individuals may struggle to lift a box but may be able to move a wheeled bin for example.
- Maintain and / or implement clear, effective and efficient collection methods to enhance levels of recycling.
- Consider sustainable (environmentally positive) outlets for digestate / compost from the treatment of organics from north London.

Low impact residual waste

- To explore the viability of greater materials recovery from residual waste.

8.3 Good practice initiatives

High repair, reuse & waste prevention

- Implement both good practice waste prevention initiatives opportunities, and deliver effective signposting (digital & non digital).
- The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change. Specific examples include reuse drop off points and shops at RRCs, working with third sector on reuse of bulky waste, refill, reuse, zero waste shopping.

High recycling

- Deliver good practice approaches to recycling at Reuse & Recycling Centres (RRCs) and from kerbside / communal collections.
- Adopt collection systems that are accessible and ergonomic. Some individuals may struggle to lift a box but may be able to move a wheeled bin for example.
- Adopt good practice in recycling traceability and seek markets within the UK.

Low impact residual waste treatment

- Adopt best practice with regards to waste water management in the EfW facility[123].
- Seek best practice in emissions control from the EfW[124].
- Lobby government to facilitate carbon, capture and storage infrastructure.
- Lobby government to support District Heating and related combined heat and power networks to maximise the usable output from the EfW facility.

8.4 Behaviour change via education & awareness

High repair, reuse & waste prevention

- Raise awareness to facilitate behaviour change.
- Deliver / continue to deliver behaviour change campaigns on food waste prevention.
- The strategy should seek to maximise opportunities to undertake repair, reuse and waste prevention activities and to raise awareness to facilitate behaviour change.
- Signposting of organisations and individuals to websites / directories of those that undertake repair/reuse/refill and zero waste initiatives in their locality.
- To deliver campaigns and communications activity that will engender strong and sustained participation in waste minimisation, reuse or recycling systems.
- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment.
- Design systems that support behaviour change, are clear and easy to use.

High recycling

- Improved recycling performance and associated benefits can be delivered through communications to tackle contamination in recycling.
- Undertake education and raising awareness to increase materials capture (correct recycling) and participation in services.
- To deliver campaigns and communications activity that will engender strong and sustained participation in waste minimisation, reuse or recycling systems.
- To focus communications and resource / waste services on preventing, reusing or recycling waste streams with the highest environmental benefit (or best environmental savings). Examples include food waste, metals, textiles and waste electrical equipment.
- There is the potential to offer compost back to households for domestic horticulture and raise awareness of the benefits of the garden waste service.

[123] Best Available Techniques (BAT) Reference Document for Waste Incineration, JRC, 2019
[124] Best Available Techniques (BAT) Reference Document for Waste Incineration, JRC, 2019

8.5 Lobbying government/ Influence

High repair, reuse and waste prevention

- Lobby government to take account of the environmental benefits of the waste hierarchy, repairability, & develop EPR measures for waste at producer level to ensure the polluter pays principle is followed.
- The constituent boroughs / NLWA to lead by example through adopting reuse practices, waste prevention initiatives and green / sustainable procurement practices to support waste prevention, reuse and repair.

High recycling

- Lobby government to take account of the environmental benefits of the waste hierarchy, repairability, & develop EPR measures for waste at producer level to ensure the polluter pays principle is followed.
- Lobby government to develop more legislation to ensure the greater use of secondary materials within products and packaging (e.g. plastic packaging tax).

Low impact residual waste treatment

- Lobby government to facilitate carbon, capture and storage infrastructure.
- Lobby government to support District Heating and related combined heat and power networks to maximise the usable output from the EfW facility.

8.6 Outreach

High repair, reuse and waste prevention

- To facilitate an active waste prevention, repair, and reuse community in north London.
- The constituent boroughs / NLWA to lead by example through adopting reuse practices, waste prevention initiatives and green / sustainable procurement practices to support waste prevention, reuse and repair.
- Supporting and signposting organisations that provide volunteer / community engagement opportunities and sustainable reuse / repair activities. Supporting the community (in liaison with social services colleagues).
- Using community groups / outreach to raise awareness of reuse / repair initiatives.
- Ensure social value is incorporated in arrangements with contractors and the third sector for reuse and repair services.
- The constituent boroughs / NLWA to use its influence, buildings, funding and powers to help third sector and other organisations in the development of the circular economy.
- The NLWA and constituent Boroughs can support upskilling for aspects like repair and refurbishment activities to support a circular economy.

High recycling

- Using community groups / outreach to raise awareness of recycling initiatives.
- The constituent boroughs / NLWA to use its influence, funding and powers to help third sector and other organisations in the development of the circular economy.
- Adopt collection systems that are accessible and ergonomic. Some individuals may struggle to lift a box but may be able to move a wheeled bin for example.

8.7 Technology Enhancement

High repair, reuse & waste prevention

- It should however be recommended that the constituent boroughs / NLWA should use renewable energy / fuels for any inhouse reuse / repair initiatives and could also liaise with contractors to adopt the same practices.

High recycling

- Continuing to explore technology and options for separation of recycling from residual waste.
- Use an appropriate recycling collection system recognising the changing climate (climate resilience, carbon emissions).
- Any new infrastructure associated with recycling should accommodate, and where practicable exceed, the requirements of Biodiversity Net Gain.

Low impact residual waste treatment

- Facility efficiency improvements and explore installation of CCUS.
- Greater amounts of low carbon heat and / or electricity could be delivered via the following:
    - expanding district heating
    - reducing the amount of plastic in the feedstock (will lower the carbon impact)
- To explore the viability of greater materials recovery from residual waste.
- The new EfW facility has modern flue gas treatment systems and would be envisaged to improve the air quality relative to the existing plant. Conversely it has a larger maximum throughput than the current plant and therefore emissions need to be well managed to ensure a lower impact overall.
- NLWA report that a lower (than maximum) tonnage can be processed in the new plant and therefore any reduction in overall residual waste (e.g. through reuse and recycling) would have beneficial environmental impacts.

These elements should be applied in the NLJWS during implementation in order to reduce negative environmental impacts and enhance positive impacts, as identified by the Strategic Environmental Assessment.

9 Monitoring implementation

For the duration of the strategy, the NLWA will be required to monitor the impact of the strategy, to identify any environmental effects that occur due to the preferred strategic options. If and when any significant changes occur to the SEA, then these elements will need to be reviewed. Areas of particular sensitivity from a waste management operations and initiatives perspective should be subject to monitoring as part of the SEA. The proposed monitoring criteria are explored in Table 41. Full details of local and national plans and policies that are relevant for target monitoring purposes can be found in appendix E & F.

Table 41. SEA monitoring criteria

Criteria	Unit of Measurement	Frequency of Measurement	Target / Comment	Trigger Point/s	Responsibility
Waste Arisings[125] & Behaviour Change	Kg of collected household waste / person / annum Kg of kerbside residual waste/ household / annum	Monitored annually using Defra's Local Authority Collected Waste Statistics Monitored annually using the WRAP's Local Authority Waste and Recycling Portal[126] Analysed biennial (to take account of short-term variations)	Target in line with Environment Act 2021. Aim is for no more than 287 kilograms of residual waste per person Waste composition will also be monitored to target reduction strategies	Where waste arisings are not in line with expectations and increase beyond anticipated levels relative to the previous two-years; and this is not a trend observed in the other benchmark local authorities over the same period, the reasons should be investigated and where necessary remedial action taken.	Responsibility for any remedial action will depend on the reason for the unanticipated changes in waste arisings.

[125] This will facilitate an assessment of how much waste is being diverted away from disposal, moving up the waste hierarchy (Repair, reuse, prevention & recycling)
[126] *http://laportal.wrap.org.uk/*

Criteria	Unit of Measurement	Frequency of Measurement	Target / Comment	Trigger Point/s	Responsibility
Repair/ reuse	Number of repair cafes reuse/ waste prevention initiatives implemented across boroughs	Annually	Delivery of the NLJWS targets / pledges on providing reuse and repair opportunities (should include training / upskilling events and loan / sharing services (e.g. Library of Things).	Where performance, committed actions and forecasts shows the progress is not in line with delivering the NLJWS targets / pledges. The causes of this should be investigated and where appropriate remedial action taken.	Responsibility for any remedial action will depend on the reason for the failure to meet landfill diversion ambitions.
Recycling/ Composting/ Anaerobic Digestion (AD) (food waste)	% household waste recycled / composted % of food waste collected for AD	Annually using Defra's Local Authority Collected Waste Statistics	Delivery of the NLJWS targets / pledges on recycling/ composting and food waste collection for AD. Contribution to the Government and GLA targets on recycling (but this is not the key metric) reduction target described above.	Where annual performance, committed actions and forecasts shows the progress is not in line with delivering the NLJWS/ GLA targets / pledges. The causes of this should be investigated and where appropriate remedial action taken.	Responsibility for any remedial action will depend on the reason for the failure to meet recycling / reuse ambitions.
Recycling Traceability (UK Markets)	Assessment and monitoring of recycle destinations	Annual	Review recyclate destinations. Key target is for all recyclate to be distributed to UK markets only	Where assessment and monitoring shows that destinations for waste have moved outside of the UK remedial action may be required	Responsibility for any remedial action will depend on the reason for the failure to achieve anticipated recyclate destination.
Carbon Impact	Kg of CO_2 equiv.	Full carbon analysis at strategy review (5 yearly)	Full carbon analysis will determine position relative to baseline. The five yearly reviews should show substantial improvement in carbon performance in line with NLWA/ borough carbon targets.	Where the 5 yearly reviews does not show anticipated reduction in carbon emissions from the baseline, the strategy may not be progressing as intended and remedial action may be required.	Responsibility for any remedial action will depend on the reason for the failure to achieve anticipated carbon performance.

Appendices