



UNIVERSITY OF
LIVERPOOL

WASTE MANAGEMENT PLAN

2021 – 2025

Document	University of Liverpool Waste Management Plan (2021 – 2025)
Owner Date	Sam Hay, Waste and Recycling Officer
Published	July 2023
Review date	July 2025

Contents

- 1. Introduction..... 1**

- 2. Policy Drivers..... 2**
 - 2.1 University Environmental Policy 2
 - 2.2 Legislation..... 2
 - 2.3 Corporate Social Responsibility3
 - 2.4 Security (GDPR).....3
 - 2.5 Economic Considerations.....4

- 3. Guiding Principles for Responsible Waste Management. 5**
 - 3.1 The Waste Hierarchy.....5
 - 3.2 Circular Economy.....6
 - 3.3 Construction Waste and Campus Development..... 7
 - 3.4 Specialist Waste Collection..... 7

- 4. Waste Data Performance..... 8**
 - 4.1 Monitoring and Reporting.....8
 - 4.2 Current Performance.....8
 - 4.3 Waste Reduction Target..... 10

- 5. Delivery Challenges.....11**

- 6. Action Plan.....13**

1. Introduction

Waste is a significant global issue. As the world's population size has grown, waste generation has increased rapidly. This has had a significant effect on humanity, wildlife and the environment through unsustainable levels of material extraction and manufacturing, and through waste disposal practices which contribute to pollution and environmental harm. The University of Liverpool recognises that due to the size of the institution, and the nature of its activities, its waste generation is a significant environmental impact which must be responsibly and compliantly managed. Sustainable reductions in waste created, as well as operating more environmentally friendly disposal routes, can help minimise some of these impacts.

Strategic Context

In January 2020, the University of Liverpool formalised its commitment to the [United Nations Sustainable Development Goals \(SDGs\)](#), by signing the global higher education sector's [SDG Accord](#), in partnership with the Liverpool Guild of Students. By signing the [SDG Accord](#), the University has pledged to put the SDGs at the heart of all its activities, including [SDG 12, Responsible Consumption and Production](#).

Furthermore, the University of Liverpool has committed through its strategic framework, [Liverpool 2031](#), to demonstrating its transition to Net Zero by 2035, and in line with the UK policy framework on [Climate Change and Net Zero](#). Our [Climate Plan](#) sets out our ambitions, principles and commitments in relation to meeting this target, and how we intend to address the climate crisis including our proposed efforts related to reduce the environmental impact of scope 3 emissions associated with waste generation and disposal.

Waste Management Plan

The Waste Management Plan (2021 – 2025) is a key enabling document for the University's Sustainability Strategy, which builds on the vision and commitments set out in [Liverpool 2031](#). Effective waste management is a critical component in achieving the University's wider sustainability goals. The Plan outlines and informs how and why the University of Liverpool manages the waste streams created by its activities and demonstrates how the University plans to improve its waste management practises, minimising waste generated and mitigating any associated environmental impacts.

The University committed to its waste reduction target (page 10) in 2021, and significant traction and progress has since been afforded by the appointment of a dedicated Waste and Recycling Officer in late 2022. This Waste Management Plan will remain in effect until the end of 2025, when it will be reviewed and new targets set for the 2026 – 2031 period, aligned with the Strategic Framework.

2. Policy drivers

2.1 University Environmental Policy

The University of Liverpool commits to: “Reduce our general waste sent to incineration with energy recovery by 50% by 2025 and improve our understanding of specialist waste collected from the University estate, aligned with the waste hierarchy,” as a key objective of the [Environmental Policy](#).

The University’s waste reduction target set in 2021 is:

“A 50% decrease in domestic general waste sent for incineration with energy recovery by 2025”.

The baseline for this target is a 10-year pre-Covid average of domestic general waste sent for incineration with energy recovery. Details of the University’s current progress toward this target are outlined in section 4.

2.2 Legislation

The Controlled Waste Regulations (England and Wales) 2012 state that household, industrial and commercial waste are classed as controlled waste and are subject to the Environmental Protection Act 1990. The Environmental Protection Act 1990 states that all producers of waste have a duty to ensure the correct management of waste. This duty seeks to keep waste to a minimum by doing everything reasonable to prevent, reuse, recycle or recover waste, and to ensure that any waste produced is stored responsibly, handled safely and transported and disposed of lawfully.

The Hazardous Waste (England and Wales) Regulations 2005 governs the management and disposal of hazardous waste in England and Wales. Under the regulations, waste producers have certain responsibilities, including the duty to properly identify and classify their waste as hazardous, maintain accurate waste transfer documentation, and ensure the safe packaging and labelling of hazardous waste. The regulations aim to protect human health and the environment by ensuring the proper handling, transport, and disposal of hazardous waste.

As the producer of waste, we are legally responsible (criminally liable) until it reaches its final destination (recycling, incineration, landfill). This remains the case regardless of the chain of custody that it follows; criminal liability is not transferred to contractors and subcontractors when they collect or transport our waste.

Compliance with waste legislation is managed as part of the University's ISO14001:2015 accredited Environmental Management System. The University is audited by a third party on an annual basis to ensure compliance with environmental legislation and the ISO14001:2015 standard. The University receives quarterly updates from Barbour EHS consultants who advise on updates to environmental legislation, including waste legislation. This ensures that we are aware of any changes to legislation and that our processes and infrastructure are appropriately aligned. Support around the correct compliance of waste is available through training or advice from the Key Contacts listed on page 12. Please contact for further details.

2.3 Corporate Social Responsibility

Awareness around waste management practices has increased, with people becoming increasingly conscious of the impact that waste can have on the wider environment. It is important that staff and students' expectations regarding waste management are met. Engaging staff and students in responsible waste management helps foster a sense of shared responsibility and pride. Additionally, creative approaches to minimising waste can identify opportunities to divert resources to groups in the community who can most benefit from their use. By prioritising responsible waste management, the University of Liverpool will mitigate environmental risks, enhance its reputation and create social value. By way of example, the University has donated surplus items of furniture to local charity partners, which has been distributed for use across local communities.

2.4 Security (GDPR)

The Data Protection Act 2018 controls how personal information is used by organisations, businesses or the government. To comply with the GDPR rules on confidential waste disposal, confidential material should not be placed in any of the normal waste or recycling bins across the University but should be collected separately. Confidential waste can include a wide range of waste materials: from paper documents to computer hard drives that may contain sensitive information about students, employees, or suppliers. There are established University processes and guidelines for the secure disposal of confidential waste streams, which must be adhered to.

Further information can be found [here](#).

2.5 Economic Considerations

The removal of waste is a significant cost to the university, with rates continuing to rise. Preventing the purchase of unnecessary products and materials and limiting the amount of waste created in the first instance will help to reduce our spend on disposal and treatment. For waste streams that can't be reduced or reused, ensuring suitable segregation and diversion to appropriate recycling or resource recovery can help reduce the rates charged per tonne of waste treated and removed from site. For example, the cost to empty an 1100ltr general waste bin is over 30% more expensive compared to the mixed recycling equivalent.

The university is committed to reinvesting savings achieved to support continual improvement in line with the Environmental Management System and ISO14001 accreditation. As an example, financial savings of around £2,500 per month were achieved in 2023 by amending the collection schedules. These financial savings have been reinvested for the introduction of the separate food waste collections, which in turn, will result in further financial savings.

3. Guiding Principles for Responsible Waste Management

3.1 The Waste Hierarchy

The statutory waste hierarchy ranks waste management options according to what is best for the environment. It is a legal requirement for the University of Liverpool to... take all such measures as are reasonable in the circumstances to apply the waste hierarchy to prevent waste, and to apply the hierarchy as a priority order when you transfer your waste to another person.

Waste Hierarchy Steps



Prevent

Top priority is placed on preventing waste. Avoid unnecessary consumption and purchases.



Reduce

Can unnecessary packaging be reduced. Reduction can be as simple as switching to more resource-efficient alternatives.



Reuse

Reusing products and materials before it becomes waste. Can materials or items be re-used elsewhere.



Recycle

Can the materials be recycled, either in whole or in part to turn the waste into a new product.



Recover

Where further recycling is not possible, materials, chemicals or energy could be extracted from waste through processes such as anaerobic digestion or incineration with energy recovery.



Dispose

In certain scenarios, materials that cannot be reused, recycled or recovered for energy will be landfilled or incinerated (without energy recovery).

The University is committed to reducing, re-using and recycling our waste, looking to promote a Circular Economy wherever possible.

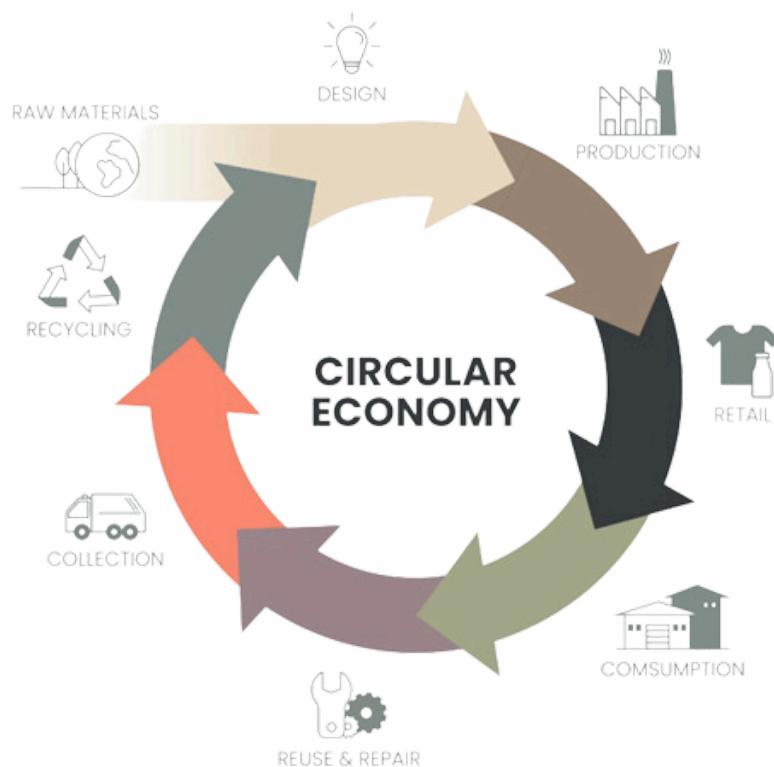
3.2 Circular Economy

Traditionally, our economy has operated based on a linear model. Resources are extracted from the environment, manufactured into products, and are then sold and used before ultimately becoming waste and pollution.

A circular economy is an alternative model that mimics the continuous cycles found within nature, whereby the outputs from one process serve as the raw materials or nutrients for another in perpetuity. The aim is then to keep existing products in use for as long as practical through strategies, such as reuse, sharing, redistribution, maintenance, repair and remanufacture. When no longer functional, products in a circular economy are broken down into their core components, which become the raw materials for the next generation of products, or are returned to nature, replenishing and regenerating natural resources and ecosystems.

A circular economy offers many potential benefits. In terms of the environment, a circular economy can help to conserve and replenish natural resources, eliminate pollution and waste, reduce carbon emissions and to rehabilitate nature. Additionally, a circular economy affords financial savings, improved efficiency, increased productivity, reduced risk and greater resilience.

We are developing circular economy guidance to support central and local purchasing practice, and waste management routes. These will sit alongside this Plan, and future iterations, to support delivery of our waste reduction target. The answer to our waste challenge, in addition to how we treat our waste, is about the removal and reduction of waste from the outset, and the prevention of unnecessary purchasing and consumption. The appointment of a dedicated Circular Economy Manager will help drive forward and embed a circular economy throughout all the University's operations.



3.3 Construction Waste and Campus Development

The construction industry is responsible for a huge amount of waste. According to the Department for Environment, Food and Rural Affairs (DEFRA), 62% of the United Kingdom's total waste production, was from construction, demolition and excavation in 2018. At the University of Liverpool, it is estimated that over 30% of the University's total waste production in the 2022/2023 academic year was from construction activities. Work is underway to streamline the management of the University's construction waste data. To support improvement in the University's construction waste performance:

- Construction and Campus Development must ensure that the Guiding Principles (The Waste Hierarchy and Circular Economy) are applied. The designing out of waste from the outset will be achieved by embedding circular design principles.
- All major and minor works projects must monitor and report on waste produced by the project, and work to the waste hierarchy giving top priority to preventing, reducing, reusing and recycling waste.
- Waste minimisation and circularity principles must be included within procurement criteria, and onsite reuse of materials must be enabled.

Further details and advice can be sought from the Environmental Sustainability Team, who are developing this within sustainability standards for projects and across a suite of waste codes of practice.

3.4 Specialist Waste Collection

The University has also committed to optimise the processing of specialist waste collected from the university estate, aligned with the waste hierarchy. Specialist waste constitutes any waste produced through our operations not collected via our main waste contractor, responsible for collecting our general waste and dry mixed recycling, such as hazardous waste streams.

Over the past 12 months significant progress has been made in diverting waste from grounds operations and food waste from our general waste stream. Progress is also being made, in conjunction with the Laboratory Sustainability Officer, in setting up a new waste stream for recycling lab plastics, supporting our target to implement LEAF (Laboratory Environmental Assessment Framework), and for 100% of labs to achieve Bronze level or working towards by the end of September 2024.

The management of hazardous waste collected from the University is also being reviewed. This includes improving record keeping and value for money for the collection of Waste Electronic and Electrical Equipment (WEEE) from the estate. Work has also been undertaken with colleagues in the faculty of Health and Life Sciences to introduce an 'Offensive' waste stream at Leahurst campus to support the University's scope 3 carbon reduction target.

4. Waste Data Performance

4.1 Monitoring and Reporting

The University's waste performance is monitored by the Waste and Recycling Officer and Environmental Sustainability Team in Property and Campus Services. Waste data (stream, tonnage, disposal route and emissions) is reported annually into the Estates Management return, and into the Annual Sustainability Report.

Scope 3 emissions associated with waste is reported biannually to the University's Sustainability Board as part of the University's Standardised Carbon Emissions Framework reporting, and in future years will be reported in the annual financial statements.

4.2 Current Performance

The following data is taken from the 2022/2023 academic year. The data shows the total amount of waste and recycling generated across the whole University estate for this period, as well as the disposal route. Data capture, and the accuracy of data has been improved recently, however there are still some aspects which require further improvements. Because of this, the other works (construction) data is partially estimated.

Figure 1 – Waste data 2022/2023

Campus activities	Residential	Non-residential	Total (tonnes)
Incineration with energy recovery	407.051	503.840	910.891
Recycling	233.046	472.110	705.156
Anaerobic digestion	17.310	0	17.310
Landfill	0	0	0
Composting	0	21.620	21.620
Totals	657.407	997.570	1,654.977

Other works (Construction)	Tonnes
Incineration with energy recovery	280.305
Recycling	689.614
Landfill	14.260
Totals	984.179

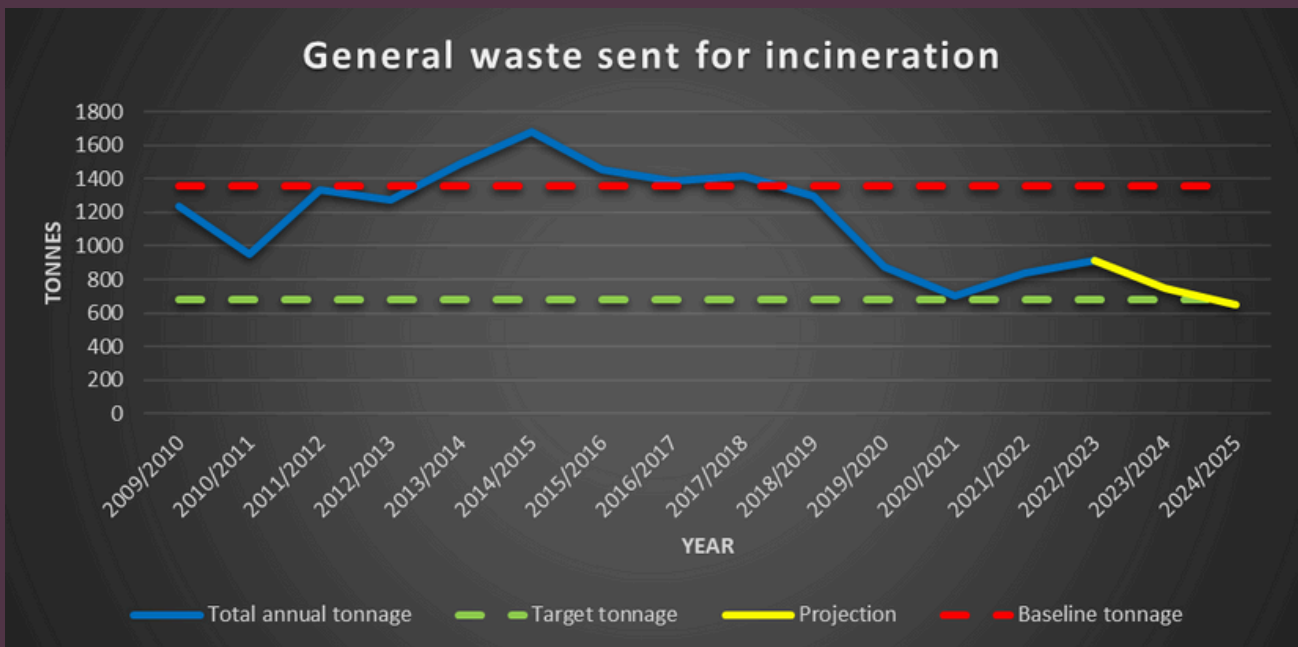
Hazardous waste	336.45 (tonnes)
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(Hazardous waste can include asbestos, clinical waste and chemical waste. These waste streams require specialist disposal, ensuring the correct transfer and disposal documentation is produced)

Total waste production	Tonnes
Incineration with energy recovery	1,191.196
Recycling	1,394.77
Anaerobic digestion	17.310
Landfill	14.260
Hazardous waste	336.45
Composting	21.620
Total tonnage	2,975.606

4.3 Waste Reduction Target

The University of Liverpool has committed to an ambitious waste reduction target. The waste reduction target is a 50% decrease in domestic general waste sent for incineration with energy recovery by 2025. The baseline for this target is a 10-year pre-Covid average of domestic general waste sent for incineration with energy recovery. We have obtained access to historical waste data for domestic waste from our current supplier, which has been used to establish the baseline. The graph below gives details on historical tonnages, current performance, the pre-Covid average, and the tonnage needed to achieve the target. The 2022/2023 academic year had already seen a reduction of 443.127 tonnes compared to the 10-year baseline, which shows significant progress. Information on what is planned to help the University achieve this target can be found below in the Action Plan.



Baseline tonnage - **1354.018 tonnes** Target tonnage - **677.009 tonnes**
 2022/2023 tonnage - **910.891 tonnes** Reduction needed to achieve target from
 2022/2023 - **233.882 tonnes**

5. Delivery Challenges

Outlined below are business as usual areas that could impact the University's ability to meet its waste reduction target, or ability to complete some of the actions listed in the Action Plan below.

University estate: An increase in the University estate would inevitably see an increase in activity, and waste creation. Any additions to the University estate would also require further investment in recycling infrastructure, resulting in increased costs.

Student numbers: Any increase in student numbers would see an increase in waste creation. An increase in student numbers could also mean an increase in bins or collection frequencies, resulting in increased costs.

Communication: Increased communication and engagement with stakeholders, including staff, students and contractors, will provide them with the knowledge and information that they might require, to understand how to correctly dispose of their waste.

Visitors and contractors: Visitors and contractors to be made aware of the correct University waste management practices and procedures to ensure best practice. Support: Support from management will facilitate with the progression on some of the actions in the Action Plan and increase the willingness in participation from staff and students.

Waste infrastructure: Appropriate infrastructure is essential for waste segregation and recycling.

Financial constraints: Upfront investment in infrastructure and services will help to reduce waste, and to reuse and recycle more, which will in turn achieve long-term cost savings. Disposal costs will continue to rise, so any reduction in waste will help reduce the University's exposure to increasing costs.

Behaviour change: Low interest or a lack of willingness to participate in waste management and the correct segregation of waste, could result in the misuse of bins, increasing contamination and costs, as well as risking non-compliance.

Whilst recognising that these are risks, the expectation is the following actions will help us to deliver on the waste reduction target, by reducing the high levels of waste we have seen in previous years.

Key Contacts

Sam Hay

Waste and Recycling Officer (Property and Campus Services)

Email: S.hay@liverpool.ac.uk

Rhiannon Hunt

Circular Economy Manager (Property and Campus Services)

Email: Rhiannon.Hunt@liverpool.ac.uk

For general enquiries relating to the University's sustainability strategy and net zero target, please email: [**sustainability@liverpool.ac.uk**](mailto:sustainability@liverpool.ac.uk)

6. Action Plan

The following table sets out the actions, timescales and responsibilities of the key waste management commitments of the University. These actions are designed to reduce waste generation, increase resource recovery, and promote a circular economy. The action plan is a live document and will be reviewed and updated periodically by the University's Waste and Recycling Officer.

Action	Progress	Completion deadline	Responsible	Impact
Review external 1100ltr bins, ensuring sufficient mixed recycling bins are in place	Completed	February 2023	Waste and Recycling Officer	Minimise the amount of recycling entering the general waste bins, maximising the amount that is recycled
Introduce waste audits across the University to benchmark current performance	Completed	February 2023	Waste and Recycling Officer	Help identify any areas requiring improvement
Introduce separate green waste recycling facility on campus for the use of the Grounds Team	Completed	June 2023	Waste and Recycling Officer	Ensuring that green waste is recycled, and not disposed of as general waste
Establish accurate waste data and set baseline for the 50% reduction in waste target	Completed	August 2023	Waste and Recycling Officer, Circular Economy Manger	Giving more of an understanding of what is required, and how we will get there
Improve the provision of glass recycling facilities across the University	Completed	September 2023	Waste and Recycling Officer	Increase the amount of glass that is recycled
Introduce a separate mattress recycling scheme across the University	Completed	September 2023	Waste and Recycling Officer	Ensuring that mattresses are recycled, and not disposed of as general waste

Introduce separate food waste recycling across Catering Outlets and Accommodation Buildings	Completed	September 2023	Waste and Recycling Officer, Circular Economy Manger	Reducing the amount of food waste entering the general waste stream, ensuring it is recycled
Introduce separate metal recycling facility on campus for the use of the Heavy Gang	Completed	January 2024	Waste and Recycling Officer	Ensuring that metal is recycled, and not disposed of as general waste
Review WEEE (Waste Electrical and Electronic Equipment) waste collections and explore opportunities for reuse	In progress	October 2024	Waste and Recycling Officer	Ensuring compliance and best value for money, and opportunities for reuse
Explore the opportunities to introduce a separate offensive waste stream across the University. Offensive waste is a type of non-hazardous waste that is unpleasant and may cause offense to those coming into contact with it	In progress	October 2024	Waste and Recycling Officer, Environmental Sustainability Officer	Ensuring the correct disposal routes and compliance
Establish and update intranet and website guidance around waste management and disposal, including other communication avenues for staff that don't have direct access to the intranet or website	In progress	November 2024	Waste and Recycling Officer, Circular Economy Manger	Providing the correct disposal advice to all staff, students, and contractors
Review external litter bins (general waste) to include recycling provision	Currently under review	December 2024	Waste and Recycling Officer, Circular Economy Manger	Ensuring that recyclables are disposed of correctly, reducing the amount of recycling in the general waste
Reconfigure the internal bins and signage across the University to match our external collections	In progress	December 2024	Waste and Recycling Officer	Making the waste disposal process clear and simpler for all users, maximising recycling

Introduce the Warpit reuse platform across the University - Welcome to Warp It- the resource redistribution network (warp-it.co.uk)	In progress	January 2025	Waste and Recycling Officer, Circular Economy Manger	Decreasing disposal and increasing reuse across the University
Introduce a laboratory plastic recycling scheme across the University for non-contaminated plastics (HDPE and PP)	In progress	January 2025	Waste and Recycling Officer, Sustainability Officer (Laboratory Sustainability), Faculty of Health & Life Sciences colleagues	Reduction in waste sent for general or clinical waste, maximising recycling
Explore the possibility of extending separate food waste collections across the rest of the University	In progress	March 2025	Waste and Recycling Officer	Minimise/eliminate food waste entering the general waste stream
Establish a recycling compound on the main campus for the storage of skips and other required receptacles	Reviewing potential locations	TBC	Waste and Recycling Officer, Circular Economy Manger	Ensuring the correct waste segregation is possible, maximising recycling and guaranteeing compliance
Establish a reuse compound/area on the main campus for furniture and other materials/equipment	Reviewing potential locations	TBC	Waste and Recycling Officer, Circular Economy Manger	Decreasing disposal and increasing reuse across the University

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