



# Lancaster University Waste Plan

2017-2022

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“We make campus an inspiring place to be”

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# 1 Introduction

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Lancaster University is a Higher Education Institution based in Lancaster in the North West of England. The University is recognised as one of the top 10 universities in Britain for the quality of its teaching and research.

Within its wider sustainability commitments, the University is keen to ensure that it manages waste and resources in an efficient and sustainable manner by aiming to avoid waste generation, where possible, and prioritising reuse and recycling over the disposal of waste materials.

Lancaster University has introduced pioneering waste projects and initiatives and has been recognised as best in Sector for its 'Project Exodus' reuse project.

## 2 Waste Plan

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The purpose of this Waste Plan is to set out an overarching framework for waste management at Lancaster University from 2017 to 2022. This second edition of the Waste Plan updates the original version of the Waste Plan adopted in 2012. The Waste Plan sets out the legislative requirements and Lancaster University drivers, as well as the national and Lancaster University specific waste management targets. Short, medium and longer-term strategic objectives, structured in respect of the waste hierarchy set out the detail of how Lancaster University will meet its legislative and internal targets.

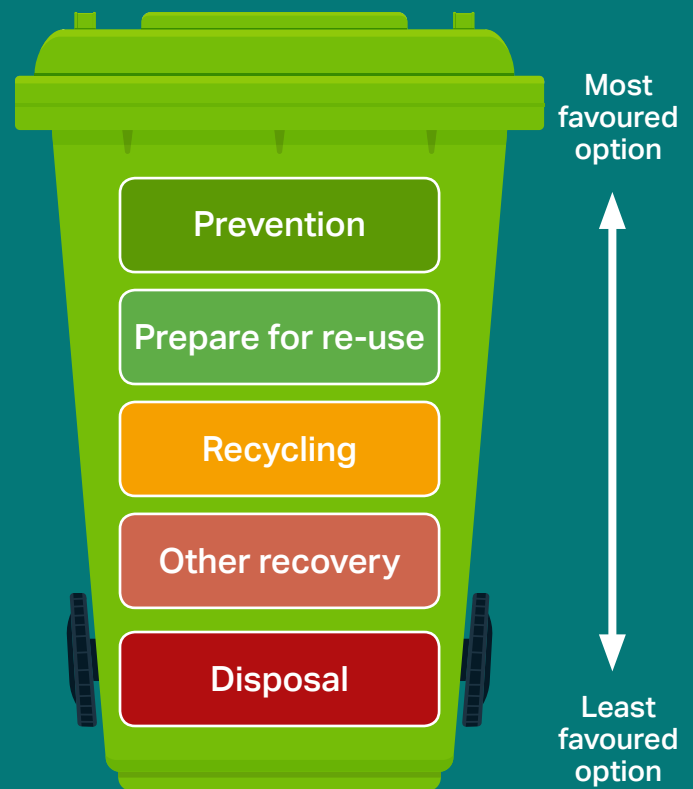
As well as being a self-contained document, The Waste Plan forms part of the overarching Facilities Sustainability Strategy. The Facilities Sustainability Strategy draws together, and puts into context all Facilities environmental sustainability strategies and plans including the Travel Plan, Ecology Strategy, Behaviour Change Strategy, Energy and Utilities Strategy, Carbon Management Plan. In addition, the Facilities Sustainability Strategy establishes the context and contribution of specific plans and strategies to the Facilities ISO 14001 Environmental Management System (EMS) and broader Facilities and University Strategies, such as the Estates Masterplan. The Facilities Sustainability Strategy comprises Facilities contribution to The University Environmental Sustainability Plan, which establishes University wide strategic environmental sustainability aims and objectives and addresses the environmental commitments made in the University Strategy.

## 3 The Waste Hierarchy

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The “Waste Hierarchy” is both a guide to sustainable waste management and a legal requirement for organisations to follow when managing their wastes.

The Hierarchy gives top priority to waste prevention, followed by preparing for re-use, recycling, other types of recovery (including energy recovery), and last of all disposal. This Strategy reviews the current performance against the tiers within the “Waste Hierarchy” and sets targets for the short, medium and long term.



## 4 Lancaster University Waste Plan Priorities

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The need for a Waste Plan at Lancaster University has been driven by a variety of factors, as detailed below:

- **Controlling waste and recycling costs.**
- **Consideration of alternative waste collection and treatment/disposal options.**
- **Desire to obtain additional value from recyclates.**
- **Desire to improve recycling rates and limit landfill disposal.**
- **Ensuring compliance with waste legislation and internal and external targets.**
- **The desire to improve waste storage arrangements, including fire safety.**





# 5 First Edition Waste Plan – Progress Review

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The First Edition Waste Plan was developed with a three phase timeframe. Each phase of the strategy had a waste reduction target and a series of projects designed to help achieve this target or to improve waste management.

The First Edition Waste Plan ran from 2011-12 until 2019-20.

## Short Term Waste Plan (2011 – 2012)

Covering the period 2011-12 the Short Term Waste Plan comprised the following objectives and had the overall target of improving the overall recycling rate to 60%:

- Undertake food waste segregation/treatment feasibility project and waste composition analysis.
- Maintenance of existing general waste and recycling contracts over 2011-12.
- Temporary upgrade of external bin stores to reduce fire safety risk.
- Preparation of phased and costed bin store upgrade plan.
- Develop a plan for and assess costs central reusable waste storage/assessment facility.
- Formalise and fully document waste procedures.
- Review and tender waste and recyclate contracts.

This initial phase of the Strategy was largely effective, with the overall recycling rate increasing to 59% in 2011-12 and the majority of objectives achieved. Lancaster University were also recognised as best in sector with the 'Project Exodus' reuse project winning an Environmental Association of Universities and Colleges 'Green Gown Award' for successful student initiatives.



## Medium Term Waste Plan (2012 – 2015)

Operating from 2012 to 2015 the Medium Term Waste Plan comprised the following objectives and had the overall target of improving the overall recycling rate to 80%:

- Extend compulsory recycling across campus for all student resident accommodation.
- Develop temporary central waste storage compound/ storage facilities for green and skip waste and certain higher value recyclates, including metal or wood.
- Install food waste treatment plant to serve areas producing high volumes of food waste.
- Review on-site and off-site contracted waste and recycling collection/treatment costs.
- Develop reusable waste storage/assessment facility (for furniture, project exodus and other reuse projects).
- Implement permanent upgrade of external bin stores to reduce fire safety risks, phased over five years, including proposed rationalisation of bin stores.
- Review and tender waste and recycling contracts.
- Develop with Procurement guidelines and purchasing policies to ensure maximum resource efficiency and minimum waste generation.
- Complete roll-out of internal waste & recycling bins and recycling arrangements to all existing buildings.
- Integrate waste procedures, targets, documentation, into formal environmental management systems.

This Medium Term phase of the Waste Plan was effective in terms of the overall recycling rate which increased to 83% in 2015-16, exceeding the target. A number of other Waste Plan Objectives were achieved but other objectives, relating to food waste management, development of the central waste compound, external bin store upgrades and furniture reuse have been delayed due to technical issues, or limited staff resourcing issues.

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## Long Term Waste Plan (2015 – 2020)

The final phase of the First Edition Waste Plan was originally set to cover the period from 2015 to 2020 and included the following objectives, with an overall target of improving the overall recycling rate to 90%:

- Extend waste food collection to all commercial outlets and trial food waste collection from student residences.
- Develop a permanent central waste compound with space to enable sorting/storage/compaction of on-site high volume segregated recyclates (in addition to the high value recyclates).
- Trial on-site collection/sorting of selected high volume recyclates in central waste compound.
- Review on-site and off-site contracted waste and recycling collection/treatment costs.
- Extend reuse facility/project to enable maximum capture of reusable items across campus.
- Extend and mainstream 'resource efficiency' through procurement by requiring full lifetime costs of items to be considered in order to minimise waste.
- Review commercial case for installation of micro waste to energy plants.

Whilst work on some of the objectives in this final phase of the First Edition Waste Plan have commenced, none have been completed.

Objectives not achieved or completed as part of the First Edition Waste Plan have been reviewed and where appropriate incorporated into this new Waste Plan 2017-22.



# 6 Waste and Recycling Performance

With the adoption of the Waste Plan Lancaster University has made significant progress in improving its waste management performance over the last ten years. The University's waste and recycling improvements in performance in the context of the waste hierarchy are detailed below.

## Total Waste Generation and Waste Prevention

Since 2007-08, the total amount of waste materials (residual waste plus all recyclates and reuse materials) generated has increased from 1,950 to 2,300 tonnes per annum. In part, the increase relates to collation of improved waste data and previously unrecorded waste streams. Increases in waste generation have been very limited considering the significant development of the campus over this period, the intensification of on-site activity and the increases in staff and student numbers.

## Reuse

In 2007-08 approximately 2.5% of waste generated at Lancaster University was segregated for reuse in a variety of projects. The reuse figure has gradually increased with initiatives such as 'Project Exodus' reuse project significantly increasing reuse rates. Reuse rates increased to over 6% in 2015-16.

## Recycling

There has been a significant increase in the recycling rate at Lancaster University from less than 4% in 2006/2007 to 32% in 2016/17. The increase has been primarily driven through the gradual introduction and roll out of segregated collection facilities across the campus.

## Recovery

Recovery of materials from Lancaster University waste for uses such energy recovery or soil generation commenced in 2009-10 and has gradually increased to 2015-16 when 44% of waste generated was being recovered. Recovery takes place at offsite facilities.

## Overall Recycling, Recovery and Reuse rate

Lancaster University's overall recycling rate (recovery plus recycling plus reuse) has increased every year from 3% in 2006-07 to 83% in 2015-16.

## Waste Carbon Emissions

Lancaster University's carbon emissions from waste and recycling have been reduced from over 450tCO<sub>2</sub>e per annum in 2006-07 to 190tCO<sub>2</sub>e per annum in 2015-16.

Lancaster University Carbon Emissions from Waste and Recycling

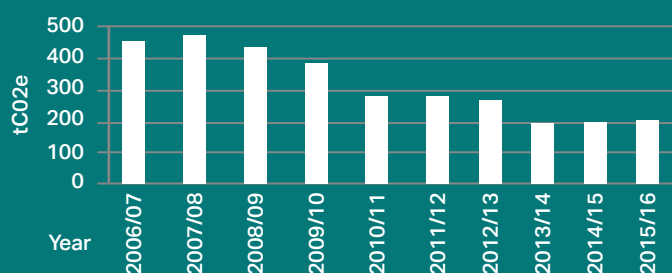


Figure 1: Lancaster University Waste and recycling carbon emissions

Disposal: The total volume of residual waste generated at Lancaster University has gradually declined from over 1,625 tonnes in 2006-07 to 1,425 tonnes in 2015-16. In 2006-07 all 1,625 tonnes of residual waste were disposed of to landfill. Off-site treatment comprising extraction of recyclable material has meant that in 2015-16 residual waste sent for disposal at landfill has declined to 380 tonnes (or 17% of total waste).

Waste Generation and Diversion

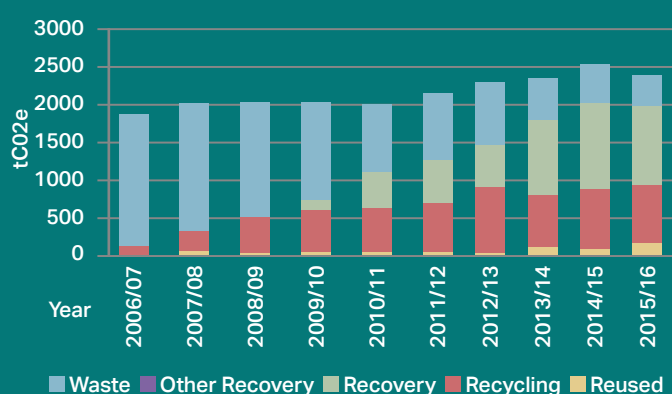


Figure 2: Lancaster University Waste generation in the context of the waste hierarchy (tonnages)





excess  
liquids







# 7 Waste Plan Targets and Performance

## National Targets

National targets for reducing waste disposed of to landfill and recycling rates were set by the UK Government, through incorporation of the targets in the EU 'Waste Framework Directive' into UK legislation. The targets, which apply to local authorities, cover diversion rates for biodegradable municipal waste and overall recycling rates.

The targets require local authorities to divert 25% of biodegradable waste away from landfill by 2010, 50% by 2013 and 65% by 2020 and achieve an overall recycling rate of 50% by 2020.

## HE Sector Targets & Performance

The HE/FE sector does not have specific waste disposal or recycling targets set through national legislation or guidance. Mean HE/FE sector recycling rates in the HE/FE sector have increased from 18% in 2005-06 to approximately 45% in 2010-11 and 70% in 2015-16.

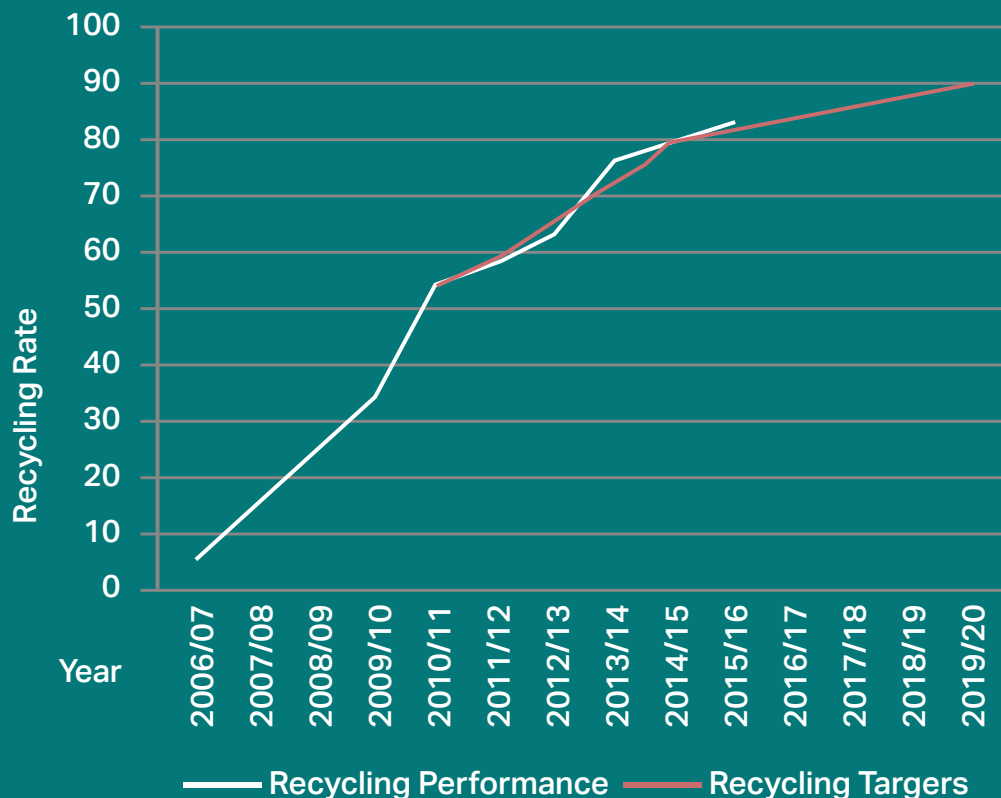
## Lancaster University Performance and Aspirations

Lancaster University has seen major improvements in its recycling rate and waste diverted from landfill disposal over recent years.

- Between 2005-06 and 2015-16 overall recycling rates have increased from approximately 4% to 83%, exceeding the mean HE/FE sector recycling rates.
- In 2005-06 over 95% of Lancaster University waste was disposed of to landfill. This had reduced to 17% by 2010-11.

Lancaster University aims to surpass the UK national targets as set out in the 'Waste Framework Directive' and being implemented through local authorities, and aspires to be a leader in waste reduction and recycling within the HE Sector. This Waste Plan has been developed in order to enable Lancaster University to achieve these.

## Recycling Performance and Targets



## 8 Second Edition Waste Plan – (2017-2022)

The Waste Plan (2017-22) supports implementation of Lancaster University Estates Strategy, Facilities and University Sustainability Plans, the Campus Masterplan and University Strategic Plan. Uncompleted and planned objectives and targets from the First Edition Waste Plan have been incorporated into the Waste Plan (2017-22).

It is planned to implement the Waste Plan in two Phases covering the periods (2017-20) and (2020-2022). As per the First Edition Waste Plan each phase of the strategy has a waste reduction target and a series of projects designed to help achieve this target or to improve waste management.



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## 8.1 Waste Plan 2017 – 2020

### Target: 90% waste reused/recycled or recovered over 2019/20

The following projects, plans and actions are planned to be implemented in order to assist in achieving this target and improve waste management:

- Develop temporary central waste storage compound/ storage facilities for green and skip waste and certain higher value recyclates, including metal or wood.
- Undertake review of Waste Plan to understand waste management options and waste and recycling collection/treatment costs.
- Review waste management budget in order to ensure it is capable of delivering Second Edition Waste Plan objectives.
- Improve compliance with waste management regulations and internal understanding of waste management requirements.
- Develop plan for and install food waste treatment facility for University outlets.
- Run the sector leading 'Project Exodus' reuse project
- Develop reusable waste storage/assessment facility (for furniture and other reuse projects).
- Implement planned upgrade of external bin stores to reduce fire safety risks.
- Develop with Procurement guidelines and purchasing polices to ensure maximum resource efficiency and minimum waste generation.
- Update waste procedures in order to meet requirements of ISO 14001:2015 Environmental management System in time for Oct 2017 accreditation.
- Roll out bin store refurbishment project following initial trial.
- Replace and refurbish external Eurobins as per capital plan programme.
- Secure permanent Operational Waste staff member to enable successful management of operational waste management and minor waste projects.
- Introduce Warpit project to enable exchange of furniture between departments.
- Review mattress disposal arrangements with Facilities Operations.

## 8.2 Waste Plan 2020 – 2022

### Target: 92.5% waste reused/recycled or recovered by 2021/22

The following projects, plans and actions are planned to be implemented in order to assist in achieving this target and improve waste management:

- Extend food waste collection to tenants and trial food waste collection from residences.
- Complete development of secure permanent central waste compound.
- Replace and refurbish external Eurobins as per capital plan programme.
- Run the sector leading 'Project Exodus' reuse project.
- Implement planned upgrade of external bin stores to reduce fire safety risks.
- Review and tender waste and recycling contracts.
- Trial on-site collection/sorting of selected high volume recyclates in central waste compound.
- Extend reuse facility/project to enable maximum capture of reusable items across campus.
- Extend and mainstream 'resource efficiency' through procurement by requiring full lifetime costs of items to be considered in order to minimise waste.
- Review commercial case for installation of micro waste to energy plants.





## 9 Waste Plan Review and Implementation

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Progress in implementing the Waste Plan is reported to Facilities line management and the Sustainability Management Group (SMG) in order to monitor performance. Since accreditation to ISO 14001 Environmental Management System (EMS) in 2014, the Waste Plan objectives, targets and relevant procedures have been integrated into Facilities ISO 14001 EMS and progress in implementing are reported to the Waste Plan is also reported to the EMS Focus Group, Steering Group and Management Review Group. A full review of the Waste Plan is scheduled for 2020-2021.

The Waste Plan is implemented through Waste & Recycling Action Plans, produced annually as a separate document. These plans set out the projects, initiatives and activities designed to support delivery of the Waste Plan during each academic year, which typically might include initiatives such as improvements in waste storage infrastructure, waste segregation trials or waste minimisation projects such as the Project Exodus reuse project.



## 10 Conclusions

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The Second Edition Waste Plan sets out a framework for waste management over the next five years at Lancaster University. This updated version of the Waste Plan offers many environmental benefits, not least through managing resources more efficiently, through preventing and minimising waste generation and by increasing recycling rates, and helping to achieve legislative compliance.

The Waste Plan covers a key period in waste management, within which the routes for the disposal, treatment and recycling of waste will continue to rapidly alter. The Waste Plan will require regular reviews in order to accommodate planned increases in the University Estate.

The projects within the Waste Plan detail how Lancaster University plans to adjust the methods in which waste is managed on site, treated and disposed off-site. It is also designed to encourage a reduction in waste generation and alter University staff, students and visitors attitudes to waste management and generation.



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If you wish to discuss any aspect of the University’s Waste Plan, please contact:

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