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06/09/17	Outline the strategy for delivering the University’s waste / recycling targets	H Cozens A Partridge K Gallagher	CEMG	A

1.0 Introduction

The University of Exeter is a leading internationally recognised higher education institution whose core business is the generation and dissemination of knowledge, which specifically includes climate change and sustainable futures. The University is a major employer in the south west with over 4,000 members of staff and a student community of around 22,000.

Waste and recycling continues to be a sustainability priority for staff, students and visitors and is one of the most visible areas in the sustainability agenda.

The University generates 1,000 tonnes of waste annually and spends approximately £350,000 on waste management each year. The first Waste Management and Resource Strategy was published in 2010. Since this time, we have introduced a raft of initiatives to ensure we comply with legal and other requirements relating to waste, manage our waste in accordance with the waste hierarchy and reduce our costs.

This revised Waste Management Strategy will improve our environmental performance and contribute to our ongoing certification to the ISO14001 (International Standard for Environmental Management Systems). This plan also supports the delivery of the University's Strategic Plan (Our Strategy 2016-2021) by ensuring we make the most of our resources.

2.0 Our achievements (2010-2015)

Since 2010 we have achieved the following:

Increased recycling: we increased recycling from 29% in 2009 to 34% in 2016.

97% of waste is now diverted from landfill each year: all general waste is now disposed of to a waste to energy plant.

95% of food waste is sent to anaerobic digestion: all food waste from commercial kitchens is now sent to an anaerobic digestion plant where biogas and biofertiliser are produced. The remaining 5% is now being distributed to food banks. The University adheres to health and safety legislation pertaining to food waste and its distribution.

Resource centre developed: a dedicated resource area was created to enable the secure segregation of metal, electrical items, wood, plasterboard and non-recyclable items. A new £71,000 storage facility at Duryard Barn was brought on line to store good quality office furniture for future use across campus. Within the first 6 months of the facility being operational £37,000 worth of quality furniture was reused across the estate. There has been a total of 10 tonnes of furniture re used across the campus during 2015. Over two tonnes of quality furniture has been distributed across campus representing a financial saving of £47,421 on the current market value during August 2016 as well as £350 in disposal costs.

Trial of on-site aerobic composting: a Rocket Composter was trialled on campus for the management of food waste. The trial subsequently demonstrated the need for a commercial contract for food waste disposal which was introduced in 2014.

Development of A-Z Waste Guide: a complete guide to waste and recycling has been developed and published on the sustainability website, promoted through online training, staff induction and within staff engagement schemes.

Four new recycling services developed: lightbulbs, cables, cartridges/toners and wood can now all be recycled at this University, all of which are used daily by divisions of Campus Services and Colleges through waste disposal requests.

Waste audit programme developed: detailed waste audits have been carried out for most of the large buildings by student Green Consultants. This has identified actions that can be taken to improve performance as well as measure the success of interventions.

Creation of tailored marketing materials: creation of Exeter specific signage and posters to facilitate awareness of waste and recycling.

Capture of reliable waste data: waste data is captured from all contractors and maintained in the energy accounting software. Waste and recycling information is now available for all buildings.

Donation of £44,268 to charity: donations of clothes, bags, books, CDs and other items via the British Heart Foundation's Moving On scheme. 2016 was the third year of participation for the University of Exeter and was the best year for donations, receiving over 30 tonnes of contributions.

Trained staff: all operational staff are trained in key elements of waste management and are able to confidently answer questions posed by staff, students and visitors.

179 tonnes of green waste is processed on site each year: green waste has been shredded and then screened and reused across the University's grounds.

Food waste: food waste is collected from commercial kitchens by a waste contractor Viridor. It is then sent to anaerobic digestion.

Skip contract: in order to ensure that the University complies with relevant waste legislation and divert waste from landfill, a new contract has been established for skip hire on campus.

Duty of care checks: are carried out for all of the University's waste contractors to ensure that the company has the necessary environmental permits and licences to remove waste and apply the waste hierarchy when disposing of the waste.

Chemical waste contract: The University uses a specialist waste contractor to dispose of chemical waste.

The benefits of these changes have been:

- Continual improvement in line with the ISO14001 International Standard for Environmental Management Systems.
- Improved legislative compliance.
- Reduced environmental impact.
- Improvements to reputation and image (in particular external league tables).

- Cost minimisation and revenue enhancement.
- Improved operational efficiency.
- Improved customer experience.

3.0 Guiding principles (2016-2021)

Waste Hierarchy - the main principles behind the University's Waste and Resource Management Strategy are based on the well-established Waste Hierarchy. This has become a cornerstone of sustainable waste management practices, setting out the order in which waste management measures should be prioritised based on environmental impact.



Figure 1: The Waste Hierarchy

Compliance with legislation and other requirements: all businesses have a legal duty to provide appropriate arrangements for the disposal of waste. A core component of this strategy relates to ensuring the University's waste management practices meet all of these relevant legislative standards. A compliance system has been established to enable the University to meet the required regulatory standards, which is monitored on a regular basis.

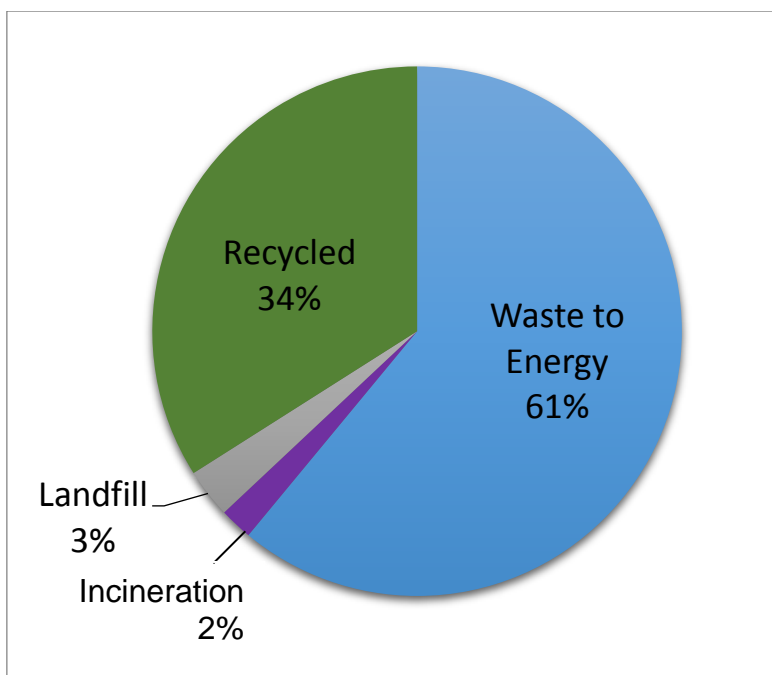
Waste as a resource: a number of the waste streams produced by the University have considerable market value and if collected and segregated properly, the University can receive rebates from recyclers or can sell items that are in good condition. The University will seek to consider waste as a resource and raise revenue wherever possible, or identify opportunities for disposing of material free of charge.

Life cycle perspective: the University will consider the lifecycle perspective of its waste management processes.

Needs and expectations of stakeholders: the University's customers, clients, funding bodies, lenders and local authority all demand information about its environmental activities and in particular its waste and recycling achievements. The University is required to provide performance indicators to both HESA Estates Management Statistics and the People and Green Planet League.

4.0 Waste data

The following summarises the performance data for August 2015 to July 2016. All weights are sourced from contractors and where possible these are measured weights. These are maintained in the energy accounting data system.



Waste disposal by destination (2015/16)

Waste Stream	Tonnes	% total
Recycled / Anaerobic Digestion		
Batteries	0	<1
Cans	17	2
Cardboard	105	10
Catering Oil	3	<1
Electrical waste	29	3
Glass	78	7
Metal	30	3
Paper	46	4
Plastic	38	4
Toner-cartridge	1	<1
Wood	23	2
Incineration		
Clinical	18	2
Chemical	6	<1
Waste to Energy		
Food	46	4
General	621	57
Landfill		
General (tip)	32	3
TOTAL	1,092	100

Breakdown by waste stream (2015/16)
(Excluding UPP and INTO)

5.0 Disposal routes

Waste Stream	Current Disposal Route	Resource
Aerosols	Non-recyclable Viridor.	Metal.
Batteries	Recycle Blackmore Ricotech.	Precious metals are recovered and remaining components are recycled.
Books	Reuse Books sent to Book-Cycle are distributed to local communities in developing countries. Recycle For books that are recycled, the ink is removed and the paper is pulped and turned into newsprint and cardboard.	Books that can be reused. Where they are out of date they can be recycled for paper.
Cans	Recycle Waste cans are collected by Viridor. Cans are sorted shredded and made into either new drinks cans or other metal products.	Metals.
Cables	Recycle Blackmore Ricotech collect and reuse where possible, otherwise cables will be stripped and recycled for metals.	Metals. Re-usable cables.
Card	Recycle Viridor collect campus wide card. Leeses collect baled card from the Forum.	Recyclable card.
Catering oil	Recycle Convert2Green and converted to biodiesel.	Oils.
CDs, paper, miscellaneous items	Reuse Dr Alice Mills , Ogden Science Officer in CEMPS can use waste non-confidential CDs and DVDs for science outreach activities in schools. Campus Services collect coloured paper and miscellaneous for Family Centre (arts and crafts). Recycle Paper recycled by Shred It. Confidential CD/DVDs securely disposed by Blackmore Ricotech.	Various reusable CDs, DVDs, coloured paper/card etc.
Chemicals	Reuse/recovery Labwaste (specialists) collect for reuse, incineration, specialist landfill.	Destination depends on nature of chemical.
Clinical waste	Incinerated	N/A
Confidential waste (paper)	Recycle Collected and shredded on site by Shred IT.	Low grade recycled paper, animal bedding etc.
Contaminated recyclates	Incinerated	Energy generation.
Fluorescent lamps	Recycle	Mercury is recovered and components recycled.

Waste Management Strategy 2016 to 2021

Waste Stream	Current Disposal Route	Resource
Furniture	<p>Reused University wide reuse scheme to use waste as a resource.</p> <p>Recycle Damaged or unfit for purpose furniture split into recyclable materials by Porters.</p>	Usable furniture. Metal/wood/plastic.
Food	<p>Anaerobic Digestion Only food from commercial kitchens is collected by Viridor.</p> <p>Non-recyclable Staff are encouraged to establish their own collection systems for tea bags and other locally generated kitchen waste to use in their own composting facilities at home. Where this is not possible, food waste is disposed of in a "non recyclable" bin for waste to energy.</p>	Packaged food. Food for anaerobic digestion.
Folders	<p>Reused Campus Services store good condition folders for reuse.</p> <p>Recycle Card recycled by Viridor.</p>	Reusable folders. Recyclable card.
General waste	<p>Waste to energy Collected by Viridor.</p>	N/A
Glass	<p>Recycled Collected by Viridor.</p>	Recyclable glass for new bottles and jars, also used as aggregate.
IT	<p>Recycle/Reuse Collected by Blackmore Ricotech, who dismantle the products and recovers gases, metals and other parts. Some refurbishment and re-sale may happen. Secure data destruction.</p>	Reusable equipment, recyclable metals, plastics etc.
Laminated paper	<p>Recycle Collected and shredded by Shred It, gets pulped with confidential waste.</p>	N/A
Laboratory equipment	<p>Recycled/Reuse Collected by Blackmore Ricotech, who dismantle the products and recover gases, metals and other parts. Some refurbishment and re-sale may happen. Secure data destruction.</p>	Reusable equipment, recyclable metals, plastics etc.
Metal	<p>Recycle Taken to Newberry scrap metals for recycling.</p>	Recyclable metals.
Mobile phones	<p>Recycle /Reuse Collected by Blackmore Ricotech, who dismantles the products and recovers gases, metals and other parts. Some refurbishment and re-sale may happen. Secure data destruction.</p>	Reusable equipment, recyclable metals, plastics etc.
Paper	<p>Recycle Collected by Shred It.</p>	Recyclable paper for variety of third grade products such as paper towels and cups, new paper, toilet rolls, cardboard etc.
Plastic	<p>Recycle Collected by Viridor.</p>	Recyclable plastics for new plastic products.
Polystyrene (EPS)	<p>Waste To Energy Collected by Viridor.</p>	Recyclable polystyrene for new products.

Waste Stream	Current Disposal Route	Resource
Pyrex	Recycle Collected by Labwaste.	Pyrex crushed for aggregate.
Textiles	Reuse Student reuse project donate to the British Heart Foundation. Recycle Logo/branded textiles a distributed to workshops and laboratories for use as rags, to save buying in.	Clothing for resale in charity shops or sold as textiles for recycling. Ragging for workshops/laboratories.
Toners and cartridges	Recycle Collected by Blackmore Ricotech.	Reusable cartridges. Some plastics.
Waste electrical equipment	Recycle/Reuse Collected by Blackmore Ricotech who dismantles the products and recover metals and other parts. Some refurbishment and re-sale may happen, dependent on the age, specification and condition of the equipment.	Reusable equipment. Metals and plastics.
Wood	Recycle Wood is taken to Wood Yew Waste to recycle.	Wood for wood chippings, panel boards, animal bedding, wood chips for biofuel.

6.0 Objectives and targets 2016 – 2021

The University will continue to experience growth and, while there have been significant changes and improvements during the last 5 year strategy, it will need to be even more proactive in maintaining its current successes. The following are the strategy objectives and targets for the period 2016-2020.

To reduce the total amount of waste generated each year	To reduce waste arisings kg/m ² , by 1% per annum (2014/15 baseline)
To increase the proportion of waste recycled	To recycle 45% of waste by the end of 2020
To ensure food waste is sent to anaerobic digestion	To divert 90% of commercial food waste to anaerobic digestion (excluding self-catered halls)

7.0 Communication:

While there are clearly defined goals and the University is working towards achieving them, improvements can be made to communicate these goals and celebrating successes.

The 2015-2020 strategy will incorporate and engage more fully in:

- Updating web pages; to show latest information and changes to the systems
- Communicating achievements and supplying answers to FAQ in the Weekly Bulletin
- Reaching out to the students through Expose and social media
- Engaging with Colleges & updating them of changes
- Promoting one point of contact through other online user groups such as intecomsec
- Distributing feedback forms with points of interest
- Developing and implementing a Waste and Recycling Communication plan. Ownership of the Plan will rest with Facilities Management with a strong input from the Guild as a combined

project aiming to reach potential students at Open Days and during Welcome Week as well as being distributed University wide.

Waste management will also be an integral component of Green Exeter, the new staff environmental accreditation programme.

8.0 Partnerships

Cooperation of all those who study work and visit the University of Exeter is needed to achieve the environment targets. All partners (FXPlus, UPP, etc.), tenants and contractors are required to comply with the guiding principles set out in Section 3. All partners, tenants and contractors should also provide waste data information, as appropriate, on an annual basis.

9.0 Measuring success

Waste performance data will be submitted quarterly to the Campus Environment Management Group (CEMG) and the Sustainability Vision and Change Catalyst Group (SVCCG). Performance will be reported annually to both the Estate and Environment Dual Assurance team and Council.

10.0 Delivery challenges

1. The increase in student numbers. There will be a need to increase the amount of bins on site to meet the demands of the increasing numbers. Space and budget will also need to be taken into consideration during the planning process.
2. The introduction of third party suppliers who use the University's disposal services as a free means of waste disposal.
3. The strategies of third party suppliers e.g. introduction of disposal items.
4. The lack of communication. (See Section 8 – Communication).
5. The lack of staff (cleaners in particular) to increase collection/disposal points.
6. Incorrect bin usage leading to contamination. The proposed communication plan and better signage on bins will be implemented to help address some of the contamination issues and keep contamination to a minimum. There is a need to involve and educate the third party suppliers on waste contamination.
7. Infrastructure, such as bin locations and purchasing protocol for bin provision.
8. Visiting events staff/guests not adhering to the recycling policies. There will always be a possibility of cross contamination but the Communication Plan should help to solve some of these ongoing issues.
9. No glass collections after informal internal events. Colleges and Professional Services need to be advised of the nearest glass bins for recycling after informal events.
10. Failing to create a successful partnership with Students' Guild and sustainability coordinators.

11.0 Action plan

Facilities Management has the overall responsibility for the operational management of the wastes on the Exeter campus and see the following as important contributing factors to help meet target (objectives to be linked ✓ once action confirmed):

Service	Action	Objective						By When
		Reduce Waste	Recycling	Food Waste	Waste as Resources	Compliance	Communication & Engagement	
Facilities Management	Continue to segregate wood, metal and WEEE waste at the Resource Centre		✓					Ongoing
	Review paper recycling scheme		✓					Dec 2017
	Provide targeted communication to ensure all users of the Resource Centre know how to use the facilities				✓	✓	✓	Dec 2017
	Work with Direct Works and Built Estate to address corporate fly tipping by contractors					✓		Dec 2017
	Provide tailored information to commercial tenants and third party users of the campuses to ensure they manage their waste correctly, comply with University requirements and support the waste targets [ask for action plans]					✓	✓	July 2018
	Establish quarterly meetings with sabbatical officers and Guild Sustainability Committee representative to discuss waste and recycling issues		✓					Dec 2017
	Communication – there needs to be a greater awareness for students, staff and visitors on what they can do, how to do it, and what can be done to improve recycling statistics – Expose, Newsletters. Create a communication plan						✓	Dec 2017
	To continue to supply unused University Logo T/Shirts to those areas that require rags for use as oily rags reducing the cost of buying in	✓				✓		Ongoing
	Coloured paper, pencils and items that can be used in crafts are sent to the Family Centre to be used as craft material for the children	✓				✓		Dec 2017

Waste Management Strategy 2016 to 2021

Service	Action	Objective						By When
		Reduce Waste	Recycling	Food Waste	Waste as Resources	Compliance	Communication & Engagement	
	Address contamination issues and incorrect use of bins	✓				✓		Jul 2018
	Review/audit levels of contamination in dry recyclables		✓			✓		Jan 2018
	Continue regular waste audits	✓	✓	✓	✓	✓		Ongoing
	Promote recycling and increase motivation	✓	✓				✓	Jul 2018
	Review recycling infrastructure e.g. bins and locations		✓				✓	Jul 2018
	Create a comprehensive waste and recycling procedure for refurbishments and clear outs	✓	✓			✓	✓	Jul 2018
	Review Event Exeter contracts for visitor/client waste and recycling after events		✓				✓	Jul 2019
	Partnering with and cross-reference with Cornwall Campus Waste Management Strategy	✓	✓			✓	✓	Jul 2018
	Maintain accurate waste data	✓	✓	✓	✓	✓	✓	Ongoing
	Review bin purchasing for colleges/buildings including protocol, provision and a business case emphasising that recycling collections are more cost effective than general waste	✓	✓					Jul 2018
	Create a successful partnership with Students' Guild and sustainability coordinators to reach all students	✓	✓				✓	Jul 2019
	Review and promote the book recycling scheme through internal communications, to prevent reusable books being recycled through Shred It	✓	✓		✓		✓	Jul 2018
	Work with Blackmore Ricotech (for data) and procurement to reduce the number of cables provided for new machines, if old ones in good working order	✓			✓			Jul 2019
	Promote CD reuse schemes	✓			✓			Jul 2018
	Identify and work with partners in the local community						✓	Jul 2019
	Consider glass collections after internal events and within buildings. Prevent glass being disposed of in general waste stream		✓			✓		Jul 2018
	Review use of specialist sales companies for reuseable laboratory equipment	✓	✓					Jul 2019

Waste Management Strategy 2016 to 2021

Service	Action	Objective						By When
		Reduce Waste	Recycling	Food Waste	Waste as Resources	Compliance	Communication & Engagement	
	Create a business case for segregating into different metal types on site (e.g. brass, aluminium) to increase income	✓			✓			Jul 2019
	Complete of bulk paper recycling review. Consider new bulk disposal procedure for marketing materials	✓	✓					Jul 2019
	Consider separating into paper and confidential waste streams. Review bin locations/infrastructure		✓					Jul 2019
	Work with Student Guild to reduce Exposé waste/over ordering. Review how to reduce how much paper is brought in and used. Stop retail giving out till receipts by default	✓	✓					Jul 2019
	More storage for re-usable furniture items. Continued promotion of the scheme. Identify and work with partners in the local community	✓			✓		✓	Jul 2019
	Monitor market for Polystyrene	✓						Ongoing
Safety, Health and Wellbeing	Complete and issue legal documentation for reuse, sale and donations					✓		Jul 2019
	Establish network of approved partners to receive surplus items through sale and/or donation	✓			✓			Dec 2017
Residences	Review end disposal route for duvets and pillows	✓						Annually
	Review disposal route for mattresses	✓						Annually
	Conduct waste audits in Halls of Residences (in conjunction with FM)	✓	✓	✓	✓	✓	✓	Annually
	Analyse waste data for halls (in conjunction with FM)	✓	✓	✓	✓	✓	✓	Annually
	Increase collection capacity (time and location) of British Heart Foundation donations	✓	✓		✓		✓	Jul 18
	Food waste in catered halls (see catering)			✓				Jul 18
	Review halls/student reuse, to check that no branded clothing/textiles are being donated	✓	✓		✓			Jul 18
	Review paper recycling provision in Halls of Residences (in conjunction with FM)	✓	✓					Jul 19

Waste Management Strategy 2016 to 2021

Service	Action	Objective						By When
		Reduce Waste	Recycling	Food Waste	Waste as Resources	Compliance	Communication & Engagement	
Grounds	Maintain green waste arrangements to ensure "Zero Green Waste to Landfill"	✓	✓					Ongoing
Commercial Services	Reusable mug Scheme	✓	✓		✓			Sep 17
	Increase waste management in new commercial leases		✓		✓			Jul 2018
	Evaluate the use of disposals (e.g. cups, glasses, cutlery and plates) and look for most sustainable option	✓	✓					Jul 19
	Look to reduce the packaging on delivered food services	✓		✓				Jul 19
	Reduce the waste of milk and fruit juice	✓		✓				Jul 19
	Stop retail giving out till receipts by default	✓						Jul 17
	Conduct waste audits in catered areas	✓	✓	✓	✓	✓	✓	Jul 19
	Analyse halls waste data	✓	✓	✓	✓	✓	✓	Annually
	Look at contracts, to include waste and recycling for clients	✓	✓			✓	✓	Jul 19
	Consider/review over ordering of Fresh Ideas (meetings etc.)	✓						Jul 19
Review opportunity for filtered water provision via Fresh Ideas			✓				Jul 19	
Built Estate & Direct Works	Address "corporate flytipping" where internal users deposit waste outside of the designated disposal processes / infrastructure					✓		Jul 18
	Ensure contractors dispose of waste in accordance with legal requirements					✓		Jul 18
	Ensure contractors are made aware of University's waste and recycling policies	✓	✓			✓	✓	Jul 18
	Work with Assistant Facilities Operations Manager to plan area clearances	✓				✓		Jul 18
	Ensure recycling infrastructure is included within new build and refurbishment specifications		✓			✓		Jul 18
	Encourage building users to reuse equipment and furniture where possible	✓			✓			Ongoing

Waste Management Strategy 2016 to 2021

Service	Action	Objective						By When
		Reduce Waste	Recycling	Food Waste	Waste as Resources	Compliance	Communication & Engagement	
	Support the ongoing management of Higher Hoopern Farm to meet best practice	✓	✓		✓			Ongoing
	Address hazardous waste store issues, creating long term solution					✓		Jul 18
Event Exeter	Update client contracts to include waste and recycling, including the removal of banners, flags, promotional/marketing materials, glass etc	✓	✓					Jul 18
	Request that clients adheres to the recycling procedures on campus.	✓	✓			✓		Jul 18
	Consider/review banner reuse/recycling	✓	✓			✓		Jul 20
	Consider and prevent outside waste spills and disposal, e.g. oil from food stalls					✓		Jul 18
	Prohibit release of balloons, Chinese lanterns and non-biodegradable confetti	✓				✓		Jul 18
	Provide recycling facilities for events		✓			✓		Jul 19
	Monitor buffet food waste	✓		✓				Jul 19
	Provide guidance on food orders to reduce over ordering.	✓		✓				Jul 19
Retail	Consider charity food waste collections	✓		✓				Jul 17
	Consider/review ordering processes	✓						Jul 19
	Reduce the number of till receipts issued	✓						Jul 17
	Include waste and recycling in future retail leasing, including built in costs	✓	✓				✓	Jul 19
Sport	Update booking forms to include waste and recycling	✓	✓			✓		Jul 19
	Increase recycling provision outside (Sports Park)		✓					Jul 19
	Look into recycling at Topsham and Duckes Meadow		✓					Jul 19
	Ensure our tenants (DCB, West Hockey, Ocean Physio) abide by the waste and recycling policies by writing into a contract					✓		Jul 19
Students' Guild	Address over ordering, e.g. for t-shirts, exposé and marketing materials	✓						Jul 19
	Work with Forum Service Yard staff to recycle cardboard efficiently		✓					Jul 19

