

Review of provisions for re-use and redeployment of resources within the Public Sector in Scotland



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Executive summary

To promote and support the re-use and/or redeployment of furniture and other items between public sector organisations, Zero Waste commissioned Ricardo-AEA to undertake a high-level review of current provisions within the public sector in Scotland for the re-use and redeployment of resources, either within or between organisations. The review included the identification of any potential environmental and financial benefits, and barriers to implementation.

The review focused on activity within organisations in the Further Education (FE) and Higher Education (HE) sector; the Police Services; and the Fire and Rescue Services.

The review of a total of 14 Further Education organisations, 14 Higher Education organisations, 5 Police Services, and 6 Fire and Rescue Services was completed by telephone survey – an overall response rate of 57%.

Specific needs and opportunities, as well as barriers and solutions to overcoming key challenges for the introduction, improvement or increase of re-use/redeployment of resources relevant to the target organisations are also presented.

Opportunities have been grouped according to 4 main areas;

- Procurement Options;
- Asset Tracking System;
- Infrastructure, including logistics; and
- Communications (raising awareness).

In addition the review identified examples of good practice currently being employed within the targeted organisations.

Three stand-alone good practice case study examples are presented for;

University of St Andrews;

Glasgow Caledonian University; and

Scottish Prison Service - Barlinnie Prison.

While not within the target sectors a case study of an asset tracking system used by Barlinnie Prison is provided as a point of comparison, for possible modification for adoption by the target organisations.

It is recommended that ZWS encourage Public Sector organisations to adopt and maintain accurate data monitoring and reporting mechanisms in line with the waste hierarchy and carbon metric.

The development and promotion of a simple asset tracking tool will help target organisations and the wider Public Sector to adopt consistent systems, integrating waste management and procurement, leading to increase and expansion of re-use and redeployment provisions.

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1 Introduction

The Scottish Government is currently consulting on its national programme for the efficient use of materials. The Programme is called Safeguarding Scotland's Resources, and will build on Zero Waste Plan's vision to waste as little as possible, and to maximise the value of resources.

Using materials efficiently, avoiding waste and re-using items can deliver some of the greatest financial and environmental benefits in the waste hierarchy. Re-using items extends the lifespan of products and reduces the need to procure new products made from raw materials.

While much focus is often given to the re-use of household waste there is significant potential for resource re-use in the commercial and industrial sector and also in the Public Sector.

Ricardo-AEA was commissioned by Zero Waste Scotland to undertake a high-level review of current provisions within the Further and Higher Education (FHE), and Police and Fire and Rescue Services sector in Scotland for the re-use and redeployment of resources, either within or between organisations, and to identify the scope for introducing and increasing this provision, including identification of any potential benefits and barriers.

The key focus areas of the review included:

- Level of re-use and redeployment undertaken by organisations (internally, and externally with other organisations);
- Identification of current methods of determining volumes/tonnages of materials;
- Current methods of asset tracking employed by an organisation, to track lower value items if not through an asset register;
- Identification of any tools or systems to promote availability of damaged or obsolete items for refurbishment or staff use;
- Current methods of capturing and reporting data on re-use and/or redeployment of resources;
- Current destinations of materials suitable for re-use and redeployment, e.g. externally to Third Sector organisations, recycling, landfill disposal etc;
- The associated facilities and logistics requirements for temporary storage and/or transfer of resources, within or between organisations; and
- Any carbon/monetary costs that can be associated with current provisions.

The findings and observations of the review are used to identify potential future opportunities, benefits, barriers and solutions to overcome key challenges with regards to:

- Increasing intra- and inter-organisational re-use and redeployment of resources;
- Storage and transfer of materials within or between organisations;
- Modifying/installing systems and tools to improve asset tracking and monitoring of resources suitable for re-use and redeployment internally and externally; and
- Potential carbon and cost savings that could be achieved.

Where possible, case studies and pull out boxes are presented to illustrate good practice approaches to re-use and redeployment of resources employed within target organisations.

This report details the findings of and observations of the review, and provides recommendations for future action that should be taken by ZWS to support target organisations in overcoming perceived barriers and challenges.

It is worth noting that the wider Public Sector; including local authority premises, NHS Boards, government premises etc. may also benefit from the findings presented, and may have significant potential to support the introduction and increase the provision of re-use and redeployment provisions.

Figure 1: Reupholstered furniture in the Saltire Centre at Glasgow Caledonian University



2 Review of existing provisions

2.1 Survey of target organisations

The approach adopted to determine the extent of existing provisions for the re-use and redeployment of resources within the Further and Higher Education (FHE), and Police and Fire and Rescue Services sector was two-fold.

Initially a request for examples of good practice and organisation experience of implementing re-use schemes was issued to FHE organisations through the Environment Association of Universities and Colleges Scotland, on behalf of Zero Waste Scotland. This was intended to generate leads to organisations that could be followed up by telephone and email to obtain further information. The response rate to this support request was poor, with only 1 university and 1 college offering to provide information.

Following this initial request for information, a structured telephone survey was completed. All FHE establishments, Police and Fire and Rescue Services were contacted and asked to participate in the survey. The following table shows the number of organisations successfully surveyed as a percentage of the total sector population.

Table 1: Number of organisations successfully surveyed

Sector	Total number of organisations	Number of completed surveys	% of organisations successfully surveyed
Education			
Further Education (colleges)	33	14	42%
Higher Education (universities)	19	14	74%
Emergency Services			
Police	8	5	63%
Fire and Rescue	8	6	75%
TOTAL	68	39	57%

Surveys were completed as far as possible with persons in a waste management / estates team / environment / facilities management role. Organisations were asked to provide information against the following focus areas in line with the scope of work.

- Current re-use and redeployment activities
- Monitoring and reporting of volumes / tonnages of materials
- Infrastructure
- Communication and awareness
- Procurement policies and procedure
- Costs and benefits
- Further help and support

The full survey questionnaire is presented in Appendix 2.

2.2 Summary of findings and observations

The information obtained from organisations was collated and is presented in Appendix 3.

It was the intention that the data analysis would give rise to quantification of the arisings of unwanted electronic and electrical goods, textiles, and furniture across the target sector organisations. It was also expected that the data would be used to quantify the potential for additional re-use and redeployment that was currently being disposed of to landfill.

Previous work completed by AEA on behalf of Zero Waste Scotland during 2010-11¹, which looked at current waste management practices in the education and emergency services sector demonstrated that data on re-use and redeployment of resources was not routinely captured. The level of data reporting within the Public Sector at present does not include a specific requirement for organisations to record re-use and redeployment of items. It has already been highlighted in previous reports that the Higher Education Statistics Agency, Estates Management Statistics (EMS) reporting system requires Higher Education establishments (universities) to report data on the weight of recycling only.

The recent survey has again highlighted poor availability of good quality waste management data in the target sectors and a lack of available data on re-use of items. The survey outcome also indicates that few organisations have holistic systems and processes in place to track items and assets from procurement to disposal.

The review of current provisions highlighted some differences in practices between the target sectors. Further Education premises (colleges) have a greater reliance on local authority waste management contracts, with ad hoc donations made to local charities or Third Sector organisations.

John Wheatley College and Kilmarnock College display a greater level of awareness of re-use. John Wheatley College staff alert the Estates Management team when items are no longer required, and these are collected by Estates Management team for internal redistribution. John Wheatley College and Lews Castle College are the only two Colleges to confirm that an asset register was used to record items owned by the College – IT equipment, construction and electrical tools and catering equipment. At John Wheatley College, it was reported that the asset register is controlled by finance based on the financial value of assets, and not linked to wider procurement of items.

Kilmarnock College provided details of a campus wide communication campaign for waste management, holding annual recycling events for students, and communicating environmental messages through use of presentations, noticeboards and posters around the campus. At the College, discarded electrical items are repaired as far as possible before they are consigned for disposal.

No college surveyed was able to provide details of data on waste generation / re-use of electronic and electrical goods, textiles and furniture.

Higher Education premises reported greater levels of re-use activity, but in contrast to the Further Education sector and Police and Fire Service sector resources are deployed internally. Both Queen Margaret University and the University of Dundee run informal swap shop arrangements where staff or students can donate unwanted or surplus items at the end of term, or throughout term time for re-use by new students.

Reported use of asset registers was more common in the Higher Education sector, particularly for IT goods – possibly a reflection of larger estates footprint and a wider range of departments and teaching faculties.

¹ Support to Public Sector organisations in Scotland; Opportunity and Needs Analysis for the Public Sector

Only the University of Aberdeen, Glasgow Caledonian University, the University of Edinburgh, and the University of St Andrews offered data on waste generation/re-use of electronic and electrical goods, textiles and furniture and provided evidence of a structured re-use system.

The University of Edinburgh Equipment Exchange website, allows redundant equipment to be advertised, and exchanged or sold between departments, within the University², and promotes re-use or repair of unwanted, old or broken furniture. The University of the West of Scotland reported a more informal system for internal re-use and redeployment of resources, utilising the estates management team. The team record details of items available and items wanted and match requests.

Informal practice was also common in Fire and Rescue Services and Police Services, with divisions sharing furniture items and uniforms. Within the Police and Fire and Rescue Service more emphasis was placed on accurate recording of assets – principally in relation to security considerations. Security was also a key driver in determining re-use of uniforms, requiring de-badging before donation to charities for use abroad or for textile recycling.

The University of Abertay, Dundee, was the only organisation surveyed to make a link between end of life considerations of resources and procurement, but also noted that this practice was not always observed. This finding suggests that further promotion and awareness raising of linking procurement activity to the waste hierarchy is required.

Where items were not donated to charities, or disposed or recycled through the waste management contractor, provision of re-use and redeployment of resources was found to be wholly an intra-organisational activity. The University of Dundee has recently joined the Tayside Procurement Forum shared procurement team. The Tayside Procurement Forum has joined the WARPit³ resource redistribution network and as a result all Forum members, including the University of Dundee will be able to offer, share and receive resources between Procurement Forum members – primarily Dundee City, Angus and Perth and Kinross Councils, with additional membership including a range of universities, NHS and emergency services. This larger inter-organisational external provision for transfer of resources will lead to more resources becoming available for redistribution and re-use, with increased potential to match the needs of organisations that might require items appropriately.

In summary, structured provision for the re-use and redeployment of resources – i.e. schemes that display elements of asset tracking, effective promotion and awareness, data collection and reporting and evidence of carbon and cost savings has much scope for development within the target sectors. Only in future years with continued support from Zero Waste Scotland, in parallel to implementation of the Zero Waste (Scotland) Regulations, will organisations become more aware of the environmental and commercial benefits that can be realised.

² <http://www.ed.ac.uk/schools-departments/estates-buildings/waste-recycling/equipment-exchange>

³ www.warp-it.co.uk/

2.3 Reform and mergers

The Police and Fire Reform (Scotland) Act 2012 will establish a single Scottish Police Authority, and a single Scottish Fire and Rescue Service.

The new Police Service of Scotland, is expected to go live on April 1, 2013, with a date for the Scottish Fire and Rescue Service yet to be announced.

When asked for their opinions of how the Reform will affect current waste management practices, including re-use and redeployment schemes, opinions of those surveyed were mixed.

Ricardo-AEA understands that as a result of the Reform a single waste contract will be set up for the Police Service, and Fire and Rescue Service. Some Service staff surveyed felt that this would be a positive step, bringing consistency to waste management procedures and policies, while others felt that existing initiatives undertaken on a local level would be lost.

It is recommended that Zero Waste Scotland continue to offer support to the Police Service and Fire and Rescue Service during the Reform process to ensure that appropriate measures are put in place to procure compliant waste management services, that will support the expansion/implementation of existing and new re-use initiatives.

When asked about the effect of mergers on Colleges, staff seemed unconcerned or even unaware that mergers would be taking place. The Scottish Agricultural College has completed an acquisition of Elmwood College, Barony College and Oatridge Agricultural College to become Scotland's Rural College. It is expected that the colleges that have joined SAC will be required to meet their operating standards in due course. The current focus of the acquisition is HR and finance – a future opportunity is for the College to explore existing and potential links between finance and procurement, and waste management.

Where merged organisations can combine best practices in waste management and move towards a more standardised waste management system, this would not only ensure greater compliance with the new Regulations, but also result in much better performance in terms of re-use and redeployment provisions.

2.4 Good practice case study examples

The evaluation of the survey information highlighted 2 examples of good practice within the FHE sector.

The University of St Andrews and Glasgow Caledonian University both display replicable, good practice in re-use and redeployment of resources, with particular reference to each focus area of the survey questionnaire.

Both University re-use schemes have a structured holistic approach to re-use, and demonstrate a high level of competency and understanding by staff of the contribution that re-use and redeployment of resources can make to wider waste prevention initiatives.

These two case studies have been written up into independent and stand-alone documents and are presented in Appendix 1. A case study example of an asset tracking system in use by the Scottish Prison Service at Barlinnie Prison is also provided as a point of comparison, and possible modification for adoption by the target organisations.

Shorter case studies showcasing different elements of good practice in asset tracking, promotion and awareness, data collection and reporting, carbon and cost savings achieved are presented as 'pull out boxes' throughout Section 3 of this report. These shorter case studies also help to illustrate and underpin recommendations, benefits and solutions to potential challenges and barriers to implementing and increasing re-use and redeployment of resources.

Some of the good practice examples are taken from outside the target sectors, but the approach used by the case study organisation is considered replicable and transferable to FHE, Police and Fire and Rescue Services, and the wider Public Sector.

3 Opportunities, benefits, barriers and solutions

The findings and observations of the review have been used to identify potential future opportunities, benefits, barriers and solutions to overcome key challenges with regards to:

- Increasing intra- and inter-organisational re-use and redeployment of resources;
- Storage and transfer of materials within or between organisations;
- Modifying/installing systems and tools to improve asset tracking and monitoring of resources suitable for re-use and redeployment internally and externally; and
- Potential carbon and cost savings that could be achieved.

To address these points, opportunities have been grouped according to 4 main areas;

- Procurement Options;
- Asset Tracking System;
- Infrastructure, including logistics; and
- Communications (raising awareness).

Each table identifies individual opportunities and needs within particular areas of focus within the main subject area.

The majority of the opportunities identified have been suggested using the outcomes of the surveys completed by target organisations, and our extensive re-use industry knowledge and expertise.

Each of these opportunities is deemed appropriate to the Public Sector as a whole unless otherwise stated.

3.1 Procurement

Within the scope of this research, the importance of re-use and redeployment of resources particularly during the process of the Reforms to implement a single Scottish Fire and Rescue Service and Post-16 reforms to Colleges and Universities across Scotland is emphasised. The Scottish Government places sustainability alongside quality and value for money considerations, making it a key criterion in buying decisions.

Sustainable procurement is key to driving waste minimisation / prevention in Public Sector organisations and can serve to underpin re-use and redeployment schemes.

Typically in the FHE sector, responsibility for procurement operations is devolved to departmental managers. Ad-hoc, non-centralised procurement of goods may result in items being bought new in one department that arise as unwanted or surplus items in other departments.

The needs of an organisation can sometimes be met by 're-thinking the need' to procure. Put simply, an organisation can review their buying requirements to meet their needs, and find different, new sustainable ways of delivering those outcomes and satisfying those needs.

The table below identifies opportunities and barriers within Public Sector organisations to link waste management practices with procurement opportunities.

Table 2: Linking Waste Management and Procurement

Focus	Opportunity/Need	Barriers to implementation	Organisation action required	External support required
1. Application of the waste hierarchy at an early procurement stage	1.1. Reducing the need to buy	<ul style="list-style-type: none"> • Reallocation of workload between procurement teams/heads of departments • Additional effort and knowledge required by staff 	<ul style="list-style-type: none"> • Follow sustainable procurement guidelines 	<ul style="list-style-type: none"> • Provide support implementing sustainable procurement strategies • Promote resource management plans to include procurement
	1.2. Buying Re-use	<ul style="list-style-type: none"> • Provision of required quantity. Re-use organisations may not be able to meet the supply large quantity of materials • Consistency of product quality. 	<ul style="list-style-type: none"> • If surplus items are not sufficient and there's a need to buy more, explore buying re-used products from existing procurement framework. 	<ul style="list-style-type: none"> • Determine if re-use organisations are registered on existing frameworks such as APUC framework widely used by colleges and institutions in Scotland • Enhance market development for TSO, inclusion of social clauses in procurement contracts • Promotion of joint working to meet large demand of feedstock • Enhancing a unified re-use quality brand or mark across Scotland. For example the Revolve Re-use Quality mark should be developed and promoted across Scotland Furniture Re-use Organisations. • In addition, ZWS could provide one-to one capacity building support to Re-use organisations to help them achieve the requirements of Revolve Re-use Quality mark as there are only two member organisations across Scotland.

Focus	Opportunity/Need	Barriers to implementation	Organisation action required	External support required
	1.3. Buy recycled resource materials	<ul style="list-style-type: none"> Provision and availability of items and consistency of quality 	<ul style="list-style-type: none"> Buy recycled resource materials. 	<ul style="list-style-type: none"> Support from Scottish Government Sustainable Procurement Delivery Group to integrating re-use and resource redeployment as a compulsory stage in the procurement process

Case study: NHS Ayrshire and Arran

Based on the success of an informal staff bulletin page on the NHS Board intranet advertising personal items for sale or collection free of charge, a system was developed by the Procurement Team of NHS Ayrshire and Arran to offer furniture and other surplus/unwanted goods for redeployment across the Board.

All staff have access to the system, and can log in to advertise and view available items. When staff make requests for the purchase of new items, they are directed by the purchasing system and the purchasing team to check that the same item is not advertised for re-use by another member of staff/ NHS department. Only once the system has been checked, and evidence provided that no alternative is available within the Board is the purchase request authorised.

3.2 Asset tracking systems

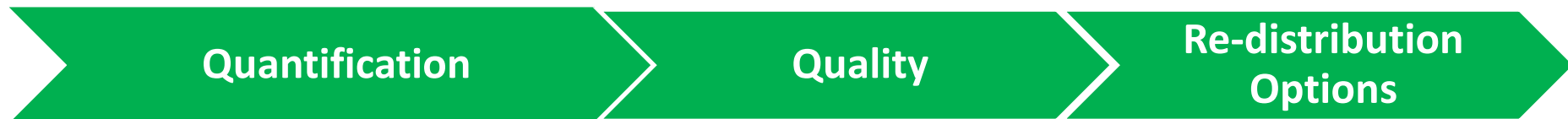
This report has assumed a zero baseline for existing asset tracking systems within the Public Sector with particular reference to Colleges, Police and Fire Services. Organisations surveyed have provided little or no evidence of materials re-used or redeployed due to the sparse and non-consistent data nature of the information obtained. Although there is limited data capture on materials currently being re-used and redeployed within surveyed Public Sector organisations in Scotland, this scope of work has identified potential opportunities for implementing asset tracking systems.

Modifying / installing systems and tools to improve asset tracking and monitoring of resources suitable for re-use and redeployment internally and externally is identified as a key opportunity.

3.2.1 Steps Required to Implementation of an Asset Tracking System.

A simple, clear and concise process can be implemented by Public Sector organisations to monitor, track and report volumes (tonnage) of materials re-used and redeployed. A 3-stage process of quantifying valuable resources that can be diverted for re-use and redeployment within Public Sector organisations, or externally can be adopted.

The following steps are recommended to promote resource re-use and redeployment: These steps are explained further in Appendix 4.



Step 1 - Quantification: Assessing the volume of material resource available by an organisation is regarded as a first key step in resource deployment. This involves identifying the type and quantity of material stream for diversion. The weight of the items per material stream can be quantified using average weights and/or standard conversion factors.

Step 2 - Quality: Conducting a visual assessment on the current quality of quantified resource material is vital for re-use and redeployment. For a smooth re-deployment process, it is encouraged that the quality of each item is categorised based on its current condition.

An assessment of the resource quality is of high importance when accessing and interacting with Third Sector re-use organisations that have immediate access to a wide market consisting of a large community of householders, housing associations and businesses.

Step 3 - Re-distribution: Evaluating available distribution channels is important in ensuring a sustainable acquisition process. It is advised to source internal redeployment options before external options are explored, promoting the sustainable re-use and redeployment of resources as well as avoiding or reducing the procurement costs.

Internal monitoring is important as it enables Public Sector organisations to illustrate the volumes of resources diverted for re-use and reductions on wastes sent to landfill, and reduce the need to procure new items.

An example of an asset tracking system in use by the Scottish Prison Service at Barlinnie Prison is provided in Appendix 1.

Table 3: Opportunities and Barriers to Implementing an Asset Tracking System

Focus	Opportunity	Barriers to implementation	Organisation action required	External support required
2. Quantification of available resources	2.1. Determine the quantity of resources available for re-use and redeployment, in terms of: <ul style="list-style-type: none"> - Resource category - Number of items - Weight of items 	<ul style="list-style-type: none"> • Allocating a dedicated team of staff • Additional effort required by staff 	<ul style="list-style-type: none"> • Change in management practices • The use of FRN average weight database 	<ul style="list-style-type: none"> • Support to develop a simple database to capture resource materials diverted for re-use
3. Resource quality assessment	3.1. Visual assessment to determine the quality of material resources to assess potential for re-use and redeployment	<ul style="list-style-type: none"> • How to determine what is “fit for purpose” for different end users. For example, soft furnishing sold by Third Sector re-use providers <u>must</u> have original fire safety label attached (<i>Furniture and Furnishings (Fire) (Safety) Regulations 1988</i>) • Identifying and approaching relevant organisations that will re-use specific material resources • Developing effective communication channels to highlight availability and requests for items 	<ul style="list-style-type: none"> • Mapping re-use and redeployment options • Involving end users of resource materials from an early stage (both internal and external end users) 	<ul style="list-style-type: none"> • Develop suitability criteria depending on end user. Generic clarification questions such as ‘<i>are the items in a resalable condition?</i>’ • Develop a database of relevant organisations with details of the type of materials collected, available capacity and cost requirements

Focus	Opportunity	Barriers to implementation	Organisation action required	External support required
	3.2. Audit process to determine the volume of items suitable for re-use, recycling or waste	<ul style="list-style-type: none"> Additional effort required by staff across multiple departments 	<ul style="list-style-type: none"> Change in practice and behaviour 	<ul style="list-style-type: none"> Integrating audit process into Assets tracking systems
4. Internal Re-use and Redeployment Options	4.1. Linking waste management arrangements with procurement of goods, and linking asset registers (based on financial value of items) to procurement	<ul style="list-style-type: none"> Lack of joined communications between Public Sector departments – procurement, finance and waste management 	<ul style="list-style-type: none"> Senior management commitment Assigned staff responsible for tracking re-use and redeployment opportunities Use of internal communication channels such as intranet facilities to promote re-use and redeployment opportunities 	<ul style="list-style-type: none"> Consistent communication campaign from ZWS
5. External Re-use and Redeployment Options	5.1. Potential favourable publicity for Public Sector organisations	<ul style="list-style-type: none"> Legal issues Safe collection of goods Temporary storage opportunities Resource clearance timescales Donors may have concerns about harm or injury arising from the use of donated goods Commercially sensitive issues e.g. re-using co-operate wears with corporate branding 	<ul style="list-style-type: none"> Identify potential suitable organisations that could re-use the equipment Approach the relevant organisation to make arrangements for the donation Development of a sample waiver for donation of goods Determine cost requirements for different material stream 	<ul style="list-style-type: none"> Develop service level agreement with representative re-use organisations. Establish Re-use Forums to enhance access to core third parties re-users for furniture, electrical items and cooperate wears

Focus	Opportunity	Barriers to implementation	Organisation action required	External support required
	5.2. Social benefits	<ul style="list-style-type: none"> • Lack of financial gains if items are donated • Inability to quantify social return on investment (SROI) • Donated goods may have an invalid warranty • Costs may be acquired if items need to be transported or stored before collection 	<ul style="list-style-type: none"> • Request monitoring and reporting on the impacts of donated goods within the community through external organisations 	<ul style="list-style-type: none"> • Integrating SROI measurements in assets tracking tools

Third Sector Re-use and Re-distribution Options

There is an active group of social enterprises managing waste resources at a local level through recycling, re-use, composting, waste reduction and waste education activities in Scotland. The majority of these organisations divert items of furniture, electrical equipment (including office IT equipment) and textiles for re-use and recycling. ILM Highland, New Start Highland and other Third Sector Re-use Organisations have asset tracking systems used to monitor the tonnages of items diverted for re-use and recycling.

An opportunity identified during this research is that there are some accredited re-use organisations capable of diverting office items for re-use. Some of these organisations have effective asset tracking systems and are capable on providing a detailed monitoring statistics of items diverted for re-use across Scotland. This is key to promoting data capture, monitoring and reporting. The [Community Recycling Network Scotland](#) represents recycling and re-use organisations on issues of sustainable community resource management.

Case study: Third Sector re-use asset tracking

Asset tracking of resources collected by Third Sector Re-use Organisations is one of the requirements of being an FRN Approved Re-use Centre. Two Scottish re-use organisations, ILM Highland and New Start Highland have been assessed by a UKAS Accredited Independent Third Party Certification Body and have satisfied the requirements of the premier International Standard ISO 9001. ISO 9001 certified standards promise to create an efficient and effective working environment; raising customer satisfaction and retention in order to lead to increased profit, as well as improving employee morale and long term employment.

New Start Highland is an organisation which strives to create opportunities for people, helping them to make positive changes to their lives and improving their quality of life. New Start Highland creates social and environmental improvements through supporting people, delivering training opportunities and promoting re-use. New Start Highland actively work with local authorities, but do not currently collect resources from target organisations within the scope of this work.

ILM Highland is an independent social enterprise with charitable status. It provides environmental training, work experience and employment projects through the delivery of re-use and recycling of waste electrical goods, insulation services, business consultancy and housing-related services for older people and people with disabilities.

These organisations may be approached to implement further redeployment of resources within the Public Sector after internal options have been explored.

3.3 Infrastructure

Once items are identified as available for re-use and redeployment, finding new homes for items relies on quick, safe and legal transfer mechanisms.

Barriers identified by staff in target organisations for the provision of re-use systems included storage of items, and security concerns. A convenient system that allows 2 way transfer of items will help to reduce volume of materials that are disposed of to landfill and promote good quality items for redistribution internally and externally between organisations. Some organisations made use of existing transfer of goods between premises by Estates Managers, to transfer unwanted items and resources to a central point, or to a new owner.

Where items cannot be redeployed or put to re-use immediately, they may be stored until they are required. There is a concern that in storing items they may become obsolete, or superseded.

This section explores the options for an integrated re-use infrastructure detailing:

- A focus on the importance of developing existing re-use infrastructure within the Third Sector Re-use Organisations and Social Enterprises; and
- A focus on bridging the infrastructural gaps within Public Sector organisations.

The table below identifies opportunities and barriers within Third Sector and Public Sector organisations for implementation and expansion of re-use infrastructure.

Table 4: Re-use and redeployment infrastructure and logistics

Focus	Opportunity/Need	Barriers to implementation	Organisation action required	External support required
Third Sector Re-use Organisations and Social Enterprises				
6. Integrated Re-use Infrastructure	6.1. Collection/transport vehicles: Existing fleet and area of coverage should be identified for each potential client. For example, Re-use Organisation Z has two 3.5 tonnes Luton Vans and 1 Ford Transit Van that operates across Aberdeen, Peterhead and Aviemore Area.	<ul style="list-style-type: none"> Lack of existing collection infrastructure Maximum utilization of existing collection vehicles which make it difficult to redeploy resources 	<ul style="list-style-type: none"> Invite relevant organisations to provide quote for collection of available resources for re-use and redeployment Establish initial discussions about the possibility to provide regular collection services Explore possible joint working and resource sharing 	<ul style="list-style-type: none"> A mapping of existing Re-use organisations with infrastructure and resources that can be called upon for clearance services Develop and promote re-use organisation ZWS can help increase markets for redeployed resources by linking with communications campaigns
	6.2. Appliance re-use/recycling centre: The possibility of having a processing facility for the reception of goods, sorting, testing, bulking of goods and disassembly of items for material recovery.	<ul style="list-style-type: none"> Lack of existing re-use organisation with the required strands of operation Lack of a re-use organisation operating at the required scale or size 	<ul style="list-style-type: none"> Identify suppliers with adequate facility to maximise material re-use diversion 	<ul style="list-style-type: none"> Identify or establish re-use hubs that can serve as redistribution hubs across Scotland or within regions in Scotland Assessment and selection of a suitable re-use scheme
	6.3. Refurbishment workshop. 27 and 20 Re-use organisations in Scotland offer repair services for WEEE and furniture respectively ¹	<ul style="list-style-type: none"> Lack of existing adequate repair and refurbishment facility Cost of development Adequate repair skills and expertise within the Third sector 	<ul style="list-style-type: none"> If surplus items are not sufficient and there's a need to buy more, explore buying re-used products from existing procurement framework. 	<ul style="list-style-type: none"> Identify and provide support to develop a suitable repair facility

Focus	Opportunity/Need	Barriers to implementation	Organisation action required	External support required
Public Sector Re-use Infrastructural Gaps				
	6.4. Warehouse (temporary or permanent): Provision of bulk storage facility for resource materials (furniture, ICT and corporate wears) awaiting further redeployment for re-use and reprocessing.	<ul style="list-style-type: none"> • Lack of suitable (e.g. clean, moisture free and accessible) storage space • Cost of storage facility • Inability to access a market for large quantity of resource materials collected • Re-allocation of workload between procurement teams/heads of departments/head and safety officers • Additional effort required by staff 	<ul style="list-style-type: none"> • Establishing a dedicated materials collection point from each Public Sector organisation. 	<ul style="list-style-type: none"> • Identify and support Public Sector organisations willing to implement re-use systems
	6.5. Corporate Wear Re-use	<ul style="list-style-type: none"> • Existing corporate wear re-use organisation • Garment labelling – requirement to debadge 	<ul style="list-style-type: none"> • Incorporate procurement protocols to involve the use easy removal of badges at the end of a uniforms first life, allowing secure recovery of garments for re-use 	<ul style="list-style-type: none"> • Identify and promote markets for collected materials • Develop case study to promote re-use of textiles • Provide support to establish and promote new or existing collection systems

Case study: storage and redeployment of bikes, University of St Andrews

At the University of St Andrews abandoned bicycles are monitored by the University's Parking Wardens. 'Suspect' bikes are tagged and revisited after 14 days. Abandoned bikes are removed to storage where there are kept for two months. Unclaimed bikes are then passed on to a local social enterprise, Bikeworks Fife Ltd, for repair and refurbishment. Repaired bikes are subsequently made available at second hand bike sales held at the University.

Case Study: Partnership working between a Re-use Organisation (OFFERS EX-IT) and Universities

OFFERS (Office Furniture Fittings Equipment Re-use Scheme) is the UK's first dedicated Re-use Scheme promoting the re-use of office furniture and equipment. OFFERS/Ex-IT is a project set up and managed by Elephant Jobs, a Southwark (London) based non-profit organisation.

OFFERS/Ex-IT work in partnership with Universities for the collection of good quality furniture, computers and equipment - distributed at low cost to community and voluntary sector organisations, small start-up business, and socially disadvantaged members of the community. The organisation is fully licensed by the Environment Agency and provides secure Data Destruction for Computers and IT equipment.

Since June 2008, OFFERS/Ex-IT has been working with Imperial College London (ICL) facility management to divert office furniture from landfill through re-use and recycling. Materials collected from ICL is split by OFFERS/Ex-IT into:

- Re-use: Furniture, which is still in reasonably good condition, is taken into storage at OFFERS/Ex-IT warehouse, where it is further redistributed.
- Recycling: Furniture, which is not suitable for re-use, i.e. because it is damaged beyond repair, too old, does not comply with current H&S standards etc., is dismantled to recover as much as possible recyclable materials.
- Non-recyclable materials is deposited a local Waste Transfer Station.

In 2008/2009, OFFERS/Ex-IT collection of 1,299 items of furniture (approximately 28 tonnes), of which 57% were diverted for re-use and 38% for recycling. Based on this trial period, the cost per tonne of furniture/ other waste streams collected from ICL by OFFERS/Ex-IT was approximately £300/collection.

Carbon dioxide equivalent (CO₂e) data obtained from the life cycle analysis of a single use and subsequent re-use of a standard office desk and chair was extracted to quantify the impact of a single resource re-use. A detailed analysis of the carbon impact of re-use for 129 office desks and 586 chairs re-used by offers Ex-IT for ICL in 2008/2009 is projected below modelling a single re-use phase in the product life cycle. A single re-use phase includes collection, re-finishing the desk surface, and redistribution.



Table 5: Carbon Saving Implications for the Re-use of Office Desks and Chairs

Items	Collection Overview (Total)	Total Weight (Tonnes)	Percentage (%)	Carbon dioxide equivalent (CO ₂ e) -Single Use	Carbon dioxide equivalent (CO ₂ e) -Total
129	Desks	6.31	22.5	Re-use: 42 kg CO ₂ e per desk	5,418 CO ₂ e
586	Chairs	6.43	22.9	Re-use: 9.3 kg CO ₂ e per chair	5,449.8 CO ₂ e

¹Dr Adrian Chapman, 2010. *Carbon Impact of Office Furniture Re-use*. Centre for Remanufacturing and Re-use Used under Creative Commons license

Overall, these figures indicate that large savings in carbon emissions can result from the re-use of office furniture. Therefore, due the quantity of furniture used by Public Sector organisations, large savings in carbon emissions could result from increasing the quantity and expanding number of office furniture products re-used.

From this data it is clear that the re-use of chairs of this variety significantly reduces the overall carbon impact. Even if other parts are replaced during repairs or other renewal processes required, re-use is still likely to present significant emissions savings.

Case study: University of Dundee

The University operates a 'free sale' system of items through the campus "swap shop". Run by Green Team volunteers with support from the University Environment and Sustainability Officer, the manned shop is open 3 days a week for students and staff to bring and take items. Items typically include stationery, small furniture and electrical goods items, clothes and household linen.

While not inventory based, the shop provides quick and easy access to surplus or unwanted items that can be re-used and redeployed.

3.4 Communications

Communication is key to engaging staff or target organisations, and the wider Public Sector in re-use and redeployment initiatives.

Matching supply and demand of items with the needs and wants of departments will rely on effective communications campaigns. Communications on wider aspects of provisions for re-use and redeployment of resources e.g. procurement, will increase awareness of the importance of considering whole life aspects of an item, and considering end of life options at the point of purchase.

This section approaches the need for re-use communication campaigns from two perspectives:

1. Internal Re-use Communications. This is further divided into communications:
 - between Public Sector organisations looking to divert materials for re-use internally;
 - between Public Sector organisations looking to divert materials and external re-use partners looking to collect materials for re-use; and
 - between external re-use partners that divert materials for product re-use.
2. External communications by ZWS designed to integrate re-use into the wider waste and recycling campaigns across Scotland. These would also include joint communications with stakeholders in the Public and Third Sectors.

Table 6: Opportunities and barriers to implementing effective communications

Focus	Opportunity/Need	Barriers to implementation	Organisation action required	External support required
Internal re-use communications				
7. Public Sector organisations looking to divert materials for re-use internally	<p>7.1. Methods for raising awareness of any system or arrangement put in place</p> <p>7.2. Ensuring maximum participation from similar organisation</p> <p>7.3. Maximise re-use and redeployment</p> <p>7.4. Visibility/high profile and easy access to re-use systems is the key to success</p>	<ul style="list-style-type: none"> Lack of existing re-use communication plan No single point of contact to organise scheme Lack of information and contact details of relevant staff within other Public Sector organisations 	<ul style="list-style-type: none"> Build staff knowledge: Good communication is essential for a successful re-use system. Consult with staff about changes, provide up to date information and give them the opportunity to provide feedback which can be integrated into the developed re-use system. Communicate regularly: The use of weekly newsletters or regular emails containing facts and handy hints to provide positive reinforcement. Develop a step by step re-use guide to include definition of waste: The disposal of materials that could otherwise be re-used or recycled is a lost resource opportunity for every business. Adopt waste hierarchy principles. 	<ul style="list-style-type: none"> Design or review and re-launch a re-use communications campaigns guide- make more use of online Recycling and re-use directory. Design re-use branding materials for specific materials streams such as office furniture, IT equipment and corporate textiles.

Focus	Opportunity/Need	Barriers to implementation	Organisation action required	External support required
8. Public Sector organisations looking to divert materials and external partners looking to collect materials for re-use	8.1. Linked communications strategy to maximise the supply and demand for reusable materials	<ul style="list-style-type: none"> Lack of knowledge on the type of materials collected for re-use by external re-use partners Lack of communications channels 	<ul style="list-style-type: none"> Collate a database with contact details of relevant organisations. <p>Note: This is an overlapping action with asset tracking system (re-distribution options).</p> <ul style="list-style-type: none"> Explore the use of network communication channels such as the use CRNS and members of Revolve. 	<ul style="list-style-type: none"> Wider re-use campaign involving relevant stakeholders Promoting Public Social Partnerships (PSP)
9. External re-use partners that divert materials for re-use and redeployment to a network of partners	9.1. Re-use forums: These are network of organisations interested in promoting re-use. Members include charities and community groups, local authorities and businesses.	<ul style="list-style-type: none"> Lack of information on materials available for re-use and redeployment Perception that '2nd hand goods' are inferior and not suitable 	<ul style="list-style-type: none"> Link in to local re-use forums Increase all staff awareness on availability of systems – build re-use into resource management and procurement planning. 	<ul style="list-style-type: none"> Identify and provide support to promote activities of local re-use forums in Scotland
External re-use communications				
10. External communications by ZWS designed to integrate re-use into the wider waste and recycling campaigns across Scotland.	10.1. Ensuring maximum participation 10.2. Raising the re-use profile across Scotland		<ul style="list-style-type: none"> Carry out marketing or promotion programme 	<ul style="list-style-type: none"> Implementation of county wide re-use campaigns across Scotland Build requirements for consideration of re-use and redeployment of goods into procurement frameworks

The case studies below highlight illustrate how effective communications can lead to significant savings.

Case study: Surrey Re-use Network

The Surrey County Council re-use campaign, which launched Surrey Re-use Network (SRN) in 2011, was implemented to develop and carry out marketing and communications activities to represent SRN across the County and beyond. The campaign implemented key aspects of communications discussed in the table above:

- External re-use communications: Surrey County Council Waste and Communications teams worked with SRN members to maximise opportunities to encourage re-use and sign-post to members' services as part of the Surrey-wide promotions and campaigns.
- Internal re-use communications: SRN members were supported to share promotional ideas and successes; and offer advice, training and materials to implement 'customer development programmes' to develop targeted promotions to the key target market(s) to increase the number of inflow and outflow re-use customers

The objectives of the re-use campaign were to increase awareness of the SRN, encourage donation of white goods and increase local awareness of members as well as increase off take market for re-use. The campaign had a very positive impact in terms of traffic to the projects; raising profiles of each local re-use charity, increased total collections of goods for re-use by 25% year on year and led to increased sales of around 30% during the campaign period.

This re-use campaign has won a Silver Award for best use of photography and integrated campaign, at the Institute of Public Relations PRide Awards. These recognise excellence and reward achievement in public relations and communications.

Case study: University of Aberdeen

Since 2005, the Environment Office has been working to change how the University views on environmental issues associated with sustainability. Over the last few years, the University has recorded a marked increase in re-use of items. In 2007/8 the re-use rate was 1%. Over the last financial year (August 2011 to the end of July 2012), 5.01% of waste (81 tonnes) was re-used predominantly through charitable donation, and 34.02% was recycled.

Many of the items that have been re-used and donated to local charities are furniture, computer equipment, books, mattresses and stationery. At the end of term when students vacate their halls for the summer vacation, they are requested to leave any unwanted items for recycling at designated collection points of campus. The University supports local schools and charities where possible, and has become a corporate member of the Creative Waste Exchange, developed by Aberdeen Forward. The University donates items for re-use within educational projects both within Scotland and Africa and also donates to the New Hope Trust – a charity undertaking humanitarian work focusing upon Eastern Europe, providing emergency relief and aid to children.

In 2011/12 the high level of re-use was attributed to the decommissioning of the University Queen Mother Library, with major charitable donations of books, furniture and metal shelving.

The University also reported internal re-use of items, an estimated 5 tonnes by weight. While the University does not have a formal policy in place for refurbishment of furniture, a contract is in place with the furniture supplier to refurbish, rather than dispose of items. This is managed by the furnishing manager.

The University will continue to develop charitable partnerships with the New Hope Trust, and will maintain ongoing environmental awareness raising activity through e-zines, posters, emails and events.



3.5 Potential achievable carbon and cost savings

Some case studies have identified the potential for carbon and cost savings, as a result of provision of re-use and redeployment activities.

The University of St Andrews, through WARPit has estimated that over a period of 10 months the following savings have been realised;

- saved 2.8 tonnes CO₂;
- diverted 0.97 tonnes of waste from landfill; and;
- saved £4,129 in waste disposal and procurement costs

There are a range of factors available to calculate carbon (equivalent) savings from changes in waste management practices such as diverting waste from landfill to re-use. The carbon metric will increasingly be a driver for Public Sector organisations to manage waste and resources more effectively, maximising quality and value.

Calculating the carbon saving accurately will be impacted by having a correct weight for an item, or a total weight of items. Cost savings will be dependent on items that are re-use or redeployed being tracked and monitored, and avoided cost savings from avoided purchase of new items calculated.

The data provided by target organisations in the further and higher education (FHE), and Police and Fire and Rescue Services sector in relation to waste arisings, and information relating to re-use and redeployment of resources was limited, with only a few organisations actively monitoring and reporting waste data.

A summary of wider benefits in of the provision of re-use and redeployment in the Public Sector that could be used and further developed as part of a wider communication strategy is presented below.

Table 7: Summary of benefits of provision of re-use and redeployment of resources**Benefits to public sector organisations**

- Waste reduction: The volume of waste sent to landfill is reduced
- Corporate Social Responsibility:
 - Receiving donated goods is seen as a positive action within the community and benefits the reputation of the donor
 - Accepting donated goods reduces an organisation's environmental impact as fewer new products are required.
- Audit trail: re-use organisation can provide an audit trail of materials diverted for re-use including data on the tonnage diverted from landfill
- Savings on waste disposal costs

Benefits to consumers in Scotland

- Access to good quality reusable materials
- Savings to consumers on a range of items that may include a warranty e.g. IT equipment
- Helping to support local re-use charities and the work that they do by using the re-use services provided

Benefits to Third Sector Organisations

- Promotes Public Social Partnerships (PSP)
- Access to good quality reusable materials
- Increased income generation
- Social benefits: Donated goods are re-used for community benefit
- Contributes to the development of a more sustainable re-use sector in Scotland

Other Benefits

- The environmental impacts associated with producing new goods is reduced, such as raw material extraction and consumption, water and energy use
- Re-use activities provides volunteering, placement and job opportunities
- Re-use boosts community cohesion
- Carbon saving – re-use tonnage diverted can be used to calculate the tonnes of carbon saved by each organisation

4 Summary Recommendations

Having identified the opportunities, benefits, barriers and success to overcome key challenges with regard to increasing re-use and redeployment of resources, it is recommended that Zero Waste Scotland continue to provide support and guidance to the Public Sector.

The opportunities presented within this report could be prioritised by ZWS to determine those that may have the greatest impact on increasing waste prevention in the Public Sector, and / or those which will be easiest to implement first.

It is recommended that ZWS encourage Public Sector organisations to adopt and maintain accurate data monitoring and reporting mechanisms in line with the waste hierarchy and carbon metric.

The development and promotion of a simple asset tracking tool will help target organisations and the wider Public Sector to adopt consistent systems, integrating waste management and procurement, leading to increase and expansion of the re-use and redeployment provisions.

4.1 Summary

This section summarises the identified opportunities and offers a suggestion to Zero Waste Scotland how each opportunity might be prioritised for action. A traffic light system is used to colour code opportunities that might be quick wins (opportunities that could be implemented directly with no or low cost implications), intermediate measures that would take longer to implement, or long term opportunities that could require more funds and resources to implement and managed.

Table 8: Prioritisation of opportunities

Focus	Opportunity/Need	External support required	Estimated time of achievement	Priority Action
Asset Tracking System	Build on existing asset tracking systems	<ul style="list-style-type: none"> Existing systems can be improved to capture relevant information 	<ul style="list-style-type: none"> Quick win 	
	Develop an asset tracking system	<ul style="list-style-type: none"> Developing suitable asset tracking systems tailored to suit relevant Public Sector organisations 	<ul style="list-style-type: none"> Achievable in medium or long term depending on the commitment of participating organisations and the ability to deploy resources committed to implementing changes 	
Procurement Options	Re-use and redeployment of resources	<ul style="list-style-type: none"> Promote PSP Link to Third Sector re-use organisations 	<ul style="list-style-type: none"> Achievable in medium 	
Integrated Re-use Infrastructure	Dedicated resource storage area by Public Sector organisations	<ul style="list-style-type: none"> Plans should be implemented to provide temporary facilities where materials available for re-deployment can be stored prior to collections. It is anticipated that during the mergers and acquisitions, the product clearance turnaround times may be limited. Implementing options for a suitable/temporary storage facility will support a smooth and effective re-use and redeployment process. 	<ul style="list-style-type: none"> Achievable in the short term. Should be prioritised for colleges already merging. 	
	Building on existing infrastructure and coordinating a joint Re-use logistics	<ul style="list-style-type: none"> There are several but disjointed re-use infrastructures across Scotland. State of the Sector Report produced by the Community Recycling Network Scotland for Zero Waste Scotland in 2011 states that 78% of the Third Sector activities are re-use projects. Encouraging partnership working with Public Sector organisations should be encouraged. 	<ul style="list-style-type: none"> Achievable in medium or long term 	

Focus	Opportunity/Need	External support required	Estimated time of achievement	Priority Action
Communications	Internal re-use communications	<ul style="list-style-type: none"> Supporting and promoting local re-use forums in Scotland 	<ul style="list-style-type: none"> Joint communications with on-going re-use forums 	
	External re-use communications	<ul style="list-style-type: none"> ZWS should consider implementing county wide re-use campaigns across Scotland 	<ul style="list-style-type: none"> Re-use campaign could be linked with on-going campaigns 	

Appendices

Appendix 1: Good practice case studies

- University of St Andrews
- Glasgow Caledonian University
- Scottish Prison Service - Barlinnie Prison

Appendix 2: Survey questionnaire

Appendix 3: Collated survey data split by sector

Appendix 4: Example asset tracking system

Appendix 1 – Best practice case studies

Appendix 2 – Survey questionnaire

Subject/focus area	
Current re-use and redeployment activities	Does re-use or redeployment of resources take place? (detail resources included and whether this is structured)
	Do you have a refurbishment policy? (detail)
	What is the current practice for managing unwanted textiles, furniture and electronic and electrical goods? (detail, which contractor is used if any)
Monitoring and reporting of volumes/tonnages of materials	Do you hold data on waste generation/re-use of electronic and electrical goods, textiles and furniture? (if so, obtain data, establish method of quantification) (if not try to estimate and note assumptions)
	Do you monitor re-use and redeployment of items?
	Do you use conversion factors to determine weights of items (SEPA, EA, WRAP, Furniture Re-use Network)?
	Does the waste management contractor, or charity provide actual or standard industry weights of items collected from your premises?
Infrastructure	What facilities are in place for storage of waste and unwanted resources?
Communication and awareness	How is the availability of re-use/redeployment schemes communicated to staff?
	If you source items from other organisations for the purpose of re-use in your organisation, how are you made aware that they are available?
Procurement policies and procedure	Does your organisation utilise asset registers? (if so identify what for)
	Who has control of the asset register/s?
	Is the asset register/s linked to procurement and waste management?
	Are take-back schemes/end of life options considered at the point of purchase?
Costs and benefits	Please provide details of monetary costs that can be associated with current provisions e.g. cost of collection of items, transfer costs, labour/staff costs, disposal/recycling costs.
	Have you quantified any benefits of re-use/redeployment of resources – financial and/or carbon?
Further help and support	What support/tools would be of benefit to your organisation to help increase re-use activities? E.g. online tool, funding, etc

Appendix 3 – Collated survey data split by sector

Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
College								
Adam Smith College	Fife							Source segregated at collection, but comingled for sorting by Biffa. Items for re-use dismantled for recycling.
Carnegie College	Fife		Y	Y				ORAN collect items on request as part of waste management contract
City of Glasgow College	Glasgow City				Y	Y		Procured new waste contract using APUC framework, Biffa dry mixed recycling collections due to be implemented campus wide January 2013. Moving to new premises 2015.. Charity donation of items.
Clydebank College	Greater Glasgow							Have contract with council for all waste management services, registered for RfS brand.
Coatbridge College	Greater Glasgow		Y	Y				-
James Watt College of Further and Higher Education	Greater Glasgow		Y	Y				Electrical items are sent for recycling, furniture donated to charities.
John Wheatley College	Greater Glasgow		Y	Y			Y - controlled by finance, not linked	Some communication between staff and estates - staff alert estates when items are available for possible re-use and internal redistribution.

Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
							to procurement of items	
Kilmarnock College	West of Scotland		Y	Y				Electrical team repair items rather than dispose of items. No monitoring of activity - re-use communicated through recycling events for students - presentations, noticeboards, posters.
Langside College	Glasgow City		Y	Y				Would like further support regarding funding of re-use, have Recycle Zone bins. Glasgow City Council take electrical and furniture items as part of waste management contract.
Lews Castle College	Islands		Y	Y			Y	IT and furniture sold on, or given away to staff.
Sabhal Mor Ostaig UHI	Islands		Y	Y				Have a 'Big Hanna' composter for organic waste.
Scottish Rural Agricultural College	Edinburgh & Lothians	WEEE only		limited			IT only	Very little re-use, informal system for furniture re-use - staff aware that items are available, but items not listed centrally. Items stored on campus, collected as required.

Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
UHI Moray College	Highlands and Morayshire							Some charity donations to Green Homes.
West Lothian College	Edinburgh & Lothians		Y	Y				Refurbish as much as possible - some IT sent to charities in Africa. Old furniture put on ZWS re-use website.
University								
Glasgow Caledonian University	Glasgow City		Leased	Y	Y	Y	Y	Reported saving of £20k through furniture re-use.
Heriot-Watt University	Edinburgh & Lothians	Y		limited				Furniture items put in storage with intention of re-use, but mainly disposed of as not re-used – no formal system in place to promote availability of items. Looking to join WARPit, ran bicycle refurbishment campaign, proceeds given to charity.
Queen Margaret University	Edinburgh & Lothians		Y					Want to look at local schemes to tie in with local authority or local schools, run an informal student swap shop for exchange of items between old and new student.
University of St Andrews	Fife		Y	Y	Y	Y	Y	Big investment in segregated bins, have some clear signage, use WARPit and made significant savings. Asset register for IT items only. Mattress take-back scheme operational.

Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
University of Aberdeen	Aberdeen & Grampian Highlands		Y	Y	Y	Y		Re-use increased in 2010/11 as library decommissioned - books sent to charity organisation. Contract for reupholster of furniture in place, managed by furnishing managers. Formalising network of 'green champions' trialed in 2010 - used to report carbon savings, but labour intensive, and minimal due to low re-use tonnage. Some informal furniture re-use, estates manager keeps track of items available/items wanted.
University of Abertay Dundee	Perth, Angus, Dundee		Y	Y			Y - controlled by estates and finance	Would like further support regarding funding of re-use. IT/electrical team refurbish IT where possible, or remove parts for re-use, before item recycled. Staff are aware that end of life options should be considered at point of purchase, but this is not observed. Some furniture recycling activity, mainly disposed of by local council. No monitoring of data, also re-use lab equipment.
University of Dundee	Perth, Angus, Dundee			Y	Y	Y	Y	Joining WARPit through Tayside procurement hub. End of year re-use free shop on campus, run by green team volunteers.

Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
University of Edinburgh	Edinburgh & Lothians			Y				Staff to contact furniture office if have surplus or unwanted furniture. Estimated 44 tonnes of furniture (or 1.3% of total waste) was re-used in 2009/10. This is an increase of about 50% on 2010-11. No financial savings reported.
University of Glasgow	Glasgow City			Limited			Y	Storage space off campus for items collected by Estates Department. Transfer of items by external contractor to/from campus cost prohibitive.
University of Stirling	Stirlingshire	Y						Recycle a bike scheme. Partnership between Chaplaincy and Student Union for textiles recycling. Collecting items – no outlet identified.
University of Strathclyde	Glasgow City						Y	Asset register for IT items only.
University of West of Scotland	West of Scotland	Limited						Recycle furniture items in bulk, storage of items an issue. Some re-use/redeployment internally - requests made for items available/wanted through estates management team. Procurement not linked to waste management. Using APUC framework to retender WMC, have secured ZWS funding for additional RoTG units.

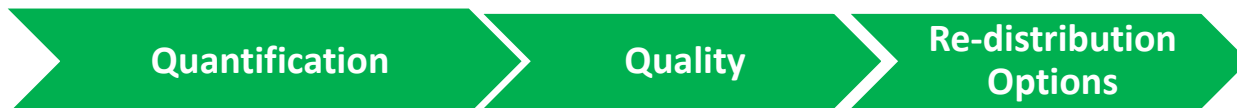
Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
Edinburgh Napier University	Edinburgh & Lothians		Y	Y			Y	Asset register only for IT. Food waste only collected at Merchiston
Glasgow School of Art	Glasgow City							Partial source segregation of paper, cans/plastics, cardboard, general waste. W.Tracey (WMC) does comingled collections, LA collect from residential premises! Moving to new building - will be better recycling facilities there. Limited space currently as in city centre location.
Police Service								
Strathclyde Police								Divisional offices, contracts for re-use and recycling organised at divisional head quarters, not locally. Arrangements disjointed.
Northern Constabulary			Y	Y	Y		Y - linked to PAT testing	Central point for furniture redeployment within Force. If unsuitable for re-use, sent to charity - Blythwood Care. Environment policy states "we will re-use items".

Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
Grampian		Y	Y	Y	Y			Large force area - multiple waste management contractors. Recycling contractor has partnership with Aberdeen Forward charity, repair items for re-se or sell on. Income generated retained by charity. Some items taken to HWRC, Moray area. Seized items/lost property sold on/auctioned. Some items advertised on intranet suitable for internal re-use, estimate £500-£750 saving from redeployment/re-use activities.
Fife								Unaware of any re-use activity.
Tayside							Y	Informal internal re-use of uniforms and furniture items between offices. Do not use charities to donate surplus/unwanted items.
Fire and Rescue Service								
Lothian and Borders				Y				Some furniture re-use between offices - informal arrangement through staff bulletins.
Tayside				Y			Y	Electrical goods taken to Recycling Centres, furniture goes to charity for refurb/re-use. No internal re-use, very limited communication and awareness.

Name of organisation	Region (APUC)	Bulking	Re-use				Asset register?	Future plans/comments/points of note
			IT	Furniture	Textiles	Books		
Central				Y	limited		Y	Some furniture re-use between offices, but no longer send uniforms to Africa, instead it is shredded. Barriers to much of their re-use (including walkie talkies and computers) surrounds security concerns.
Grampian			Y		Y		Y	Uniforms debadged and re-used through partnership with Salvation Army. All assets listed.
Dumfries and Galloway			Y	Y	Y			No formal refurbishment policy, items sent to local charities. Uniforms debadged and sent to Uruguay. Asset list records items repaired (H&S requirement), and IT, PPE and machinery. Used to record all items with value of over £50 on register, ceased due to commitment of staff to maintain.
Fife		Y	Y		Y			Uniforms re-used between staff/sent abroad to foreign fire services. Re-use batteries - rechargeable.
Highlands and Islands					Y			Service focus on waste and recycling driven by council collection offering. Re-use of uniforms internally and to charities - fire engine re-use abroad!

Appendix 4 – Example asset tracking system

The following steps are recommended to be incorporated into an internal asset tracking system to determine the type, number and weight of material resources available for re-use and redeployment, and the potential disposal route / option.



4.1 Quantification

Assessing the volume of material resource available by an organisation is regarded as a first key step in resource deployment. This involves identifying the type and quantity of material stream for diversion. The weight of the items per material stream can be quantified using average weights and/or standard conversion factors.

4.1.1 Suggestion activities for quantification

- Determine the type of materials e.g. furniture, IT equipment or branded corporate wear
- Determine the number of materials per category. For example:

Category	Item description	Number of items
Office furniture	Cabinet, large	22
	Filing cabinet, small	8
	Office chair	23
	Office desk	39

- Determine the weight per material stream. Where these are unable to be determined, average item weights can be estimated from the Furniture Re-use Network (or similar) average weight listings⁴. For example:

Category	Item description	Number of items	Average Weight (kg)	Total Weight (kg)
Cat 3 - IT & communication	Computer, base unit	15	10	150
	Laptop	10	3	30

⁴ <http://www.frn.org.uk/average-weights.html>

4.2 Quality

Conducting a visual assessment on the current quality of quantified resource material is vital for re-use and redeployment. For a smooth redeployment process, it is encouraged that the quality of each item is categorised based on its current condition.

An assessment of the resource quality is of high importance when accessing and interacting with Third Sector re-use organisations that have immediate access to a wide market consisting of a large community of householders, housing associations and businesses.

This step will provide a visual assessment of the quality of material resource available for re-distribution and re-deployment.

A breakdown of how the materials could be categorised according to an assessment of quality is provided in the example presented below:

Category	Type	Re-usable	Slight repair	Major repair	Recycling	Additional notes
Office furniture	Cabinet, large	*				
	Filing cabinet, large		*			
	Office chair	*		*		3 desks require major repair
	Office desk	*				
IT & communication	Computer base unit	*				
	Laptop	*				
	PC Accessory, (mouse, keyboard)	*			*	Ensure IT disposal is fully compliant with WEEE Regulations and Data Protection Act

This will provides a clear guide on the current conditions of the identified materials for redeployment and re-use either internally or externally to third party organisations.

This step will also define and summarise any commercially sensitive issues for consideration. For example – the notes section can detail if branded corporate wear will need to be delabelled; or IT equipment wiped clean of sensitive information before diverting for re-use and redeployment.

An audit sheet may need to be developed by the organisation for this purpose.

4.3 Redistribution

Evaluating available distribution channels is important in ensuring a sustainable acquisition process. It is advised to source internal redeployment options before external options are explored, promoting the sustainable re-use and redeployment of resources as well as avoiding or reducing the procurement costs.

This step will allow for investigation into the means that can be considered for re-use and redeployment of items.

4.3.1 Internal Distribution

Cherry picking of good quality furniture should be encouraged within respective Public Sector organisations.

Item redistribution should be employed between Public Sector departments. For example, the re-use of existing office equipment should be considered and practised in Colleges presently undergoing mergers.

Relevant contacts within Public Sector organisations to support internal redistribution is likely to include Office managers; Health and safety officer; Procurement officer and Waste officers.

4.3.2 External Distribution

External distribution of items could be considered between Public Sector organisations for example, between the Police and Scottish Fire and Rescue Service. This can be achieved in a number of ways.

Distributions through principal Re-use Organisation: These mainly involve Third Sector Organisations that process a vast range of materials including office furniture, IT equipment and textiles for re-use.

Internet based exchange forums such as [WRAPit](#) and [NISP](#) - a business-led initiative helping to connect businesses from different sectors to improve resource efficiency and cut waste, saving costs. Using online systems it is now easy to match supply and demand through nearly instantaneous mass synchronisation of wants and needs in a way which both sides gain.

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