



Dorset
Council

WASTE

Detailed Technical Paper



15 July 2021

WASTE

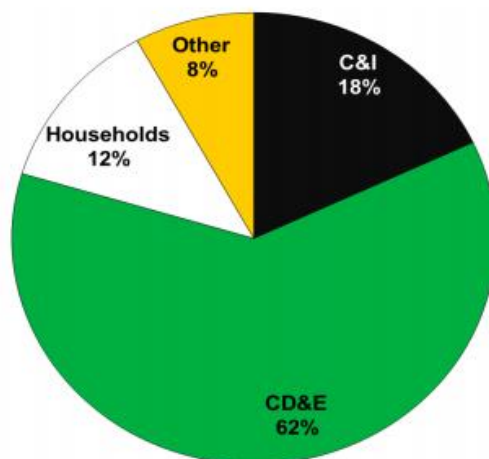
1. CONTEXT

National Context

In 2017, waste management contributed to 4% of UK's greenhouse gas emissions, and account for 9.2million tonnes CO₂. Of the 221 million tonnes of waste generated in the UK in 2016, Construction, Demolition, and Excavation (CD&E; including dredging) generated 62%, with Commercial and Industrial (C&I) waste accounting for 18%. The remaining 20% was split between Households (12%) and Other activities (8%).

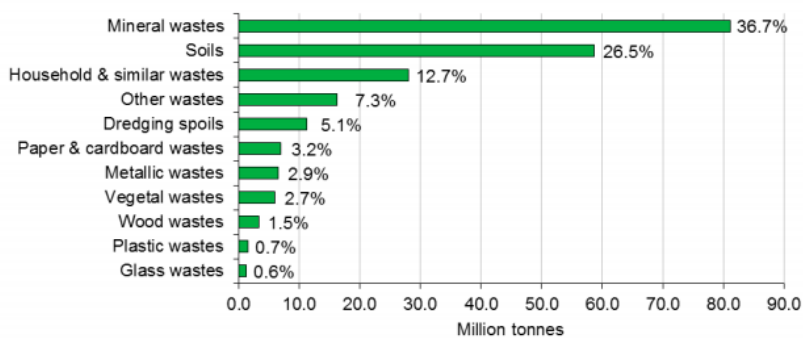
6.1 Waste Generation

Figure 3. Waste generation split by source, UK, 2016



In 2016, the largest waste material categories generated in the UK were 'Mineral Wastes' (81.1 million tonnes) and 'Soils' (58.7 million tonnes). Together, these make up almost two thirds (63%) of total UK waste.

Figure 4. Waste generation by waste material, UK, 2016



Source: Defra Statistics

Includes waste that may go on to be exported, but excludes waste imported from outside the UK. Any type of waste can be generated by any economic activity. E.g. 'Household & similar wastes' are not solely generated by 'Households'. Percentages may not sum to exactly 100% due to rounding.

Greenhouse gas emissions from the waste sector mainly comprise of methane released from landfill sites, waste-water treatment, incineration, and transportation of waste.

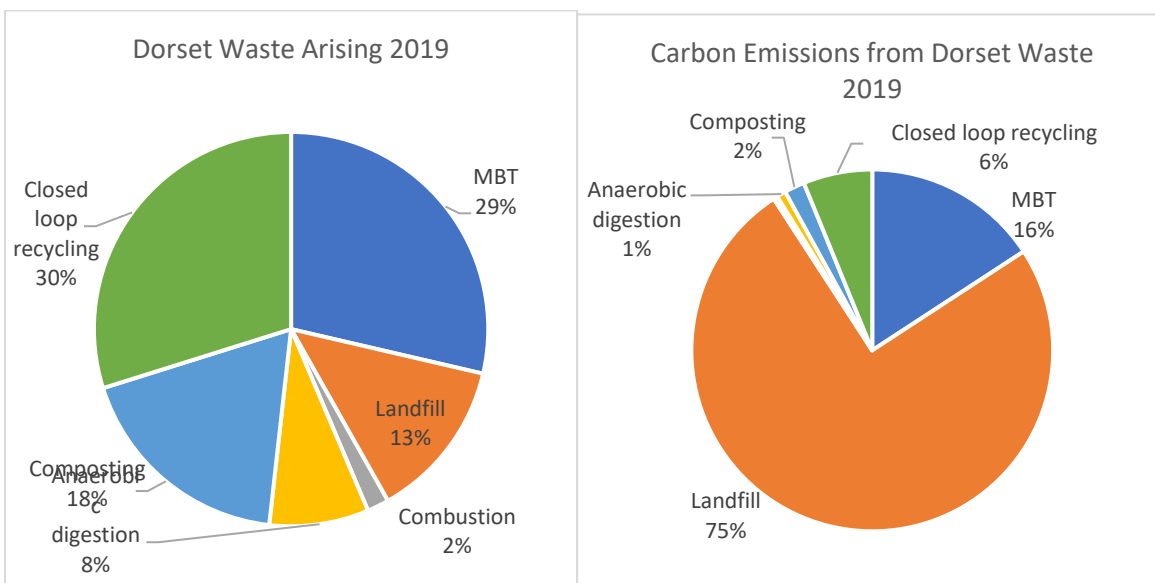
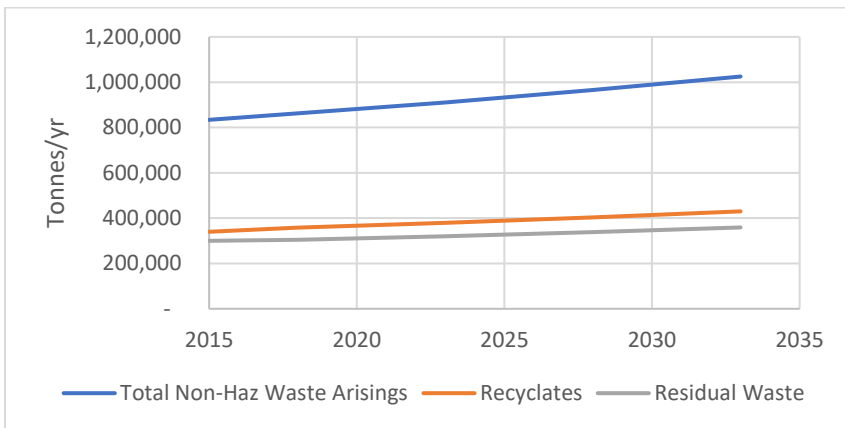
In addition to greenhouse gas emissions, waste management also has several wider impacts on the environment, such as on amenity and landscape. In terms of the ecological emergency, landfill sites can result in the loss of habitats and species, interrupted ecological corridors, and changes in local population equilibrium. This is because waste can attract species that may not typically inhabit the area. Toxic leachate is also produced as waste decomposes and can cause pollution and furthermore harm ecological systems.

Throwing away things is a waste of resources, as it wastes raw materials and the energy used in producing the items. Reducing waste means less environmental impact, as well as less resources and energy used.

Dorset Context

Dorset (including Bournemouth, Christchurch, and Poole) generates 1.6 million tonnes of waste each year. However, our facilities deal with 2.17 million tonnes per year, as we are a net importer of waste into the county. Nearly half of this waste is categorised as Construction, Demolition, and Excavation (CD&E) (44%) or Hazardous (4%). The remaining 52% (approximately 840,000 tonnes) can be broadly split between Municipal Waste (Household) and Commercial and Industrial Waste.

Estimated trajectories of waste in the Dorset Waste Plan currently predict an ongoing growth in waste in the County, for both recyclable and residual waste streams. The Waste Plan will be reviewed annually to ensure that the projections are aligned with waste arisings and that the plan reflects the up to date national policy.



Household Waste (Municipal Waste)

In 2018/19, Dorset households produced 174,002¹ tonnes of waste, which resulted in the emission of 18,768 tonnes of CO₂.

The vast majority of our recyclable waste streams are treated within the UK. It is an exception if something must be exported (e.g. if the market suddenly disappears).

All of Dorset's household organic waste is now treated within the county using anaerobic digestion, a wood biomass plant, and windrow composting, which is an excellent example of the proximity principle in practice.

Alongside numerous targeted campaigns, the Dorset Waste Service has worked closely with schools to raise awareness of waste minimisation and key issues. These projects include:

Slim your Bin - 'Jim the Slim Bin' is a mascot used to undertake assemblies across Dorset schools. A quiz and information sheet are given to primary school children to take home and includes information on how to reduce waste at home.

¹ Dorset Council Waste Service Data

Is plastic fantastic? – Secondary school students investigated where they used plastic items in their lives and how the item could be made using different materials. They then held an event to help educate their fellow pupils and the public on how to reduce plastic waste.

To help inform national policy, the Dorset Waste Service also responded to the following consultations:

Consistency in household and business recycling collections in England
Introduction of a Deposit Return Scheme (DRS)
Reforming the UK packaging producer responsibility system.

According to the latest edition of Eunomia’s Local Authority Recycling Carbon Index, which gives councils a measure of the environmental performance of their waste and recycling services, the Dorset Council Waste Services is the best performing local authority in England, Wales, and Northern Ireland.

Commercial and Industrial Waste

Dorset Council has a statutory duty to advise businesses on waste minimisation and management, but to date this duty has not been actively undertaken.

Commercial and Industrial (C&I) waste accounts for approximately half of the waste arisings in Dorset. This type of waste varies according to the make-up of the local economy but can be similar in composition to household waste. Dorset Council collects a small amount of this waste. However, the majority is collected and managed by several different commercial companies, which makes it difficult to access data accurately, as this information is often commercially sensitive. Estimates on C&I waste arisings therefore need to be treated with caution. Furthermore, the Dorset Waste Plan estimates that total arisings for C&I waste in Dorset amounted to approximately 468,000 tonnes in 2018.

All licensing (and licence exemptions for smaller facilities) applications are dealt with by the EA. The Council has no direct influence or control over these waste streams but, through the waste planning function, can help to facilitate an appropriate infrastructure for waste management in the County.

Fly Tipping

Over the last two years, the number of fly tipping incidents has decreased, bucking the national trend. However, the enforcement team has seen a big increase in activity, which includes dealing with incidences of fly tipping, duty of care offences, and abandoned vehicles, as well as the use of devolved DVLA powers across the County.

Fly-tipping costs for Dorset Council in clearance and disposal are substantial. In addition, each fly-tip incident that is reported and actioned incurs additional admin costs and associated paperwork, letters, and postage. As can be seen, the cost savings of reducing incidents of fly tipping are substantial. On a national scale, the estimated cost of clearance of fly-tipping to local authorities in England in 2016/17 was £57.7 million, up from £50 million in 2015/16.

Table 1: Fly tipping:- Number of incidents and Estimated Costs

Year	Total Number of Incidents	Estimated Clearance & Disposal Costs *
2015	1908	£140,115
2016	2417	£130,813
2017	2803	£154,069
2018	2218	£123,864
2019	1857	£118,732

* Estimated costs derived from the national fly-tipping database on Waste Data Flow

Dorset Council Context

Dorset Council produces a range of waste streams from our operations, including office, food, clinical, oils, and road construction materials. As the new Dorset Council was formed in 2019, merging the former County and District Councils, we do not currently have a full picture of all waste streams and associated carbon emissions. To give an idea of the potential scale of waste arisings, in 2014/15 the County Council alone generated 1,948 tonnes of waste, resulting in the emission of 168 tonnes of CO₂.

Table 2: Dorset Council's total waste arisings 2019-20

General Waste	Recycling	Food Waste	Glass Waste
1201.3 tonnes	217 tonnes	156.2 tonnes	19.2 tonnes

Of the 1201 tonnes of general waste collected less than 6% goes to landfill, the rest is either recycled or biologically or thermally treated.

General office wastes are our most common waste and is produced at all our buildings and includes paper, card, cans, glass, printer materials, and food. Most of this waste is collected by Dorset Waste Services and is recycled through the same systems as household waste. However, this is not consistent across all sites and different facilities are in place to enable sorting and recycling at different buildings. In 2017, the former Dorset County Council alone generated 1,940 tonnes of office waste, which equated to 168 tonnes CO₂. Other specialist waste is managed through different waste contractors.

Dorset Council has initiated several projects to reduce waste and increase recycling within its own buildings / establishments, including:

- Improved recycling schemes available in many buildings
- Collecting food waste in some buildings
- Established a policy and action plan to remove Single Use Plastics
- Set all printers to print double sided
- Using recycled materials on highways (see case study below)
- Set up a local network to re-use highways waste materials
- Developing a balloon release policy to reduce littering and potential harm to wildlife.

2. PROGRESS / CURRENT SITUATION

National

Emissions have fallen by 69% since 1990, which is due largely to reduced emissions from landfill sites and in part due to the implementation of the Landfill Tax. A key driver in this has been the EU landfill directive, which requires significant reductions in landfilling of biodegradable municipal waste (to 75% of that produced in 1995 by 2010, to 50% by 2013 and to 35% by 2020).

Dorset

Household waste in Dorset is managed by Dorset Council. Recycling rates have increased each year since 2003/4 from 29% to 59.6% by 2019, putting Dorset in the top three comparable authorities in England. The last 10 years has seen a 70% reduction in waste sent to landfill, which has saved approximately £3.3m each year.

During 2018/19, the Dorset Waste Service introduced a charged household garden waste collection scheme. 23.6% of households took part and 17,817 tonnes of garden waste was diverted from landfill.

The Dorset Waste Service continues to deliver several targeted campaigns to help households reduce their waste, which include:

- Behaviour change campaigns to reduce household waste, such as:
- Love Food Hate Waste – To reduce food waste (which has resulted in a reduction of food waste by 5.69% compared to 2018)
- The Real Nappy incentive scheme – To reduce the volume of disposal nappies, which currently represent approximately 11% of household residual waste
- Encouraging Home Composting – Working with a supplier to offer reduced priced home compost bins. During 2018/19, 252 subsidised bins were sold across the county
- Food waste stickering and tagging - to reduce the amount of food waste in the general waste stream, which has shown to divert between 12% and 19% of food waste from landfill
- Hangers - A pilot project, which placed 37,284 information hangers (designed by our own team) on bins and resulted in a 14%-17% reduction in recycling contamination. A doorstep questionnaire confirmed all 100 residents found the information easy to read
- Communal Area Recycling - Improving the storage areas, bins, signage, and residents' awareness resulted 334 tonnes of residual waste diverted from landfill
- Right Stuff Right Bin and Dorset Does campaigns - Targeted campaigns in towns and larger villages, which use toolbox talks and educational materials to reduce waste and reduce contamination of recycling.

The Dorset Waste Service has also placed incentives in waste disposal contracts that encourage waste to be treated rather than landfilled. The future contract (2021 to 2027) will require landfill diversion of 90% for all waste received, not including that from HWRC's.

3. THE SCALE OF THE CHALLENGE

National

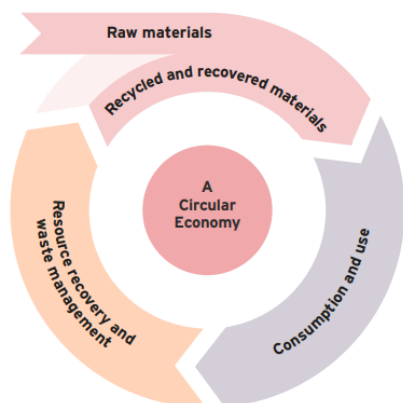
The concept of the waste hierarchy was developed in the 1970s and came into European legislation as part of the 2008 Waste Framework Directive. It indicates an order of preference for action to reduce and manage waste ().

Figure 1: Waste Hierarchy



However, the Government launched its waste strategy “*Our Waste, Our resources: A Strategy for England*” in 2018, which stated a wish to shift the focus from the traditional linear economic model and create a more sustainable and efficient circular economy. This would keep resources in use for as long as possible to extract their maximum value, and recovering and reusing products and materials whenever we can, therefore giving them a new lease of life.

Figure 2: A Circular Economy



Other key points of the 2018 strategy are:

Sustainable production

We turn valuable natural resources and materials into the goods and services upon which modern life and a healthy, vibrant economy depend. Evidence suggests that 80% of the damage inflicted upon the

environment when products become waste can be avoided if more thoughtful decisions are made at the production stage.

Helping consumers take more considered actions

Despite advances in technology in recent decades, the average life span of many products we buy and use in daily life is lower than it was 20 years ago. We want to extend the lives of products through repair, reuse, and remanufacture. We want to help consumers to be able to recycle the materials they contain and dispose of them in the most environmentally sensitive ways.

Resource recovery and waste management

After an increase in recycling rates for household and construction wastes, rates for both have plateaued since 2013. We need to drive better quantity and quality in recycling, and more investment in domestic recycled materials markets. The Government wants to promote UK based recycling and export less waste to be processed abroad.

Tackling waste crime

Waste-related criminal activity costs the economy hundreds of millions of pounds per year. Rogue operators illegally dump or export waste, undermining legitimate businesses by disposing of waste cheaply and recklessly. This deprives the economy of tax income and harms the environment and local communities. Tackling this crime will ensure that resources are properly recycled or recovered and fed back into the economy.

Enough is enough: cutting down on food waste

In the UK alone, an estimated 10 million tonnes of food and drink are wasted post-farm gate annually, which are worth around £20 billion. Growing excess food that no one eats damages the earth's ecosystems when we dispose of it. Moreover, a fifth of UK greenhouse gas (GHG) emissions are associated with food and drink, mostly created during production (agriculture and manufacturing) – and needlessly if the food and drink are wasted. The Government is committed to reducing food waste, reducing our carbon footprint, and meeting the UN Sustainable Development Goal to halve global food waste at consumer and retail levels by 2030.

Global Britain: international leadership

Concerns over resources and waste management cut across continents and oceans. Pollution and environmental damage do not respect national borders and tackling them requires a broad coalition and international leadership.

Research and innovation

Innovation is needed to develop novel solutions and improve the efficiency, cost and / or effectiveness of existing technologies.

Proposed Changes to National Government policy and strategy

In 2019, the Government consulted on three key areas – consistency in household collections, Extended Producer Responsibility, and the introduction of a Deposit Return Scheme. The points of the consultations were:

Consistency in household and business recycling collections in England

The consultation on consistency was concerned with measures to improve the quantity and quality of what we recycle both at home and at work in England. DEFRA believes that these measures would help to transform recycling in England and to increase recycling rates significantly above 50%, towards the much higher recycling rate of 65% that has been set as an ambition in the Resources and Waste Strategy.

Introduction of a Deposit Return Scheme (DRS)

The aim of a DRS would be to reduce the amount of littering, boost recycling levels for relevant materials, offer the enhanced possibility to collect high quality materials in greater quantities, and promote recycling through clear labelling and consumer messaging. Additionally, introducing a DRS could help incentivise moves to push more material up the waste hierarchy and move towards a circular economy.

Reforming the UK packaging producer responsibility system

Extended producer responsibility places responsibility on producers for the cost of managing their products once they reach end of life. This also gives producers an incentive to design their products to make it easier for them to be reused or dismantled and recycled at the end of their life. The consultation asked views on the following:

Dorset

The next round of consultations are due to be released later on this year, which will include the details as to what this mean for Dorset and other local authorities. However, the transition to a circular economy is likely to involve putting in place:

- Design standards to ensure products can be more easily repaired or dismantled and more widely recycled / reused
- Systems and initiatives to re-use and recycle products and materials
- Developing new processing systems to turn waste streams into usable materials
- Developing markets for recycled and re-used materials
- Developing technologies for wastes where landfill is currently the only option.

Dorset Council

Our aim as a council is to reduce the amount of waste we generate as much as technically feasible, with zero waste going to landfill. This subject to technologies being made available to provide an alternative to landfill for those wastes where landfill is currently the only option. Any remaining waste still produced will need to be fully separated and collected for reuse / recycling within the circular economy. This will be different for each waste stream and will be reliant on the establishment of appropriate waste management systems being available in Dorset or the UK.

We will need to implement a robust and consistent approach to managing and monitoring our waste across all our operations.

4. ISSUES

- A new national strategy is in place but national schemes so support transition to circular economy are still emerging
- Businesses have a key role in a transition to a circular economy and are responsible for large proportion of our waste, but we currently have limited oversight over Commercial and Industrial wastes due to competitive market and commercially sensitive data
- The current level of landfill tax appears to be an insufficient incentive for commercial and industrial sector to recycle and reuse waste
- The relatively long-term nature of waste contracts offers limited opportunities to change in the short-term
- Significant level of investment is required for new local waste facilities
- A fundamental change is required for products and packaging and new technologies are required to allow for a circular economy
- The step change in waste reduction and reuse required for a circular economy is reliant on public and commercial behaviours, and poses a very significant behaviour change challenge
- Dorset Council has no consistent approach to managing waste from our own operations.

5. OPPORTUNITIES

- Dorset Council has key statutory functions for Municipal waste collection, Household Waste Recovery Centres, and waste planning, and has a skilled and experienced internal department with specific responsibilities in these areas. This provides the opportunity for a consistent approach to the development of a zero-waste circular economy, but the scale of the challenge is significant.
- The next waste contract to be let by Dorset Waste Services will be relatively short (seven years) compared to typical local authority waste contracts of around 20-25 years, providing opportunities for change in a shorter time frame and enabling a quicker response to changes in legislation.
- Waste management is an economic activity. An increase in landfill tax offers an economic driver to reduce waste and recycle, offering organisations the chance to reduce costs and, through resource efficiency, local businesses can become more competitive and sustainable.
- The Dorset Waste Plan provides the framework for bringing forward new sites, addressing the need for new local facilities.
- Dorset Council has significant scope to reduce waste arisings, increase recycling, and reduce waste to landfill with one robust scheme across all our operations.

6. OBJECTIVES

- Become a Zero Waste Council by 2050
- Transition to a Circular Economy
- Reduce the amount of waste produced in Dorset
- Encourage greater re-use of waste in Dorset
- Increase the proportion of Dorset's waste that is recycled
- Reduce the amount of waste going to landfill as close to zero as possible by 2040
- Reduce emissions from waste fleet.

7. AREAS FOR ACTION

Direct Action

- Become a Zero Waste Council by 2050 by carrying out waste audits across our operations and creating a waste reduction plan, which is supported by a targeted campaign
- Reuse internal packaging, donate reusable furniture, and improve information for waste disposal at all our public facing sites e.g. country parks
- Continue to work towards the Council's commitment to become single-use plastic-free and increase the scope of Single Use Plastic Team to include 'non-recyclable' products
- Ensure waste is minimised through procurement e.g. investigating potential for Dorset Council suppliers to take back packaging, or using reusable packaging systems and specifying rechargeable batteries
- Research a business plan to move towards a near-to closed-loop school and an adult services catering service, in which food waste can create compost (maybe power through AD eventually) to grow veg locally to put back into school meals
- Work with Fleet manager to reduce emissions form waste collection vehicles.

Indirect Through Services

- Establish the appropriate infrastructure to support a circular economy as part of the Joint Municipal Waste Management Strategy for Dorset 2008 – 2033. This will involve enhancing and developing a network of local waste facilities that enable the service to deliver, store, transport, and treat waste efficiently, and enabling a wider and more flexible choice of treatment options, which support the waste hierarchy.

- Reduce the amount of waste produced in Dorset by reviewing the results of the 2019/20 waste analysis exercise to target specific waste streams and plan material specific and area specific campaigns e.g. garden waste, food, and nappies, and facilitating the reduction of commercial and industrial waste.
- Increase the proportion of Dorset's waste that is recycled by rolling town by town area specific campaigns, involving Right Stuff, Right Bin, and Dorset Does. This is as well as trialling a "Not Sure" box to inform residents what can / cannot be recycled, and improving the facilities at communal sites.
- Increase the amount of food waste that is recycled by trialling the provision of free and subsidised food waste caddy liners to deprived areas and, if successful, extend to further targeted areas.
- Reduce the amount of waste going to landfill by exploring the opportunity for commercial food waste collection for Anaerobic Digestion.
- Develop a contract strategy to enable the most efficient and cost-effective solution for Dorset. This requires high levels of waste to be diverted from landfill, and a continuous use and improvement of current recycling and composting services.

Influence / Partnership

- Respond to the second round of consultations relating to the national waste strategy on the Consistency in household and business recycling collections in England, the introduction of a Deposit Return Scheme (DRS), and reforming the UK packaging producer responsibility system.
- As per the National Waste Strategy, Dorset Council Waste Services will investigate how they can work more with partners to facilitate the reduction of commercial and industrial waste (C&I). This will include C&I waste that is not collected by the Council.
- Engage further with primary and secondary schools and build on the current Recyclebot wars project, where schools design and develop robots out of recycled materials and then complete a series of games to test them.
- Encourage greater re-use of waste in Dorset by exploring the development of repair cafes and facilities. This is as well as investigating supporting a "Library of things", and hold repair workshops / skill sharing events, clothes swap events, and exploring possible kerbside collections with Salvation Army.
- Continue to engage the public, communities, schools, and businesses to increase understanding of waste issues and best practices to reduce the volume of waste they produce and develop further campaigns to reduce the amount of waste generated. Such campaigns include Love Food Hate Waste, Slim your Bin, home composting, nappies, and junk mail, and introduce a pilot project in partnership with Keep Britain Tidy to reduce food waste.

Case Study 1: Dorset Council's Recycling Team Wins Team of the Year!



Dorset Council's Recycling Team works tirelessly to help the public reduce, reuse, and recycle their waste correctly, and has been rewarded by recently winning Team of the Year at the Local Authority Recycling Advisory Committee Awards.

Through good team working, excellent internal and external partnerships and great communications, focus on schools, proven projects and campaigns, the kerbside recycling rate has continued to increase to one of the highest in the country at 55%, generating estimated savings of over £90k in the last year.

Each Recycling Officer is linked with an operations depot and identifies areas requiring improvement, using limited resources to produce significant benefits to the environment, council budgets, and providing great public service.

Successful campaigns have included Right Stuff Right Bin and food waste stickering and tagging.



Case Study 2: Using Recycled materials for Highways

Highways waste (largely old worn out highway maintenance waste) is an inert material but is the largest of our waste streams with high embedded carbon. In order to reduce these emissions, our Highways team is working on a very exciting project with supply chain partner, Allasso Recycling, based at Corfe Mullen, which aims to close the loop in terms of recycling. Allasso re-process our asphalt waste into sustainable surfacing and recycled materials, which are fed back as a raw material into our resurfacing schemes. This cuts down on the use of raw materials and emissions from processing raw materials. In addition, making the surfacing locally also reduces emissions from transporting the materials.

The sustainable surfacing has the same performance as conventional material and is a lower cost, which enables us to do more with the budget that we have. This partnership will significantly reduce the cost and carbon emissions from the large improvement schemes planned for this year.

Last year, we generated 24,137 tonnes of highways maintenance waste. Of these, 3,748 tonnes were directly reused in Dorset Council schemes and 15,978 tonnes were sold to the local community for use in their schemes. The remaining waste was reprocessed by Allasso Recycling and made available for use on more Dorset Council Schemes.

