

Merseyside Recycling & Waste Authority

Ch₀ose to reuse



Sustainability Report 2022/23

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EXECUTIVE SUMMARY

According to National Oceanic and Atmospheric Administration (NOAA), the global surface temperature of the Earth for 2022 was the sixth highest since records began in 1880. The global surface temperature in December 2022 was the eighth highest in the 143-year record. The overarching consensus of the Paris Accord (COP 21, 2015) was to limit the global temperature increase to 1.5°C above pre-industrial levels. To achieve this, it was identified that greenhouse gas emissions must peak before 2025 at the latest and decline 43% by 2030. Scientists are unequivocal that various tipping points are being triggered now (floods, wildfires, melting ice). Today, the global temperature stands at approximately +1.2°C (World Economic Forum, 2023).

Despite the records, consumers continue to buy new household products and personal items that they may eventually discard with their embodied energy intact. Merseyside Recycling & Waste Authority (MRWA) can identify and implement actions that increase the reuse of household products and personal items to reduce waste, maximise Social Value and embed the principles of a low waste and carbon and a circular social economy into the region.

This sustainability report is the third that MRWA has produced. Having built up a range of back data, we have assessed our performance and begun to put some SDG targets in place that are achievable and measurable. Establishing behaviours and trends both good and bad will help us focus on the SDGs that we have prioritised. Our employees can play a crucial role in transforming MRWA's priority SDGs into reality. They are on the front line of delivering sustainable services that reduce and reuse discarded products, recycle resources, reduce water consumption, energy use and limit carbon emissions. But they cannot do this without the commitment of MRWA.

MRWA is committed to:

PEOPLE – breaking the glass ceiling: MRWA had 30 employees in 2022/23. Females accounted for 53.4% positions whilst 46.6 were male posts. This is an increase of 6% females since 2021/22. Female managers also increased from 44.4% in 2020/21 to 55.5% in 2022/23.

PLANET - protecting resources: The average household produced almost one tonne of waste (959 kgs) with each resident being responsible for 451 kgs. Since 2020/21, waste generation has reduced by 48,167 tonnes. As an important regional environmental service provider, we actively promote zero waste and zero carbon. We advocate the circular economy, waste prevention, reuse and recycling and maximising social value from unwanted household resources. To support nature recovery, we have begun to undertake Phase 1 Habitat Surveys of our closed landfill sites and waste management facilities. The aim is to maximise unused land for nature.

ECONOMY – create social value and green jobs: MRWA's Community Fund supports communities to prevent and reuse unwanted resources, learn new skills, cut carbon emissions, and provide opportunities to volunteer.

Sustainability is about so much more than eliminating single-use water bottles, turning lights off, using local transport, and walking. A holistic approach to sustainability incorporates social, environmental, and economic sustainability – or people, planet, and the economy. We continue to use these pillars of sustainability as our drivers. People make up society, impact the environment, and may demonstrate behaviours which can contribute to an unsustainable economy. The ultimate driver behind sustainability is that the planet's global environmental balance has been altered by human activity, and efforts to limit the worst effects of this will be fundamental to the global population by 2050. Economic sustainability

entails evaluating the environmental impact of human activity. MRWA's overarching goal is to reduce waste and encourage zero-waste lifestyles which can help conserve nature's valuable resources and reduce carbon emissions.

MRWA is positioned to establish participation in a 'decade of action' with the aid of indicators and targets relevant to the UN Global Indicator Framework.

- **Local Action**
 - a. We will implement innovative solutions with partners that are targeted at achieving zero waste and zero carbon by 2040.
 - b. Address local cost of living crises and subsequent needs with the redistribution of resources that have social value.
 - c. Develop and showcase best practices that can be replicated locally and globally.

- **People Actions**
 - a. Encourage people to make positive choices and take positive actions that can make a difference today and tomorrow.
 - b. Help people to change their behaviour and lifestyle choices through education, information, and awareness.
 - c. Support and develop people-centred solutions for climate resilience, waste generation, waste disposal and a Circular Social Economy (CSE).
 - d. Draw on the environmental principles of circularity and the values of social enterprise, underpinned by the pursuit of social equity.

Sustainable Development Goals and Targets for Future Implementation

Below we have established local SDG proxy indicators. We have ensured that the proxy indicators are aligned with the SDG indicators and are meaningful and useful to us, our partners, and our communities.

SDG 13: Climate Action - take urgent action to combat climate change and its impacts.

13.1.3a: Proxy Indicator: Review and update where necessary our corporate Climate Risk Register.

13.2.2a. Proxy Indicator: Produce an annual carbon emissions report and public summary report

13.3.1a. Proxy Indicator: Create education resources for teachers that demonstrate the intrinsic link between waste and climate change. (Targets – No. of schools/teachers and pupils).

13.1.1b: Proxy Indicator: Create online workshops for community groups that demonstrate the intrinsic link between waste and climate change. (Targets - No. of community groups and residents).

SDG 12: Responsible consumption and production: ensure sustainable consumption and production patterns.

12.3.1a. Proxy Indicator: (b) reduction of % / tonnes of food waste in residual waste bin (set prevention targets).

12.5.1a. Proxy Indicator: LCR food composting % rate and food tonnes prevented (set targets).

12.7.1a. Proxy Indicators: % of procurements that are sustainable sourced and % of services procured that are linked to local providers and communities which will generate social value.

SDG 11: sustainable cities and communities: Make cities and human settlements inclusive, safe, reliant, and sustainable.

11.3.2a. Proxy Indicator: No. of reuse and Household Waste Recycling Centres across the region, No. of reuse hubs. Establish a region-wide reuse network. % of resources reused (set target - %).

11.6.1a. Proxy Indicator: Total household waste managed by MRWA (set reduction targets - tonnes).

Establish proportion of residual as a % of regional municipal waste (%).

SDG 4 Quality education: Ensure inclusive and equitable education and promote lifelong learning opportunities for all.

4.7.1a Proxy indicator: Develop sustainable development education resources (target No. of resources) for teacher delivery.

Develop sustainable development education resources for community groups and residents (target No. of each).

SDG 3: Good Health and Well-Being: Ensure healthy lives and promote well-being for all ages.

3.5.1a. Proxy Indicator: Review and update alcohol and drug misuse policy (2017, V4).

1. Introduction

Merseyside Recycling and Waste Authority (MRWA) is the statutory Waste Disposal Authority for Merseyside. MRWA manages and treats waste on behalf of the District Councils of Knowsley, Liverpool, Sefton, St Helens, and Wirral. In a separate arrangement, waste is managed and treated on behalf of neighbouring Halton Council. The infrastructure required to manage and treat waste includes 14 Household Waste Recycling Centres, four Waste Transfer Stations, two Materials Recovery Facilities and a Rail Transfer Loading Station. Residual waste is transferred by rail to an Energy from Waste Facility. The direct management and treatment of waste are contracted services provided by Veolia Merseyside Ltd and MERL (Suez). MRWA is also responsible for the ongoing management, monitoring, and nature recovery at seven Closed Landfill Sites. Closed landfill Sites cover an area of 117 hectares and the area required for waste management and treatment facilities is 30 hectares (see Appendix Table 1).

MRWA serves 1.55 million residents that reside in 730,000 households in the Liverpool City Region. In 2022/23, residents generated 699,833 tonnes of household waste. The average household produced almost one tonne of waste (959 kgs) with each resident being responsible for 451 kgs. (See Appendix, Table 2). Since 2020/21, waste generation has reduced by 48,167 tonnes. Reducing waste means that fewer natural resources are lost and less carbon emissions are emitted and contribute to climate change. It is imperative that we continue to support residents to reduce the waste they produce. As a critical service provider, we continue to lead on advocating zero waste, proactively reducing carbon from our contract services, operations, and activities, promoting the circular economy, waste prevention, reuse and recycling and maximising social value from unwanted household and personal products.

This is in line with our strategic commitment to achieve zero avoidable waste and contribute to LCR zero carbon by 2040. Consumer behaviour, household residual waste and its management and treatment, are intrinsically coupled with the release of greenhouse gases which increases global temperatures and cause changes to the climate. The production of greenhouse gases is associated with the extraction and transportation of resources to make household and personal goods. This is called 'product embodied energy'. When products are purchased and taken home, people consume primarily fossil energy to use their products and when they are no longer wanted, products are discarded in either waste or recycling bins or taken to Household Waste and Recycling Centres. At this point, the 'product embodied energy' has the potential to be lost. We are doing our utmost to ensure that unwanted resources are either recycled which conserves both resources and energy or are reused, so that the 'product embodied energy' remains in the product for longer.

MRWA recognises that global temperature increase is not a future problem. Changes to the planet are driven by increased human caused greenhouse gases and the consumption of resources by industry and consumers, which are having widespread effects on the environment now. Glaciers and ice sheets are shrinking, river and lake ice is breaking up earlier, plant and animal ranges are shifting, and plants and trees are flowering earlier. Today, we are experiencing droughts, wildfires, and extreme rainfall and flooding and longer, more intense heatwaves which are directly affecting and impacting people in the UK and around the world.

The Paris Agreement (COP 21, 2015) is a legally binding international treaty on climate change and adopted by 196 Parties. Its overarching goal is to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. In 2022, the UK experienced heatwaves in June, July, and August. On the July 19th, the hottest temperature ever recorded in the UK occurred in Lincoln which reached 40.3° Celsius. So far in 2023, the UK has experienced the hottest June, and the wettest July ever recorded.

2. Sustainable Development Goals

As a single function Authority whose services are specifically to manage and treat household waste, the United Nations Sustainable Development Goals of Health and Well-being, Responsible Consumption, Sustainable Cities and Communities, and Climate Action were initially identified as our priority goals. On review, we have added Goal 4 – Quality Education – to these goals as we need to engage more with education establishments and residents to raise awareness and change behaviour and lifestyle choices to enable more resources to be reduced, reused, and recycled and not wasted (See Box 1).

Box 1. Prioritised Sustainable Goals



Achieving responsible consumption and production secures efficiency and productivity gains. This would make sure that human activities remain within the carrying capacity of the planet and respects the rights of future generations. Well managed cities and their communities can be hubs of innovation for resource circularity, environmental protection, social benefit, and economic prosperity. This goal is critical for increasing resource efficiency and reducing waste, reducing carbon emissions, and mitigating climate

change, creating social value, and creating green jobs. We will continue to contribute to a low carbon circular economy by retaining the embodied energy of household products and personal items, maximising product reuse, and sharing the inherent value of unwanted household resources with others and by increasing recycling and reducing the contamination of recycling by non-target materials.

Quality education is critical for employees and residents so they can be prepared for future changes to waste management, treatment, and activities. We will offer lifelong learning opportunities for our employees and encourage healthy living and lifestyle choices. We will demonstrate care for the physical and mental well-being of our employees. We will maximise the reuse of unwanted resources to support social value in the community and nurture small businesses and community groups to be more resourceful and sustainable. To limit habitat destruction across the world, it is imperative that we continue to support residents to reduce the waste they produce, and we will aid nature's recovery across our operational estate and closed landfill sites.

The future landscape for waste management is changing with the focus on reduction, reuse, and recycling therefore, it is important that our employees and the users of our services are ready for this change. We intend to provide opportunities to increase their knowledge and understanding of why waste matters through a detailed education and resource protection and conservation programme. The escalation of the climate crisis towards emergency status is a call for all of us to act and contribute to transforming the ways in which we produce, consume and live. We will educate and inform stakeholders to reduce carbon emissions by changing their behaviour to produce less waste and less carbon and enable reuse and recycling of products that are no longer wanted. We will provide staff with carbon literacy training to ensure that they are aware of the climate crisis that the planet and people face now and in the future.

3. Global indicator framework and targets for the Sustainable Development Goals

It is important that we make a difference with our management, operations, and activities around the generation of unavoidable and unnecessary waste. AT COP 26 (Glasgow), the United Nations stated that we are well into the 'decade of action' and called on all sectors to mobilise on three levels:

- **Global action** - secure greater leadership, more resources, and smarter solutions for the Sustainable Development Goals.
- **Local action** - embed the much-needed transitions in the policies, budgets, institutions and regulatory frameworks of governments, cities, and local authorities.
- **People action** - including youth, civil society, the media, the private sector, unions, academia, and other stakeholders, to generate an unstoppable movement pushing for the required transformations.

MRWA will concentrate its efforts on the following: *2. Local action and 3. People action*. With three years of back data for our prioritised SDGs, MRWA is positioned to establish indicators and targets relevant to the UN Global Indicator Framework.

- **Local Action**
 - a. We will implement innovative solutions with partners that are targeted at achieving zero waste and contribute to LCR zero carbon by 2040.
 - b. Address local cost of living crises and subsequent needs with the redistribution of resources that have social value.
 - c. Develop and showcase best practices that can be replicated locally and globally.

- **People Actions**

- Encourage people to make positive choices and take positive actions that can make a difference today and tomorrow.
- Help people to change their behaviour and lifestyle choices through education, information, and awareness.
- Support and develop people-centred solutions for climate resilience, waste generation, waste disposal and a Circular Social Economy (CSE).
- Draw on the environmental principles of circularity and the values of social enterprise, underpinned by the pursuit of social equity.

4. Prioritised Goals and proxy indicators

Sometimes it is not possible for every UN SDG global indicator to be used because they are aimed at global institutions, multi-national corporations or at the bloc (Europe) or national level. However, it is possible to develop local, proxy indicators which can be more suitable for local actions. The main outcome expected from MRWA’s engagement with the SDGs is to develop a localised version of the indicators. We will ensure that proxy indicators are aligned with the SDG indicators and are meaningful and useful to us, our partners, and our communities (see Tables A – E).

Table A. SDG 12: Responsible consumption and production: ensure sustainable consumption and production patterns – proxy indicators

12.2 Target 12.2.1 Indicator 12.2.2 Indicator 12.2.1/2a Proxy indicator	<ul style="list-style-type: none"> • By 2030, achieve the sustainable management and efficient use of natural resources. • Material footprint - material footprint per capita. • Domestic Material Consumption, Domestic Material Consumption per capita. • Domestic Material Consumption per GDP. <p>This indicator is in development. National data is available, and a localised indicator will be identified in line with the emerging Zero Waste Strategy.</p>
12.3 Target 12.3.1 Indicator 12.3.1a Proxy indicator	<ul style="list-style-type: none"> • By 2030, halve per capita global food waste at the retail and consumer levels and reduce food waste losses along production and supply chains, including post-harvest losses. • (a) food loss index and (b) food waste index. • (b) reduction of % / tonnes of food waste in residual waste bin (set reduction target).
12.5 Target 12.5.1 Indicator 12.5.1a Proxy indicator	<ul style="list-style-type: none"> • By 2030, substantially reduce food generation through prevention, reuse, and recycling. • National recycling rate, tonnes of materials recycled. • LCR food recycling % rate and LCR food tonnes recycled, food tonnes prevented (set targets). Measure food waste that is reduced by home and community composting.
12.7 Target	<ul style="list-style-type: none"> • Promote public procurement practices that are sustainable, in accordance with national policies and priorities.
12.7.1 Indicator	<ul style="list-style-type: none"> • Degree of sustainable public procurement policies and action plan implementation

12.7.1a Proxy indicator	<ul style="list-style-type: none"> • % of procurements that are sustainable sourced • % of services procured that are linked to local providers and social value
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Table B. SDG 11: Sustainable cities and communities: Make cities and human settlements inclusive, safe, reliant, and sustainable - proxy indicators.

11.3 Target	<ul style="list-style-type: none"> • By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries.
11.3.2 Indicator	<ul style="list-style-type: none"> • Proportion of cities with direct participation structure of civil society in urban planning and management that operate regularly and democratically.
11.3.2a Proxy indicator	<ul style="list-style-type: none"> • No. reuse and recycling centres across the region • No. of reuse hubs • Establish a region wide reuse network. • Tonnes and % of resources reused (set targets for tonnes and %).
11.6 Target	<ul style="list-style-type: none"> • By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
11.6.1 Indicator	<ul style="list-style-type: none"> • Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated by cities. •
11.6.1a Proxy indicator	<ul style="list-style-type: none"> • Total household waste managed by MRWA (set reduction target – tonnes). • Establish proportion of residual as a % of municipal waste (set reduction target - %)

Table C. SDG 13: Climate Action - take urgent action to combat climate change and its impacts – proxy indicators.

13.1 Target	<ul style="list-style-type: none"> • Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
13.1.3: Indicator	<ul style="list-style-type: none"> • Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies.
13.1.3a Proxy indicator	<ul style="list-style-type: none"> • Review and update corporate Climate Risk Register.
13.2 Target	<ul style="list-style-type: none"> • Integrate climate change measures into national policies, strategies, and planning
13.2.2 Indicator	<ul style="list-style-type: none"> • Total greenhouse gas emissions per year (Target - tonnes/CO2e - set reduction target)
13.2.2a Proxy indicator	<ul style="list-style-type: none"> • Production of annual Carbon emissions Report and a public summary report (targets - reports x 2)
13.3 Target	<ul style="list-style-type: none"> • Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.
13.3.1 Indicator	<ul style="list-style-type: none"> • Extent to which (i) global citizen education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment.
13.3.1a Proxy indicator / Target	<ul style="list-style-type: none"> • Create educational resources for teachers that demonstrate the intrinsic link between waste and climate change. (Targets – No. of schools/teachers and pupils).
13.1.1b: Proxy indicator / Target	<ul style="list-style-type: none"> • Create online workshops for community groups to demonstrate the link between waste and climate change. (Targets - No. of community groups and residents).

Table D. SDG 4 Quality education: Ensure inclusive and equitable education and promote lifelong learning opportunities for all - proxy indicators.

4.7 Target	<ul style="list-style-type: none"> By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and culture's contribution to sustainable development.
4.7.1 Indicator	<ul style="list-style-type: none"> Extent to which (i) global citizen education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment.
4.7.1a Proxy indicator	<ul style="list-style-type: none"> Develop sustainable development education resources (target No. of resources) for teacher education. Develop sustainable development education resources (target No.) for community groups and residents (target No. of each).

Table E. SDG 3: Good Health and Well-Being: Ensure healthy lives and promote well-being for all ages - Proxy indicators.

3.5 Target	<ul style="list-style-type: none"> Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful abuse of alcohol.
3.5.1 Indicator	<ul style="list-style-type: none"> Coverage of treatment interventions (pharmacological, psychosocial, and rehabilitation and aftercare services) for substance use disorders.
3.5.1a Proxy indicator	<ul style="list-style-type: none"> Review and update alcohol and drug misuse policy (2017, V4).

5. Progress on SDGs

5.a Drivers of sustainability

The way to remain within ecological boundaries is to take a holistic approach to sustainability and give equal credence to society, the environmental, and the economy. We continue to use the pillars of sustainability as our drivers and refer to them as People, Planet, and the Economy. People make up society, impact the environment, and propel the economy. The ultimate driver behind sustainability is that the planet's global environmental balance has been altered by human activity, and efforts to limit the worst effects of climate change will be fundamental to global societies over the next century. Economic sustainability entails evaluating the environmental impact of economic activity. Reducing waste or living a zero-waste lifestyle can help conserve the planet's valuable resources and reduce carbon emissions released into our atmosphere. The economy would be best served by being circular whereby resources are not discarded but returned to the economy be reused or recycled to protect the extraction of natural resources.

6. People and key stakeholders

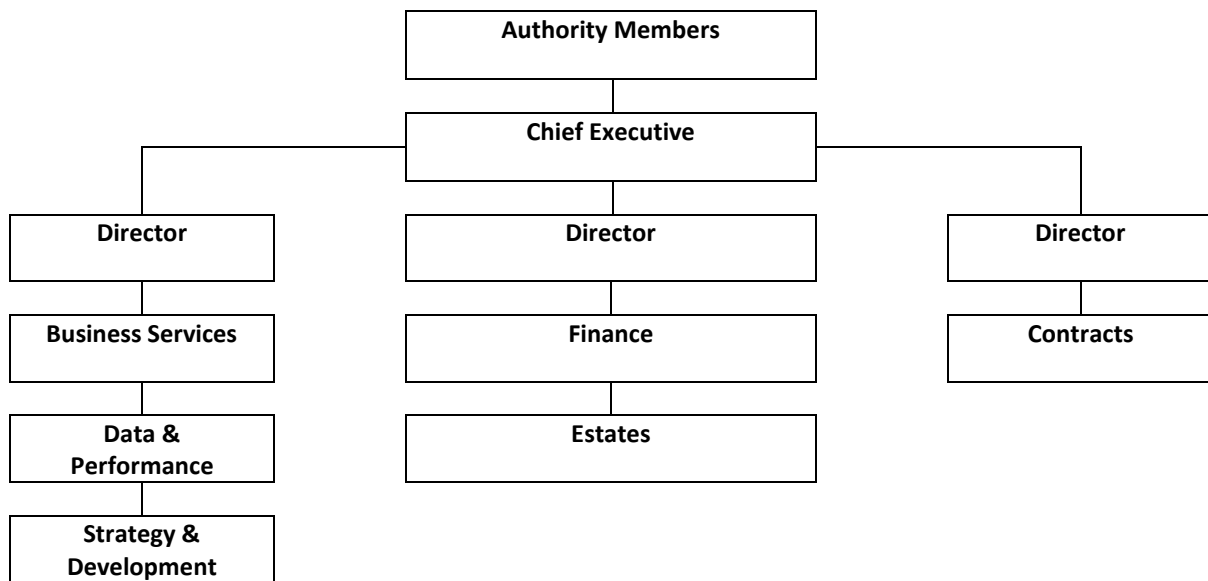
6.a Governance

MRWA is a committed, just, and fair organisation that conducts its operations, activities, and contract services lawfully, honestly, and with integrity. We adhere to all applicable laws and regulations, exercise sound judgment and take actions to minimise our impact on people, the planet, and the economy. We actively promote sustainable practices with key stakeholders and provide residents with information and awareness of waste prevention, reuse, and recycling, and tackling climate change to achieve a future low carbon circular social economy.

6.b Our people

Figure 1 illustrates the governance structure of MRWA in 2022/23.

Figure 1. Governance structure of Merseyside Recycling and Waste Authority



In 2022/23, there were 30 employees at MRWA. Of these, 53.4% were females and 46.6% were male, an increase of almost 6% of females compared to 2020/21. Females in management positions increased from 44.4% in 2020/21 to 55.5% in 2022/23. Our employees are on the front line of delivering sustainable services that reduce waste, recycle resources, reduce water consumption and energy use, and limit carbon emissions. But they cannot do this without the committed support of MRWA. In 2021/22, 186 training sessions were completed between employees. This increased to 300 training sessions for employees in 2022/23. To keep employees informed about positive lifestyle choices, 12 Health and Wellbeing internal newsletters were issued (See Appendix, Table 3).

While management has a central role to play in SDG governance, employees are a crucial part of the equation. The process of embedding Sustainable Development considerations across MRWA, requires all employees having a clear understanding of sustainability, their goals, their objectives, and their targets and understanding the impact of material consumption, waste, and carbon emissions. To ensure that employees understand sustainability, all staff completed an online sustainability workbook. We will develop a programme of education and implementation of the SDGs in 2023/24.

The purpose of adding SDG 4 – Quality Education – to our priority goals is because we recognise that the way we will manage waste in the future will change, and employees will require new knowledge, understanding and experiences of sustainability to maintain their lifelong learning and employability. We

have improved the training budget for the past two years which is reflected in the increase of training sessions provided and completed.

6.c Other People

We currently work with Veolia and Suez waste management companies to deliver the Waste Management Recycling Contract and the Resource Recovery Contract respectively. Indirectly, we are responsible for the welfare of 264 Veolia employees and 97 Suez employees (see Appendix, Table 4). In total, we are indirectly responsible for the well-being of 361 other people.

One of the most important aspects of our activities is the offer of support to local groups to participate in waste reduction, reuse activities and community awareness raising through the MRWA and Veolia Community Fund which has a value of £165,000. In 2022/23, 16 community groups were supported. Together, the groups diverted 131 tonnes of waste from disposal and included the prevention of 98 tonnes of food waste, and the reuse of seven tonnes of furniture and 17 tonnes of textiles. The 16 projects organised 98 events in their communities and directly engaged with 24,557 people and in-directly engaged with 19,006 people. For the projects to be successful, they are reliant on the goodwill of volunteers. In total, 22,233 volunteer hours of support were provided by local people (See Appendix, Table 4).

6.d Social Value

By providing funding for community groups and their projects, they received welcome support from the residents in their communities. Opportunities to volunteer is critical to the success of many projects and 16 projects were able to benefit from 22,223 volunteer hours. This had a social value of £231,563 based on the living wage of £10.42. The environmental costs of the associated carbon emissions would have been almost £3,800 had unwanted resources been disposed of instead of being reused (See Appendix, Table 4).

6.e Communications and education

To change consumer behaviour, it is vital for MRWA to engage with the residents of the city region either directly or indirectly through community groups. As part of the construction of the Gilmoor Materials Recovery Facility, we ensured that an education centre was built so that children and adults could see and experience what happens to the materials they put in their recycling bins. In 2022/23, 2,737 people visited the Resource Discovery Centre (RDC). In addition, 3,733 people visited the Southport Eco Centre (SEC) which is also supported by MRWA. We worked with the RDC and the SEC to deliver three and two communications initiatives respectively (See Appendix, Table 5).

6.f Social media and the Circular Economy

In 2022/23, there were 130,074 engagements (Impressions) on Facebook and Twitter an increase of 72,000 on the previous year. There were 45,952 engagements with our Recycle Right campaign – almost 31,000 more than in 2021/22. In 2021/22, we created a 'Zero Waste Liverpool City Region' (ZWLCR) website. There was a substantial increase in visits to this website - 3,729 visits in 2022/23 compared to 456 the previous year. Similarly, social media engagements via ZWLCR and Twitter increased to 19,067 from 315. There has also been an increase in 13,000 visits to the Recycle Right website over the previous year. We believe the fall in visits to MRWA website (down 45,000) is because of the availability of other, more specific sources of information (See Appendix, Table 6).

To reduce waste and manage resources efficiently and effectively, community groups, not-for-profit organisations, small and medium enterprises, and businesses need to recognise the benefits and opportunities of creating a region and an economy that is circular. This means keeping resources in use for as long as possible. In 2019, MRWA established the Liverpool City Region Circular Economy Club (LCRCEC) to encourage organisations to move away from the make-use-dispose economic model and improve their bottom line. In 2022/23, there were 120 members of the club, and we organised three events, and issued four newsletters. (See Appendix, Table 6).

6.g Compliance

In 2022/23, we received four Freedom of Information requests and provided enquirers with appropriate answers. 26 complaints were received and resolved. In 2009, we gained ISO 14001:2015. 13 internal EMS audits and 10 internal Health and Safety audits were completed to ensure accreditation was maintained. We did not receive any prosecutions or financial penalties (See Appendix, Table 7).

6.h Policy

Recent policy developments are increasingly focused on decarbonising our use of material resources and moving to a circular economy. An important aspect of our work is to influence these policies and encourage those who can help us to develop more sustainable waste management services for the people of Liverpool City Region. For example, in 2022/23, MRWA responded to Government proposals on residual waste reduction targets and reviewed the UK Net Zero Strategy. There was much activity in the waste management sector this year and as a result, 208 policy briefings were distributed to staff, Authority Members, Local Council officers and other key stakeholders. Policy briefing distribution increased by 95 on the previous year (See Appendix, Table 8).

7. Planet

It has been highlighted how consumerism and waste management are inherently linked through 'product embodied energy'. The linear model of making, using, and disposing of unwanted, valuable resources will maintain contributions to climate change. Whereas a circular economy that keeps products in use for longer will help reduce CO₂-e emissions.

A zero waste and carbon economy and the transformation of behavioural choice can help avoid the risks and damages caused by climate change. We need renewable energy generators, more wind and solar, battery storage capabilities, the replacement of current mobility fuels with electric vehicles, clean energy for businesses and homes and most importantly for MRWA, people making different choices about what they buy, what they throw away, and the lifestyle they choose.

7.a MRWA consumables

MRWA is directly responsible for a range of office-based consumables. However, electricity (48,398 kWh), gas (3,580 kWh) and water (1,77.5 litres) consumption are proportioned by floor space within a 13-storey building. As staff have returned to work after the Covid 19 pandemic, our energy, water and other consumables increased. The Wilton Energy from Waste facility generated 80,633 tonnes of renewable steam. This was sufficient energy to power 41,801 UK homes (See Appendix, Table 9).

7.b Waste and resource management

There is an assumption by residents and businesses that their waste has no value. We consider waste to be a valuable resource and aim to maximise its secondary use and worth to communities and people. In 2022/23, we treated 699,883 tonnes of household waste. Residual waste was sent directly to an

Energy from Waste Facility. Household and personal items that should not be put in household bins can in most cases be taken to our Household Waste Recycling Centres (HWRCs). The average household generated 957 kgs of waste. This equates to 451 kgs per person. The Materials Recovery Facilities recycled 77.3% of materials. However, residents are still confused as to what can be recycled and therefore, recycling bins contained 22.7% of contaminate materials. The recycling rate at HWRCs was 66%. Other waste collected included garden waste – 3,597 tonnes - and food waste - 3,158 tonnes - which were composted. Overall, the recycling rate for household waste that was recycled or composted was 34.7% (See Appendix, Table 2).

7.c Carbon footprint

We are currently developing a Zero Waste Strategy with the goal of achieving zero waste by 2040. Waste is intrinsically linked to carbon emissions and climate change, either through ‘embodied product energy’ or management emissions. Therefore, strategic efforts will aim for both zero waste and a contribution to LCR net zero carbon by 2040.

Due to scheduled maintenance and occasional unexpected shutdowns at the Energy from Waste Facility (EfW), carbon emissions have increased by approximate 15,000 tonnes. We sought alternative disposal routes for waste, but this incurred higher carbon emissions than expected. Generally, and compared to the previous year, the carbon emissions from the operations of our waste contractors have increased. Veolia’s emissions increased by 68 CO₂-e tonnes while Suez’s emissions increased by 11,530 CO₂-e (See Appendix, Table 10).

7.d Biodiversity

Industrialisation and human development have had a drastic effect on the planet’s biodiversity. Humans have impacted ecosystems worldwide through habitat destruction, material extraction, climatic change, pollution, and the introduction of invasive species in areas not found previously. The loss of habitat is the primary threat to biodiversity in general. A study by the Natural History Museum, claims that nearly half of Britain’s biodiversity has been lost since industrial revolution.

MRWA is responsible for 147 hectares of land as either landfill sites - 117 hectares - or operational sites -- 30 hectares (See Appendix, Table 12). In 2022/23, five of the seven closed landfill sites had Phase 1 Habitats Survey reports completed. Surveys enable us to highlight and illustrate important observations, such as rare plants, rare animal species, ancient hedgerows, or other types of special features within the habitat. The purpose of the surveys was to record the status of the location, identify ecological constraints and opportunities to protect the ecology and assist nature recovery. Table F highlights the areas of dominant habitats, coverage, and the main invasive species on closed landfill sites.

Table F. Landfill sites - Phase 1 Habitat Surveys

Site	Classified Habitat	Site Area (ha) - overall	Site area (ha) of habitat	Dominant habitat	% covered	Invasive species
Bidston Moss	-	34.5	-	-	-	-
Billinge Hill Quarry	Unimproved acid grassland	11.5	Not detailed in report	Not detailed in report	Not detailed in report	Giant hogweed (<5%)
	Unimproved neutral grassland					Japanese knotweed
						Himalayan balsam

	Acid/neutral rock exposure					Rhododendron Spanish or hybrid bluebell Water fern Parrots feather Floating pennywort
Foul Lane	Dense Scrub	9.4	5.35	Scrub (bramble)	60.4	Giant hogweed Japanese knotweed Himalayan balsam
	Modified Grassland		1.25			
	Broad-leaved woodland		1.13			
	Aquatic marginal vegetation		0.97			
	Neutral Grassland		0.59			
	Pond		0.06			
	Artificial unvegetated unseal surface		0.02			
Red Quarry	-	3.0	-	-	-	-
Roughdales	Broadleaved Woodland	7.6	4.35	Broadleaved Woodland	52.75	
	Modified Grassland		3.9	Modified Grassland	47.25	
Sefton Meadows Ext. II	Agricultural cropland	42.1	39.25	Agricultural cropland	39.2	None noted
	Grass		1.36			
	Scrub		0.94			
	Broadleaved woodland		0.69			
Sefton Meadows Ext. III	Broadleaved woodland	23.2	13.07	Broadleaved woodland	51.92	None noted
	Scrub		8.53	Scrub	33.87	
	Grass		3.58			

8. Economy

The overall service cost of waste management, treatment and activities was £79 million in 2022/23 (See Appendix, Table 13). The average cost of household waste disposal per tonne of waste was £100.34 and the cost of waste disposed per household was £62.55. In 2022/23, MRWA invested £244,105.00 in infrastructure including specific spending on the Sefton Meadows attenuation scheme - £90,000 - and at Gillmoss and Bidston sites EV charging stations were installed at a cost of £18,793. General expenditure for management across operational and landfill sites was £135,312.

To support communities to disseminate important messages about resourcefulness and to demonstrate how unwanted resources can be reused and their lives extended and to maximise social value, MRWA (£150,000) and Veolia (15,000) provided £165,000 in the Community Fund. MRWA also provided a £15,000 grant to the Southport Eco Centre to provide waste educational resources. Indirectly, Suez provided funding of £55,000 to communities in Kirkby from the Resource Recovery Contract (Kirkby being the location of the Rail Transfer Loading Station.)

9. Conclusion

As a single function Authority that manages and treats household waste, we are responsible for major global issues such as biodiversity conservation and carbon emissions which are intrinsically connected. Protecting one avoids the other. We continue to advocate the reuse of resources to protect nature and to prolong the 'embedded energy' of unwanted household and personal items. Our priority goals continued to make progress with respect to People, Planet and the Economy.

At COP 26 (Glasgow), the United Nations stressed that we have entered a decade of global action, that we are well into the 'decade of action' and called on all sectors to focus, mobilise and deliver transition to a sustainable world. We have identified key proxy indicators and targets related to relevant UN Global Indicator Framework. In the future, MRWA can make significant differences by concentrating its efforts on Local and People actions.

Appendix

Table 1. Infrastructure	Metric	Measure
Closed landfill sites	No	7
Waste Transfer Stations	No	4
Rail Transfer Loading Stations	No	1
Trade waste recycling (HWRCs)	No	0
Material Recovery Facilities	No	2
Household Waste Recycling Centres	No	14
Reuse shops	No	0
Petrol/diesel vans	No	3
Energy-from-Waste facilities	No	1

Table 2. Waste and resources management	Metric	Measure
LCR Population	No	1,551,722
LCR households	No	730,080
Total household waste	tonnes	699,883
Total waste per household	kgs	958.640
Total waste per capita	kgs	451.036
Total HWRCs resources	Tonnes	113,468
Total HWRCs recycling	%	66%
Total HWRCs residual waste	Tonnes	43,580
Total Refuse collection and street cleansing	Tonnes	390,634
Total Street sweepings	Tonnes	14,728
Total Litter bin refuse	Tonnes	3,329
Total dry recycling collections	Tonnes	107,805
Material Recovery Facility performance	%	77.3%
Material Recovery Facility contamination rate	%	22.7%
Total green waste collected	Tonnes	3,957
Total food waste collected	Tonnes	3,158
Total waste sent to landfill – non hazardous	Tonnes	52,918
Total waste sent to landfill – hazardous	Tonnes	108.26
Residual waste treated at EfW	Tonnes	390,971
Residual waste treated at other facilities	Tonnes	86,422
Household waste recycled and composted (NI 192)	%	34.7%

Table 3. Our people – human resources	Metric	Measure
Total employees	Nº	30
Total male employees	Nº	14
Per cent male employees	%	46.6
Total female employees	Nº	16

Per cent female employees	%	53.3
Per cent of women in management positions	%	55.5
People trained in first aid	Nº	1
People aware of fire procedures (Marshals)	Nº	4
People received training	Nº	30
EMS, Health and Safety inductions	Nº	5
Training programmes	Nº	9
Total training programmes x people	Nº	270
Health and Wellbeing Ezine	Nº	12
Veolia employees	Nº	264
Suez employees	Nº	97

Table 4. Other people – social value	Metric	Measure
Community events (CF)	Nº	98
Waste diverted (CF)	Tonnes	131
Food waste prevented (CF)	Tonnes	98
Furniture reused (CF)	Tonnes	7
Textiles reused/recycled (CF)	Tonnes	17
Carbon savings (£29.00t) (environmental damage prevented)	£	4,031
Direct engagement (CF)	People	24,557
Wider engagement (CF)	People	19,006
Volunteer hours (CF)	£10.42 (hr)	22,233
Return On Investment (ROI)	£	£4.60

Table 5. Communication and Education	Metric	Measure
Communication and awareness ‘paid for’ campaigns	Nº	3
Communication and awareness ‘national’ campaigns supported	Nº	4
Communication and awareness ‘local’ campaigns supported	Nº	2
Education		
Education and awareness outreach to groups/organisations/ community	Nº	0
Education and awareness resources published	Nº	0
Resource Discovery Centre communications initiatives supported	Nº	3
Resource Discovery Centre visits/visitors	Nº	2737
Southport Eco Centre – visits/visitors	Nº	3733
Southport Eco Centre communications initiatives supported	Nº	2
Sustainability online workbook	Nº	30

Table 6. People – Social-media, and Circular Economy	Metric	Measure
Education		
Education and awareness outreach to groups/organisations/ community	Nº	0
Education and awareness resources published	Nº	0

Resource Discovery Centre communications initiatives supported	Nº	3
Resource Discovery Centre visits/visitors	Nº	2,737
Southport Eco Centre – visits/visitors	Nº	3,733
Southport Eco Centre communications initiatives supported	Nº	2
Social media		
Social media engagements (MRWA) – Facebook/Twitter	Nº	130,074
Social media engagements (Recycle Right) – Facebook/Twitter	Nº	45,952
Social media engagements (Zero Waste LCR) - Twitter	Nº	19,067
MRWA website (sessions)	Nº	149,465
Recycle Right website	Nº	117,919
ZW LCR website	Nº	3,729
Circular Economy		
LCR CEC members	Nº	120
Events	Nº	3
Newsletters	Nº	4

Table 7. Compliance and responsible management	Metric	Measure
Freedom of Information requests	Nº	4
Environmental Information Regulations requests	Nº	0
Data Protection / SARS requests	Nº	N/A
Complaints received	Nº	26
Complaints resolved	Nº	26
Compliments received	Nº	1
Internal EMS audits	Nº	13
Internal Health and Safety audits	Nº	10
Accreditations	Nº	0
External EMS audits	Nº	1
RIDDOR incidences	Nº	0
Injury frequency rate	Nº	0.1
EMS prosecutions	Nº	0
EMS financial penalties	£	0
Health and Safety prosecutions	Nº	0
Health and Safety financial penalties	£	0
EMS non-compliance reports	Nº	15
Health and Safety non-compliance reports	Nº	5
EMS non-compliance resolved	Nº	0
Health and Safety non-compliance resolved	Nº	0

Table 8. People - Policy	Metric	Measures
Consultation responses	Nº	5
Policy briefings	Nº	208
Strategy reviews	Nº	1
Policy reviews	Nº	0
New policies	Nº	0

Table 9. MRWA consumables	Metric	Measure
Office electricity	kWh	48,393
Office water	Litres	1877.513846
Office gas	kWh	3,580
Office recycling	kgs	2,000
Office confidential paper recycled	Kgs	61
Steam generated from energy-from-waste	Tonnes	80,633
Renewable energy for homes	Nº	41,801

Table 10. Carbon Footprint	Metric	Measure
Emissions from closed landfill sites	CO2e t	717.80
Staff commute on public transport	CO2e t	0.49
Office electricity consumption	CO2e t	48,392.54
Office water consumption	CO2e t	1,877.51
Office paper	CO2e t	0.07
Website server	CO2e t	0.21
Furniture recycling	CO2e t	0.14
Food waste reduction	CO2e t	2.09
Textile reuse	CO2e t	0.36
Annual Carbon report	CO2e t	40,954.27
Veolia carbon emissions		
Electricity	CO2e t	1,491.09
Site vehicles	CO2e t	1,199.79
Waste transfer between sites	CO2e t	431.60
Waste transfer to final sites	CO2e t	245.90
Water consumption (supply and treatment)	CO2e t	8.91
Suez carbon emissions RTLS		
Waste transfer between sites (train, diesel)	CO2e t	3,711.75
Waste transfer to final sites	CO2e t	n/a
Water consumption (supply and treatment)	CO2e t	0.30
Waste transfer between sites (road)	CO2e t	147.55
Site vehicles (diesel)	CO2e t	809.72
Electricity consumption	CO2e t	679.11
Natural gas	CO2e t	3.16
Water consumption (supply and treatment)	CO2e t	see above
Suez carbon emissions Wilton		
Natural gas	CO2e t	2,544.24
Electricity consumption	CO2e t	586.02
Water consumption (supply and treatment)	CO2e t	307.75
Waste bottom ash	CO2e t	63.05
Site vehicles (diesel)	CO2e t	83.11
Waste fly ash	CO2e t	6.61
Contingency	CO2e t	21,509.08
Landfill	CO2e t	27,872.77

Table 11. Biodiversity	Metric	Measure
Total area of MRWA estate	Ha	147
Total area of closed landfill sites	Ha	117
Total area of facilities	Ha	30
Area of land restored	Ha	0
Trees planted	No	0
Hedges planted	m	0
Phase 1 Habitat surveys completed (Landfill sites)	N°	6
Phase 1 Habitat surveys completed (HWRCs)	N°	9
Wildlife habitats protected or created (pond)	m2	1600 (0.16Ha)
Carbon sequestration from planting	kgs	0

Table 12, Closed Landfill Sites and Facilities: Phase 1 Habitat Surveys

Site	Classified Habitat	Site Area (ha) - overall	Site area (ha) of habitat	Dominant habitat	% covered	Invasive species
Bidston Moss	-	34.5	-	-	-	-
Billinge Hill Quarry	Unimproved acid grassland	11.5	Not detailed in report	Not detailed in report	Not detailed in report	Giant hogweed (<5%) Japanese knotweed Himalayan balsam Rhododendron Spanish or hybrid bluebell Water fern Parrots feather Floating pennywort
	Unimproved neutral grassland					
	Acid/neutral rock exposure					
Foul Lane	Dense Scrub	9.4	5.35	Scrub (bramble)	60.4	Giant hogweed Japanese knotweed Himalayan balsam
	Modified Grassland		1.25			
	Broad-leaved woodland		1.13			
	Aquatic marginal vegetation		0.97			
	Neutral Grassland		0.59			
	Pond		0.06			
	Artificial unvegetated unseal surface		0.02			
Red Quarry	-	3.0	-	-	-	-
Roughdales	Broadleaved Woodland	7.6	4.35	Broadleaved Woodland	52.75	

	Modified Grassland		3.9	Modified Grassland	47.25	
Sefton Meadows Ext. II	Agricultural cropland	42.1	39.25	Agricultural cropland	39.2	None noted
	Grass		1.36			
	Scrub		0.94			
	Broadleaved woodland		0.69			
Sefton Meadows Ext. III	Broadleaved woodland	23.2	13.07	Broadleaved woodland	51.92	None noted
	Scrub		8.53	Scrub	33.87	
	Grass		3.58			

Table 13. Economy	Metric	£
Annual turnover (service costs)	£	78,998,000
Investments in infrastructure	£	244,105
Cost per household of disposal of residual waste	£	62.55
Average cost per tonne to dispose of residual waste	£	100.34
Suez Community Fund (in-direct)	£	50,000
Monies granted by MRWA/Veolia Community Fund	£	165,000
Southport Eco Centre (grant)	£	15,000