

Annual Sustainability Report 2021-2022



MFT Sustainability Team V 1.0

Contents

Introduction	03			
City Wide Perspective				
Vision & Overarching Ambitions				
Carbon Footprint 2021/22				
Carbon Budget				
Risks & Opportunities				
Performance Report				
Sustainable Models of Care	11			
Digital Transformation	12			
Supply Chain & Procurement	13			
Medicines	14			
Food & Nutrition	15			
Estates & Facilities	16			
Travel & Transport	17			
Climate Change Adaptation	18			
Green Space & Biodiversity	19			
Workforce, Networks & System Leadership	20			
Conclusion	21			
Appendix A: KPI Dashboard				
Appendix B: Carbon Footprint Breakdown				
Find Out More				



Data

Introduction



2021/22 has seen continued momentum for delivery of the Green Plan actions across Manchester University NHS Foundation Trust (MFT) despite the ongoing pressures of the pandemic and the elective recovery. The Green Plan provides us with a framework to deliver sustainable healthcare and has complemented some of the clinical innovations seen this year. Roll out of initiatives such as virtual outpatient appointments and 'Patient Initiated Follow Ups' accelerated during the pandemic, delivering sustainability co-benefits by reducing patient travel and unnecessary appointments.

April 2021 marked a key milestone for MFT as we welcomed North Manchester General Hospital (NMGH) to the Trust. We have rebaselined our carbon footprint to take this into account, and we can now look for further opportunities to scale up decarbonisation initiatives (especially where they also improve patient care), learn from one another and positively influence a large workforce of 28,000 staff.

The health and wellbeing of MFT colleagues has remained an important priority as we've tackled service pressures through the pandemic. Staff have shown remarkable resilience, and our sustainability goals have not been viewed in isolation from this broader issue. We have developed and enhanced our green spaces and provided the 'Green Rewards' engagement programme for staff to support their physical, mental, and financial wellbeing through sustainability action.

The Trust has successfully secured over £7.5 million of funding for energy infrastructure investments this year, further contributing to improving efficiency and reducing our carbon impact. At present these initiatives are having significance beyond the environmental benefit, helping to mitigate the impact of energy price rises as well as improving Trust energy security.

This year's experiences demonstrate the interconnectivity of climate change to wider economic and societal issues, and how the 'green' option is generally also the most viable option.

Kathy Cowell OBE DL, MFT Group Chairman, Board Net Zero Lead

Introducing the New Green Plan

The new **Green Plan** was was published in January 2022 and encompasses a total of 67 objectives and supporting projects across 10 areas of focus. This annual report provides a progress update on our overarching net zero ambitions, as well as highlights from the sustainable healthcare programme. The 2021/22 report represents a transition from our previous strategy (Sustainable Development Management Plan 2018 - 2023) and the mobilisation of the refreshed goals outlined in the new Green Plan.





Manchester University Foundation Trust Dr Nick Watts, NHS Chief Sustainability Officer, visits Manchester University Foundation Trust to talk to staff and patients about the steps they are taking to build a #GreenerNHS

City Wide Perspective

MFT has a strong track record for collaboration, and this year, we continued to work closely with the Greater Manchester Health and Social Care Partnership to support the development of the ICS Green Plan, using our experience to help shape system-wide priorities. The NHS Greater Manchester Green Plan will go for Board Approval in 2022/23 and we will work closely with stakeholders from a range of healthcare settings to support effective delivery.

We worked in conjunction with another Trust to assess the feasibility of several on-site waste treatment technologies, and we have been active members of Greater Manchester working groups focusing on the decarbonisation of travel, transport, procurement, and estates. We continued to work closely with the GMCA, being part of a successful collaborative funding bid for the Public Sector Decarbonisation scheme (PSDS) and we also continued to provide leadership capacity to the North West Greener NHS programme, working closely with our national colleagues.

Rob Jepson, MFT Group Director of Estates and Facilities





Data

Vision & Overarching Ambitions

Our sustainability vision is to provide greener, safer, more consistent care that is fit for the future. This means carbon considerations are integrated into decisions for patient care; all staff, contractors and suppliers are fully aligned with our net zero ambition; and we take a more holistic, collaborative, and preventative approach to community health. To achieve this vision we have two overarching ambitions:

- to be net zero carbon for those emissions we directly control (e.g. energy, waste, anaesthetic gases) by 2038
- to be net zero carbon for those emissions we can influence (e.g. our supply chain and travel by patients and visitors) by 2045

The range of activities involved in achieving our vision and overarching ambitions goes well beyond the traditional focus on buildings and infrastructure, encompassing broader opportunities such as what we buy, how we prescribe and when we utilise digital technology. The ten areas of focus align with national NHS priorities and represent where we will direct our efforts to reduce carbon emissions and improve sustainability alongside health outcomes.



Carbon Footprint 2021/22



In 2021/22, carbon emissions from MFT have increased: both the Carbon Footprint (those emissions we directly control) and the Carbon Footprint Plus (those emissions we influence, in addition to those we directly control).

- The Carbon Footprint Plus increased by 14.1%, mainly due to a large spending increase driving up carbon emissions from our supply chain
- The Carbon Footprint rose marginally by 1.4%, due predominantly to increased natural gas use, as well as greater use of anaesthetic & medical gases compared to 2020/21

The supply chain footprint remains by far the largest proportion of our Carbon Footprint Plus, with the rise in spend in 2021/22 having a significant impact on total overall emissions.

Energy is still the highest contributor to our direct emissions. Despite reducing electricity use by 16.6%, the carbon savings made were counteracted by rising natural gas consumption. Gas emissions now account for 56% of the Carbon Footprint, compared to 44% in our baseline year.

Medical gas use (nitrous oxide and Entonox) is the largest direct emitter outside of energy and has also increased this year in line with service recovery.

1. The 2021/22 Carbon Footprint, Carbon Footprint Plus, remaining Carbon Budget, and projected 2022/23 emissions have been updated compared to those reported in the MFT 2021/22 Annual Report.

- This is because of access to more complete energy data sets, anaesthetic and medical gas data, and fleet data for quarter four of the reporting period, in addition to access to more accurate carbon factors for financial year 2022/23.
- 2. Staff Commuting and Patient & Visitor travel emissions are modelled using the Health Outcomes of Travel Tool, based on generalised assumptions and carbon factors last updated in 2019. As a result, the confidence in accuracy of emissions is comparatively low to other areas of the Carbon Footprint Plus. This method is the best available to us at time of calculation.

Carbon Footprint 2021/22

These rises in our carbon emissions bring into sharp focus the need for more accelerated and coordinated action to reach our net zero carbon overarching ambitions.

- As an organisation with a strong track record of groundbreaking developments and collaborations, we encourage and welcome low carbon innovations from our suppliers. Low carbon or waste reduction claims must be material, robustly evidenced and have potential for scaling across the wider NHS.
- We advocate for staff to consider what they are buying directly, or using in their teams or departments, and act on opportunities for efficiencies and savings to be made.
- Significant progress is needed for medium-long term strategies for heat decarbonisation, reducing our reliance on gas, one of the most carbon intensive fuels.
- There is strong consensus and guidance on how to reduce emissions from medical gases, we must now act on this at all Trust sites. Outdated nitrous oxide infrastructure which causes high levels of waste should be decommissioned, and best practice instilled at the point of use to avoid unnecessary wastage.

For a detailed breakdown of 2021/22 data, go to Appendix A: KPI Dashboard



Figure 2: MFT Carbon Footprint Plus Composition 2021/22

Carbon Budget

Our carbon budget relates to those emissions we directly control (Carbon Footprint) and dictates the maximum emissions until we reach net zero carbon by 2038/39. The current interim budget spans from our baseline year in 2019/20 until the end of the Green Plan in 2024/25.

Three years into this carbon budget period, we are currently $11,624 \text{ tCO}_2$ e behind target and have used 61% of the interim budget. Whilst sustained efforts are being made to implement low carbon energy infrastructure across MFT, the scale of these

savings are currently insufficient to counteract increased gas use and meet our reduction targets. The current carbon position reflects that we are in a transitional phase as we plan and prepare our sites for transformational energy projects to decarbonise our heat sources. The first of these will be seen at Trafford General Hospital where an innovative industry partnership has been initiated for works to begin in 2024/25.

Looking to the year ahead, planned energy saving projects, the decommissioning of the Wythenshawe Hospital nitrous oxide

manifold, as well as further decarbonisation of the national grid will generate anticipated carbon reductions of 5,450 tCO₂e (6.9% annual reduction). Unfortunately, these emissions will still exceed our budget, further deepening the deficit and making future annual reductions even more challenging.

Using current predictions, we will exceed our carbon budget for 2022/23 by 2nd February 2023, 57 days before the end of the financial year.



Figure 3: MFT Carbon Footprint & Annual Carbon Budget



The carbon budget sets out the maximum emissions until we reach net zero carbon by 2038/39. Our current interim budget spans from our baseline year in 2019/20 until the end of the Green Plan in 2024/25.

Figure 4: MFT Carbon Budget

Risks & Opportunities



There are several risks and opportunities associated with delivery of the Green Plan to consider for the coming year. We must work collaboratively and pragmatically to ensure we are neither hindered by the risks or overlooking the opportunities:

Risks:

- Making insufficient progress with medium to long term energy infrastructure projects, putting greater short to medium term pressure on the carbon budget.
- Reduced capacity for sustainability engagement and innovation from Autumn 2022 as the major electronic patient record transformation project 'HIVE' is implemented.
- Insufficient clinical project leads/capacity to deliver local transformation projects.

Opportunities:

- Utilising sustainability quality improvement projects as a vehicle for staff wellbeing and development to support workforce recruitment and retention.
- Standardisation through HIVE to tackle areas of potential wastage.
- Improved strategic leadership for sustainability through the new senior level 'Climate Emergency Response Board'.
- Embedding environmental sustainability as a core component of procurement to identify cost savings and use our purchasing power for social good.



Performance Report

The following section provides a summary of key developments and case studies from 2021/22, as well as expectations for achievements in 2022/23, across the ten areas of focus.



Sustainable Models of Care

Adapting care pathways to improve patient outcomes whilst reducing resource use and carbon emissions.

2021/22 Overview

During 2021/22 care pathway innovations have largely been the result of COVID-19 service adaptations which are providing widescale sustainability co-benefits. Primarily targeting low risk outpatients, the extensive use of multi-disciplinary care through video conferencing as well as Patient Initiated Follow Up (PIFU) are making outpatient services more efficient and reducing the need for patient travel. The number of patients moved or discharged to a PIFU pathway has increased throughout 2021/22, from 0.3% in March 2021 to 1.5% in March 2022, encompassing approximately 1,200 patients a month on average.

A new MFT Quality Improvement staff network has been initiated to exchange learnings and facilitate greater innovation at local ward level within the Trust. Nationally, the MFT led James Lind Alliance priority setting partnership on "Greener Operations" received over 1,900 ideas from clinicians, patients and members of the public. This is providing valuable insights for researchers and research funders on the priority opportunities for making peri-operative care more sustainable.

Looking Ahead to 2022/23

There are two significant strategic priorities in 2022/23: reducing the elective care waiting list and the successful implementation of the new electronic patient record system 'HIVE'. Strategic priorities and transformation initiatives will be assessed for their positive and negative impacts on our carbon footprint.

The Sustainable Quality Improvement (SusQI) framework has been identified as a key resource for creating more sustainable care pathways across the broad scope of services provided at MFT. During 2022/23 we will explore how to embed this practice within existing quality improvement requirements, encouraging maximum participation from clinical staff.





"The Transformation Team have been working with the MFT Service Managers to implement PIFU across all our hospitals. Not only does the PIFU pathway allow for huge efficiency improvements in the delivery of healthcare, but

it allows patients to be more engaged and empowered with their health journey."

Meral Mercan-Darby, Delivery Manager leading PIFU roll out, MFT Transformation Team

The PIFU pathway gives patients the flexibility and autonomy to request follow up appointments when needed, instead of pre-scheduled check-ups. The aim of this pathway is to reduce wasted patient and clinician time on unnecessary routine appointments, and support patients with care when they need it. For example, patients have direct access to care during a flare up of their condition. Throughout 2021/22, about 14,500 patients were moved to or discharged to a PIFU pathway; of these we saw 8% returning for an appointment. We estimate this saved us over 13,000 appointments between 2021/22.

Quality improvement (QI) is a key focus and looks to give the staff closest to issues affecting care quality (e.g. nurses, midwives, AHPs, junior doctors) the permission and ability to solve them using an evidence based approach. A new formalised MFT QI network has been established in 2021/22 to build our collective capacity for exceptional QI projects, including the field of 'SusQI', sustainable quality improvement. Wherever QI projects are reducing resource use or improving patient recovery, these are local examples of sustainable models of care. Using the SusQI methodology we can begin to track the carbon impact of this which will contribute to our overarching net zero ambitions.



Data

Digital Transformation

Using digital technologies to deliver and manage healthcare to drive down the carbon intensity of care.

2021/22 Overview

Much of 2021/22 has revolved around preparation for the new electronic patient record (EPR) solution HIVE, due to go live in September 2022. Given the scale and complexity of the Trust, readying staff and infrastructure for this switch has been sizeable. To support HIVE, IT equipment has been upgraded across the Trust, with packaging materials from new equipment and disposal of old equipment leading to large increases in waste. IT and cardboard tonnages have increased 40% and 14% respectively, in addition to high volumes of waste polystyrene. However, we have worked to divert this waste to reuse or recycling centres.

The widespread roll out of Attend Anywhere virtual consultations has integrated digital technology into business as usual across many services with 24.6% of first outpatient appointments and 23.8% of all follow up appointments delivered virtually. This has been facilitated by the use of smart healthcare devices, enabling patients to use monitoring devices remotely whilst clinicians review patient data onsite.

Looking Ahead to 2022/23

HIVE will be the biggest digital transformation project ever initiated at MFT. The system will facilitate improved clinical guality, patient and staff experience, operational effectiveness, and drive research and innovation. The efficiency and changes in working practices are expected to deliver resource savings, which will be observed and quantified over the course of the next year.

HIVE is an ongoing programme of transformation. Following the initial launch, the system will be refined with the roll out of new and improved features.



patients based across the North West. Throughout 2021/22, 1,200 teams conducted 56,000 consultations, saving approximately 150 tCO₂e and over 900 hours of patient time given the reduction in the need for travel.





"There are clear clinical benefits from HIVE, but alongside this there should be efficiencies in our working practices. For example, there will be reduced reliance on paper forms, reduced duplication of work,

reduced waste through efficient working, and fewer nonstandard working practices. This will give us more time to focus on delivering good care, but also ensure that we are working sustainably and efficiently. We're really looking forward to the roll out in September this year."

Rachel Hunter, MFT Digital Matron for CSS

Supply Chain & Procurement

 $\mathcal{C}\mathcal{O}$

Engaging with suppliers to find ways to reduce the carbon impact of the production and transportation of goods and services used. Also avoiding wastage and unnecessary purchases.

2021/22 Overview

The supply chain footprint increased by 16% in 2021/22, due to a combination of more granular financial coding at North Manchester General Hospital (and the initiation of the site redevelopment works), and the return towards business as usual from the height of the pandemic in 2020/21. An in-depth analysis of spend data took place during the year, identifying the most carbon intensive products, suppliers, and purchasers. Actionable insights will be circulated internally and acted upon in 2022/23, working to reduce the supply chain footprint.

We have also been preparing for new national legislation, which, effective from April 2022, applies a minimum of 10% social value weighting to all new tenders, resulting in positive socioeconomic and environmental outcomes. Four tenders were tested with the weighting in advance of this milestone, this included TV information screens and laundry services.

Looking Ahead to 2022/23

Further legislation comes into place in April 2023, requiring all suppliers with contracts above £5 million to publish a carbon reduction plan; given the scale of this requirement, supplier engagement will be led at a national level. However, we will take action using our purchasing data analysis to identify deliverable interventions within our control to deliver.

Product innovation will continue to be a high priority in procurement, with multiple avenues of innovation factoring in sustainability in product development. A new working group will be established to drive forward and review progress on supply chain and procurement targets. This will involve tracking the cumulative carbon impact of product innovation and local purchasing changes. At Trust level, the methods of carbon calculation will also be scrutinised to ensure we are using the best approach and fully capturing carbon savings, as the footprint is currently calculated based on the extent of expenditure.



From April 2022, a minimum of 10% social value weighting will be included within all tenders. Suppliers bidding for NHS contracts must outline how their goods or services will support action on climate change and may also include how well they assist with COVID-19 recovery, tackle economic inequality, provide equal opportunities or improve wellbeing.



"We are in a strong position to influence and encourage our suppliers for social good and can now more consistently reward this through the tender process. Some suppliers are already demonstrating creativity in this

area, for example one supplier, instead of purchasing Christmas gifts for clients, used this budget to buy sleeping bags for people without housing in Manchester. We've already piloted the new rule on four tenders to date and this sends a clear message of intent to our potential suppliers." Duncan Robjohns, MFT Senior Buyer, Procurement MFT is continuously involved with creating and testing innovations that benefit patient experience, staff working conditions, financial efficiencies, and environmental benefits. Products are suggested through various channels, and where proved successful, are rolled out across the Trust. For example, Serres suction liners are now in place Trustwide following excellent staff feedback in an August 2021 trial. The Serres system saves space, is easier to install and change, uses 50% less plastic packaging, and saves £95,000 per year compared to the previous product.



"I'm very lucky in my role to be able to engage with sustainability while working to improve patient care. Procurement choices impact every department across the Trust, so there is huge potential here to think creatively,

efficiently, and innovatively to make sustainable changes. Staff input is crucial for making these transitions, so if you have ideas, I want to hear them!"

Marie Green, MFT Procurement Matron



Moving to lower carbon options for high-impact areas such as anaesthesia and inhalers and tackling medicinal wastage including overprescribing.

2021/22 Overview

Medicines

We have continued to tackle the carbon impact of anaesthetic and medical gases, with a 17.4% reduction in emissions compared to the baseline year, however there was a 4.5% increase from last year due to the rise in patient contacts and elective procedures. This now accounts for 13% of our Carbon Footprint.

The Ditch the Des campaign is well embedded across MFT with desflurane (the most carbon intensive gas) accounting for just 3.4% of intravenous anaesthetics compared to 15.7% in our baseline year. Attention has now shifted to reducing unnecessary use of Nitrous Oxide (N_2O) and Entonox ('gas and air'). A multidisciplinary team has been established at Wythenshawe Hospital where audits have revealed the full extent of N_2O wastage through the hospital's piped infrastructure. Catalytic N_2O destruction ('cracking') technology has also been piloted to capture the environmentally harmful gases at point of use within maternity wards.

Looking Ahead to 2022/23

The decommissioning of piped N_2O at Wythenshawe Hospital is due to take place in 2022/23 and is predicted to save the trust more than 2,200 tCO₂e each year. Building on lessons learned, work will be mirrored across sites to identify where else N_2O cost and carbon savings can be made. Gas capture trials will also be reviewed, with the potential for expansion.

Respiratory pharmacists at Wythenshawe Hospital will be undertaking a sustainable inhaler QI project, carrying out audits and supporting patients to use inhalers effectively to reduce waste, and transition patients to low carbon inhalers where clinically appropriate. To complement this work and scope the full carbon impact of Trust prescribed inhalers, we will include direct emissions from inhalers in our 2022/23 carbon footprint.



Sustainable Anaesthesia



"Our Ditch the Des campaign has led to very effective behaviour change amongst anaesthetists, with only a little further to go until desflurane use ceases completely at the Trust. Now, our focus is on N₋O and

Entonox, where there is potential for even greater carbon savings through improved drug supply practices and the implementation of new technologies."

Dr Cliff Shelton, MFT Anaesthetics Consultant & Sustainability Lead

 N_2O and Entonox now make up 11.3% of the Carbon Footprint. The multidisciplinary Sustainable Anaesthesia Group have identified huge wastage through the current piped N_2O manifold at Wythenshawe Hospital, acting to decommission the manifold and move to cannisters in 2022/23. The project has engaged Clinicians, Estates & Facilities, as well as Senior Leadership, and is a standout in best practice that can be mirrored across MFT sites. Innovative Entonox capture and 'cracking' machines have been trialled in the maternity departments at Wythenshawe Hospital and St Marys. If successful, the machines will reduce carbon emissions from Entonox by capturing and breaking down the gases exhaled by the patient, which will also improve working conditions for staff by reducing their ambient exposure to the gas.



"Across the NHS, up to 8% of all unplanned hospital admissions are due to medication issues, and up to 50% of patients do not take their medicines as prescribed. Across the system, this causes large scale

financial and resource inefficiencies, and suboptimal health outcomes for the communities we serve. Work is ongoing to optimise the use of medicine, resulting in improved quality of care, enhanced patient experience, and a reduction in waste." Charlotte Skitterall, MFT Group Chief Pharmacist

Ensuring the meals served in hospital are nutritionally balanced and low carbon to improve patient experience and recovery rates, alongside tackling food waste.

2021/22 Overview

Food & Nutrition

As we are seeing more patients return to hospital as part of COVID-19 recovery, the need to address food and nutrition, and particularly its impact on the environment, has gained priority.

Food waste monitoring has been enhanced in 2021/22 through expanded food waste management services. New food waste collections have been implemented, now covering all hospitals with inpatient facilities, enabling food waste to be collected, weighed then sent to an offsite anaerobic digestion plant to generate renewable energy.

This year the purchase of single-use plastic catering items has been tracked on a monthly basis, with no MFT budget holders purchasing any single use plastic catering items by the end of 2021/22.

Clinical colleagues continue to focus on the dining experience aspect of food and nutrition with training and support provided through the 'Bee Brilliant' Continuing Professional Development (CPD) programme delivered Trust wide.

Looking Ahead to 2022/23

Initiatives to eliminate unnecessary single use plastic catering items will continue through constructive collaboration with our catering providers, removing avoidable plastics from patient and staff meals.

With the implementation of HIVE and associated digital systems, patient meal ordering will be consolidated across the trust in 2022/23, with live data available on the number of patient meals required. This information, combined with the data from food waste collections, will allow for detailed analysis of food waste hotspots.

In addition, the efficiency improvements facilitated by HIVE should result in more accurate meal ordering and delivery, reducing the likelihood of overproduction of food, or wrongly ordered patient meals.





"Making sure our patients are receiving nutritious and appetising meals is a key part of the patient experience and is a major focus of our work in quality improvement. Uneaten food is bad for patient

recovery as well as the environment, that's why we've had an emphasis on nutrition and hydration within our flagship 'Bee Brilliant' learning and development programme in 2022. Through proactive feedback and awareness raising we've been supporting our nurses and allied health professionals to provide the best possible dining experience for our patients."

Gail Meers, MFT Corporate Director of Nursing, Quality and Patient Experience Waste management services have been expanded in 2021/22 with new food collections launched at Wythenshawe Hospital and North Manchester General Hospital, emulating the existing services at ORC and Trafford General Hospital. This allows greater volumes of kitchen food waste to be diverted away from standard general waste collections towards specialist off-site anaerobic digestion, which generates renewable energy and reduces the carbon impact of each kg of food by over 30 times. With an additional 122 tonnes of food waste now channelled through this expanded service, this has prevented over 40 tCO₂e being emitted – the equivalent carbon impact of driving an average car 4 times around the circumference of the globe!

Estates & Facilities

Implementing low carbon processes and technologies for heating, electricity, water, and waste to avoid unnecessary uses of resources.

2021/22 Overview

Energy remains the largest component of the Carbon Footprint at 83%. Despite reduced electricity consumption and a lower use of backup oil boilers, carbon savings were counteracted by an increase in gas consumption of 9.1%, resulting in an overall increase in energy emissions by 1.1%. Over £7.5 million low carbon infrastructure investments were made in 2021/22 to increase renewable energy capacity and energy efficiency. These projects will help protect against rising energy prices, improve energy security, and achieve further carbon savings.

Total volume of waste increased by 10% in 2021/22, consistent with patient contacts which increased by 9% as services returned to normal operation. Handling the changes in waste stream tonnages from COVID-19, PPE use, and the roll out of HIVE infrastructure has been an operational focus of the Waste Team, with new waste streams piloted to deal with this in the least carbon intensive way possible.

Looking Ahead to 2022/23

The carbon savings from the low carbon energy infrastructure investment will be fully realised in 2022/23, with annual estimated savings of 1,300 tCO₂e. Work will be conducted to identify priority projects for future funding applications and secure further investment. Given the carbon intensity of gas is unlikely to fall significantly, attention is now being focused on medium to long term plans for heat decarbonisation. In particular, an innovative partnership with industry will be initiated to make Trafford General Hospital the first fully net zero carbon hospital in the country.

The Trust-wide clinical waste contract will be reviewed and retendered, presenting an opportunity to work with contractors to reduce the environmental impact of waste disposal and increase social value. Further roll out of low carbon waste streams will also be pursued, including offensive waste, recycling, and reusable sharps bins at all sites.



Funding obtained through the Public Sector Decarbonisation Scheme has led to a breadth of new and upgraded infrastructure, including new solar panels (PV arrays) which generate renewable electricity, ground source heat pumps which provide gas-free heating, energy efficient LED light fittings, as well as boiler controls and building management systems to ensure buildings are managed optimally depending on their use.



"As a result of outstanding collaborative work across the Trust and from different stakeholders, we've been able to deliver this breadth of impressive energy and carbon saving schemes. Opal House at Wythenshawe

Hospital is now gas free, and we have increased the amount of electricity generated annually from onsite renewables by 51% in just the few months the new solar PV arrays have been in operation. We will continue to work hard to find short, medium, and long-term opportunities to minimise the carbon impact of the energy we use."

Mark Foden, MFT Group Head of Energy & Transport

In 2021/22, a strategic decision was made to review potential cost and carbon savings by switching to onsite treatment of waste. MFT partnered with Northern Care Alliance NHS Foundation Trust to undertake the review to explore the feasibility for a more sustainable, regional approach to healthcare waste handling, as an alternative to existing offsite specialist disposal plants. Through an independent third party, the fundamentals of current waste processes were assessed then compared to the impacts of utilising new onsite technology. The review concluded that the technologies do not currently offer a materially significant sustainability benefit, although this work has facilitated greater focus on a long-term strategy for waste disposal and provided us with a framework to continue to assess new technologies against current practice. Data

Travel & Transport



Avoiding unnecessary travel and shifting to lower carbon modes of transport for the movement of people and goods.

2021/22 Overview

The past year has seen a return towards normal levels for travel and logistics across MFT, demonstrating the transition back to standard service delivery. As a result, the associated carbon has shown an annual increase (35%), reflecting greater mileage from staff commuting, patient and visitor travel. Progress has been made to transition away from Trust owned petrol and diesel vehicles, with 10 now replaced by electric vans.

We have continued to operate two inter-site shuttle bus services to support sustainable business and patient travel, with staff patronage increasing in comparison to pre COVID-19 levels, supporting carbon benefits and financial savings through avoided travel expenses. We have also been proud to expand the e-cargo bike service that transfers samples from GP practices to MFT labs, now employing two cyclists covering a distance of 175km per week and saving around 5 tCO₂e per year.

Looking Ahead to 2022/23

A sustainable travel working group will be established to oversee interventions for carbon reductions in travel and transport. The group will identify and progress opportunities associated with all aspects of travel, to meet carbon goals as well as improving staff and patient wellbeing. This will particularly focus on greater active travel and avoided travel to reduce carbon and air pollution.

External innovation funding was successfully approved in 2021/22 to trial smart cycle parking solutions. Ten secure spaces will be accessible for staff, patients, and visitors via an app at Wythenshawe Hospital. Furthermore, 44 new secure cycle parking spaces for staff will be delivered across the estate.

A proposal will be considered to restrict the staff salary sacrifice scheme to low and zero emissions vehicles only and the Trust fleet will continue to decarbonise, using more zero or ultra-low emission vehicles as leases and lifecycle replacement continues.



Our bike courier service is provided by Toby and Lucy from Chorlton Bike Deliveries. They use e-cargo bikes to collect samples from local GP surgeries and pharmacies, and deliver them to the laboratories at Wythenshawe and Oxford Road hospitals. This has replaced trips that were previously made using the electric vans, which are now able to conduct an enhanced scheduled delivery and parcel service across MFT. In turn, this has replaced outsourced courier and taxi trips, saving approximately 5 tCO₂e per year, plus around £19,000 per year on avoided taxi and courier costs.

"I've been cycling seriously for around 5 years and I've had a few different bikes, but the best bike I've had the pleasure of riding is the electric cargo bike. A lot of motorists give me space on the road because of the trailer and it really stands out. I get paid to do something I love, wave at mystified children and make receptionists smile when I collect the samples, it's brilliant"

Lucy Quinn, Cycle Courier, Chorlton Bike Deliveries (pictured above)



"Following the success of our pilot scheme last year, I'm very happy to have welcomed two bike couriers into our Transport Team. The bikes are used for our smaller local jobs, which means we have been able to use our

electric vehicle fleet more effectively. Overall, these fleet changes have saved carbon, and reduced air pollution in the local area."

Kevin Salter, MFT Transport Manager

Climate Change Adaptation

Making sure our buildings and services are prepared for the impacts of extreme heat or flooding events.

2021/22 Overview

During 2021/22 we have continued to experience the impacts of climate change in Greater Manchester, with flooding, extreme heatwaves, and a very mild winter.

Action for climate change adaptation has largely taken place in the form of infrastructure upgrades across parts of the site. Many of these have the dual function of lowering the carbon intensity of building stock while diversifying energy supply, for example the installation of solar panels and ground source heat pumps. in addition to Combined Heat and Power plants at some sites. These developments are increasing our resilience and reducing our dependency on the national grid which can be vulnerable during extreme weather events.

Adaptation also involves preparing for changes in disease patterns relating to climate change. Within this field, we have members of staff conducting research on the prevalence of pathogens relating to climate change in the general population. It is crucial that we build our understanding of how climate change will affect the health demands of the population, so that we can plan ahead and make sure we can meet the needs of our communities

Looking Ahead to 2022/23

A more focused and consolidated approach to climate change adaptation will be made in 2022/23 as we develop a multidisciplinary approach to prepare both clinical services and building infrastructure. We will raise greater awareness of adaptation issues among staff to develop their understanding of the short to medium term impacts of climate change, and what actions they can take locally to complement broader infrastructure improvements.

Adaptation principles should also be built into backlog maintenance management, to ensure all capital work is equipping our buildings for the impacts of climate change.

Service planning must continue to account for the impacts of climate change, particularly in respiratory fields where we know climate change exacerbates pre-existing conditions.





"We must make effective decisions now to ensure our building stock, infrastructure and services are future proof. Our buildings need to be able to function effectively during extreme weather events, so we can continue

delivering care to our patients, and our staff are able to work in safe and comfortable environments."

Stuart Malcolm, MFT Head of Estates Development



"Working within the Manchester Medical Microbiology Partnership (MMMP), a collaboration between MFT and the UK Health Security Agency (UKHSA), and as a legacy action from my role as COVID-19 testing lead for COP26 as part of a COVID-19 sabbatical post with Public

Health Scotland (PHS), I am excited at the opportunity to continue to apply my expertise in the **infection aspects of** climate change.

Working with colleagues in the UKHSA Centre for Climate and Health Security, we aim to collectively develop a surveillance system to track priority pathogens likely to become more prevalent due to climate change. Tracking this impact of climate change is vital to adaptation, as we need to understand and monitor the repercussions on our health from novel infection threats. With the information bank created through this project and through situation reporting, we'll be able to act with more certainty at the right time to avoid health catastrophes."

Dr Stephanie Thomas, Consultant Medical Microbiologist, MFT and Public Health Scotland

Green Spaces & Biodiversity

Utilising our onsite green spaces to benefit people and the environment.

2021/22 Overview

Greater emphasis has been placed on accessible gardens for staff and patients with two new infrastructure projects initiated over the last 12 months. A staff focused health and wellbeing space at Wythenshawe Hospital and an ICU patient garden at North Manchester General Hospital are providing new resources for staff wellbeing and patient recovery.

Bespoke bee-keeping training was provided to a new cohort of staff volunteers to care for our rooftop beehives at our Oxford Road Campus. As one of our flagship biodiversity projects this has been an important step to upskill more staff and secure the long-term future of the initiative.

Staff have been encouraged to connect with nature through nature focused actions embedded within the 'Green Rewards' engagement platform, with 3,196 nature-based actions recorded including lunchtime walks, contributing to a wildlife survey, and growing vegetables.

Looking Ahead to 2022/23

Celebrating and supporting staff who are engaged with onsite green space activities, we will develop a new staff network to facilitate the sharing of good practice for maintaining spaces and coordinating activities for staff and patients. Through this network we will better understand the conditions for utilising green spaces for patient recovery and explore how this can be improved across sites.

We will trial the national No Mow May campaign and other biodiversity opportunities to understand how our maintenance contracts and working practices can more consistently support local biodiversity.





"Access to green spaces has a direct and indirect impact on people's physical and mental health. There is strong evidence to indicate that the connection with nature and access to green spaces is associated

with higher levels of physical activity and reductions in a number of long-term conditions such as heart disease and musculoskeletal disorders. It's terrific to see a number of locality-based workplace walks taking place and as more interesting, accessible green spaces are created, the impact on staff health and wellbeing should be significant."

Gareth Beck, MFT Employee Health & Wellbeing Programmes Lead Mentored by experienced beekeeper, Dr Andrew Mockridge, our staff have been managing four hives gaining practical skills to support local biodiversity.



"Beekeeping is a very rewarding hobby. At the height of summer, each hive may have as many as 50,000 bees. They are a vital contributor to pollination and play an important role in maintaining a healthy

environment. The project has a diverse range of staff volunteers throughout the trust. Many feel the project has allowed them to de-stress from their busy day jobs and has enabled them to enjoy a hobby that otherwise may not be possible from home. We are very proud of our volunteers and are grateful for their commitment and contribution to what is a unique and important project."

Dr Andrew Mockridge, Speciality Training Registrar in Anaesthesia & Intensive Care Medicine



Workforce, Networks & System Leadership

Engaging the workforce so that our workforce has the skills and awareness to take action on the sustainability agenda including staff learning and development, and undergraduate and postgraduate teaching.

2021/22 Overview

Our flagship staff engagement programmes, Green Impact and Green Rewards, provide a framework to support staff to take local action. Whilst only 10 of the 31 engaged departments were able to reach Green Impact accreditation (due to COVID-19 constraints), overall we engaged 700 staff through these programmes. We also undertook a staff consultation for the new Green Plan, which highlighted the need for greater visibility of initiatives relating to sustainable models of care, medicines, and supply chain, therefore expanding staff sustainability awareness beyond traditionally estates-based issues.

New opportunities for sustainability learning and development have been tested this year, with a new e-learning module 'Building a net zero NHS' launched on the e-learning platform, as well as more targeted Carbon Literacy training piloted with procurement colleagues.

Our staff have been active leaders in sustainable healthcare across Greater Manchester, the North West, and the broader healthcare system. Clinical and non-clinical colleagues are driving forward sustainability opportunities in education, research, clinical, and estates management fields, to support others throughout the NHS.

Looking Ahead to 2022/23

The new Green Plan has been an exciting opportunity to re-launch the sustainability vision for MFT. Staff engagement activities will continue through 2022/23 to raise the profile of our priority areas, and support staff to develop their skills and awareness for the relevant opportunities to their roles.

Existing sustainability governance structures and networks will be reviewed to ensure these are fit for purpose. Particular attention will be given to identifying new leaders across MFT who are positioned to embed the aspirations of the Green Plan into their business-as-usual processes and decision making.



The Neonatal Intensive Care Unit in the Royal Manchester Children's Hospital received a Platinum Green Impact award in 2021 for their project to reduce consumables and single use plastics. By reviewing their processes the team were able to reduce the extent of bottled water use for babies, using tap water instead where clinically appropriate, which over the pilot period saved over 4,000 single use plastic bottles and over £1,250. The team also encouraged parents to be proactive in utilising their own items in hospital (e.g. blankets, bottles and nappies) to empower them to be involved and in control of choices being made for their baby, and providing practical advice on more sustainable product options.



"Every day in my job as a Materials Management Supervisor I see the vast quantity of medicines, equipment and consumables used on our wards. When you consider the environmental impact of the

production, packaging, and transportation of each of these items, the carbon impact must be huge! **This inspired me to be part of a new working group focusing on Sustainable Procurement across MFT**, working with colleagues I wouldn't ordinarily engage with and developing my skills for sustainability. This is an emerging field, so it's really exciting to be part of the team trying to make positive changes across MFT."

Carrie Kelly, MFT Materials Management Supervisor, Procurement

Conclusion

The breadth of projects and individuals represented within this year's annual report demonstrates the start of a new phase for sustainability. Supported by more specific objectives within the Green Plan and a renewed governance structure, we are now better equipped than ever before to deliver sustainable healthcare across our 10 hospitals.

However, despite concerted efforts, the bounce back of elective care in addition to increased use of gas has increased our carbon impact, both for our Carbon Footprint (dominated by energy) and Carbon Footprint Plus (dominated by the supply chain).

The outlook for energy remains challenging and decarbonising heating across the estate is a major infrastructure challenge for the medium to long term. This concern is not unique to MFT, however the quicker we can successfully transition away from gas, the more likely we are to reach the 2038 net zero target.

The opportunities for procurement are vast, and we have a strong appetite for genuinely sustainable product trials. Whilst we await national developments for more sophisticated procurement carbon reporting, as well as more widescale sustainable production across the supply chain, we will continue to focus on reducing wastage and adopting the best currently available products and services to save resources and money.

To enable us to successfully meet our sciencebased net zero targets (encompassing our ambitious carbon budget), we must now prioritise those opportunities which return the greatest carbon savings.

Furthermore, sustainable action across the Trust cannot happen in silos. A more holistic approach is needed for sustainable business decision making, to ensure activities across the organisation are complementing rather than counteracting each other.

This annual report reflects only the beginning of our journey through our 2022-2025 Green Plan, and continued efforts including training and communications will be needed next year to embed this and identify more formal and informal leaders for sustainability. Our staff are a hugely important component of our vision for sustainable healthcare, and their development will be pivotal to increase the Trust wide knowledge and capacity for sustainability.



Appendix A: KPI Dashboard

- **Carbon:** TThe large increase in the Carbon Footprint Plus resulted from increased supply chain spend. Staff, patient, and visitor travel distances all increased given return to normal services at the hospitals after the disruptions of COVID-19, leading to an increase in the community footprint. Despite a small rise in the absolute value of the Carbon Footprint, the upturn of patient contacts in 2021/22 equated to a drop in the normalised Carbon Footprint.
- Utilities: Gas consumption rose, and electricity fell after a full year's operation of Combined Heat and Power units (CHPs) at three sites. Onsite renewables generation saw impressive increases resulting from infrastructure investments into solar panels at multiple sites. Water consumption returned to pre-COVID-19 levels with the increase in patient contacts, however a reduction in the national water carbon intensity meant emissions fell overall.
- Medical & Anaesthetic Gases: Increases directly resulted from the return of elective surgeries after service disruption in 2020/21, and the drive to clear the resulting backlog.
- Waste: Waste disposal changes represent the fluctuations caused by COVID-19, both in 2020/21 and 2021/22. The return of services, as well as widespread PPE use, has led to a rise in healthcare and non-healthcare waste. Although when normalised by patient contacts, this resulted in a lower waste tonnage per patient in 2021/22. Cardboard and WEEE waste from HIVE preparation, as well as food waste roll out, has caused increases in recycled and reused non-healthcare waste.
- Travel & Transport: Many areas of travel and transport increased in mileage due to the relaxation of COVID-19 related restrictions on travel, more office-based working, as well as the recovery of services seeing more patients and visitors travelling to the hospitals. Fleet mileage increased drastically as reporting processes were improved, more accurately capturing all vehicles operated by the trust.

Theme	КРІ	Unit	2019/20*	2020/21*	2021/22	Trend from Prev Year (21/22 vs 20/21)	Trend from Baseline (21/22 vs 19/20)
Carbon	MFT Carbon Footprint	tCO ₂ e	84,949	77,901	78,985	1 %	V 7%
	Community Carbon Footprint	tCO ₂ e	25,790	18,309	24,880	1 36%	4%
	Supply Chain Carbon Footprint	tCO ₂ e	314,274	280,231	325,823	1 6%	1 4%
	MFT Carbon Footprint Plus	tCO ₂ e	425,013	376,442	429,688	14%	1 %
	Normalised MFT Carbon Footprint	Kg CO ₂ e / patient contact	31.37	37.71	34.53	♦ 8%	↑ 10%
Utilities	Natural Gas Consumption	kWh	180,188,024	189,847,881	207,186,726	1 9%	1 5%
	Electricity Consumption	kWh	95,032,414	83,077,135	69,254,736	17%	V 27%
	On-site Renewable Generation	kWh	99,799	86,559	130,913	† 51%	1 31%
	Water Consumption	m ³	800,124	695,866	751,959	1 8%	6%
	Normalised Energy & Water Carbon Footprint	Kg CO ₂ e / patient contact	25.30	31.59	28.69	V 9%	↑ 13%
Medical & Anaesthetic Gases	Volatile Anaesthetic Gases	tCO ₂ e	1,674	359	534	1 49%	68%
	Medical Gases	tCO ₂ e	10,713	9,430	9,694	1 3%	V 10%
Waste	Total Waste	Tonnes	7,932	7,531	8,279	1 8%	1 4%
	Healthcare Waste	Tonnes	3,613	3,539	3,832	♦ 8%	† 6%
	Healthcare Reuse & Recycling	Tonnes	57	74	64	13%	12%
	Non-Healthcare Waste	Tonnes	2,972	2,498	2,681	1 7%	V 10%
	Non-healthcare Reuse & Recycling	Tonnes	1,290	1,420	1,175	1 20%	1 32%
	Normalised Total Waste	Kg waste / patient contact	2.93	3.65	3.62	V 1%	1 24%
Travel	Total Fleet Mileage	km	697,042	567,135	1,279,677	126%	1 84%
	Total Business Travel Mileage	km	9,405,211	4,193,162	4,630,969	10%	V 51%
	Modelled Staff Commuting Mileage	km	146,295,961	139,496,383	154,981,965	1 1%	† 6%
	Modelled Patient & Visitor Travel Mileage	km	99,625,822	65,645,680	84,314,255	1 28%	15%

Appendix B: Carbon Footprint Breakdown





The largest changes to the Carbon Footprint Plus have predominantly been caused by increases in emissions from the supply chain. A rise in spend and carbon is consistent across most categories of spend, with significant carbon emissions increases in Construction (19% increase in spend, now 38% of supply chain footprint), and Medical Equipment (12% increase in spend, now 22% of supply chain footprint). 'Other Supply Chain' categories of note are Commissioned Health & Social Care Services (167% increase in spend, now 6.5% of supply chain footprint), and Business Services (22% increase in spend, now 16% of supply chain footprint). The current methodology used to calculate the Supply Chain Footprint is closely aligned to financial spend. To capture low carbon innovations more precisely with our suppliers, we will be proactive in piloting new reporting approaches as they become available.

The carbon impact of gas consumption has been magnified, as the national carbon intensity of gas rose by 3% in 2021/22. As a result, impressive savings in electricity emissions were counteracted. Modelled staff commuting emissions have risen

significantly, this encompasses greater levels of site-based working as well as assumed shifts in modes of transport.

The cumulative fluctuations in other categories of the Carbon Footprint Plus have had a comparatively small impact overall, given the scale of supply chain spend on the total footprint.



Find Out More

If you have any questions, or would like to find out more about the work that we are doing please contact us via email: ECOteam@mft.nhs.uk

View the full MFT Green Plan

Staff can find practical sustainability advice from MFT on the <u>intranet</u> Receive regular updates via the monthly MFT <u>sustainability newsletter</u> This document was produced by the Energy & Sustainability Team at Manchester University NHS Foundation Trust:

MFT Estates and Facilities International House Ledson Road Manchester M23 9GP





This Bio-bin