Nottingham and Nottinghamshire ICS Green Plan 2022 to 2025

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Executive Summary

In '*Delivering a 'Net Zero' National Health Service'* the NHS sets out its ambitions to become the world's first Net Zero Health Service, with trajectories to reach net zero carbon emissions by 2040 for emissions it controls directly and 2045 for those it can influence. The trajectories are ambitious, while realistic with action and commitment to innovation. The Nottingham and Nottinghamshire ICS Green Plan outlines the specific actions and priority interventions for achieving carbon net zero to lay the foundation to deliver carbon emission reductions through the delivery of sustainable health and care services.

Climate change refers to the large-scale, long-term shift in the planet's weather patterns and average temperatures, and is the single biggest threat facing humanity. The Intergovernmental Panel on Climate Change (IPCC) has concluded that to avert catastrophic impact the world must limit temperature rise to 1.5°C.

The climate emergency is a health emergency. It threatens the foundations of good health, with direct and immediate consequences for our patients, the public and the NHS. Responsible for circa 4% of England's carbon emissions, the NHS has made a commitment to support the nation's response to climate change. Delivering a net zero NHS will not only reduce the impact on climate change, but will realise significant health benefits. By the year 2040, this trajectory would see an estimated 5,770 lives saved a year from reductions in air pollution and 38,400 lives saved per year from increased levels of physical activity. Addressing climate change has the potential to exacerbate conditions for the most vulnerable. Acknowledging the links between climate change, sustainable development and health inequalities is an important consideration in the development of priority actions within the ICS Green Plan, with a commitment to deliver joint action to reduce health inequalities.

The Nottingham and Nottinghamshire ICS Green Plan will support our diverse population of 1.2 million people. The development of the Green Plan has involved engagement and contributions from stakeholders across professions, organisations and in collaboration with local authorities and other system partners. Building on the commitments already made by our statutory partner organisations, the actions developed aim to meet the carbon emission reductions as defined by the NHS Footprint Plus for our local area and across nine areas of focus.

- **Workforce and System Leadership** - Success in delivering net zero depends on system leadership and the support of staff, with education to raise awareness and engagement to adopt sustainable practices. Our ambition is to: provide leadership to deliver net zero ambitions; engage the public and our workforce in the actions required to deliver sustainable healthcare locally; provide education and training to enhance carbon literacy.

- **Sustainable models of care** – 60% of carbon emissions are linked to clinical pathways and associated supply chain and human resource. Our ambition is to: develop holistic pathways to deliver quality care outcomes, with a focus on prevention, self-care and equity of access; meet the ambitions to deliver care closer to home; deliver lower carbon interventions where clinically relevant.

- **Digital transformation** – Critical priorities have been identified seeking to mainstream digitally enabled care across all areas of the NHS. Our ambition is to: deliver digital appointments and services where clinically relevant; connect clinicians and patients; digitise processes to enhance clinical care delivery.

- **Travel and transport** – Approximately 3.5% of all road travel in England relates to patients, visitors, staff and suppliers in the NHS. Our ambition is to: promote sustainable transport and reduce overall transport, increase the use of ULEV and ZEV vehicles; develop the infrastructure to support lower carbon transport options; enhance understanding and communication via Green Travel Plans
- **Estates and facilities** – NHS estate and its supporting facilities comprise 15% of the total carbon emissions profile. Our ambition is to: continue to reduce carbon emissions through smart energy strategies; correctly manage waste across the system with improved recycling and prevention; to recognise water as a valuable resource in the sustainability journey; promote green spaces and biodiversity in all estate developments
- **Medicines** – Account for 25% of emissions within the NHS, with a small number of medicines accounting for a large proportion of emissions. Our ambition is to: develop strategies to support commitment to lower inhaler carbon footprint; deliver medicine optimisation for patients prescribed inhalers; reduce the environmental impact of inhaler waste; reduce carbon footprint from anaesthetic gases.
- **Supply chain and procurement** – The NHS supply chain accounts for approximately 62% of total carbon emissions, with the NHS England Procurement Roadmap outlining steps to achieve net zero supply chain by 2045. Our ambition is to: support SME's and social value; measure and reduce supplier carbon footprints; reduce consumption and switch to sustainable alternatives.
- **Food and nutrition** - Food and catering services in the NHS produces approximately 6% of total emissions. Healthier, locally sourced food supports wellbeing and reduces emissions. Our ambition is to: maximise social value through sustainable procurement; deliver strategies to continue to reduce food waste; strengthen community initiatives to re-allocate surplus food and promote community growing; implement plans to improve the health and wellbeing of the population.
- **Adaptation** – Strengthens the NHS's capacity to provide a high standard of care while the climate changes. Our ambition is to: complete comprehensive risk assessments for climate change; develop plans to mitigate the risks of effects of climate change on business and functions.

Our summary action plan outlines how we will achieve the actions described and by when. The governance framework has been developed to support delivery of the ICS Green Plan, under the leadership of the ICS Board Net Zero Lead. The Green Plan has strong connections with the work of the wider health and wellbeing board plans and arrangements will be made to ensure plans are connected in design and delivery. Staff from across the ICS have contributed to the production of the plan. An annual summit will be held so that staff and citizens can review progress and contribute to the next stage of development.

Many of the carbon reducing interventions in this plan are either cost-neutral or can provide immediate cost benefit. Further initiatives may require initial capital investment, followed by efficiency savings over the long run. To support the delivery and implementation of initiatives all funding opportunities will be explored. In addition, capital and revenue business cases will include a Sustainability Impact Assessment to describe how the case will contribute to our net zero pledge and used as a key principle in decision making.

Our Green Plan outlines the actions we will take over the next three years to support NHS net zero trajectories. The next steps of this ambitious plan includes a focus on commitment and ambition through the development of a communication strategy, developing governance arrangements and the structure to support development and implementation of plans to deliver the actions described.

1. Background and Context

1.1. Climate Change

Climate change refers to the large-scale, long-term shift in the planet's weather patterns and average temperatures.

Burning fossil fuels produces energy, but also releases greenhouse gases such as carbon dioxide, methane, and nitrous monoxide into the air. Over time, large quantities of these gases have built up in the atmosphere.

Once in the atmosphere, greenhouse gases such as carbon dioxide form a 'blanket' around the planet. This blanket traps the heat from the sun and causes the earth to heat up. This effect was noticed as far back as the 1980s.

Evidence has shown that the high levels of greenhouse gases in the atmosphere are the leading cause of increasing global temperatures. In their most recent report, the International Panel on Climate Change (IPCC) states that human activity is unequivocally the cause of climate change.

Global temperatures are rising, with the 20 warmest years on record globally in the past 22 years. In the UK, the ten hottest years have all happened since 2002, as shown in Figure 1. (1)

Figure 1 - UK Annual Temperature
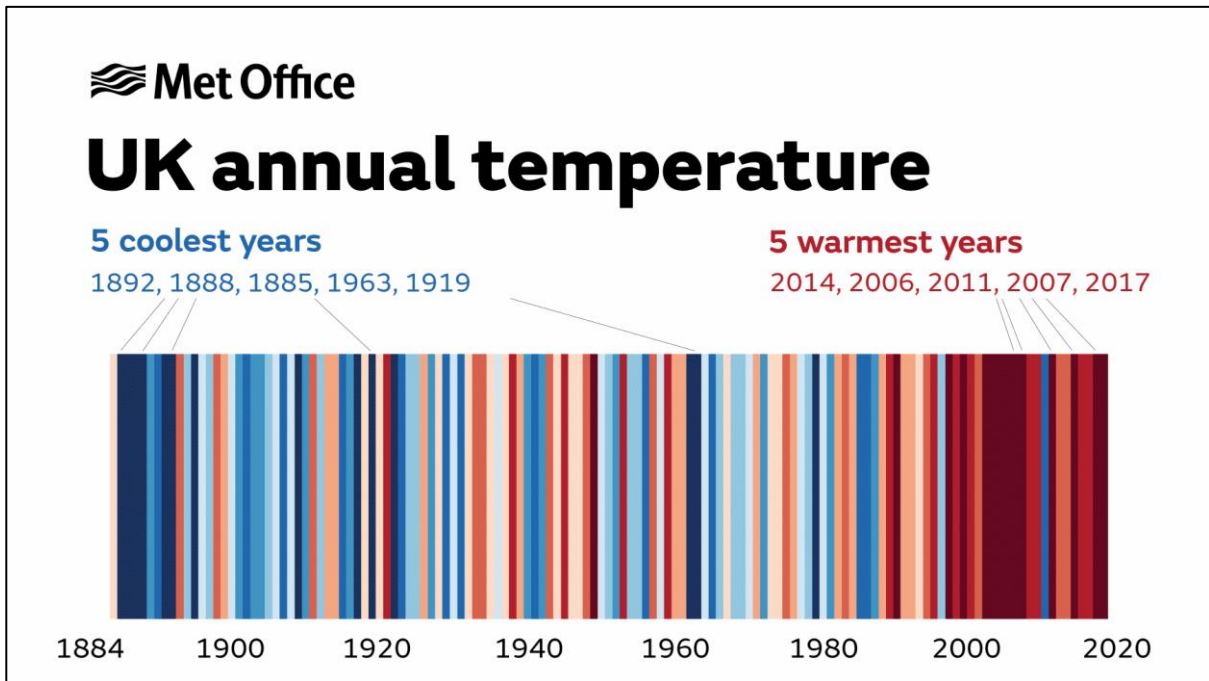
Source: Met Office

How will climate change affect the UK?

In the future, we will still see a lot of the weather we experience today. The difference, though, is that whilst the weather will continue to be variable, the intensity of some weather types will change and make these conditions more likely. The Met Office expects that across the UK, we will see warmer and wetter winters, hotter and drier summers and more frequent and intense weather extremes.

> By 2070, the Met Office projects that:
>
> - Winters will be between 1 and 4.5^0C warmer and up to 30% wetter
> - Summers will be between 1 and 6^0C warmer and up to 60% drier

Local context

In Nottingham and Nottinghamshire, the hottest summer day of the past 30 years' was 35.8^0C, if average temperatures increase by 2^0C average temperatures could increase to a maximum temperature of 37.5^0C. The warmest winter's day of the past 30 years was 18^0C; this could increase to 18.5^0C with a 2^0C increase in global temperatures. (1)

Hot spells and the risk to public health

Heatwaves are a risk to health and, in some cases, life. There is evidence that proves this across the world but also right here in the UK.

During the summer heatwave of 2003, there were over 2,000 excess deaths over a 10-day period. In a 2006 heatwave, the Government estimated 680 excess deaths. And in 2009, there were approximately 300 excess summer deaths.

Many of these excess deaths are among older people. These are not people who would have died due to illness or old age. There is strong evidence that these deaths are the result of heat-related conditions. (2)

> Climate change will make hot spells more frequent and severe. By 2070, the chance of exceeding 30°C for two days or more increases—a lot. That will have a large impact on our elderly population and public health.
>
> That's prolonged heat, but extremes become more likely, too. By 2070, the chances of exceeding 40°C are similar to the chances of exceeding 32°C thirty years ago.

Increased rainfall and risk of flooding

In the future, we project the intensity of rain will increase. When we talk about intensity, we mean how heavy rainfall is when it occurs. (3)

> A greater risk of flooding will have large impacts, both on the environment and in our daily lives.

Floods are one of the most common environmental emergencies and have significant health impacts. Short term health impacts are usually due to injuries, infections, exposure to chemical hazards and disruption to health services. The longer term effects are less well understood and may arise from the impact of damage to homes, loss of domestic utilities, having to move out until the home is habitable and delayed recovery.(4)

1.2. Climate Emergency – Health Emergency

Climate change is the single biggest health threat facing humanity. The Intergovernmental Panel on Climate Change (IPCC) has concluded that to avert catastrophic health impacts and prevent millions of climate change-related deaths, the world must limit temperature rise to 1.5°C. Past emissions have

already made a certain level of global temperature rise and other changes to the climate inevitable. Global heating of even 1.5°C is not considered safe, however; every additional tenth of a degree of warming will take a serious toll on people's lives and health.

While no one is safe from these risks, the people whose health is being harmed first and worst by the climate crisis are the people who contribute least to its causes, and who are least able to protect themselves and their families against it - people in low-income and disadvantaged countries and communities. (5)

The climate emergency is a health emergency. Climate change threatens the foundations of good health, with direct and immediate consequences for our patients, the public and the NHS. The situation is getting worse, with nine out of the 10 hottest years on record occurring in the last decade and almost 900 people killed by heatwaves in England in 2019. Without accelerated action there will be increases in the intensity of heatwaves, more frequent storms and flooding, and increased spread of infectious diseases. (6)

BMA representative body chair Helena McKeown September 2020

"With the pandemic this year, we have seen the devastating impact of a global health emergency. If we do not take decisive action immediately to work towards net zero the impact of climate change in the near future will wreak havoc on the planet taking an immeasurable toll on the health of people across the globe" (7)

1.3. Combating Climate Change – Commitment to Carbon Net Zero

The 2008 Climate Change Act set national targets for the reduction of carbon emissions in England. Since then, as the largest employer in the UK and responsible for circa 4% of England's carbon emissions, the NHS has been working to deliver on these to support the nation's response to climate change.

In October 2020, the Greener NHS National Programme published its new strategy, '*Delivering a Net Zero National Health Service.*' This report highlighted that left unabated climate change will disrupt care, with poor environmental health contributing to major diseases, including cardiac problems, asthma and cancer.

The Chief Executive Officer of NHS England and NHS Improvement stated that the NHS must confront longer term challenges head on…

"One of the most significant is the climate emergency, which is also a health emergency. Unabated it will disrupt care, and affect patients and the public at every stage of our lives. With poor environmental health contributing to major diseases, including cardiac problems, asthma and cancer, our efforts must be accelerated

Sir Simon Stevens, Chief Executive Officer, NHS England and NHS Improvement October 2020 – Delivering a 'Net Zero' National Health Service.
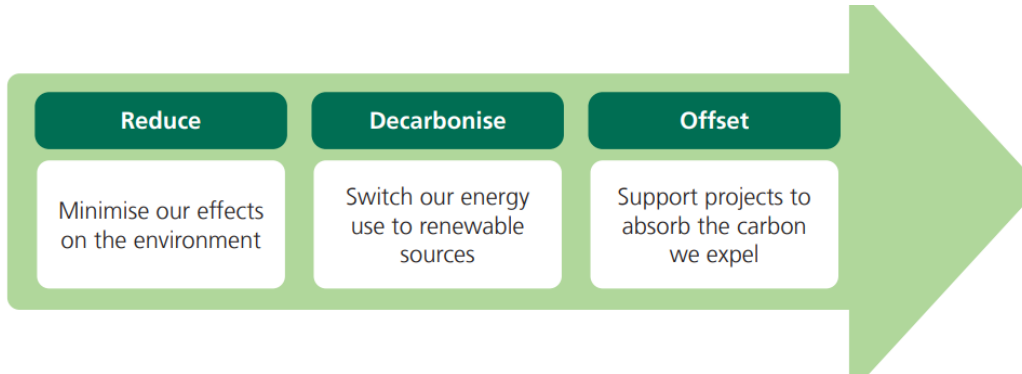
What do we mean by Net Zero?

Net zero refers to the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere.

Net zero means achieving a balance between in greenhouse gases by reducing emissions and increasing absorption rates. Urgent and deep cuts to emissions and delivering Net Zero can be achieved using three strategies. (6)

Reduce	Decarbonise	Offset
Minimise our effects on the environment	Switch our energy use to renewable sources	Support projects to absorb the carbon we expel

Source: Sherwood Forest NHS Foundation Trust

NHS Net Zero Targets

The report set out trajectories and actions for the entire NHS to reach net zero carbon emissions by 2040 for the emissions it controls directly, and 2045 for those it can influence (such as those embedded within the supply chain). Two net zero targets for the NHS have emerged, with a trajectory that is ambitious, while remaining realistic; and supported by immediate action and commitment to continuous monitoring, evaluation and innovation. (6)

The NHS Carbon Footprint (emissions under NHS direct control, net zero by 2040, with an ambition for an interim 80% reduction by 2028-2032

For the NHS Carbon Footprint Plus, (which includes our wider supply chain), net zero by 2045, with an ambition for an interim 80% reduction by 2036-2039

Carbon Footprint of the NHS

The NHS has been working to reduce its carbon footprint for a number of years, but earlier programmes did not cover the full scope of emissions attributable to the NHS. Under the new strategy the efforts to reduce carbon emissions now covers a wide scope of emissions as outlined in Figure 2.

Figure 2: Full scope of NHS related carbon emissions
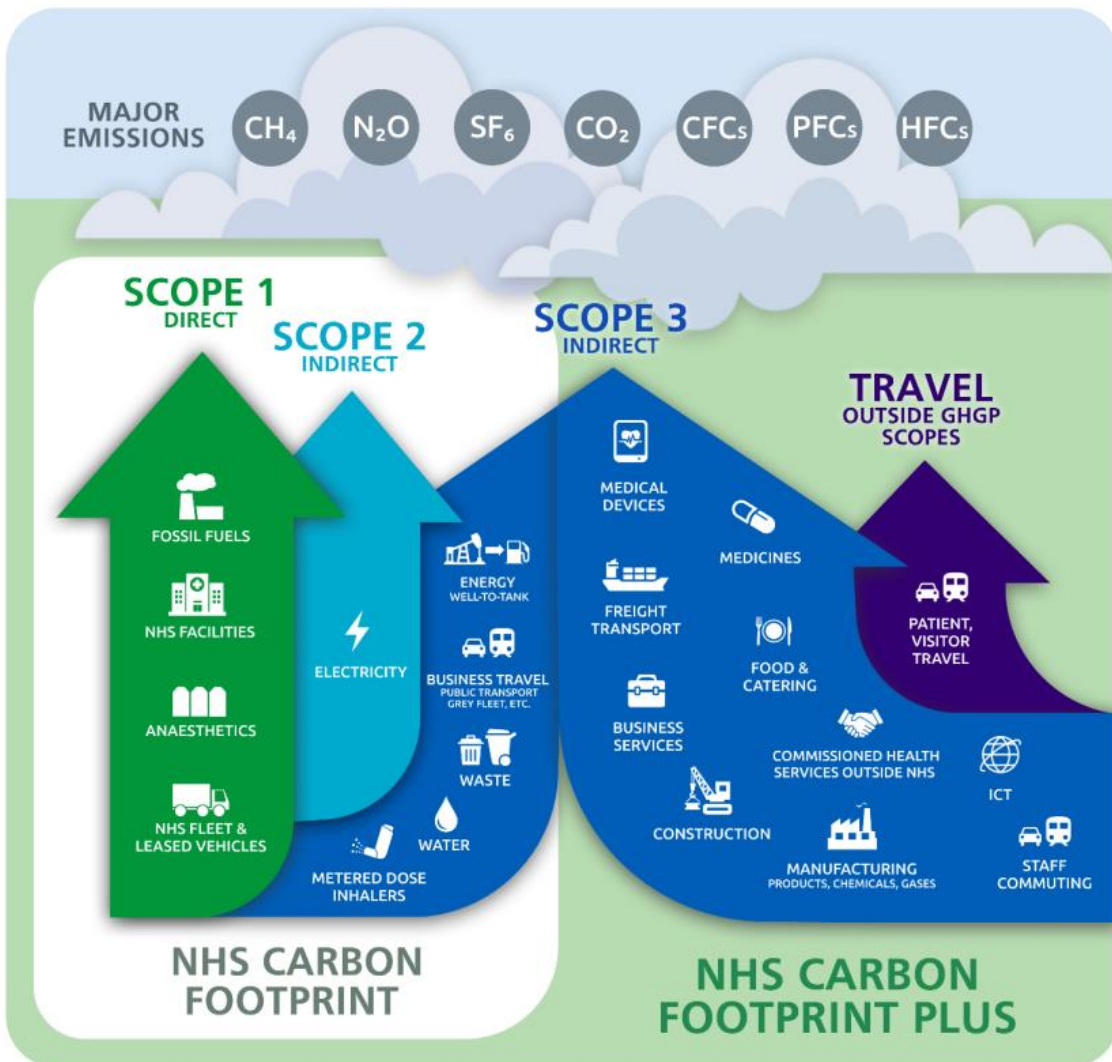
Source: Delivering a Net Zero NHS

Scope 1: Direct emissions from owned or directly controlled sources, on site

Scope 2: Indirect emissions from the generation of purchased energy, mostly electricity

Scope 3: All other indirect emissions that occur in producing and transporting goods and services, including the full supply chain.

Plus emissions related to patient and visitor travel

While travel and building energy use contribute to the NHS' emissions, as indicated in Figure 3, the NHS supply chain and the use of pharmaceuticals and medical devices are the source of the largest share of the NHS' emissions.

Figure 3: National sources of carbon emissions by proportion of NHS Carbon Footprint Plus
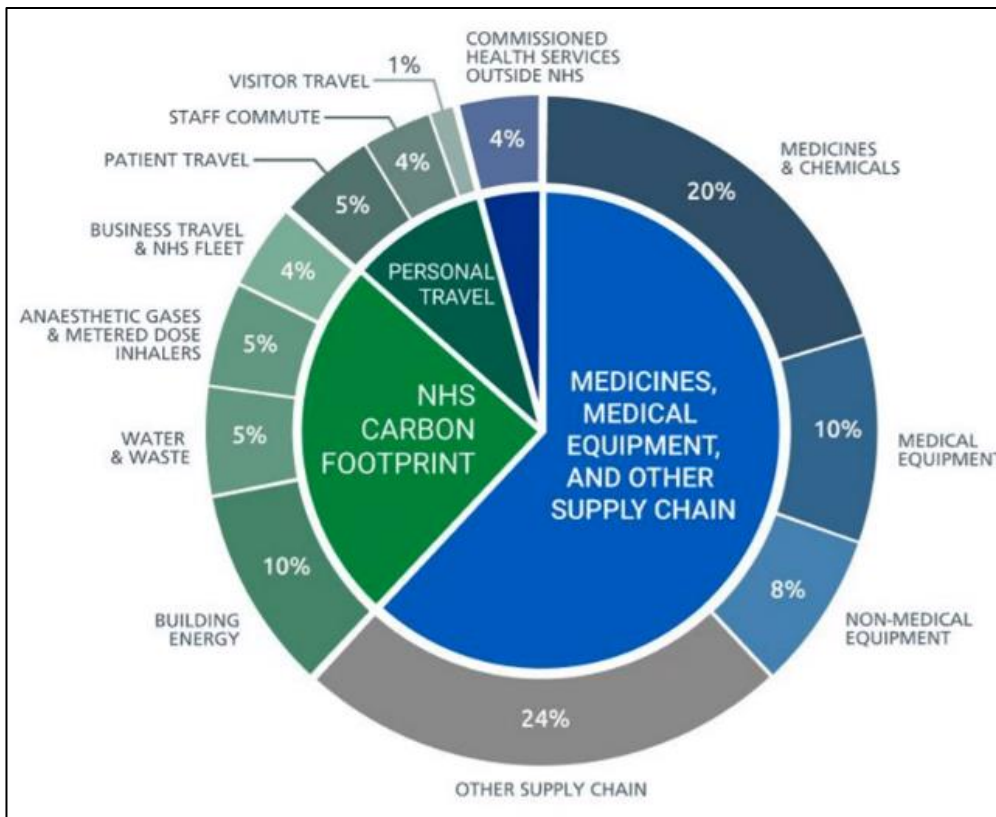
Source: Delivering a Net Zero NHS

1.4. Emissions related health impacts and opportunities for improvements to public health

While it is difficult to quantify the benefits that a net zero NHS alone can deliver in terms of lives saved, NHS analysis makes clear that reaching the national commitments under the Paris Climate Change Agreement and achieving a net zero UK economy will result in significant health benefits, by reducing the impact of climate change on health. (8)

By the year 2040, this trajectory would see an estimated: 5,770 lives saved per year from reductions in air pollution and 38,400 lives saved per year from increased levels of physical activity. (6)

Public Health England in 2018 modelled that air pollution for Nottingham City residents as an example, will cost health and social care £34M accumulatively over 10 years (2017-2027) and will also result in 3,000 additional deaths during this time. With the health costs made up of increases in primary care, secondary care and medication. In 2027 this population can attribute 1,700 additional cases of diabetes, 1000 additional cases of Chronic Heart Disorder and 600 cases of COPD as well as smaller increases in stroke, asthma and lung cancer to the effects of air pollution. (9)

1.5. Health Inequalities

Delivering a net zero NHS has the potential to secure significant benefits across the population. Achieving all the stated targets will reduce the impact of climate change, but may exacerbate conditions for the vulnerable.

As a key priority, the NHS will work to reduce its own contribution to air pollution and work with partners on actions to improve air quality and improve local environments, thereby supporting the development of local economies in geographical areas of deprivation. Air pollution disproportionately affects people in these areas, many of whom are already at risk of poorer health outcomes. Examples of the links between climate change, sustainable development and health inequalities are seen across the country.

These benefits will only be fully realised through public participation, involvement and engagement with those communities as this work goes forward, having regard to the need to reduce health inequalities and taking into account the public sector equality duty.

For example:
- Access to green spaces has positive mental and physical health impacts, and these beneficial effects are greatest for those from socioeconomically disadvantaged groups. However, these groups also have the least access to green spaces.
- Black, Asian and minority ethnic groups are disproportionately affected by high pollution levels, and children or women exposed to air pollution experience elevated risk of developing health conditions.
- As climate change worsens the demand for energy will increase. This may increase the price of household fuel, which is likely to make it harder for poorer families to maintain good health, particularly in poorly insulated homes (6)

1.6. Our commitment to Net Zero

To support the co-ordination of carbon reduction efforts across the NHS and the translation of this national strategy to the local level, the NHS requires trusts to develop a Green Plan to detail their approaches to reducing their emissions in line with the national trajectories. Given the pivotal role that integrated care systems (ICSs) play, this has been expanded to include the expectation that each system develops its own Green Plan, based on the strategies of its member organisations.

The development of the Nottingham and Nottinghamshire ICS Green Plan has involved engagement and contributions from stakeholders across professions, organisations and in collaboration with local authorities and other system partners. This included two workshop events to:

- To raise awareness and gain commitment to the ambition to deliver a net zero NHS
- To seek contributions from system experts to identify the priority interventions for the next 3 years

This is the first Nottingham and Nottinghamshire ICS Green Plan and outlines our shared vision and commitment to Nottingham and Nottinghamshire health system achieving net zero. This plan covers our journey over the next three years as we lay the foundation for achieving net zero and outline our priority interventions to simultaneously improve patient care and community wellbeing while tackling climate change and broader sustainability issues.

2. Nottinghamshire ICS Overview

2.1. Our Population

The Nottingham and Nottinghamshire ICS serves a diverse population of 1.2m, which going forward will include the people of Bassetlaw following a boundary change.

City of Nottingham

- There is a rich cultural mix across Nottingham City - 35% of the population are from black and minority ethnic (BME) groups.
- Nottingham City is the 11th most deprived district in the country. 56 of the 182 City Lower Super Output Areas fall amongst 10% most deprived in the country and 104 fall in the 20% most deprived.
- Life expectancy for males is 77 and females 82 years old, which is below the England average.
- 12% of the population are aged over 65, the England average is 18%, 30% of the population are aged 18-29 (full time university students comprise 1 in 8 of the population).
- In the short to medium term, Nottingham City is unlikely to follow the national trend of large increases in the number of people over retirement age, although the number aged 85+ is projected to increase.
- Despite its young age structure, Nottingham has a higher than average rate of people with a limiting long-term illness or disability.
- City has the 13th highest unemployment rate in the country, 12.7% of people are claiming out of work benefits.
- Over 2 in 5 households do not have access to a car, with the highest level of bus use per head outside of London.

Nottinghamshire

- Across Nottinghamshire 4% of the population is from black and minority ethnic groups.
- Deprivation levels as a whole are comparable with England, however there are some communities with the highest levels of deprivation in the country and some in the lowest levels – 31 Lower Super Output Areas are in the 10% most deprived areas in England that are concentrated in the districts of Ashfield (12), Mansfield (10) and Newark and Sherwood (5).
- Life expectancy for males is 80 and females 83, which is similar to the England average. Locally in regions of Nottinghamshire life expectancy varies considerably with more deprived districts having a shorter life expectancy than less deprived districts For example in 2013-2015, life expectancy in Ashfield, Bassetlaw and Mansfield was significantly lower than for the East Midlands.

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- 20% of the population are aged 65+, compared to the England average of 18%. The population is predicted to continue to age over the next 5 year, with the population aged 65+ expected to increase by circa 7% and the population over 85 by circa 8%.
- Older people are more likely to experience disability and limiting long-term illness. More older people are anticipated to live alone, increasing by 41% between 2015 and 2030.
- Job Seekers Allowance claimant rate (May 18) is 1.1%, which is the same as the national figure.

2.2. The ICS Partnership

At present the ICS continues to be a non-statutory partnership that brings together public health, general practice and primary care, acute hospitals, community and mental health services, social care and wider partners - including housing - to better serve population needs and achieve quality and sustainable care provision through collective endeavours.

With a combined annual budget of over £3billion for the commissioning and provision of health and care services, the partners collaborate at:

- A neighbourhood level through 23 primary care networks (PCNs) covering populations on the whole of between 30,000 and 50,000

- At a place level through four Place Based Partnerships (PBPs): Bassetlaw, Mid Nottinghamshire, Nottingham City, and South Nottinghamshire. Each PBP serves a population of ~120,000-350,000 people

- Through provider collaboratives at scale (see later section)

- At a whole system (ICS) level.

Statutory partner organisations

9 Local Authorities

- Nottinghamshire County and District/Borough Councils (x7)
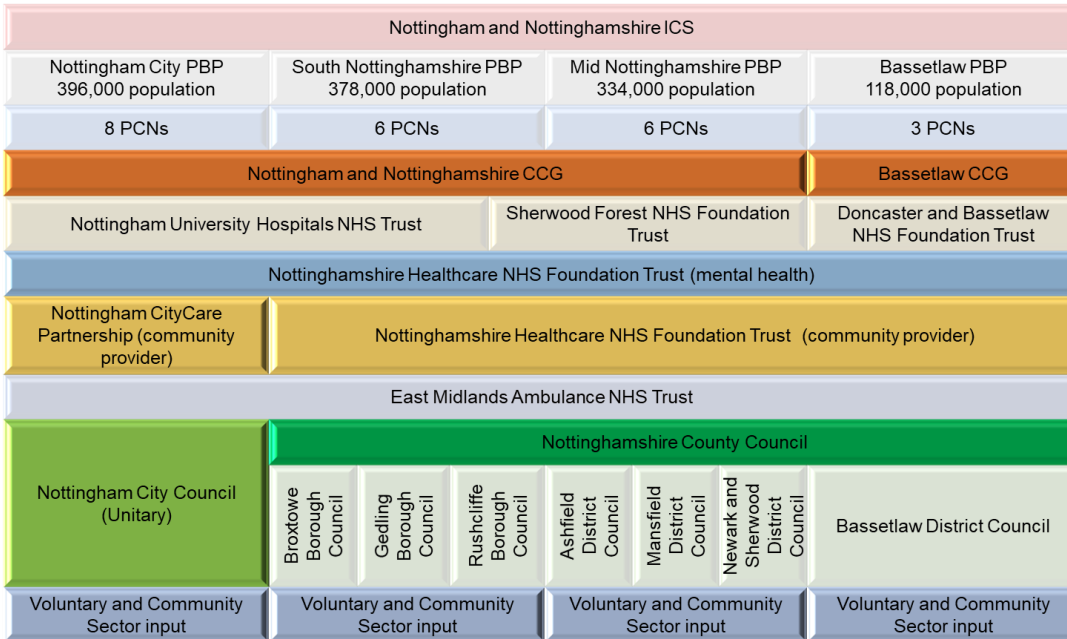- Nottingham City Council

2 NHS Clinical Commissioning Groups

- NHS Bassetlaw CCG
- NHS Nottingham and Nottinghamshire CCG

NHS Providers / Providers of health and care Services

- Nottinghamshire Healthcare NHS Foundation Trust
- Nottingham University Hospitals NHS Trust
- Sherwood Forest Hospitals NHS Foundation Trust
- Doncaster and Bassetlaw NHS Foundation Trust
- East Midlands Ambulance NHS Trust
- Nottingham CityCare Partnership CIC
- Primary Care including General Practice
- *Social Care Providers*
- *Community and voluntary sector organisations*

The graphic below provides an appreciation of our current set up and geographical arrangements.

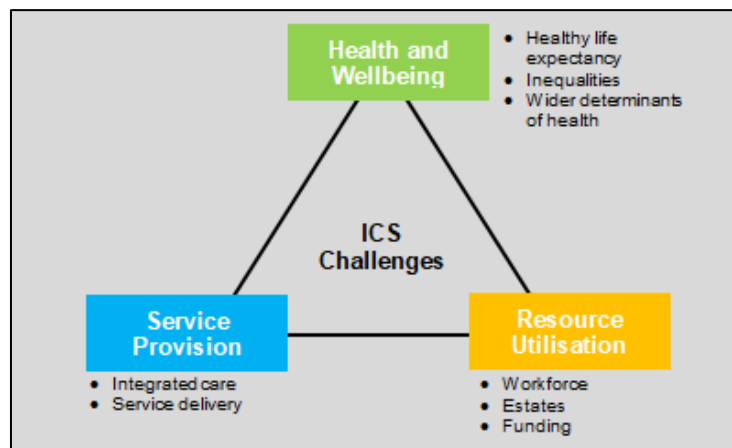| Nottingham and Nottinghamshire ICS			
Nottingham City PBP 396,000 population	South Nottinghamshire PBP 378,000 population	Mid Nottinghamshire PBP 334,000 population	Bassetlaw PBP 118,000 population
8 PCNs	6 PCNs	6 PCNs	3 PCNs
Nottingham and Nottinghamshire CCG			Bassetlaw CCG
Nottingham University Hospitals NHS Trust		Sherwood Forest NHS Foundation Trust	Doncaster and Bassetlaw NHS Foundation Trust
Nottinghamshire Healthcare NHS Foundation Trust (mental health)			
Nottingham CityCare Partnership (community provider)	Nottinghamshire Healthcare NHS Foundation Trust (community provider)		
East Midlands Ambulance NHS Trust			
Nottingham City Council (Unitary)	Nottinghamshire County Council		
	Broxtowe Borough Council / Gedling Borough Council / Rushcliffe Borough Council / Ashfield District Council / Mansfield District Council / Newark and Sherwood District Council		Bassetlaw District Council
Voluntary and Community Sector input	Voluntary and Community Sector input	Voluntary and Community Sector input	Voluntary and Community Sector input

2.3. Our strategic context

Our five-year strategy confirms the key challenges that need to be addressed by the Nottingham and Nottinghamshire ICS. These are grouped into three categories, summarised in Figure 4, with a reinforcing effect on each other and are:

- The health and wellbeing of the population, including addressing inequalities and wider determinants.
- The provision of high quality services, including recovery from Covid19.
- The effective utilisation of system resources namely our workforce, estate and financial resources.

Figure 4 – Key challenges

Source: Nottingham and Nottinghamshire Health Inequalities Strategy

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Achieving excellence in these three areas and meeting the triple aim is central to our ambitions. The approach taken by the ICS is one of incremental change, based on self-discovery and going on the journey, with a shared purpose underpinned by the triple aim to identify improvement opportunities. Nottingham and Nottinghamshire is renowned for innovation at a Neighbourhood and Place level, with considerable experience of operational collaboration across Local Authority and NHS organisations. Over the coming period there will now be increased opportunity for shared learning between Mid Nottinghamshire; Nottingham City and South Nottinghamshire with best practice from Bassetlaw as a confirmed Place within the ICS going forward.

2.4. Our Health Inequalities Strategy

Access to and the quality of health care services is only a small contributor to overall health outcomes, with the wider determinants of health contributing to 80% of health outcomes. These include:

Deprivation is a key driver of illness and ill health, with deprived communities having greater exposure to factors that impact on their health, including fuel poverty, poor housing, higher unemployment and poorer access to services. Lifestyle factors such as smoking, physical inactivity and poor diet are also more prevalent in these communities. Figure 5 shows the health and healthcare usage indicators in areas of higher deprivation in parts of our ICS, with a similar pattern emerging.

Figure 5 – Patterns of deprivation and health and healthcare factors in our ICS

Deprivation

Obese or overweight Age 10/11

Emergency admissions All age, all cause
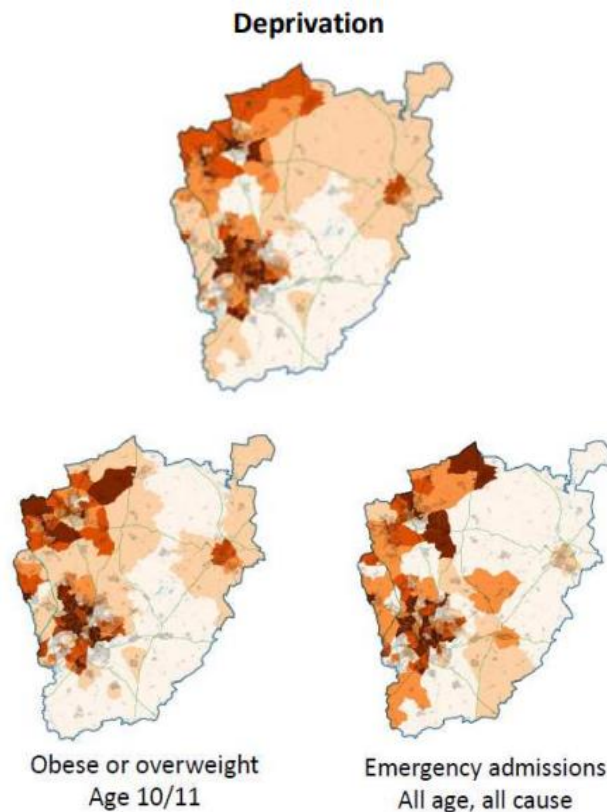
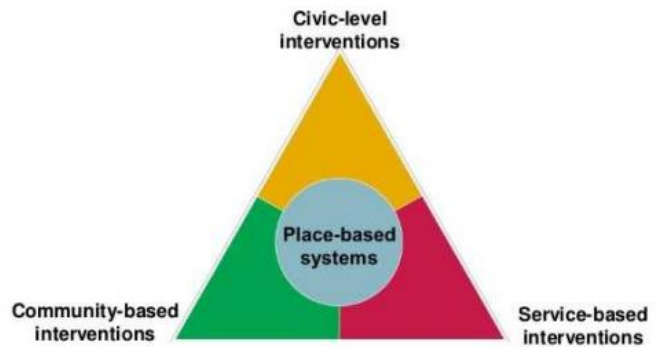*Source: Nottingham and Nottinghamshire ICS Health Inequalities Strategy*

Ethnicity is also a key factor in health risks and behaviours, for example smoking is more common in mixed-ethnicity and white populations and some diseases are more prevalent in some ethnic groups.

Mental health and learning disability inequalities are also often linked with wider cultural and societal systems of disadvantage which impact on a person's wellbeing, including, but not limited to, adverse childhood experiences, stigma, discrimination and housing security.

Our Health Inequalities Strategy has adopted a Population Intervention Triangle to guide and shape the specific actions to address the health inequalities identified and defined and will be co-produced with our communities. The model bringing together important elements of effective place-base working delivered through ICPs and PCNs. (10)

Acknowledging the links between climate change, sustainable development and health inequalities is an important consideration in the development of the Green Plan for Nottingham and Nottinghamshire ICS.

> **We will:**
>
> - Deliver joint action to reduce health inequalities through defined links between ICS Greener and Health Inequalities Leads

2.5. Our Carbon Footprint

The following section outlines the Nottingham and Nottinghamshire Carbon Footprint as of 2020/21 to inform progress and opportunities to deliver net zero ambitions, as summarised in Figures 6, 7 and 8.

Figure 6 – ICS Carbon Footprint

Area	NHS Carbon Footprint * (ktCO$_2$e)		Reductions required from current levels (ktCO$_2$e)	
	1990	Current (2019/20)	by 2028-2032	by 2040
Midlands	3,127	1,179	-554	-1,179
Nottingham and Nottinghamshire ICS	unavailable at ICS level	165	-132	-165

*These figures will need to be revised to include the carbon footprint in Bassetlaw.

In line with England, the Midlands have committed by 2028-2032 to an 80% reduction in Carbon footprint (from the 1990 baseline) requiring a further carbon reduction of 554 ktCO$_2$e. As the 1990 baseline data is not available (and will not be available in the future) at an ICS level, the 80% reduction target uses the 2019/20 baseline equating to Nottingham and Nottinghamshire reducing

carbon emissions by 132 ktCO$_2$e by 2028-2032 and a total 165 ktCO$_2$e reduction by 2040 to achieve net zero for our ICS.

Figure 7 – ICS Carbon Footprint Plus

Area	NHS Carbon Footprint Plus ** (ktCO$_2$e)		Reductions required from current levels (ktCO$_2$e)	
	1990	Current (2019/20)	by 2036-2039	by 2045
Midlands	6,255	4,631	-3,380	-4,631
Nottingham and Nottinghamshire ICS	Unavailable at ICS level	553	-442	-553

* These figures will need to be revised to include the carbon footprint and carbon footprint plus in Bassetlaw (and to remove EMAS carbon footprint plus arising from their procurement which resides in Derbyshire ICS as they are the lead commissioner). EMAS carbon footprint from their fleet has already been removed from these figures.

In line with England, the Midlands region have committed by 2036-2039 to reduce their *carbon footprint plus* by 80% (from the 1990 baseline), requiring a further carbon emissions reduction of 3,380 ktCO$_2$e. Similarly to the carbon footprint, the carbon footprint plus 80% reduction by 2036-39 uses the 2019/20 data as the ICS baseline, therefore requiring Nottingham and Nottinghamshire ICS to reduce carbon emissions by a further 442 ktCO$_2$e and a total of 553 ktCO$_2$e reduction by 2040 to achieve net zero.

Figure 8 – ICS Carbon Footprint Plus

Nottingham and Nottinghamshire ICS sources of carbon emissions by NHS Footprint Plus*
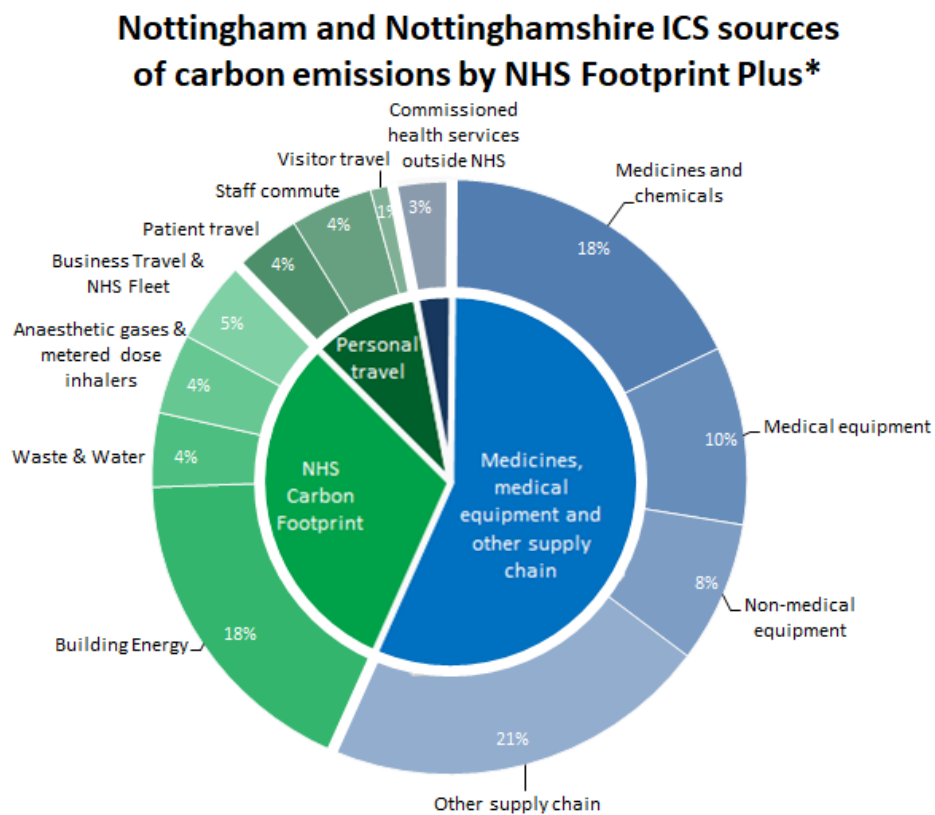
The carbon figures for the above can be found in Appendix 1 at the end of this document.

2.6. Our Organisations and Commitment to Net Zero

A number of organisations in the Nottingham and Nottinghamshire ICS have acknowledged the scale of the challenge and a commitment to take action, including the declaration of a climate emergency:

In 2019, **Nottinghamshire Healthcare NHS Foundation Trust** became the first Mental Health Trust to declare a Climate Emergency, stating an ambition to be Net Zero carbon by 2040.

On the 13th January 2020, **Nottingham City Council** acknowledged the scale of the challenge presented by climate change by declaring a Climate and Ecological Emergency at Full Council and in March 2020 made a commitment to become the first city in the UK to become carbon neutral by 2028. In doing so, Nottingham will be one of the healthiest places to live with clean air, green open spaces and locally produced healthy food. New networks of safe cycling routes and high quality vehicle free public spaces will make it easier for people to get regular exercise. Good quality homes, high employment, attractive public spaces and biodiverse ecosystems will improve the overall wellbeing of citizens and communities.

In May 2021 **Nottinghamshire County Council** passed a motion formally agreeing to declare a Climate Emergency and committing to achieve carbon neutrality in all its activities by 2030. The Council is working now on a strategy to deliver this ambitious goal.

On the 2nd December 2021, **Sherwood Forest NHS Foundation Trust,** declared a Climate Emergency, with board commitment to net zero ambitions as outlined in its organisational Green Plan.

NHS Trusts and Local Authorities in our ICS have responded through the development of organisational-level Green Plans to support net zero ambitions within our system, with an outline organisational context and summary of ambitions provided:

Nottinghamshire County Council

The Council has set out its ambitious plan and aim of developing a healthy, prosperous and greener future for all. Over the next 10 years the local authority will focus on:

- Improving health and wellbeing in all our communities
- Growing our economy and improving living standards
- Reducing the County's impact on the environment
- Helping everyone access the best of Nottinghamshire

While many residents enjoy the best that Nottinghamshire has to offer, health and prosperity are spread unevenly, and some residents miss out. Under the plan, the council will aim to reduce inequality and support vulnerable and disadvantaged communities.

Over the next four years the council will:

- Use its influence to create healthy and sustainable places: Ensuring that the environment we grow, live, work and age in promotes good health and wellbeing. We'll use the planning and transport system, along with economic planning, licensing and policy decisions, to create

places that do this. This will also help to reduce health inequalities and benefit the environment, for a better quality of life.

- Support individuals to improve their health and wellbeing: We'll provide services that support people in improving their health and wellbeing. These will address the biggest causes of ill-health – smoking, poor diet, physical inactivity, being overweight, harmful alcohol use and substance misuse. While these will improve the health and wellbeing of everyone in Nottinghamshire, we'll focus on where the need is greatest. We'll also address the social and environmental factors that cause differences in people's health. Finally, we'll support other organisations to deliver services which better prevent poor health, loss of independence and unnecessary hospital stays.

Nottingham City Council

Nottingham City Council has responded to the climate and environmental crisis by setting an ambition to become the first carbon neutral city in the UK by 2028. At the heart of the shared vision is an approach that not only positively addresses wider environmental challenges, but improves quality of life and continues to create a prosperous, fair and resilient city for this and future generations.

An action plan has been developed, building on Nottingham 2028 Carbon Neutral Charter, which sets out high-level objectives to achieve the ambition for carbon neutrality by 2028. These include:

Carbon Reduction Measures – focussing on five activities to achieve emission reduction rates in excess of 22.3% per year and including transport, the built environment, energy generation, waste and water and consumption.

Carbon Removal – focussing on capturing carbon and offsetting residual greenhouse gas emissions that cannot be removed entirely. These are broken down into three groups: local carbon sequestration, carbon capture and large scale carbon offsetting.

Resilience and Adaptation – addresses the actions Nottingham must take to protect against avoidable harmful impacts of climate change, with the impact of flooding and extreme temperatures already experienced locally.

Ecology and Biodiversity – outlining the importance of green and open spaces, and biodiversity, for climate change mitigation and adaptation – unlocking other positive outcomes such as improvements in physical and mental health and enhancing local landscape.

Sherwood Forest NHS Foundation Trust: Green Plan 2021-2026

The Trust provides outstanding healthcare in modern buildings and increasingly across the community to 500,000 people in Mansfield, Ashfield, Newark, Sherwood and parts of Derbyshire and Lincolnshire.

5,000 colleagues work across three hospital sites – King's Mill, Newark and Mansfield Community and have well established relationships with partners in health and social care through the Mid Nottinghamshire Integrated Care Partnership.

As a committed member of the Nottingham and Nottinghamshire Integrated Care System (ICS) the Trust works with NHS organisations, local councils and others to take collective responsibility for resources, delivering NHS standards, and improving the health of the population they serve.

The Trust has acknowledged this responsibility by developing a Trust-wide Green Plan, which clearly defines plans, commitments and targets. These will be monitored and reviewed to ensure sustainability obligations are met.

The Climate Action Project Group will undertake a regular review to ensure that the plans, objectives and targets in the Green Plan and action plan remain current and valid to the Trust. By adopting a continual improvement approach with respect to sustainability, performance will continue to develop incrementally.

At the Trust, awareness of and compliance with all current and any future legislation that will impact on sustainability position will be considered. A Sustainable Development Assessment Tool is used to ensure compliance criteria are met and, where feasible, exceeded.

The Trust recognises the impact on the local economy, society and environment, and is committed to continually work to integrate public health and sustainability into core business. Climate change is one of the most pressing challenges facing our society today and in the future. There are considerable implications for health, both directly and indirectly, across the population. There are also implications for widening health inequalities. We have a responsibility to maximise our contribution to creating social value and ensure efficient use of resources. Planning now will help to ensure critical care pathways remain accessible, growth in service use can be resourced sufficiently, and risk is minimised.

Nottinghamshire Healthcare NHS Foundation Trust: Our Journey to Net Zero Green Plan 2022-2025

The Trust is a provider of integrated healthcare services, including mental health, intellectual disability, and physical health service. Over 10,000 staff provide services in a variety of settings, ranging from the community through to acute wards, as well as secure settings. The Trust manages two medium secure units Arnold Lodge in Leicester and Wathwood Hospital in Rotherham, and the High Secure Rampton Hospital near Retford. It also provides healthcare in prisons across the East Midlands.

The size of the estate managed by the Trust (for all freehold, leases and licences excluding freehold residential housing at Rampton Hospital) totals 111, 500m^2. Trust services are currently present on 260 locations, the breakdown of which is detailed as follows:

- 58 Trust owned properties
- 69 Leased properties where the Trust has sole rights to use rooms
- 5 Licences where the Trust has shared rights to use the rooms
- 90 Locations where the Trust has a 3rd party presence (drop in/touch down space for example in Care Homes and GP's)
- 28 Trust owned residential properties at Rampton Hospital

In terms of service provision and the scale of delivery, during 2020/21 the number of "seen appointments" was just over 1.6 million and for the same period, the total number of occupied bed days was 302,093. The local population served by the Trust totals just over 2.1 million. With sites and services provided in Nottinghamshire, Derbyshire, South Yorkshire, Lincolnshire and Leicestershire, the estate is vast and varied but so are potential opportunities for change and improvement.

The Trust has been working hard to reduce emissions over several years and has delivered these reductions strategically through the implementation of a Sustainable Development Management Plan

(SDMP). The first SDMP was approved in 2015 and following a number of successes was reviewed and refreshed in 2018. In 2019, the Trust became the first Mental Health Trust to declare a Climate Emergency, stating an ambition to be Net Zero carbon by 2040, with a Green Plan based on ten areas of action, each with a nominated lead.

Nottingham University Hospitals NHS Trust: Green Plan 2022-2025

The Trust is one of the largest acute teaching hospitals in England. With a budget of just under £1billion, it is one of the largest employers in the region, employing circa 15,000 people at QMC, City Hospital, Ropewalk House and the Nottingham Treatment Centre.

The Trust has 90 wards and around 1,700 beds across three main sites:

- QMC is where the Emergency Department (ED), Major Trauma Centre and the Nottingham Children's Hospital are based. QMC is also home to the University of Nottingham's School of Nursing and Medical School and the Nottingham Treatment Centre acquired in 2019.

- Nottingham City Hospital is the planned care site, where the cancer centre, heart centre and stroke services are based.

- Ropewalk House is where a range of outpatient services is provided, including hearing services.

The Trust delivers services to 2.5 million residents of Nottingham, Nottinghamshire and its surrounding communities. It also provides 92 specialised services to 4-5 million people from across the East Midlands region, including Derbyshire, Lincolnshire, Leicestershire, and nationally for a handful of services.

Since its creation, sustainability has been at the core of NUH's activities bringing social, economic and environmental benefits in line with its business priorities.

In line with the ambition to deliver a net zero NHS, NUH is going through a transformational process seeking to address the new challenges. Sustainability is a core principle NUH continues to permeate across the whole organisation and must inform (and be aligned with) the wider organisational strategy aiming to address the new challenges.

The NUH Green Plan 2022-2024 builds on previous achievements ensuring good practice and successful initiatives have continuation. The strategy also re-focuses NUH's efforts in response to the changes in both the local and the national policies.

The structure of this strategy identifies the main drivers, themes and action plan for NUH to achieve the main goals of its sustainability agenda.

East Midlands Ambulance Service NHS Trust (EMAS)

EMAS provides emergency and non-emergency services for approximately 4.8 million people. The Trust operates from over 70 premises across the East Midlands, including ambulance stations, educational centres, and administrative offices.

In its Green Plan, EMAS provides an overview of the actions it will take throughout the next 3 years to tackle its carbon footprint. EV technology and infrastructure is currently being developed, so the Trust's fleet-based emissions are largely unavoidable. However, EMAS plans to take several proactive measures to facilitate the speed at which EVs can be integrated, including the identification of Trust-wide providers, regional schemes, and locations. To tackle business travel emissions, travel

policies will be revised to include environmental considerations, work will be conducted online where possible, and awareness over the impact of avoidable business travel will be promoted amongst staff. Lastly, anaesthetic gas use will be reduced through the exploration of alternatives, whilst building energy will be made more sustainable through the procurement of renewable alternatives and site upgrades.

Doncaster and Bassetlaw Teaching Hospitals Trust

Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust is an acute NHS Foundation Trust operating within the Yorkshire region. It hosts one of the busiest emergency services in the county, as well as being a teaching hospital, working closely with the University of Sheffield and Sheffield Hallam University.

The Trust employees 6,000 staff across its three main hospital sites; providing the full range of district general hospital services and some specialist tertiary services, including vascular surgery. We also provide a number of community services including sexual health services, therapies, aortic aneurysm screening and audiology.

The Trust delivers healthcare to a population of more than 420,000 across two geographical areas South Yorkshire, North Nottinghamshire, and the surrounding areas, including the towns of Doncaster, Worksop, and the rural towns of Retford and Mexborough. Except for the urban town of Doncaster, the area the Trust predominately serves is rural.

Doncaster has a population of approx. 440, 000 and Bassetlaw a population of approx.117, 000. The Government's Indices of Multiple Deprivation 2019 has ranked Bassetlaw as 106 out of the 317 Local Authorities in England making it within the 35% most deprived areas, Doncaster is one of the 20% most deprived districts/unitary authorities.

The Green Plan is a Board Approved strategic document, which sets out the Trusts commitment and approach to achieving net zero and to improving the sustainability of the Healthcare Services we provide.

The Trust aims to prioritise interventions that reduce carbon emissions and improve sustainability performance; the strategy outlining an intention to implement direct interventions within estates and facilities, travel and transport, supply chain and medicines to reduce carbon emissions and to improve sustainability performance and to adapt to a changing climate.

Alongside these interventions, enabling actions will include the development and training of our workforce, providing system leadership, developing sustainable models of care, and improving access to preventative health advice and access to fresh and health food on their Estate.

Our pledge

As the ICS transitions into Integrated Care Board (ICB) arrangements and under the leadership of our designated board-level net zero lead, our system commits to the actions described to support the ambitions of delivering a net zero NHS across health and care. This will include, consideration to declaring a climate emergency as a system, building on the commitments already made by many of our system partners.

3. Areas of Focus

3.1. Workforce and system leadership

Context

Success in achieving Net Zero depends on System Leadership and the support of staff. Clear leadership and strategic direction are vital for the ICS is to act on climate change and deliver financial and environmentally sustainable healthcare services.

Staff engagement with the Green Plan is essential for the delivery of sustainable healthcare. All staff have a role to play in delivering our vision.

Engaging staff to adopt sustainable practices will enable them to take ownership within their own area of influence. With 1 in 20 of the UK population working for the NHS, a carbon literacy educated workforce can act as a catalyst for spreading the sustainability message.

Where we are now

Leadership

All organisations within our ICS have board level net zero leads.

An ICS Green Programme Board has been established and chaired by an ICS Sustainability Lead to develop the Green Plan for Nottingham and Nottinghamshire. This is supported by an ICS Green Development Group formed to bring together local sustainability knowledge and expertise to drive the development of the plan now and into the future.

Clear leadership, strategic direction and support to all stakeholders and decision makers will support the delivery of actions to deliver net zero ambitions. A number of organisations have incorporated a Sustainability Action Plan into their governance processes to identify the carbon impact of service developments and transformation projects to support decision making, with an ambition to develop this at a system level.

Engagement

The development of the Green Plan has taken a co-design approach, to develop a shared vision to gain commitment to its ambitions, share best practice and with a commitment to working together to maximise actions that are mutually beneficial to deliver net zero across the ICS. A commitment to engagement builds on commitments already made locally to engage broadly to understand challenges and opportunities. For example, **Nottinghamshire County Council** conducted the 'Big Notts Survey' during the summer of 2021; with 12,000 respondents, it has supported the development of its commitment to protecting and enhancing Nottinghamshire's environment, supporting more sustainable lifestyles and reaching net carbon neutrality in all Council activities by 2030.

The ICS is also looking at digital schemes to incentivise citizen and staff behaviour and encourage them to learn more about climate change and how they can help lower carbon levels.

Education

Organisations across the ICS have made a commitment to raise awareness of climate change and are encouraging staff to undertake carbon literacy training.

Nottingham City Council is aiming to train as many of its staff in carbon literacy, including climate change e-learning for all new starters, supported by regular internal communication messaging to maintain awareness.

Sherwood Forest Hospitals has established a Climate Action Project Group and Climate Action Teams. They are supporting the roll out of Environmental Awareness Training, with e-learning to accessible to staff on induction. This is to be extended to incorporate e-learning as part of annual appraisals to support the delivery of sustainable development objectives. This ambition is supported by other NHS organisations within our system, including Nottinghamshire Healthcare NHS Foundation Trust committing to reflect sustainable healthcare in appraisals, inductions and job descriptions by October 2023.

Raising awareness at all levels of the organisation is fundamental to delivering sustainable healthcare actions, with **Nottingham University Hospitals NHS Trust** making a commitment to develop a network of Green Champions, as well as including e-learning as part of induction and a statement on Green NHs in job descriptions. **Nottinghamshire Healthcare NHS Foundation Trust** have over 600 Green Champions, the largest staff champion group in the Trust, who are kept up to date on Trust, sector and national sustainability initiatives through a monthly bulletin. The Trust has also signed up to Green Impact, a sustainability behaviour change campaign for staff and patients for a third year this year supporting carbon reduction ambitions.

Case Study:

Nottinghamshire Healthcare NHS Foundation Trust was the first mental health Trust to be involved, in Green Impact, a sustainability toolkit which has been developed by the National Union of Students (NUS) and run by SOS-UK, with the scheme being very successful in the University sector and, in the last 5 years, in the NHS too. Staff, patients, volunteers and service users agree to take part in teams and work their way through a bespoke online toolkit, submitting evidence of their achievements. Teams are recognised with a Bronze, Silver, Gold or Excellence Award depending on the number of actions completed.

Green Impact helps Trust staff and patients understand the whole sustainability agenda and social responsibility, it shows them what they can do to make a difference and supports them in achieving these actions. The Trust first launched Green Impact in 2019 after feedback from our 600 strong network of Green Champions told us that staff wanted to be directly and actively involved in making positive change locally.

Our Ambition

Leadership to deliver net zero ambitions	• Designated board-level net zero lead to be appointed to support the ambitions of delivering a net zero NHS • Maintain ICS Green Board and Delivery Group arrangements to deliver ambitions • Explore the use of digital schemes to incentivise citizen and staff
Engaging the public and our workforce in the actions required to deliver sustainable healthcare locally	• Annual summit to encourage and enable to staff to generate ideas and lead on them • Co-design with the public to understand and respond to carbon impact through the life course
Education and training to enhance carbon literacy	• Delivering carbon literacy training, with a tiered e-learning approach to deliver meaningful training effectively • Developing a network of Green Champions to raise awareness
Sustainability as a core dimension of service management/delivery	• Completion of Sustainability Impact Assessments mandatory for service developments • Carbon monitoring 'scorecard' undertaken locally • Sustainability actions supported by PMO

3.2. Sustainable models of care

Context

60% of carbon emissions are linked to clinical pathways and associated supply chain and human resource.

The NHS Long Term Plan sets out a commitment to deliver a new service model for the 21st century. If the NHS is to reach net zero emissions, that new service model must include a focus on sustainability and reduced emissions.

As part of the new NHS service model for the 21st century, multiple commitments are in progress, including boosting 'out-of-hospital' care; empowering people to have more control over their health; digitally enabling primary and outpatient care; and increasing the focus on population health. Optimising the location of care ensures that patients interact with the service in the most efficient place, which may be closer to, or even in, their home. Not only does this improve patient experience

and often offer greater access to care, but it also reduces emissions by helping to avoid unnecessary hospital visits and admissions.(6)

Where we are now

A Clinical Advisory Group has been established for the ICS to provide advice and expertise on the development and coordination of components of the Green Plan, with specific attention to Sustainable Models of Care, Food and Nutrition and Medicines, but also understanding interdependencies with other areas of focus e.g. Supply Chain, Digital Transformation and Health Inequalities. Membership of the group includes clinical representation from acute, community and primary care services, as well as public health input.

A Clinical and Community Services Strategy has been completed for the ICS. This sets out how we will provide care in the future to achieve this. It aims to develop a model of care that is delivered by the whole health and care system as a whole, being more proactive, focusing on prevention and early intervention and providing services closer to home; this supporting people to live longer, happier, healthier and more independent lives. Twenty service reviews have been undertaken, as summarised in Figure 9, with transformation plans emerging from these which can support carbon reduction plans for the system. (14)

Figure 9– ICS Clinical and Community Services Strategy

Source: ICS Clinical and Community Services Strategy

Prevention and Health Inequalities

As described, an ICS Health Inequalities Strategy has been published, with an ICS Prevention and Health Inequalities Transformation Programme supporting the delivery of local ambitions, with a commitment to align to the ICS Green Plan.

One of the nine ambitions in the new **Nottinghamshire County Council** Plan is 'Helping our people live healthier and more independent lives.' As part of this ambition the council aims to support individuals to improve their health and wellbeing, by providing services that support people in improving their health and wellbeing. These focusing on the biggest causes of ill-health – smoking, poor diet, physical inactivity, being overweight, harmful alcohol use and substance misuse. With an

ambition to improve the health and wellbeing of everyone in Nottinghamshire, a focus will be placed on where the need is greatest and addressing the social and environmental factors that cause differences in people's health. Working with other organisations the council aims to deliver services which better prevent poor health, loss of independence and unnecessary hospital stays, all leading to a positive environmental benefit.

Care Pathways

Future models have been developed which describe ambitions to deliver care closer to home. A cross ICS Programme is underway to develop this further, for example optimising opportunities in the ophthalmology pathway. Other innovative services, such as the Alcohol Care Team are contributing to carbon reductions, with plans to extend across the ICS aligned with NHS LTP ambitions. (11)

Case Study

The Alcohol Care Team in **Nottingham University Hospitals NHS Trust** achieved a two-thirds reduction in hospital admissions due to detoxification and alcohol-related cirrhosis, saving 36 bed days per month. Over a year, this would lead to estimated carbon savings of 0.27 $ktCO_2$.

The COVID-19 pandemic has also transformed the way we deliver outpatient services, supporting the NHS LTP ambition to reduce attendances by a third (11). Working with Connected Nottinghamshire, opportunities for digital transformation can be optimised, including virtual appointments, but also other functionality such as Patient Knows Best (PKB) to connect clinicians and patients to support self-care and smooth transitions of care across settings.

Lower Carbon Interventions

Supply chain requirements within clinical pathways contribute to overall carbon emissions. Progress is being made to seek alternative products to reduce waste. **Sherwood Forest NHS Foundation Trust** is working closely with procurement colleagues to adopt items such as zero plastic food utensils. **Nottingham University Hospitals NHS Trust** is also embedding sustainability principles into its Quality Improvement and Waste Reduction Initiatives.

Case Study:

Sherwood Forest Hospitals NHS Foundation Trust Waste Contracts Manager at observed that a huge number of waste items being brought out of the hospital for disposal sometimes appeared not to be broken and were simply unopened or unwanted. These items were quarantined during a one month period, and presented before the SMT, Chief Nurse, Head of our Consumables Group and Procurement. Following on from the meeting a value was placed on the items by working alongside the procurement team. Both financially and ethically it didn't make sense to continue with the needless disposal of items. A campaign highlighting the issue, sharing knowledge of unwanted items and offering the surplus stock to other hospital departments was commenced

The Academic Health Science Network (AHSN) supports the adoption and spread of innovations which can benefit clinical carbon reduction. This knowledge is being used within our organisations to reduce carbon emissions, such as the use of manifold systems to reduce Nitrous Oxide emissions.

Case Study

Sherwood Forest NHS Foundation Trust has sought advice from the Yorkshire & Humber Academic Health Science Networks (AHSN) presentations on Nitrous Oxide Emissions Reductions, and is using the knowledge to take action working with a multi-disciplinary team to develop plans to monitor / test manifold systems, and calculate the actual v estimated consumption values

Our Ambition

Developing holistic pathways to deliver quality care outcomes, with a focus on prevention, self-care and equity of access	• With a focus on prevention and addressing health inequalities to reduce unnecessary carbon emissions and inequity of access •Promoting self-care ambitions
Meeting the ambitions to deliver care closer to home	•Optimising digital enabled care accelerated as part of COVID-19 pandemic response • Working with Connected Nottinghamshire to optimise connectivity across digital platforms and use of Patient Knows Best(PKB) to connect clinicians and patients •Transforming pathways to deliver care closer to home e.g. Ophthalmology as an early adopter
Delivering lower carbon interventions where clinically relevant	•Clinical engagement and collaborative procurement to optimise carbon reduction opportunities •Build on carbon reduction innovations developed in collaboration with the AHSN

3.3. Digital transformation

Context

The NHS Long Term Plan has set a number of critical priorities to support digital transformation, seeking to mainstream digitally-enabled care across all areas of the NHS. New digital technology is opening to the healthcare sector opportunities to be more efficient and productive, from improving communication to storing information digitally. (11)

The direct alignments between the digital transformation agenda and a net zero NHS are clear. The ICS will focus on ways to harness existing digital technology and systems to streamline service delivery and supporting functions while improving the associated use of resources and reducing carbon emissions, as outlined in the Sustainable ICT and Digital Services Strategy (2020 to 2025) objectives. (15)

For example, patient travel accounts for 5% of the NHS Carbon Footprint Plus. Increased use of remote consultations where clinically appropriate will assist in reducing the need for patients to travel for healthcare appointments, reducing travel related emissions and saving patients time and money.

Enabling patients to manage their own health and wellbeing through digital technology also contributes to reduction in carbon by up to 25.59kg CO_2 per registered patient. (17)

The impact of avoided appointments, both in terms of a reduction in carbon emissions and the benefits to patients' health and wellbeing has been described by NHS England East of England, as shown in Figure 10, below.

Figure 10 – Impact of the reduction in outpatient attendances
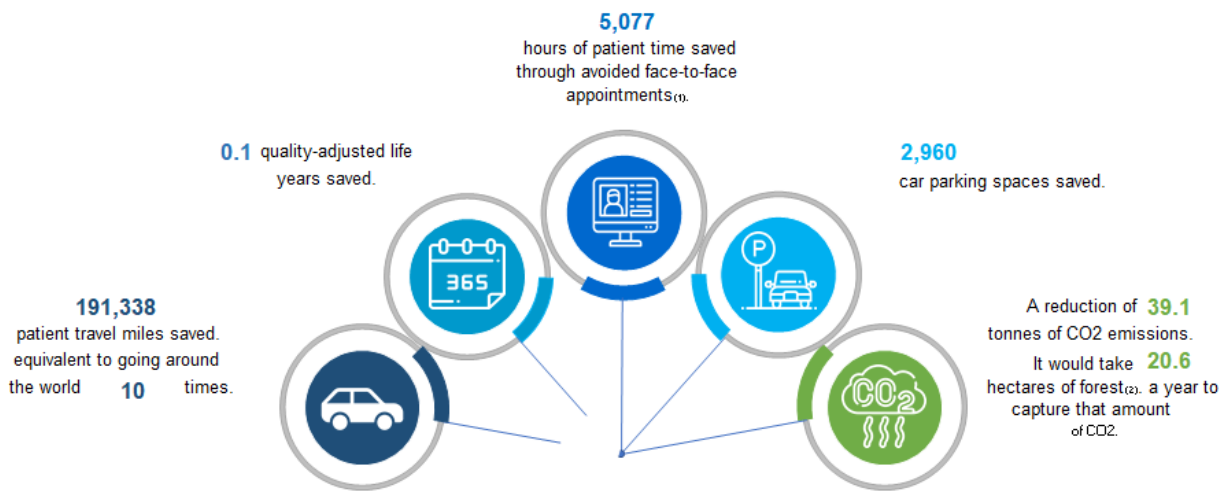
Source: NHS England East of England

Where we are now

The need to transform the delivery of services during the COVID-19 pandemic has accelerated the development and use of remote consultations across healthcare where clinically appropriate. This supports the drive to reduce patient related travel.

Figure 11 - % Virtual Outpatient Appointments
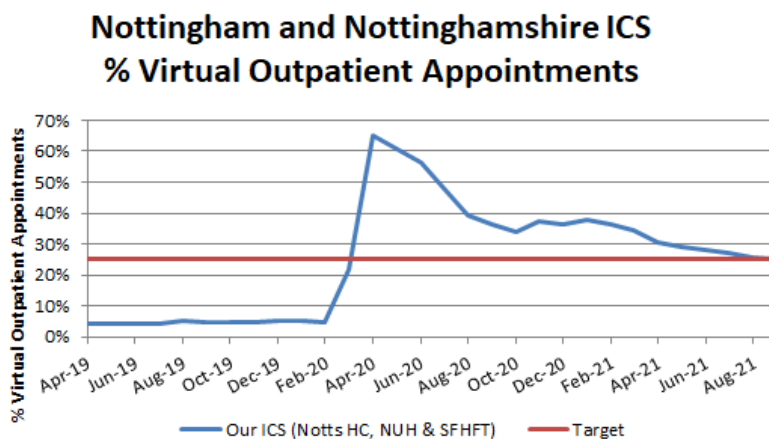
A significant increase in virtual outpatient appointments was seen in response to the COVID-19 pandemic, with the ICS achieving 25% of outpatient activity delivered remotely.

The move to home working and adoption of virtually meetings has reduced staff travel and increased productivity through saving time lost through travel. Though there will be a stepped return to some site based working and face to face meetings, great strides have been made in reducing travel needs.

For **Sherwood Forest Hospital's** patients, appointment letters are being sent into the NHS App so they don't need to be posted to patients. Virtual appointments are already in use within the Trust where their use is considered appropriate. Opportunities for remote monitoring are also being developed to reduce the need for patients to travel by the ability to monitor their condition and connect with clinicians remotely.

Telemedicine is already in place in **Nottingham University Hospitals.** The trust will see the installation of new facilities to maximise sustainable access to the trust and will push to achieve easier access to its services with a new established telemedicine platform. The trust is also advancing plans to digitise clinical records, streamline correspondence with patients and implement robotic processes e.g. reducing the use of desktop phones by migrating to JABBER software, centralising emergency response through the use of EVERBRIDGE. The organisation's Green Plan also includes actions that are in line with NHSX's *"What Good Looks Like"* framework to digitise, connect and transform services safely and securely. (17)

There were significant changes in practice at **Nottinghamshire Healthcare** as a result of the pandemic, with many services still being undertaken remotely.

Cross system and cross partner projects introducing digital transformation of services are delivering service efficiencies and reducing emissions and wastage. These include the East Midlands Radiological System (EMRAD) which supports the digital storage and sharing of images.

Underpinning Nottingham and Nottinghamshire's Integrated Care Systems Public Facing Digital Services vision is the programmes Digital and Social Inclusion Project. Recognising that many of the people who could benefit most from these digital services are the least likely to be online, or lack the skills and confidence to utilise these tools. This project developed to support the improvement of Digital and Social Inclusion across Nottingham and Nottinghamshire, and, to ensure digitally disempowered communities can access and take advantage of digital opportunities.

Our Ambition

Delivering digital appointments and services where clinically relevant	• Optimising digital appointments across settings • Developing virtual services e.g. medical retina solution • Enhancing inter-operability between systems
Connecting clinicians and patients	• Empowering patients through digital literacy e.g. PKB, but with consideration to health inequalities • Extending access to self-monitoring functionality and with connection to clinicians • Access to educational materials and creating a virtual environment for care delivery e.g. exercise classes
Digitising processes to enhance clinical care delivery	• Enhanced digital solutions for administration e.g. patient letters • Digitising health records and developing shared care records • Developing alternatives to the 10 data centres run across trusts and councils

3.4. Travel and transport

Context

Approximately 3.5% (9.5 billion miles) of all road travel in England relates to patients, visitors, staff and suppliers to the NHS, contributing around 14% of total emissions (13% locally). Locally, this includes approximately 3% for business travel and fleet transport, 4% for patient travel, 5% for staff commutes and 1% for visitor travel (6). This underlines the key responsibility we have to reducing travel to support the delivery of net zero and to reduce air pollution.

National programmes to reduce travel related emissions include a move by the NHS to purchasing or leasing low and ultra-low emission vehicles. Greater use of digital solutions to avoid unnecessary patient travel will also help in reducing emissions.

Sustainable forms of travel, and the reduction in the number of journeys necessary, have in addition to reducing carbon emission, a range of benefits including improving public health from reduced air and noise pollution.

In 2019, nearly a third of Nottingham's total CO_2 emissions came from transport of which, nearly all come as a result of road transport from cars, vans, lorries and buses.

Action is needed to reduce car journeys, increase cycling and walking and improve public transport and more low emission vehicles. Through this, we can achieve better air quality, mobility and health for citizens. (18)

Where we are now

Clean Air

In Nottingham the whole of the city centre is an ultra-low emission area, supported by the implementation of the UK's first Workplace Parking Levy and the construction of two new tram lines leading to 9.7 million additional public transport journeys each year.

NHS trusts are continuing to implement plans to reduce patient transport mileage, aligned with the ambition to reduce outpatient attendances to 25%, contributing to improvements in local air quality and aligned to the clean air hospital framework.

Ultra-low (ULEVs) and zero emission vehicles (ZEVs)

Efforts have been made to increase ULEV or ZEV vehicles within fleet across the ICS. 46% of the **Nottingham City Council** fleet is ULEV.

At **Sherwood Forest Hospitals** at least 10% of the fleet and pool vehicles are fully electric. The trust now also offers ULEV & EV to staff through the salary sacrifice scheme.

Nottingham University Hospitals sees the implementation of sustainable travel though the minimisation of private car usage and elimination of emissions from motor vehicles by moving to emissions free vehicle. The Trust offers staff, through the salary sacrifice scheme, the option to have an ultra-low or zero emission vehicle

Nottinghamshire Healthcare NHS Trust is purchasing fleet vehicles to support the NHS national targets, with an ambition to ensure 90% of Trust fleet to be Low Emission Vehicles with at least 25% Ultra Low emission by 2028. The trust has only ultra-low emission vehicles (<75g/km or below) on the staff salary sacrifice scheme.

EMAS plans to take several proactive measures to facilitate the speed at which EVs can be integrated into its fleet, including the identification of Trust-wide providers, regional schemes, and locations.

Infrastructure

Local authorities are working to ensure there is high quality infrastructure to enable low emission and low carbon transport and investment in charging infrastructure to manage demand.

Sherwood Forest Hospitals is working to install EV points in car parks to offer more opportunities for staff and patients to use electric vehicles EV, with chargers currently available at 2 of the 3 trust sites.

Nottinghamshire Healthcare NHS Foundation Trust have EV charging points installed at 8 key hospital sites and charging points awaiting installation at the trust's latest hospital acquisition, Sherwood Oaks in Mansfield.

Sustainable Travel

Both local authorities are working to reduce the need to travel, particularly by car, through promoting the uptake of active travel and availability of safe and green walking/ cycle networks and other low-carbon and healthy travel options to encourage people to try healthier, more environmentally-friendly ways of travelling. This will include promoting options for cycling and walking to school and raising awareness of the harm to health, especially children's health, caused by poor air quality and the benefits of an active lifestyle.

Both local authorities and all NHS organisations offer cycle to work schemes, with infrastructure in place, such as cycle parking. Other schemes are in place to support sustainable travel:

Nottinghamshire County Council has a new Hybrid working strategy that encourages staff to work from home, and if commuting to consider active travel options

Sherwood Forest NHS Foundation Trust is utilising the Kinto app, originally used for car sharing, to promote tracking walking and cycling to work. To encourage staff to switch from diving to work

Nottinghamshire Healthcare NHS Trust is reviewing and updating the Trust Expenses Policy to ensure measures are in place to encourage sustainable travel.

Public transport

Nottingham City Council is working with operators to increase the quality, accessibility and frequency of public transport. This includes access to a Medilink service that connects the two **Nottingham University Hospitals NHS Trust** sites and is free for staff and students.

To encourage daily bus travel, **Sherwood Forest NHS Foundation Trust** supports Stagecoach Smart Commute which saves 30% on bus fares.

Nottinghamshire Healthcare NHS Foundation Trust offers staff an Easy Rider/Robin Hood travel card. The Travel Pass Scheme enables staff to obtain a 12 month travel card with significantly reduced fares. With this card staff are also entitled to other benefits including free use of Citycard Cycles, which enables free cycle rental in Nottingham.

Communication

Awareness of all schemes to increase the use of low emission vehicles and alternative sustainable transport solutions is vital to support increased uptake to reduce carbon emissions. Organisations are working to incorporate communication within Green Travel Plans to support staff, patients and visitors to get to sites more sustainably.

Our Ambition

Promoting sustainable transport and reducing overall tranport	• Promoting active transport solutions to reduce carbon emissions and support health and wellbeing • Reducing patient and business transport through reduction in attendances and hybrid working practices
Increasing the use of ULEV and ZEV vehicles	• Increasing the % of ULEV and ZEV in fleet through new lease opportunities and considering options to procure centrally • Extend offer of ULEV and ZEV vehicles in salary sacrifice schemes and working towards only providing low emission options
Developing the infrastructure to support lower carbon transport options	• Ensuring adequate EV points to support transition to ULEV and ZEV within fleet • Providing appropriate infrastructure to support active transport within community and organisations • Developing a consistent approach to anti-idling principles
Enhancing understanding and communication via Green Travel Plans	• Promoting the health and wellbeing benefits of active transport • Educating on lower carbon solutions and how to access these

3.5. Estates and facilities

Context

The ICS continues to seek opportunities to develop system-wide estate infrastructure through rationalised estate with full utilisation of high quality, flexible long term estate and is committed to ensure this aligns to achieving a net zero carbon for the NHS and public sector estate. An Estates Strategy will be developed that enables planned review for suitability renewal where needed including sustainability impact assessments of developments for the ICS estate to deliver modern, energy efficient services over the coming years. Developing frameworks to ensuring estate is genuinely utilised on a System basis to improve services and generate efficiencies that reduce demand for energy across the system economy through lowered demand for carbon intensive activities. Estates and facilities need to be focused on providing the infrastructure to deliver the best care for the ICS population against the objectives defined within the NHS *"Delivering a 'Net Zero' National Health Service".* (6)

The NHS estate and its supporting facilities services – including primary care, trust estates and private finance initiatives – comprises 15% of the total carbon emissions (22% locally) profile.(6) National programmes to delivery emissions reductions will include upgrading lighting across the NHS

estate, including a move to 100% LED lighting; and a move to purchasing 100% of electricity from renewable sources.

Where we are now

Nottingham City Council has responded to the climate and environmental crisis by setting an ambition to become the first carbon neutral city in the UK by 2028. Each year, city wide emissions data published by BEIS will be used to measure progress towards achieving carbon neutrality in 2028.

The Carbon Neutral Charter (www.nottinghamcity.gov.uk/CN2028) recognised that tackling climate change needs to be done in a way that is fair and sustainable - improving and protecting our environment, economy and society.

The most recent figures from 2019 show a reduction of 52% per person reduction in the amount of CO_2 emitted in Nottingham since 2005. This represents a reduction of over 1 million tCO_2 in 15 years. The city has already exceeded its target of generating 20% of the City's energy demand through low and zero carbon sources.

By March 2019, over 6,200 solar photovoltaic (PV) installations had been deployed across the city covering 4.5% of domestic properties, with an installed capacity of 21MW. Moving forward, Nottingham will continue to increase its local renewable generation, with a particular focus on solar PV combined with energy storage.

Across Nottingham the **City Council** has helped families to reduce their emissions and improve their well-being, through installing 14,221 boilers, 4140 loft installations and 12,588 cavity wall measures.

Sherwood Forest NHS Foundation Trust purchases 100% electricity generated from renewable sources. During the rebuilding of the King's Mill Hospital in 2011, the trust incorporated a geothermal system from an adjacent reservoir. The geothermal system provides one-third of all the heating requirements, and 90% of the cooling requirements for the complex.

Nottinghamshire Healthcare NHS Foundation Trust has been purchasing renewable energy since April 2019. Other measures to reduce estate related emissions include the installation of LED lights and the installation of solar panels on seven of its building. The Trust will ensure at least 50% of Estates and Facilities (E&F) staff have completed relevant carbon literacy training.

Case Study:
Nottingham University Hospitals NHS Trust is actively progressing delivery of the City Energy Project (CEP) to promote decarbonisation of the City Hospital campus. This includes replacement of its obsolete coal fired and gas back up boilers to a state of the art Energy Centre. This provides improved distribution across the site via 3 new steam boilers and 2 combined heat and power (CHP) units. This is expected to provide a reduction in emissions of 14,000 tCO_2 by 2030.

For nearly three years both **Nottinghamshire Healthcare NHS Foundation Trust** and **Sherwood Forest NHS Foundation Trust** have been purchasing its electricity from renewable energy source suppliers and **Nottingham University Hospitals NHS Trust** since 2021. All healthcare trusts are in advanced stages of changing to LED light use. **Nottinghamshire County Council** are delivering a programme that will see completion of its conversion of street lighting to LEDs by 2026, with the **City Council** already embarking on a programme to replace all its office lighting with LEDs.

The Green Social Prescribing programme is the practice of supporting patients to engage in nature-based activities, and plays an important role in recovery following the COVID -19 pandemic as we build back better and greener. Nottingham and Nottinghamshire ICS has been identified as a test and learn site to explore the ways in which connecting people with nature can improve mental health and wellbeing. Green Space, the scheme commenced in the ICS, is all about improving people's mental health, with green providers, social prescribers, voluntary organisations and community initiatives helping to connect many more people with nature-based activities.

Our Ambition

Continue to reduce carbon emissions through smart Energy strategies	• Ensure 100% renewable energy is used across all ICS organisations by April 2022 • Increase energy generation (photovoltaic), whilst making services more efficient to reduce energy demand • Consider sharing or shifting power generation sources
Correctly manage Waste across the system with improved recycling and prevention	• Build on existing and developing recycling and waste prevention initiatives across the ICS • Reduce cost of waste management through more efficient processes e.g. work with suppliers to reduce use of single use plastics, paper, re-use items
To recognise Water as a valuable resource in the sustainability journey	• Responsible and efficient use of water across the ICS, modernising infrastructure to prevent excess or uncontrolled water waste, e.g. leaks, dripping taps • Consider local impact of estate developments on flood defences, e.g. plant trees
Promote Green Spaces and biodiversity in all estate developments	• Create estate with green space and actively promote Green Social Prescribing - raise awareness of these benefits • Recognise the importance of and actively conserve and protect biodiversity within the system estate footprint

3.6. Medicines

Context

Medicines account for 25% of emissions within the NHS (22% locally). A small number of medicines account for a large portion of the emissions, and there is already a significant focus on two such groups – anaesthetic gases (2% of emissions) and inhalers (3% of emissions) – where emissions occur at the 'point of use'. (6)

Anaesthetic gases used in surgery, such as Desflurane, have a particularly high carbon footprint, with the emissions from one bottle equivalent to those from burning 440 kg of coal. However, low carbon

alternatives exist, and are clinically appropriate in a wide variety of settings. The NHS therefore requires ICSs to have plans in place to reduce the use of Desflurane in surgery. (6)

In England, more than 65 million inhalers are prescribed every year, with the most frequently prescribed being Metered Dose Inhalers (MDI) and Dry Powder Inhalers (DPI).(6) Inhalers are used in a variety of respiratory conditions, ranging from asthma to chronic obstructive pulmonary disease. The majority of the emissions come from the propellant in metered-dose inhalers (MDIs) used to deliver the medicine, rather than the medicine itself. (12)

Metered doses Inhalers (MDI) contain potent hydrofluorocarbons (HFCs) that have significant global warming potential up to 3000 times more potent that CO2. (70% of inhalers prescribed in the UK are MDIs compared to just 13% in Sweden, who opt for lower carbon alternatives such as dry powder inhalers which provide a fraction of the carbon footprint of MDIs. (12)

When used MDIs are often disposed of in domestic waste, the residual HFCs, typically 30% of the original propellant, are likely to be released into the atmosphere due to them being crushed during refuse collection or when disposed of via landfill. Inhalers returned to pharmacies for safe disposal can be incinerated at high temperature's using NHS E and I's waste contractor to destroy propellant gases, with the added option of recycling components from some inhalers. (19)

The NHS Long Term Plan set targets to deliver significant and accelerated reductions in the total emissions from the NHS by moving to lower carbon inhalers, such as dry powder inhalers. (11)

The 2021/22 NHS Standard Contract set out inhalers and anaesthetic gases as two key areas for early action in this area:

- Every trust to reduce its use of Desflurane in surgery to less than 10% of its total volatile anaesthetic gas use, by volume.
- Every ICS to develop plans for clinically appropriate prescribing of lower carbon inhalers.

Where we are now

The Nottingham and Nottinghamshire ICS has established a Clinical Advisory Group which will provide the clinical oversight to developing and implementing plans for carbon reduction from medicines. As well as representation across settings, colleagues include physicians, anaesthetists, pharmacists and GPs to provide expertise and oversight to ensure delivery of clinically appropriate changes to both anaesthetic gas and inhaler use across the system.

Medical Gases

The system has achieved a reduction in Desflurane use to less than 10% of its volatile anaesthetic gas use by volume, as shown in Figure 12, with peaks linked to purchasing rather than use. **Acute trusts** have removed access to Desflurane, with use agreed on a patient specific basis. Further work is underway to change prescribing behaviour to reduce use further.

Figure 12 – Desflurane use in the ICS

Nottingham and Nottinghamshire ICS
% desflurane of volatile anaesthetic gas usage
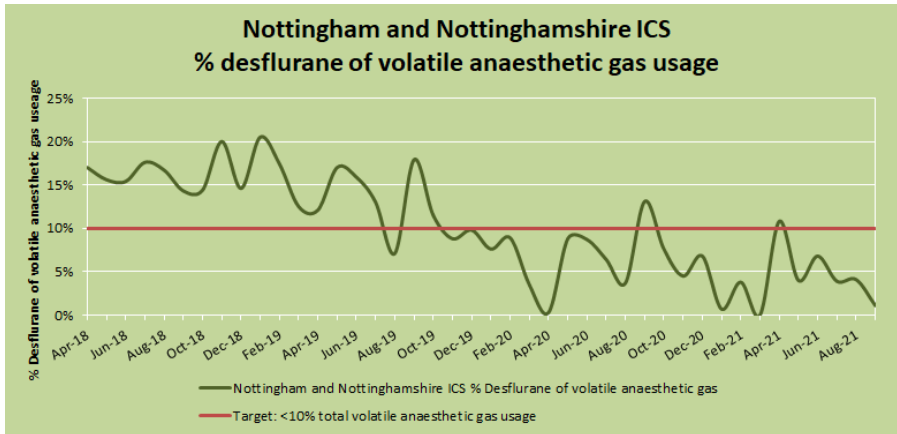
Sherwood Forest NHS Foundation Trust has plans in place to reduce Nitrous Oxide emissions by reviewing a manifold system which delivers the medical gases to identify leaks, and also considering the feasibility of novel gas capture systems which have recently been brought to market.

Inhalers

MDI Inhaler use in the ICS is summarised in Figure 13, below:

Figure 13 - % of MDI Inhalers

% of prescribed inhalers that are MDIs
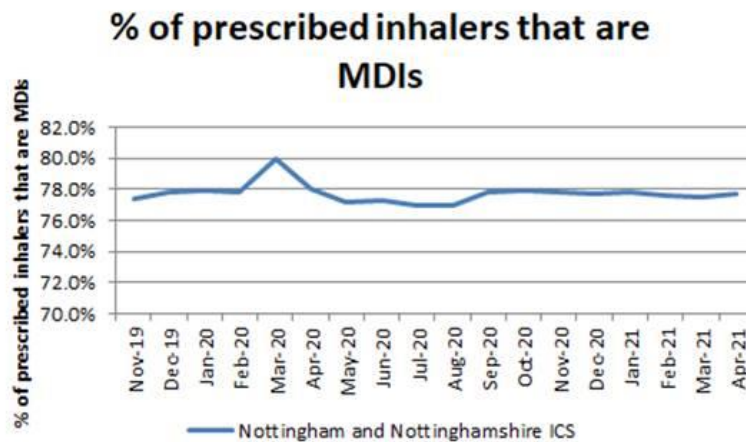
Work is underway to develop plans for clinically appropriate prescribing of lower carbon inhalers in line with the commitment of a 50% reduction by 2028. A dedicated Inhaler Group has been formed and is working with the ICS Clinical Advisory Group to develop and implement initiatives to achieve this target.

Medicine Disposal

Nottingham University Hospitals has implemented a scheme to maximise the recovery of unused pharmaceuticals that is currently saving circa £50,000 per year. This is equivalent to 130 tCO$_2$/year.

Nottinghamshire Healthcare NHS Foundation Trust is working to reduce the quantity of medicines waste across all sites. This will include implementation of a new pharmacy dispensary

system and implementation of an electronic prescribing and administration system. The latter will reduce duplicate requests and over ordering of medicines.

Primary Care and **Community Pharmacies** are educating and speaking with patients regarding the safe disposal of inhalers to GP practices and community pharmacies, as per the 2021/22 Pharmacy Quality Scheme which requires pharmacies to speak with all patients, their carer or representatives, who have been dispensed an inhaler between 1st September 2021 to 31st January 2022.

Our Ambition

Strategies to support commitment to lower inhaler carbon footprint	• Area Prescribing Committee (APC) changing formulary and guidance to support a commitment to lower carbon inhaler use
Medicine optimisation for patients prescribed inhalers	• Achieving optimal asthma and COPD control through patient reviews • Agreeing local respiratory pathways aligned with APC formulary and clinical best practice guidance • Demonstrating and checking inhaler technique • Implementing shared decision-making principles with patients to support prescribing of lower carbon inhalers
Reduce the environmental impact of inhaler waste	• Education of patients, carers or representatives to return used or unwanted inhalers to community pharmacies for safe disposal • Encourage appropriate ordering of inhalers to prevent over supply
Reduce carbon footprint from anaesthetic gases	• Changing prescribing practice to reduce Desflurance use to a named patient basis • Trial and implement systems to reduce emissions from other anaesthetic gases e.g. Nitrous Oxide

3.7. Supply chain and procurement

Context

The NHS supply chain accounts for approximately 62% of total carbon emissions (57% locally) and is a clear priority area for focus in every Green Plan. (13)

The NHS England Procurement Roadmap, Figure 14, outlines the steps to achieve a net zero supply chain by 2045. (20)

Figure 14 – Building a net zero into NHS procurement
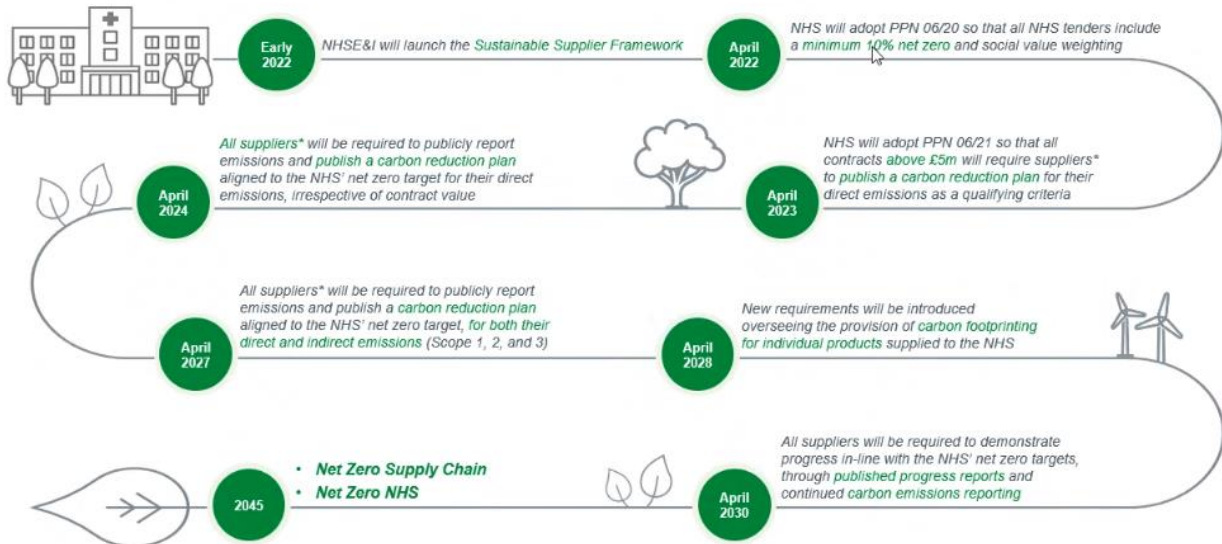
Source: NHSE and I - Delivering a Net Zero NHS – One Year Progress.

Where we are now

The Nottingham and Nottinghamshire ICS has developed procurement targets to deliver net zero across three areas.

All organisations in the ICS have made a commitment to inform suppliers and adhere to the commitments in the supply chain roadmap, including the 10% minimum social value weighting.

Organisations in the ICS have developed sustainable procurement strategies to support these ambitions and review of consumption and demand to inform sustainable procurement opportunities.

A number of internal projects have been completed or underway to reduce consumption and switch to sustainable alternatives. For example, all organisations are working to using only 100% recycled paper in their operations. Single use plastics are being ceased where possible e.g. plastic cutlery. Initiatives are also underway to adopt leaner practices to reduce waste, reuse items and utilise remanufactured devices where possible.
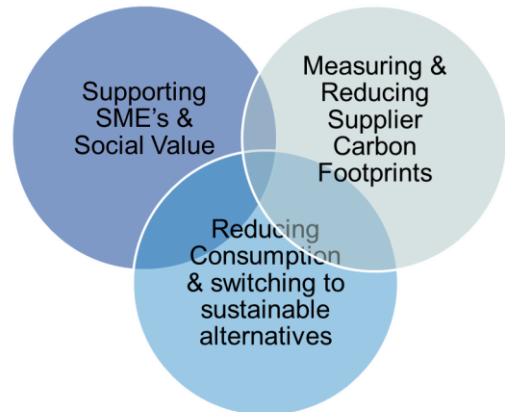
Case Study:

In the past **Sherwood Forest Hospitals NHS Foundation Trust** were procuring disposable sharps containers. Once full the whole unit and its contents were incinerated, which is the standard disposal method for sharps within the NHS, which is not a sustainable system. The Waste Contract Manager researched the market to see what alternative options were available to the NHS, whilst there was the option to use disposable cardboard boxes (which would reduce plastic use); waste hierarchy was applied to seek a re-usable system. The Bio Systems reusable sharps containers offered the opportunity to reduce the Trusts single-use-plastics consumption, and reduce incineration costs by offering a safely managed re-usable sharps container system

Our Ambition

Supporting SME's & Social Value	• Inform suppliers and adhere to the commitments in the supply chain roadmap announced at the NHSE/I Sept 2021 board, including the 10% minimum social value weighting from April 2022 • Adopt a common Social Value Policy for Procurement across the ICS • Engagement and support to help local SME's to understand commissioning goals/requirements and identify social value (incl carbon footprint)
Measuring & Reducing Supplier Carbon Footprints	• Develop understanding of procurement carbon footprint /whole life costs • Collaborative work on target carbon reduction categories
Reducing Consumption & switching to sustainable alternatives	• Only purchase 100% recycled paper, and reduce paper usage • Take action to address single use plastics, reduce and specifically eliminate unnecessary clinical / catering plastics • Ensure all organisations are using Multi-Functional devices as their core printing infrastructure instead of stand-alone printers • Adopt programmes looking to reuse items, such as reusable gowns and other clinical protective clothing. • Establish a walking aids reuse programme or build on an existing programme to increase the rate of return • Adopt programmes to use remanufactured medical devices

3.8. Food and nutrition

Context

It is estimated that food and catering services in the NHS produces 1,543 ktCO2e each year, equating to approximately 6% of total emissions. Healthier, locally sourced food can improve wellbeing while cutting emissions related to agriculture, transport, storage and waste across the supply chain and on NHS estate.

The Department of Health and Social Care has recently published the "*Report of the Independent Review of NHS Hospital Food"* highlighting the role that food and nutrition plays in improving the nation's health, tackling health inequalities and meeting net zero ambitions. (21)

The government is currently exploring the issue of sustainable food and agriculture in the UK through the "*National Food Strategy"* which supports sustainable ambitions, with Part One featuring a commitment to improve public sector procurement of food and drink and Part Two focussing on the delivery of healthy and sustainable food and the role that public sector food procurement might have in restoring and enhancing the natural environment for the next generation. (22)

This overlaps with recent policies to improve the diet of the general population, which aim to promote health and wellbeing, prevent ill-health and reduce health inequalities, as outlined in the obesity strategy. (23)

Food waste represents a cost to the UK healthcare sector of £230 million each year, which includes food procurement, labour, utilities and waste management costs. Estates Returns Information Collection (ERIC) data, published by NHS Digital, shows that 14 million kilograms of unserved meals were thrown away in 2018 to 2019. Currently, plate waste is not measured nationally, so overall waste is likely to be higher. (24)

Where we are now

Health and Wellbeing

Locally, a number of actions are being taken to improve the health and wellbeing of the population, with obesity identified as a key area of focus. The incidence of obesity in adults in our ICS is above the England average as shown in Figure 15 15 (the reduction in prevalence is likely due to less face to face GP appointments in the pandemic in order to be weighed). Childhood obesity highlights future health issues; this is especially concerning in Nottingham City, with 12% children 4-5 years old obese and 1 in 4 children 10- 11 years obese. This compares to the national figures of 9.9% and 1 in 5 respectively.

Figure 15 - Local Obesity Incidence in Adults

Obesity prevalence of adults in Nottinghamshire ICS (QOF 18+)
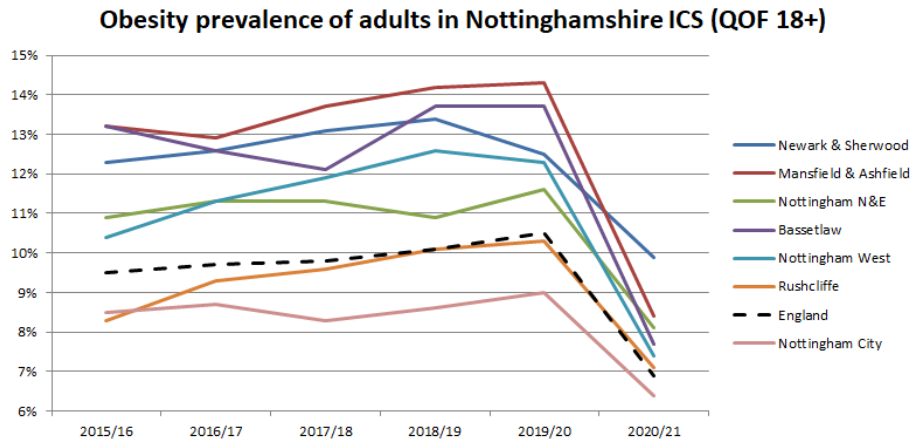
Working in partnership with the Health and Wellbeing Board, transformation programmes plans are underway to reduce the incidence of obesity for children and adults across the ICS.

Nottinghamshire County Council have developed a Nottinghamshire Food Charter and partnership action plan to shows the role food can play in creating healthier lives, richer economies and a sustainable environment. Nottinghamshire is also one of five local authorities involved in the Child Obesity Trailblazer programme focussing on ways to improve food environment for children in early years. Testing with local charities has commenced, with 26 food clubs across Nottinghamshire to enable families in disadvantaged areas to access good quality, healthy food.

Nottingham City Council is working with food charities to ensure school meals encourage children to eat more fruit and vegetables and offer healthy options**.**

Sustainable Food

Sustainable food procurement plans are considered by NHS organisations and local authorities in the ICS.

Nottingham University Hospitals NHS Trust was the first trust to implement a sustainable food procurement programme built around locally sourcing produce and maximise local ingredients via the introduction of seasonal menus. This has been recognised by the Soil Association, with the Trust being the first recipient of the Bronze medal. Both acute trusts change their menus on a regular basis to include seasonal products.

Nottinghamshire County Council has achieved the Food for Life Silver Award for meeting school food standards, with ambition to achieve gold through increased use of organic food, supply permitting.

Sustainable food choices are being enabled in a number of ways across both acute trusts.

Nottingham University Hospitals NHS Trust has developed a Memory Menu, developed in partnership with patients and the public, to provide meal choices, with an increased request for the incorporation of plant based options.

Sherwood Forest NHS Foundation Trust has implemented meat free Monday's into staff restaurants, with the aim of extending plant based options into hospital menus, as well as a trial of the removal of processed meat.

Nottinghamshire Healthcare NHS Foundation Trust continues to provide plant based options on patient and staff menus and has a programme of engagement programmes to promote the take up of these options.

Community Food initiatives are accessible across **City** and **County** with place based initiatives that link into local food supply chains. Family Action is also partnering with Fair Share to re-allocate surplus food. Work is also underway within acute trusts to re-allocate food to food banks.

Case Study:

Sherwood Forest Hospitals NHS Foundation Trust initiated a Hope Orchard led by the Hospital's Climate Action Team to link the importance of planetary health on human health. The initiative brought together various parties from across the county to make a positive impact on both climate change and wellbeing, and promote the association of healthy food (fruit in this case) with health and the environment. We asked participating organisations to share their news using Twitter #HopeOrchard.

This initiative is an example of linking climate health and the environment and could be extended further for example linking food growing and allotments, exercise, healthy plant based diet, and carbon reduction. This scheme could be rolled out across all ICS partners across Nottinghamshire and the Midlands.

Waste

A number of initiatives are in place to reduce food waste and its associated impact on carbon emissions.

Domestic food waste collection will be a statutory function of all English local authorities, including **Nottingham City Council** in 2023. Nottingham City Council is also exploring plans for the use of food waste in anaerobic digestion to generate bio gas fuel locally.

Food waste recycling is already in place at key sites across **Nottinghamshire Healthcare NHS Foundation Trust.**

Digital food ordering is established at **Nottingham University Hospitals NHS Trust**, with plans to implement at **Sherwood Forest NHS Foundation Trust** in the near future. Pre-ordering of school meals is also in place to reduce food waste.

Our Ambition

Maximising social value through sustainable procurement	• Implement national guidance in relation to food procurement • Consider opportunities for collaborative procurement to provide local produce and support local producers • Seasonal produce incorporated in all menus
Strategies to continue to reduce food waste	• Implement and embed digital ordering to reduce food waste • Scope opportunities to recycle food waste
Strengthening community initiatives to re-allocate surplus food and promote community growing	• Optimise the reallocation of surplus foods at place and in conjunction with local charities • Scope opportunities to extend community growing initiatives
Implement plans to improve the health and wellbeing of the population	• Develop and implement transformation plans to address obesity incidence across the ICS • Education of the population, and with a focus on early years, to support healthier lifestyle choices

3.9. Adaptation

Context

Adaptation in relation to health and social care are actions or processes that reduce mortality and morbidity associated with climate change, while strengthening the sector's capacity to provide a high standard of care while the climate changes.

From the Met Office's national climate projections, we are likely to see an increased chance of hotter and drier summers and milder but wetter winters. These changes are expected to present challenges to keeping patients safe and delivering high quality healthcare, as outlined in Figure14.

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Figure 16 - Climate Change Hazards

Climate change hazards affecting people and the built environment

	Heatwaves	**Floods**	**Cold**
Communities and settlement	Heatwaves, urban heat island, air pollution	Flooded communities, resilience, relocation, blight/economic effects	Risks from extreme weather
Buildings	Overheating	Flood damage, damp, mould	Damp homes, cold homes
Health and social care system	Overheating risks to patients, social care, occupational risks, energy use	Flood risks to NHS assets, service disruption	Service disruption
Population health	Heatwave risks to population, mortality, injury etc.	Flood impact on mental health, deaths and injuries	Cold risks to mortality and morbidity

Source: Met Office

This requires the NHS to plan on how to mitigate the associated risk on its ability to deliver safe patient care.

Where we are now

All NHS organisations have developed climate change risk assessments to understand the risks of the effects of climate change and severe weather conditions on its business and functions, which are incorporated into their assurance frameworks. These supporting organisations to identify assess and implement adaption measures described in their Climate Change Adaptation Plans and business continuity plans.

Nottingham City Council has detailed plans on mitigating flood risk in the city through infrastructure improvements, natural solutions and educating. The council is working on understanding the communities at risk such those in poor housing; fuel and food poverty. It will publish a revised adaptation strategy in 2023.

Under its 10 year plan **Nottinghamshire County Council** working with its partners will work to protect communities most at risk of flooding.

Our Ambition

Comprehensive risk assessment process for climate change	• Risk assessments developed for all climate change events • Risks captured on risk registers with continual review and iteration of plans in response • Risk assessment completed in the development of new buildings to incorporate climate adaptation measures
Plans to mitigate the risks or effects of climate change on business and functions	• Consideration to the socio-economic and population impact of climate change • Plans respond to risk likelihood and impact to understand future pressure on services and avoid disproportionate impact on the most vulnerable • Plans outline physical changes to properties to mitigate against risks • Challenge plans to ensure they are sufficient to mitigate impact • Develop system thinking to enable flexibility and agility in response and incorporated in emergency planning

4. Governance and Reporting Progress

Context

In '*Delivering a 'Net Zero' National Health Service'* the NHS set out its ambitions to become the world's first Net Zero Health Service. The publication of this ambition set in motion the establishment of arrangements across the NHS to deliver this ambition. In the Midlands a Regional Board has been established to deliver this work across the Midlands Region and to hold ICS's to account for delivery. In turn ICS's are expected to hold organisations to account through their own structures for the delivery of organisation Green Plans.

A strong governance framework is essential across the ICS to ensure that sustainability becomes integral to decision making processes and that reducing carbon usage is considered as part of all ICS work. Strong connections will also be required between NHS and non-NHS partners in the ICS to deliver this agenda, including the work of health and wellbeing boards.

Where we are now

The ICS has considered staff engagement in the early stages of developing its first Green Plan to be essential and workshops have been held to encourage staff to contribute to the work. This will be a continuing theme through the cycle of Green Plan development and delivery.

The ICS has a Transformation Programme to develop the Green Plan and in 2022/23 this will move to a System Delivery Group as part of the ICS Governance Structure under the leadership of the ICS Director of Finance, with membership evolving to include other ICS organisations. This group will monitor the delivery of Green Plans from across the ICS.

Staff from across the ICS have contributed to the production of the Green Plan and in 2022/23 the ICS will develop a Green Plan delivery function to develop systems to monitor, manage and reduce carbon usage across the ICS. The ICS will hold an annual summit so that staff and citizens can review progress with the Green Plan delivery and contribute to its next stage of development, both within health and care but also in the development of climate change ambitions as part of the wider community.

The nature of the Green Plan is that it will have strong connections with the work of the ICS on health inequalities, the wider health and wellbeing board plans in the ICS and the sustainability plans of ICS partners from outside the NHS. The ICS will aim to set up suitable arrangements to ensure the plans are well connected in design and delivery.

Our Ambition

Establish clear governance for the ICS Green Plan delivery	• Establishment of Greener ICS as a System Delivery Group in the ICB governance structure • NHS Organisations will be held to account for plan delivery by the ICS, with membership evolving to include other ICS organisations • Provide annual reports to the ICB on progress with plan delivery
Develop an infrastruture to understand carbon use in the ICS and manage its reduction	• Commit to resourcing a Green Plan Delivery function to lead on the development of carbon reporting in the ICS • Develop systems, including sustainability impact assessments, to ensure that carbon impact is considered in all ICS activity
Ensure that staff and public engagement is at the heart of ICS Green Plan delivery	• Hold an annual ICS Sustainability Summit for attendance by staff and the public to review progress with Green Plan delivery and contribute to its future development both within health and care and as part of the wider community • Ensure that stakeholders from across the ICS are included in delivery groups for each of the chapter areas
Ensure effective working on the sustainability agenda with non NHS partners in the ICS	• Establish formal ICS Green Plan connections to health and wellbeing boards • Ensure the sustainability work of non NHS partners is included in planning and delivery

5. Finance

Context

Many of the carbon reducing interventions described in this plan are either cost-neutral or can provide an immediate cost benefit. These range from efforts to reduce plastics and food waste through to low-carbon procurement and optimisation of medicine usage. Yet more are directly aligned with existing priorities – such as the digital transformation agenda and the commitment within the NHS Long Term Plan to reduce polluting emissions from the NHS fleet. These are areas where we need to make quick progress across the system and its partner organisations.

A further set of initiatives may require initial capital investment, followed by efficiency savings over the long run. Examples of this include investments in LED lighting, systems to manage and reduce energy consumption, and the electrification of transport fleets as costs fall.

Where we are now

To support the implementation and delivery of green initiatives, from 2022/23 all capital and revenue business cases developed within the ICS will include a Sustainability Impact Assessment. This will describe how the case will contribute to our net zero pledge and should be used as a key principle in decision making.

In addition, plans for allocation of the System Capital Envelope over a 3-year period (2022-2025) will have a particular focus on decarbonisation with a proportion of the envelope set aside to support this agenda.

The capital envelope will be used to support heat decarbonisation and to ensure that heating systems, insulation and ventilation are upgraded to reduce carbon emissions where possible as part of backlog maintenance, and that LED lights are used in place of less efficient systems.

However, internal capital resources are limited in value and to truly transform our estate we will need to access capital funds from other sources. In recent years we have been successful in applying for SALIX decarbonisation funding at Nottingham University Hospitals. The capital project at NUH has enabled us to implement the City Energy Project, removing the coal-fired boilers at Nottingham City Hospital.

We will continue to explore opportunities for funding from the Public Sector Decarbonisation Scheme to support delivery of plans described in this document. We will actively work with our local partners, within and outside of the NHS, to access funds directed towards the UK wide ambition for net zero and explore alternative ways to fund this investment.

The investment needed for a net zero health service clearly extends beyond its buildings alone. It will require investment in our people, ensuring they understand what they can do to respond to climate change, and have the expertise needed to implement new ways of working and to embed behaviour changes.

Integrated Care System
Nottingham & Nottinghamshire

Our Ambition

Sustainability will be included in the assessment of all service developments	• From 2022/23 Sustainabilty Impact Assessments will be required for all ICS capital and revenue business cases to increase the priority place on sustainability in decision-making
The prioritisation of capital expenditure will include decarbonisation impact	• A proportion of the System Capital Envelope will be set aside to focus on the decarbonisation agenda through to 2025
Development of external funding sources	• The ICS will work on sourcing external funding from beyond the ICS to support decarbonisation

6. Summary Action Plan

Workforce and Leadership		
Objective	**How**	**By when**
1. Leadership to deliver net zero ambitions	• Designated board-level net zero lead to be appointed to support the ambitions of delivering a net zero NHS • Maintain ICS Green Board and Delivery Group arrangements to deliver ambitions	• April 2022 • Already in place
2. Engaging the public and our workforce in the actions required to deliver sustainable healthcare locally	• Annual summit to encourage and enable to staff to generate ideas and lead on them • Co-design with the public to understand and respond to carbon impact through the life course	• November 2022 • December 2022
3. Education and training to enhance carbon literacy	• Delivering carbon literacy training, with a tiered e-learning approach to deliver meaningful training effectively • Developing a network of Green Champions to raise awareness	• April 2024 • March 2023
4. Sustainability as a core dimension of service management/delivery	• Completion of Sustainability Impact Assessments mandatory for service developments • Carbon monitoring 'scorecard' undertaken locally • Sustainability actions supported by PMO	• September 2022 • September 2022 • September 2022
Sustainable Models of Care		
Objective	**How**	**By when**
5. Developing holistic pathways to deliver quality care outcomes, with a focus on prevention, self-care and equity of access	• With a focus on prevention and addressing health inequalities to reduce unnecessary carbon emissions and inequity of access • Promoting self-care ambitions	• March 2024 • March 2024
6. Meeting the ambitions to deliver care closer to home	• Optimising digital enabled care accelerated as part of COVID-19 pandemic response in line with national targets • Working with Connected Nottinghamshire to optimise connectivity across digital platforms and use of Patient Knows Best(PKB) to connect clinicians and patients • Transforming pathways to deliver care closer to home e.g. Ophthalmology as an early adopter	• September 2022 • April 2023 • March 2024

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7. Delivering lower carbon interventions where clinically relevant	• Clinical engagement and collaborative procurement to optimise carbon reduction opportunities • Build on carbon reduction innovations developed in collaboration with the AHSN	• September 2024 • September 2023

Digital Transformation

Objective	How	By when
8. Delivering digital appointments and services where clinically relevant	• Optimising digital appointments across settings • Developing virtual services e.g. medical retina solution • Enhancing inter-operability between systems	• September 2022 • March 2024 • March 2024
9. Connecting clinicians and patients	• Empowering patients through digital literacy e.g. PKB, but with consideration to health inequalities • Extending access to self-monitoring functionality and with connection to clinicians • Access to educational materials and creating a virtual environment for care delivery e.g. exercise classes	• April 2023 • March 2024 • March 2024
10. Digitising processes to enhance clinical care delivery	• Enhanced digital solution for administration e.g. patient letters • Digitising health records and developing shared care records • Developing alternatives to the 10 data centres run across trusts and councils	• April 2023 • March 2024 • September 2024

Travel and Transport

Objective	How	By when
11. Promoting sustainable transport and reducing overall transport	• Promoting active transport solutions to reduce carbon emissions and support health and wellbeing • Reducing patient and business transport through reduction in attendances and hybrid working practices	• October 2022 • September 2022
12. Increasing the use of ULEV and ZEV vehicles	• Increasing the % of ULEV and ZEV in fleet through new lease opportunities and considering options to procure centrally • Extend offer of ULEV and ZEV vehicles in salary sacrifice schemes and working towards only providing low emission options	• October 2023 • September 2022
13. Developing the infrastructure to support lower carbon transport options	• Ensuring adequate EV points to support transition to ULEV and ZEV within fleet • Providing appropriate infrastructure to support active transport within community and organisations • Developing a consistent approach to anti-idling principles	• January 2025 • January 2025 • January 2024
14. Enhancing understanding and communication via Green Travel Plans	• Promoting the health and wellbeing benefits of active transport • Educating on lower carbon solutions and how to access these	• September 2022 • September 2022

Estates and Facilities

Objective	How	By when
15. Continue to reduce carbon emissions through smart Energy strategies	• Ensure 100% renewable energy is used across all ICS organisations by April 2022 • Increase energy generation (photovoltaic), whilst making services more efficient to reduce energy demand • Consider sharing or shifting power generation sources	• April 2022 • March 2025 • March 2025
16. Correctly manage Waste across the system with improved recycling and prevention	• Build on existing and developing recycling and waste prevention initiatives across the ICS • Reduce cost of waste management through more efficient processes e.g. work with suppliers to reduce use of single use plastics, paper, re-use items	• October 2023 • September 2024
17. To recognise Water as a valuable resource in the sustainability journey	• Responsible and efficient use of water across the ICS, modernising infrastructure to prevent excess or uncontrolled water waste, e.g. leaks, dripping taps • Consider local impact of estate developments on flood defences, e.g. plant trees	• March 2025 • March 2025
18. Promote Green Spaces and biodiversity in all estate developments	• Create estate with green space and actively promote Green Social Prescribing - raise awareness of these benefits • Recognise the importance of and actively conserve and protect	• March 2025 • March 2025

	biodiversity within the system estate footprint	

Medicines

Objective	How	By when
19. Strategies to support commitment to lower inhaler carbon footprint	• Area Prescribing Committee (APC) changing formulary and guidance to support a commitment to lower carbon inhaler use	• September 2022
20. Medicine optimisation for patients prescribed inhalers	• Achieving optimal asthma and COPD control through patient reviews • Agreeing local respiratory pathways aligned with APC formulary and clinical best practice guidance • Demonstrating and checking inhaler technique • Implementing shared decision-making principles with patients to support prescribing of lower carbon inhalers	• March 2024 • March 2024 • March 2024 • March 2024
21. Reduce the environmental impact of inhaler waste	• Education of patients, carers or representatives to return used or unwanted inhalers to community pharmacies for safe disposal • Encourage appropriate ordering of inhalers to prevent over supply	• September 2022 • September 2022
22. Reduce carbon footprint from anaesthetic gases	• Changing prescribing practice to reduce Desflurane use to a named patient basis • Trial and implement systems to reduce emissions from other anaesthetic gases e.g. Nitrous Oxide	• September 2022 • September 2023

Supply Chain and Procurement

Objective	How	By when
23. Supporting SME's & Social Value	• Inform suppliers and adhere to the commitments in the supply chain roadmap announced at the NHSE/I Sept 2021 board, including the 10% minimum social value weighting from April 2022 • Adopt a common Social Value Policy for Procurement across the ICS • Engagement and support to help local SME's to understand commissioning goals/requirements and identify social value (including carbon footprint)	• April 2022 • April 2022 • April 2024
24. Measuring and Reducing Supplier Carbon Footprints	• Develop understanding of procurement carbon footprint /whole life costs • Collaborative work on target carbon reduction categories	• April 2024 • April 2024
25. Reducing Consumption and switching to sustainable alternative	• Only purchase 100% recycled paper, and reduce paper usage • Take action to address single use plastics, reduce and specifically eliminate unnecessary clinical / catering plastics • Ensure all organisations are using Multi-Functional devices as their core printing infrastructure instead of stand-alone printers • Adopt programmes looking to reuse items, such as reusable gowns and other clinical protective clothing. • Establish a walking aids reuse programme or build on an existing programme to increase the rate of return • Adopt programmes looking to utilise remanufactured medical devices	• September 2022 • March 2024 • October 2023 • October 2023 • March 2023 • March 2023

Food and Nutrition

Objective	How	By when
26. Maximising social value through sustainable procurement	• Implement national guidance in relation to food procurement • Consider opportunities for collaborative procurement to provide local produce and support local producers • Seasonal produce incorporated in all menus	• March 2023 • March 2024 • Already in place
27. Strategies to continue to reduce food waste	• Implement and embed digital ordering to reduce food waste • Scope opportunities to recycle food waste	• October 2022 • September 2022
28. Strengthening community initiatives to re-allocate surplus food and promote community	• Optimise the reallocation of surplus foods at place and in conjunction with local charities	• April 2023

growing	• Scope opportunities to extend community growing initiatives	• October 2022
29. Implement plans to improve the health and wellbeing of the population	• Develop and implement transformation plans to address obesity incidence across the ICS • Education of the population, and with a focus on early years, to support healthier lifestyle choices	• March 2024 • March 2023

Adaptation

Objective	How	By when
30. Comprehensive risk assessment process for climate change	• Risk assessments developed for all climate change events • Risks captured on risk registers with continual review and iteration of plans in response • Risk assessment completed in the development of new buildings to incorporate climate adaptation measures	• September 2022 • September 2022 • March 2023
31. Plans to mitigate the risks or effects of climate change on business and functions	• Consideration to the socio-economic and population impact of climate change • Plans respond to risk likelihood and impact to understand future pressure on services and avoid disproportionate impact on the most vulnerable • Plans outline physical changes to properties to mitigate against risks • Challenge plans to ensure they are sufficient to mitigate impact • Develop system thinking to enable flexibility and agility in response and incorporated in emergency planning	• March 2023 • September 2022 • October 2023 • October 2024 • March 2025

Governance and Reporting Progress

Objective	How	By when
32. Establish clear governance for ICS Green Plan delivery	• Establishment of Greener ICS as a System Delivery Group in the ICB governance structure • NHS Organisations will be held to account for plan delivery by the ICS, with membership evolving to include other ICS organisations • Provide annual reports to the ICB on progress with plan delivery	• September 2022 • September 2022 • September 2022
33. Develop an infrastructure to understand carbon use in the ICS and manage its reduction	• Commit to resourcing a Green Plan Delivery function to lead on the development of carbon reporting in the ICS • Develop systems, including sustainability impact assessments, to ensure that carbon impact is considered in all ICS activity	• March 2023 • March 2023
34. Ensure that staff and public engagement is at the heart of ICS Green Plan delivery	• Hold an annual ICS Sustainability Summit for attendance by staff and the public to review progress with Green Plan delivery and contribute to its future development both within health and care and as part of the wider community • Ensure that stakeholders from across the ICS are included in delivery groups for each of the chapter areas	• November 2022 • September 2022
35. Ensure effective working on the sustainability agenda with non NHS partners in the ICS	• Establish formal ICS Green Plan connections to health and wellbeing boards • Ensure the sustainability work of non NHS partners is included in planning and delivery	• September 2022 • September 2022

Finance

Objective	How	By when
36. Sustainability will be included in the assessment of all service developments	• From 2022/23 Sustainability Impact Assessments will be required for all ICS capital and revenue business cases to increase the priority place on sustainability in decision-making	• July 2022
37. The prioritisation of capital expenditure will include decarbonisation impact	• A proportion of the System Capital Envelope will be set aside to focus on the decarbonisation agenda through to 2025	• March 2023
38. Development of external funding sources	• The ICS will work on sourcing external funding from beyond the ICS to support decarbonisation	• March 2023

7. Next Steps

The Nottingham and Nottinghamshire ICS Green Plan outlines the actions we will take over the next three years to support NHS net zero trajectories. Led by our board-level net zero lead the system will take the following next steps to support delivery of our ambitious plan to deliver sustainable health and care for future generations:

- **Focus on commitment and ambition:** The plan has been developed with staff across our system to support developing actions that reflect our collective ambition. The development of a communication strategy will outline our plans to raise awareness and gain commitment by continuing to engage with our workforce and communities as we progress through the cycle of Green Plan development to delivery.

- **Governance:** The governance and reporting arrangements have been described, with a move to a System Delivery Group as part of the ICS Governance Strcture. This will be implemented to support decision making processes and monitoring as we move to delivery of the actions described. This will nclude connection with health and wellbeing boards and other transformation programmes to ensure connection with sustainability plans.

- **Structure:** Key actions have been described across nine areas of focus within the plan. Delivery groups will be established across all areas, including representation from organiations, sustainability leads and with appropriate expertise across our workforce to develop and implement plans to deliver the actions described.

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9. Appendix 1

Figures 15 and 16 showing Nottingham and Nottinghamshire ICS Carbon Footprint and Carbon Footprint plus is explained again in the chart below the Direct Scope 1, Indirect Scope 2 and Indirect Scope 3.
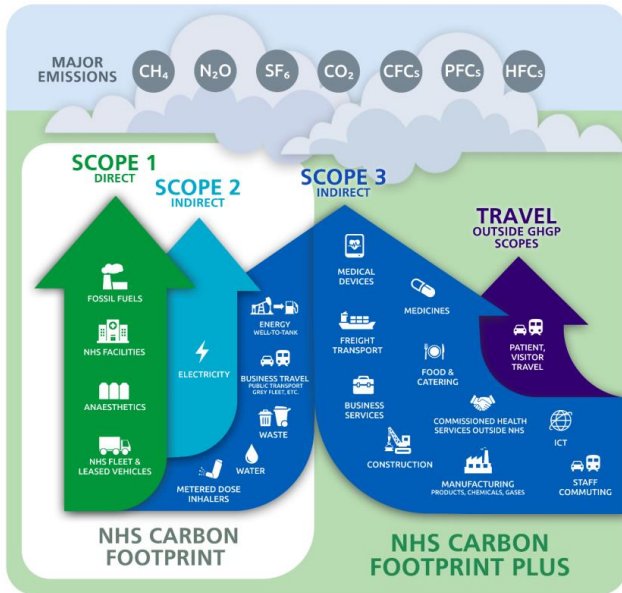
	Scope 1: Direct emissions from owned or directly controlled sources, on site
	Scope 2: Indirect emissions from the generation of purchased energy, mostly electricity
	Scope 3: All other indirect emissions that occur in producing and transporting goods and services, including the full supply chain
	Plus emissions related to patient and visitor travel

Source: Delivering a Net Zero NHS

Figure 16 – Nottingham and Nottinghamshire's Carbon Footprint

Nottingham and Nottinghamshire ICS's NHS Carbon Footprint 2019/20 (tCO2)*											
		Building Energy					**Business Travel & NHS Fleet**				
	Metered Dose Inhalers	Anaesthetic gases	Coal	Electricity	Gas	Heat and steam	Oil	Business Travel	NHS Fleet	Waste	Water	**Total Carbon Footprint**
Scope 1		9,660	0		63,870		1,570		3,210			**78,310**
Scope 2				23,830		0			0			**23,830**
Scope 3	14,770		0	2,820	8,090		290	12,660	1,870	21,350	1,210	**63,060**
Total	**14,770**	**9,660**	**0**	**26,650**	**71,960**	**0**	**1,860**	**12,660**	**5,080**	**21,350**	**1,210**	**165,200**

*These figures will need to be revised to include the carbon footprint in Bassetlaw.

Figure 17 – Nottingham and Nottinghamshire's Carbon Footprint Plus

Nottingham and Nottinghamshire ICS's NHS Carbon Footprint Plus 2019/20 (tCO2)*											
	Nottingham and Nottinghamshire ICS Carbon Footprint	**Supply chain**						**Patient and visitor travel**			Commissioned health services outside NHS	Total
		Business services	Food and catering	Medicines and chemicals	Medical equipment	Construction and freight	Non-medical equipment	Patient travel	Visitor travel	Staff commute		
Scope 1	78,310											**78,310**
Scope 2	23,830											**23,830**
Scope 3	63,060	55,940	28,610	100,360	54,330	34,690	43,080	14,390	6,400	25,080	17,610	**443,550**
Total	**165,200**	**55,940**	**28,610**	**100,360**	**54,330**	**34,690**	**43,080**	**14,390**	**6,400**	**25,080**	**17,610**	**545,690**

* These figures will need to be revised to include the carbon footprint and carbon footprint plus in Bassetlaw (and to remove EMAS carbon footprint plus arising from their procurement which resides in Derbyshire ICS as they are the lead commissioner). EMAS carbon footprint from their fleet has already been removed from these figures.