

NHS Forth Valley - ANNUAL CLIMATE EMERGENCY AND SUSTAINABILITY REPORT 2021/22

Introduction

It has been widely recognised that the climate crisis is a health crisis and many of the drivers of climate change are drivers of ill health and health inequalities.

Updated climate change and sustainability policy/strategy documents have been issued to NHS Scotland by the Scottish Government (SG): DL (2021) 38 – the Policy for NHS Scotland on the Climate Emergency and Sustainable Development came into force in November 2021 and this is underpinned by the NHS Scotland Climate Emergency and Sustainability Strategy 2022 – 2026.

The Policy for NHS Scotland on the Climate Emergency and Sustainable Development can be accessed [here](#).

The NHS Scotland Climate Emergency and Sustainability Strategy 2022 – 2026 can be accessed [here](#).

These documents set out the significant challenges that lie ahead, they are very prescriptive and include details around what Boards are expected to do to address the climate emergency. A framework has been provided for NHS Scotland to maximise its contribution to mitigating and limiting the effects of the global climate emergency - and for the development of an environmentally and socially sustainable health service that has adapted and is resilient to the locked-in impacts of climate change, particularly extreme weather events.

Priority areas for action have been identified:

- Sustainable Buildings & Land
- Sustainable Travel
- Sustainable Goods & Services
- Sustainable Care
- Sustainable Communities

NHS Forth Valley (NHS FV) has acknowledged that significant and long-term changes to the way care is delivered will be required to ensure this NHS Board makes an effective contribution to the national/global drive to limit the impacts of climate change.

This is NHS Forth Valley's first Annual Climate Emergency and Sustainability Report, covering Financial Year 2021/22, and it provides details of the actions taken by the Board to initiate an effective climate emergency response. Each section within the report summarises what was done in 2021/22, together with an overview of 2022/23.

NHS Forth Valley Overview

NHS Forth Valley is an NHS Scotland Health Board located in the Central Belt. The NHS Board controls an annual budget in the region of £775 million, employs around 6,000 FTE staff and is responsible for providing services to more than 300,000 people across the area and in a number of locations in both community-based and acute settings.

Leadership, Governance & Operational arrangements

NHS Boards are required to establish a strong management structure to ensure delivery of the aims of DL (2021) 38 (henceforth 'DL38') and to fully integrate these aims into all planning, management, clinical and operational decision making and practices.

An NHS Forth Valley Climate Emergency and Sustainability Board has been established to oversee the NHS Board's response to the climate emergency. It has both a governance and a strategic role and is responsible for reporting progress to the Scottish Government's Climate Emergency & Sustainability Board. Further, in line with policy, an Executive Lead and a Board-level Champion for sustainability have been nominated.

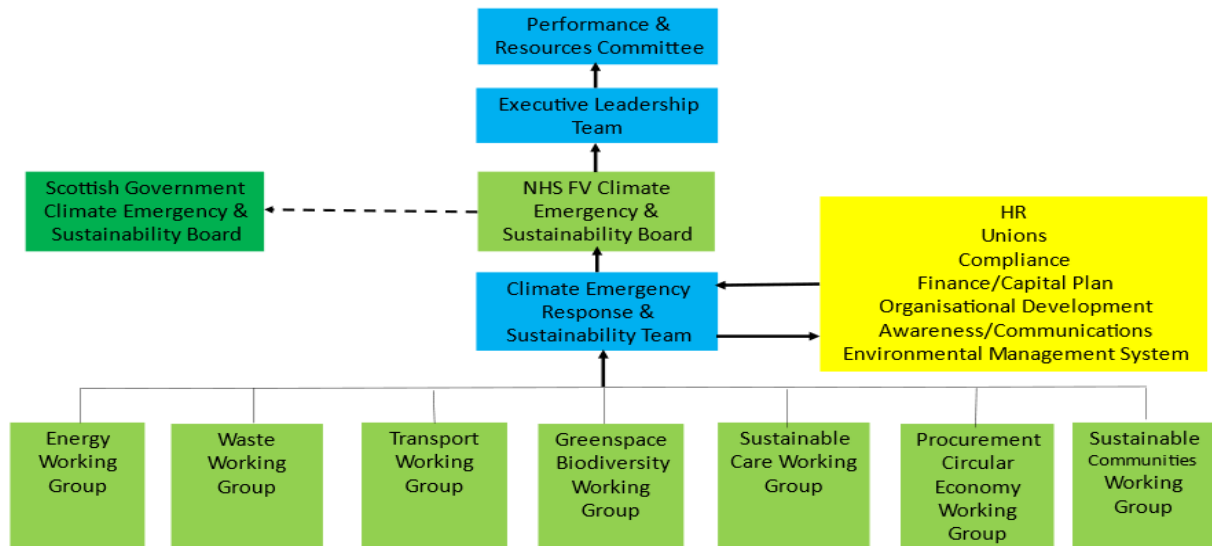
The Climate Emergency & Sustainability Board for NHS FV is chaired by the Chief Executive. Membership includes, but not limited to:

- Chief Executive
- Director of Facilities & Infrastructure (Executive Lead for Sustainability)
- Director of Finance
- Director of Pharmacy
- Director of Public Health & Strategic Planning (Board-level Sustainability Champion)
- Medical Director
- Employee Director
- Representatives from Health & Social Care Partnerships
- Associate Director of Facilities & Infrastructure
- Director of Acute Services
- Director of Corporate Portfolio Management Office, Women & Children's Directorate, Chief Midwife

A Climate Emergency Response & Sustainability Team has been established to inform the NHS Forth Valley Climate Emergency & Sustainability Strategy and to develop and oversee delivery of outcomes within the Action Plan, being developed in 2022/23. The Response Team will have both a strategic and an operational role in NHS FV's response to the climate emergency. It will be responsible for reporting progress to the NHS Forth Valley Climate Emergency & Sustainability Board and will coordinate output of the strategic Working Groups that have been established to address the requirements within DL38.

Figure 1 below summarises the internal governance and operational structure that has been established to respond to the climate emergency.

Figure 1: NHS Forth Valley climate emergency response governance and operational structure



The information presented in this report is a summary the extensive work carried out by the Working Groups shown above in Figure 1.

Greenhouse gas emissions

In line with the requirements set out in DL38, NHS Forth Valley aims to become a net-zero organisation by 2040 for the sources of greenhouse gas emissions set out in Table 1 below. The table sets out the amount of greenhouse gas produced annually by NHS Forth Valley.

Table 1: NHS Forth Valley greenhouse gas emissions

Source	Description	Amount of greenhouse gas (tonnes of CO ₂ equivalent tCO ₂ e)			Percentage change since 2019/20
		2019/20	2020/21	2021/22	2021/22
Building energy use	Greenhouse gases produced in providing electricity and energy heat for NHS buildings	14740.2	14547.6	14322.5	-2.83%

Non-medical F-gas use	Greenhouse gases used for refrigeration and air conditioning. 2021/22 data taken from Net-zero report prepared by Jacobs	n/a	n/a	159	n/a
Medical gases	Greenhouse gases used in anaesthetics - nitrous oxide (N ₂ O), Entonox (which contains nitrous oxide), desflurane, sevoflurane and isoflurane	1578.1	1226.2	1130.9	-28.3%
Metered dose inhaler propellant	Greenhouse gases used as a propellant in inhalers used to treat asthma and chronic obstructive pulmonary disorder (COPD)	n/a	n/a	4385	n/a
NHS fleet use	Greenhouse gases produced by NHS vehicles	379	453.4	296.4	-21.7%
Waste	The greenhouse gases produced by the disposal and treatment of waste produced by the NHS	271	650.3	233.2	-13.9
Water	The greenhouse gas produced	197.5	64.9	56.2	-71.5%

	from the use of water and the treatment of wastewater				
Business travel	Greenhouse gases produced by staff travel for work purposes, not using NHS vehicles.	601.7	419.8	438.5	-27.1%
Sub-Total		17767.5	17362.2	**21021.7	**18.3%
Carbon sequestration	The amount of carbon dioxide captured per by woodland, trees, grassland and shrubs growing on NHS grounds.	n/a	n/a	n/a	n/a
Greenhouse gas emissions minus carbon sequestration		n/a	n/a	n/a	n/a

n/a = figures are not available

**As shown in Table 1, the data collection processes that inform the Board's carbon footprint are becoming more robust, and the tonnes of CO₂ equivalent reported is more comprehensive. The emissions data presented in this report for 2021/22 is effectively a re-baselining of the NHS FV carbon footprint.

Good progress is being made by NHS FV in terms of emissions reduction in most areas. It should be noted that within the NHS Board's Public Bodies Climate Change Duties Report for 2021/22, that has not typically included non-medical F-gas, medical gases or metered dose inhaler propellant, the Board's carbon footprint shows a 36% reduction in emissions compared with 2014/15 baseline.

Moving forward, data gathering to inform the amount of greenhouse gas produced by the Board annually will be aligned with requirements set out in DL38 and the NHS Scotland's net-zero targets.

National Sustainability Assessment

NHS Scotland has developed a National Sustainability Assessment Tool (NSAT) which all Health Boards use on an annual basis to measure their progress across sixteen different areas of sustainability.

In the 2021/22 NSAT, NHS FV scored 56% overall – an increase from the previous year's score of 48%. The Board moved up the bronze/silver/gold levels in several categories: Transport, Greenspace, Capital Projects, Sustainable Care and Adaptation. The three highest scoring areas were: Welfare 74%, Capital Projects 67%, and Transport 66%. The three areas with the most room for improvement were: Nature & Biodiversity 23%, Waste 44%, and Awareness 43%.

Opportunities identified as part of the NSAT assessment will be included in the Action Plan that is being developed in 2022/23.

Climate Change Adaptation

The climate is changing due to the greenhouse gases already emitted into the atmosphere. While efforts to reduce the rate and scale of climate change continue, there is a pressing need also to adapt to new conditions being faced – recent examples include record high temperatures and increasing levels of rainfall.

The changing climate is increasing risks for health and health services. More information on these risks in the UK can be found in the UK Climate Change Committee's Health and Social Care Briefing available here: www.ukclimaterisk.org/independent-assessment-ccra3/briefings/

The NHS Scotland Climate Change Risk Assessment (CCRA) Toolkit has been used by NHS FV to assess the risks facing the organisation. Colleagues from a range of departments and services attended an initial workshop in June 2021 to inform the NHS FV CCRA and identify the key risks. This was followed by another workshop in March 2022, attended by representatives from the NHS Board's Risk Management, Resilience and Contingency Teams – the risks initially identified were revisited and the scores etc verified.

NHS Forth Valley has:

1. A better understanding of how current severe weather and climate change affects service delivery.
2. Used impact and risk assessments to identify and prioritise threats and opportunities.

3. Worked with suppliers to improve organisational resilience by developing emergency plans e.g. with utility suppliers in the event of business disruption/major incidents.
4. Aligned climate change considerations with Business Continuity Plans.

NHS Forth Valley will:

1. Build on the progress made to ensure climate risks are incorporated into the Board's existing risk management processes.
2. Review, monitor and evaluate risks on an ongoing basis.

The climate emergency and compliance with DL38 is included within the NHS FV Strategic Risk Register and it was agreed following the second CCRA workshop that, whilst the NHS Scotland CCRA Tool had been useful in getting the NHS Board to this point, it was important to align this risk management process with existing Corporate Risk Assessment and scoring arrangements.

Building Energy

NHS Scotland's Climate Emergency & Sustainability Strategy highlights a number of key targets to be met by NHS Boards, including:

- Bringing forward the target date for achieving net-zero emissions from 2045 to 2040.
- Reducing greenhouse gas emissions from health service buildings by at least 75% by 2030 and 90% by 2040, compared to a 1990 baseline.
- Introducing renewable heating systems by 2038 for all NHS-owned buildings, and
- Achieving net-zero emissions across the whole NHS Scotland estate by 2040, or earlier where possible.

Within the reporting period, NHS FV has initiated the process to shift onto a net-zero trajectory. The mandatory targets and requirements set out in DL38 are being adopted at NHS Board level.

NHS FV's operational property portfolio (owned and leased) consists of 104 properties based at 55 individual sites with a floor area totalling 190,528m². Of the total estate, 41% is owned, 1% is leased and 57% is currently subject to a form of Public Private Partnership (PPP) contract.

The NHS Board's healthcare estate portfolio consists of:

- 1 Acute Hospital (PPP)
- 5 Community Hospitals
- 57 Community Premises

Building sizes range from small properties that are less than 500m² to Forth Valley Royal Hospital which extends to approximately 96,500m².

In 2021/22, NHS FV used 74,462,109 kWh of energy. This was an increase of 2.1% compared with the year before. It should be noted that actual consumption is affected by the variations in weather year to year i.e. in a relatively colder winter, sites use more energy. In terms of the consumption data reported, it should also be noted that electricity consumption in 2021/22 includes a proportion of power used to charge electric vehicles which was not previously the case. Also within the figures for 2021/22 is a correction due to the impact of a faulty gas meter at Falkirk Community hospital.

Comparing actual consumption in 2021/22 against the 2014/15 baseline, there is a 5.7% reduction.

In 2021/22:

- 69,360 kWh of energy was generated from renewable technologies.
- 14,322.5 tonnes of CO₂ equivalent were produced by NHS FV use of energy for buildings - a decrease of 1.5% compared with the year before.
- There was a 39% reduction in tonnes of CO₂ equivalent produced by NHS FV use of energy for buildings against the 2014/15 baseline.

Extensive work has been carried out to improve the energy performance of the Primary Care estate. The Energy Conservation Measures (ECMs) implemented to date have focused on upgrading lighting to LED and boiler replacements to provide commercially beneficial 'simple paybacks' and support maintenance activities for heating systems at/beyond end of life.

Since 2018, lighting has been upgraded to LED at 45 sites/buildings and a total of 18 boiler sets have been replaced across the property portfolio and the steam boilers at Stirling Health & Care Village site have been de-commissioned. The guaranteed improvements within the Energy Performance Contract that was used to deliver much of this work were exceeded – achieving a 20% improvement on predicted performance, with a circa 8-year Simple Payback return.

The focus more recently has shifted to the Board's PPP/PFI estate, which accounts for ~50% of total utility consumption. The PPP/PFI estate in Scotland is significant, as is the energy consumed within these buildings. Due to existing contractual arrangements, there are, however, limited energy efficiency projects currently being procured at these sites. With the implications of the climate emergency and net-zero ambitions in mind, there is a pressing need to ensure that energy efficiency/carbon reduction projects within PPP/PFI sites are being actively considered and delivered.

On this basis, the Board has secured grant funding from SG to help support the upscale in investment in PPP/PFI facility energy efficiency projects. The opportunity

at FVRH is being viewed by SG as a pathfinder project that, if scaled-up and rolled out across the public sector in Scotland (e.g. to include other NHS and non-NHS buildings including schools), would deliver revenue savings and reduce environmental impacts in the wider PPP/PFI estate. Lessons learned from the FVRH project will be shared across other Public Sector bodies; noting the pressing need for change within such facilities to support meeting building emissions reduction targets up to and including a 2040 net zero carbon national commitment.

In parallel with efforts to improve the energy performance of FVRH, work has been ongoing since 2019/20 to identify opportunities to finance and implement ECMs in the Primary Care (non-acute/PPP) estate. Many of the 'easy wins' have already been achieved and there is a need now for more in-depth refurbishment and renewable energy-generation type projects to support the decarbonisation agenda. The launch of the Scottish Government's Green Public Sector Estate Decarbonisation Scheme (GPSEDS) will allow the Board to shift to a 'Fabric First' approach that means ECMs with longer payback can be included in the decarbonisation programme. The GPSEDS funding stream is welcomed as it can significantly support the NHS Board to upscale and accelerate energy efficiency and decarbonisation projects to support meeting the ambitious net-zero targets which have been set.

The Board made an application for funding to the GPSEDS Pre-Capital Grant Fund in August 2021. This was successful and enabled the Board to appoint a contractor to undertake Building Energy Audits across a number of buildings to identify options and prioritise projects which can support the transition to lower and net-zero emissions buildings. A suite of ECMs have been identified across 29 sites and 37 buildings, which will form the basis of future bids to the GPSEDS fund.

Sustainable Care

It is estimated that NHS Scotland is responsible for around 5% of Scotland's carbon footprint. The way that care is provided influences environmental impacts and greenhouse gas emissions.

Many of the actions needed in response to the climate emergency and the environmental crisis have positive health impacts. Cutting emissions and restoring biodiversity improves air quality and can reduce the incidence of or improve outcomes in diseases such as asthma, heart attacks and stroke. Eliminating pharmaceutical residues from wastewater prevents harm to biodiversity and limits the growth in antimicrobial resistant bacteria. Failure to protect the environment has direct consequences, and longer-term there are also risks associated with changing patterns of disease and the ability to treat these effectively.

Achieving Scotland's climate goals and Realistic Medicine fit naturally together. To become a sustainable and greener healthcare provider, Boards must deliver safe, effective, personalised care, and reduce harm and waste through improvement and innovation. Realistic Medicine promotes a culture of stewardship of finite NHS

resources, where responsibility is taken individually and collectively, to use healthcare resources wisely.

The Royal College of Surgeons of Edinburgh and The Royal College of Physicians and Surgeons of Glasgow acknowledge that climate change poses a major threat to both human health and planetary health. Both Colleges are committed to promoting patient health and wellbeing, and to protecting patients' health by urgently minimising environmental impacts.

NHS Scotland has three national priority areas for making care more sustainable – anaesthesia, surgery and respiratory medicine.

Theatres are one of the most carbon and energy intensive areas of health care, and significant producers of clinical waste. Anaesthesia is estimated to account for around 5% of acute NHS emissions, primarily resulting from nitrous oxide use and associated volatile emissions. In 2018, a group of NHS Scotland Anaesthetists initiated the Green Theatres Project.

The Green Theatres Project looked initially at equipment, drugs/medical gases and existing processes/practices, and concluded many things could be done better to reduce impacts and costs. The Scottish Environmental Anaesthetists Group (SEA-G) now has 81 members and the Green Theatre Project has 41 separate workstreams – 33 of which can also deliver cost savings. It is estimated that changes influenced by this group in terms of phasing out of the anaesthetic gas Desflurane have already reduced emissions that equate to around 5.6 million car miles (9 million km).

NHS Forth Valley has supported the Green Theatres Project from the outset and staff within theatres at Forth Valley Royal Hospital have successfully delivered several projects that combat climate change.

Impact reduction in respiratory medicine is largely led by GPs and Pharmacists. In Scotland, the environmental impact of inhalers, used for treating asthma and chronic obstructive pulmonary disease, accounts for around 4% of the NHS carbon footprint and 13% of the primary care carbon footprint. This is equivalent to around 79,000 tonnes of CO₂ a year, which is more than the NHS fleet emissions from 9,300 ambulances, cars, HGVs and motorbikes. Dry Powder Inhalers which use a person's own breath to deliver a dose of medicine have less global warming potential than Metered Dose Inhalers which use powerful greenhouse gases.

NHS FV's GP's are involved in a range of activities to reduce environmental impacts through the GP Greener Practice Group – the group currently has in the region of 80 members representing 35 practices in Forth Valley.

In addition, discussions have been initiated with senior nursing staff within NHS FV with a view to developing a 'Green Nursing' programme of work. It is this NHS Board's view that the role of Nurses in tackling the climate emergency will be significant.

NHS Scotland has three national priority areas for making care more sustainable – anaesthesia, surgery and respiratory medicine.

Anaesthesia and surgery

Greenhouse gases are used as anaesthetics and pain killers. These gases are nitrous oxide (laughing gas), Entonox (which contains nitrous oxide) and the “volatile gases” - desflurane, sevoflurane and isoflurane.

NHS Forth Valley’s emissions from these gases are set out in the Table 2 below:

Table 2: NHS Forth Valley anaesthetic gas greenhouse gas emissions

Anaesthetic gas use			
<u>Source</u>	<u>2018/19 (baseline year) tCO2e</u>	<u>2021/22 - tCO2e</u>	<u>Percentage change since 2018/19</u>
<u>Volatile gases</u>			
Desflurane	115.2	0	-100%
Isoflurane	1.9	0.6	-68.42%
Sevoflurane	54	40.3	-25.37%
<u>Volatile gas total</u>	171.1	40.9	-76.09%
<u>Nitrous oxide and Entonox</u>			
Piped Nitrous oxide	246	64	-73.98%
Portable Nitrous oxide	39	17	-56.41%
Piped Entonox	855	940	9.94%
Portable Entonox	59	69	16.94%
<u>Nitrous oxide and Entonox total</u>	1199	1090	-9.09%
<u>Anaesthetic gas total</u>	1370.1	1130.9	-17.45%

NHS Forth Valley has formally removed desflurane from pharmacy stock and encouraged all Anaesthetists to consider total intravenous anaesthesia (TIVA) in place of volatile anaesthetics. All nitrous oxide pipeline outlets are being closed and the proportion of operations performed under local anaesthetic or regional blocks has been increased (hence removing the need for any volatile anaesthetics).

The measures taken to reduce use of anaesthetic agents has prevented more than 300 tonnes of CO₂ being emitted annually – equivalent to 1.6 million car miles (2.5 million km). Of note, this has been achieved without impacting on patient care.

The Neptune irrigation system has been procured so that surgical fluid suction into Vac-sacs can be eliminated. This will significantly reduce emissions associated with transportation and incineration of the waste that is currently collected in the Vac-sacs.

Measures taken by the Theatre Team have also included reducing the amount of waste which requires to be incinerated or heat treated and cutting back on cardboard waste. Theatres at Forth Valley Royal Hospital generate a large amount of waste on a daily basis, this is now segregated at source in the Theatres Department. The Theatre Team at the hospital has reduced the amount of clinical waste sent for disposal by almost a quarter.

Work is also underway to identify options for reduce (where appropriate) the amount of equipment used in theatre procedures that is currently disposed of after just one use; some laparoscopic equipment is now being returned for re-manufacture.

In the year ahead, there are plans to:

- Commission and roll out the Neptune irrigation system
- Identify further opportunities to improve waste streaming to increase reuse and recycling
- Develop the business case for laundering of scrubs on site (to reduce transportation and associated impacts)
- Reduce use of 'disposable' drapes associated with procedures carried out under local anaesthetic
- Reduce 'in-person' appointments following surgery (where appropriate)
- Identify and implement 'supply chain' opportunities by working more effectively with suppliers (and procurers)

Respiratory medicine

Greenhouse gases are used as a propellant in metered dose inhalers used to treat asthma and COPD. Most of the emissions from inhalers are from the use of reliever inhalers – Short Acting Beta Agonists (SABAs). By helping people to manage their condition more effectively, it is possible to improve patient care and reduce emissions. There are also more environmentally friendly inhalers such as dry powder inhalers (DPI) which can be used where clinically appropriate.

It is estimated that emissions from inhalers in NHS FV in 2021/22 were 4385 tonnes of CO₂e (Metered Dose Inhaler (MDI) Propellant Primary Care + MDI Propellant Secondary Care).

In the reporting period, NHS FV set up a primary care group tasked with editing the local Pharmacopaedia to enhance the likelihood of default DPI prescription.

The primary care prescribing team released the new respiratory formulary in November 2022 which now has options for dry powder inhalers for all treatment steps

and encourages use of salamol instead of ventolin when appropriate (reduced CO₂e per inhaler).

Work is underway to understand how best to use the new Forth Valley formulary associated with respiratory inhalers to reduce environmental impact and improve care, as well as highlighting correct disposal of inhalers. At GP practice level, individual Practices and some clusters (groups of GP practices in geographically similar areas) are looking to reduce salbutamol overuse (which will lead to better care and fewer inappropriate prescriptions - potentially large amounts - being prescribed). A link to the national greener practice website has also been shared with key stakeholders to access more information on greener prescribing.

In the year ahead, an online meeting will be hosted by the GP Greener Practice Group to discuss asthma care and the climate emergency – at least 78 people are expected to attend, representing 35 practices from Forth Valley. The impact of inhalers on the climate will be discussed, together with how the new formulary can help reduce impacts, as well as the most climate friendly way of disposing of inhalers. Potential quality improvement projects will be shared with the attendees following the meeting. These will include reviewing and changing inhalers for those patients on high carbon impact inhalers (especially flutiform which accounts for 36.5kg CO₂e per inhaler), reviewing patients overusing salbutamol and looking at changing from salbutamol generic inhalers (25kg CO₂e) to salamol (11.95kg CO₂e).

The next step after education will be implementation, with guidance and support from SG. NHS England have already set targets for changing patients to dry powder inhalers and have a payment structure set up to aid practices to change. It is hoped that this approach will be adopted by NHS Scotland. Proposed changes will be communicated to all local GP practices and the resultant proportional changes in prescribing measured and monitored to improve reporting.

The Realistic Medicine action plan has been reviewed and a driver diagram and change package developed for implementation in 2023. Two Realistic medicine champions have been appointed to ensure practising Realistic Medicine to deliver a more sustainable system supports tackling some of the challenges healthcare is currently facing. Further, there is clinical representation on the NHS Board's Climate Emergency Response and Sustainability Team.

Travel and Transport

Nationally, domestic transport (not including international aviation and shipping) produced 24% of greenhouse gas emissions in 2020. Car travel is the type of travel which contributes the most to those emissions. NHS Scotland is supporting a shift to a healthier and more sustainable transport system where active travel and public transport are prioritised.

In the reporting period, NHS FV reduced the need to travel by enabling certain groups of staff to work agilely by working from home/office or in the local community. Laptops

for staff were purchased for this purpose – as at September 2022 there were a total of 2218 laptops with remote access licences installed. Microsoft Teams was implemented to enable meetings or conversations to take place online rather than in person and for teams to work more collaboratively. The Liftshare for Work scheme will be re-launched after a Covid-19 hiatus.

In addition, a total of 30,698 ‘Near Me’ Remote Consultations took place between 1 April 2021 and 31 March 2022, which prevented 30,698 journeys to one of the NHS FV sites. Planning Permission obligations, commonly known as Section 75 Agreements in Scotland, are in place at FVRH to ensure adequate patient and community transport links are retained.

Active Travel

In terms of Active Travel NHS Forth Valley has again performed well in partnership with key stakeholders. The following initiatives have been delivered in the reporting period:

- Monthly physical activity ebulletin produced for all NHSFV staff until June 30 2021, this included information about free, accessible cycling and walking opportunities and support for staff to benefit their health and wellbeing.
- Monthly NHS Forth Valley and Forth Environment Link (FEL) Oversight Meeting. With additional fortnightly touchpoint meetings between NHS FV’s Travel Manager and FEL fortnightly, to plan and take forward all Active Travel work for NHS Forth Valley staff, patients and visitors.
- Successful funding application to Cycling Scotland for five NHS FV sites to benefit from covered cycle storage, small cycle repair kits, bike pumps and longer lockers (St Ninian’s Health Centre, Camelon Health Centre, Bellsdyke Hospital, Bo’Ness Hospital, Lochview Bungalows area).
- NHS FV sites have or are working towards Cycle Friendly Employer status (Board Headquarters at Carseview, Camelon Health Centre, Falkirk Community Hospital and Forth Valley Royal Hospital).
- Essential Cycle Skills training was (and still is) available for free to any staff member or patient, their family and friends aged 16+.
- Led rides from Livilands Resource Centre (Adult Mental Health) from the last week in April 2021 to end of November 2021. This involved building trust with all the participants; Nursing staff fed back that there was a positive difference in the patients upon their return to Livilands following the ride.
- Free 3-month eBike loans for NHS FV staff if they use the eBike to cycle to work. Since April 2021, a total of 89 people have benefited from the 90-day trial.

- 100 free ForthBike passes made available for psychological patients in Falkirk.
- The Bowel Cancer patient ebike pilot finished in mid-2021. A journal article is being prepared to highlight to clinical colleagues the significant benefits to patients that were achieved. This 'pre-habilitation' approach significantly improves (where appropriate) healing and recovery post-op by increasing the fitness of patients pre-op.
- NHS FV staff Walking Challenge - bespoke 6 week walking challenge with 97 teams and 474 participants, walking a total of 65,173 miles (187,576,801 steps). A post challenge survey was overwhelmingly positive.
- Braveheart free walks open to the public on Tuesdays at Forth Valley Royal Hospital and from CCHC in Clackmannanshire on Wednesdays
- The LochPower, ClacksPower and Exercise Corridor opportunities were developed in partnership with Edinburgh University, Maggie's, Paths for All, Forth Environment Link, Forest and Land Scotland and NHS FV. These initiatives are designed to encourage the community to engage in active travel.
- 3 NHS FV staff have taken on a voluntary NHS FV Cycle Ambassador role to support and encourage more people to cycle.
- The Bike Medic roadside recovery concluded by August 2021. There were 19 calls for assistance between Sept' 2020 and Sept' 2021. Since then, NHS Forth Valley has set up a free taxi bike recovery service for NHS FV staff.
- Dr Bike: 59 bikes were checked between June and October 2021 with basic repairs carried out.
- The NHS FV Health Promotion Service is working in partnership with Stirling Council City Centre South Team to link existing and new active travel routes within Stirling Health & Care Village to local active travel network.

Fleet operations

In line with SG policy, NHS FV is working to remove all petrol and diesel fuelled cars from the fleet by 2025. The Board has an Electric Vehicle (EV) Strategy in place to underpin the shift to EVs and to inform plans for installation of the EV charging infrastructure that is required.

Table 3 sets out how many renewable powered and fossil fuel vehicles were in the NHS Forth Valley fleet at the end of March 2022.

Table 3: NHS Forth Valley Electric Vehicle Strategy Implementation

	Renewable powered vehicles	Fossil fuel vehicles	Total vehicles	Percentage renewable powered vehicles
Cars	17	33	50	34%
Light Commercial Vehicles (LCVs)	19	59	78	24%
Heavy vehicles	0	0	0	0

The NHS Boards’ Fleet Decarbonisation and Vehicle Replacement Profile and Plan shows that all cars are due to be replaced before 2025, and all Light Commercial Vehicles by 2030. The aim is to replace all these vehicles with zero- emission alternatives so that Scottish Government and NHS Scotland targets are met. The current trajectory suggests that 50% of the fleet will be electric by the end of 2023 – however, this is dependent on the global position in terms of supply-chain pressures and other covid-related manufacturing issues.

Over the last two Financial Years a range of charging infrastructure for electric vehicles has been installed across the NHS Board’s estate. The strategy in relation to the location of vehicle chargers is to create hubs on larger sites, which has been done at Stirling, Falkirk and FVRH with very few chargers dedicated to single departments and with installations also concluded in more ‘remote’ locations to enable coverage of the NHS Board area.

Greenspace and Biodiversity

In addition to health benefits for patients and staff, investment in greenspace around hospitals and healthcare centres helps tackle climate change and biodiversity loss.

The relevance and importance of nature and biodiversity on health and wellbeing is recognised by NHS FV. Access to thriving ecosystems is widely accepted as being beneficial in terms of improving health and wellbeing and the recovery process. Wherever possible, NHS FV seeks to identify opportunities to maximise the benefits offered by local greenspace in provision of healthcare.

The NHS Board’s main site for developing greenspace and biodiversity opportunities is Larbert Woods and Loch on the FVRH site. Moorhens, Coots, Dragonflies and Frogs can be found in/around Larbert Loch. Deer, Squirrels, Bats and a wide range of birds and insects can be found in/around Larbert Woods. The wild-flower meadows within and surrounding the woods provide an excellent opportunity for the creation and conservation of habitats that support a wide range of species.

Further details can be found at the link below.

[NHS Forth Valley – Woodland](#)

Opportunities to maximise use of the woods and loch have been developed over several years in partnership with key stakeholders, including the Forestry Commission Scotland. In recognition of this, NHS FV was awarded the Building with Nature Full (Excellent) Award for FVRH/Larbert Woods.

The case study associated with the award states that:

“Forth Valley Royal Hospital and Larbert Woods is a modern hospital development that represents an exemplar in the design, delivery and maintenance of high-quality green infrastructure, capturing the preventative health benefits of green infrastructure now and long into the future.”

Full details can be found at:

<https://www.buildingwithnature.org.uk/forth-valley-hospital-detail>

NHS FV was also awarded a Gold Level National Award for Environmental Excellence (NAEE) at FVRH/Larbert Woods - the first hospital to ever receive the highest possible accreditation.

Further information regarding the NAEE process and award received can be found at:

<https://www.keepsotlandbeautiful.org/environmental-services/national-award-for-environmental-excellence/>

<https://nhsforthvalley.com/celebratingsuccess/forth-valley-royal-hospital-presented-with-national-environmental-award/>

The focus in 2021/22 shifted beyond the FVRH site to the Stirling Health & Care Village (SHCV) site. The aim is to develop the available greenspace at SHCV to improve the health and wellbeing of patients, staff and wider community through a coordinated use of the greenspace.

The scope of the plan considers:

- utilising space in the best possible way by introducing multiple uses
- opportunities for partnership working
- adopting a person/ community centred approach
- identifying funding sources and pooling resources

Key highlights:

- Project commenced Sept 2021
- Robust structure is in place to ensure full engagement and communication with stakeholders
- Partnership work with Stirling Council City Centre South Team has commenced

- Widely diverse range of 3rd sector organisations have agreed to work in partnership
 - Strong links have been established with groups representing communities facing accessibility issues – these have been consulted throughout and represented on steering and working groups – accessibility has been a key consideration at all stages
 - Initial funding secured to commission Architectural Landscape Consultants ERZ to carry out a feasibility study of the SHCV grounds, linked to the 2018 study that was carried out when the SHCV site was under development
 - Installations for a sensory trail have been purchased and will be installed in 2023/24
 - Additional stakeholder engagement is ongoing with employability, community development, biodiversity and transport partners
 - Consultation questionnaire sent to all stakeholders 18.7.22
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- Internal space identified for the Green Place room - to bring outdoors in
 - Funding application submitted for seating for Nook & Cranny 'Sitooteries' for staff
 - Community activities set up in partnership with various services and 3rd sector organisations
 - Conservation installations to be created in partnership between community groups and Transition Stirling utilising recycled materials. These will include bird feeding stations, bug hotels, hedgehog homes, bat boxes etc. Funding is in process of being applied for.
 - Partnership set up between community groups to apply for funding
 - Discussions are ongoing the SG with a view to securing funding to progress plans

The aim in 2023/24 is to take the SHCV project forward to implementation. The project will support staff wellbeing activity and improve accessibility on campus by connecting to paths and community spaces outwith hospital site.

Projects to be delivered will include:

- Enhancement of existing greenspace to support work with families that demonstrates the natural world can help with the development of sensory processing in children.
- Improvements that will enable Adult Mental Health Services to utilise greenspace to optimise the beneficial effects of nature on mental wellbeing.
- Creating growing areas within the grounds of SHCV that are accessible and meet the needs of stakeholders. Spaces would be multifunctional to provide useable spaces for a wide range of groups, including growing areas, accessible planting beds and an interactive musical instrument play area.
- Establishing a bumble bee trail following a site survey from the Bumble Bee trust

- Discussions with the three Local Authorities covering Forth Valley will continue to identify opportunities for partnership working and development of 'biodiversity corridors'
- The NHS FV Estates/Grounds Team will continue to develop options to manage greenspace to encourage and benefit biodiversity e.g. 'No Mow May'

Sustainable Procurement, Circular Economy and Waste

Earth Overshoot Day marks the date when demand for resources exceeds what Earth can regenerate in that year. In 2020, the Global Earth Overshoot Day was 22nd August. In 2021, it was 29th July. The current global trend shows a concerning picture of over consumption. For the UK, the picture is more worrying. In 2022, the UK's Earth Overshoot Day was 19th May. The current level of consumption of materials is not sustainable, it is the root cause of the triple planetary crises of climate change, biodiversity loss and pollution.

NHS FV aims to reduce the impact that use of resources has on the environment through adopting circular economy principles, fostering a culture of stewardship and working with other UK health services to maximise our contribution to reducing supply chain emissions to net-zero by 2045.

Procurement & Circular Economy

The governance structure in relation to climate change and sustainability was reviewed and updated in the reporting year to streamline implementation of the changes necessary to address climate change effectively. NHS FV's Head of Procurement is the Project Lead on the Sustainable Procurement & Circular Economy Working Group and will oversee the process of shifting to more sustainable procurement.

As part of this process, the NHS Board's Procurement Strategy is being updated to reflect requirements within DL38 and the NHS Scotland net-zero targets.

In terms of NHS Board-level procurement activity: The Flexible Framework are used to track and measure progress and identify additional opportunities to be progressed (where appropriate). NHS FV has a Procurement Performance Objective to: Implement a Sustainable Procurement Action Plan for Goods and Services that achieves value for money on a whole costing basis and delivers social, environmental and social benefit outcomes. And a Procurement of Goods and Services Target: To meet the needs for goods, services, works and utilities that achieve value for money on a whole life basis and deliver social, environmental and social benefit outcomes. All procurement contracting strategies consider the implications of sustainability in relation to the procurement under consideration.

In addition, at a national level: Sustainable Procurement is embedded within National Procurement's strategic procurement processes - as part of the 'Procurement Journey'. Various environmental, social/community and financial benefits are delivered through national contracts and existing national distribution centre arrangement.

NHS FV will continue to utilise Government Buying Standards (where appropriate).

NHS FV representatives participate in local partnership procurement and environmental groups e.g. the Board's Anchor Institution and Community Wealth Building activity and the NHS Board will support action that taken nationally by NHS National Services Scotland/NHS Assure.

Waste

NHS Forth Valley aims to reduce the amount of waste produced and increase the volume that is recycled. Table 4 below provides information on the type of waste produced.

Table 4: NHS Forth Valley Waste Arisings

Type	2020/21 (tonnes)	2021/22 (tonnes)	Percentage change
Waste to landfill/Waste to incineration	575.27	1125.01	95.6%
Recycled waste	775.30	897.03	15.7%
Food waste	72.72	94.11	29.4%
Clinical waste	1424.88	799.72	-43.9%

In the reporting period (2021/22), areas/services dealing with Covid that were treating all waste as clinical waste relaxed this position as we emerged from the pandemic, which is anticipated to significantly reduce the volume of clinical waste produced.

The year ahead (2022/23) will see the following initiatives progressed:

- Pre Acceptance Audits (PAAs) of FVRH – 42 waste producing departments – will also identify opportunities for change.
- Reviewing and changing placement of Orange Bag waste bins.
- Refreshing the approach to recycling segregation at FVRH (Biffa) and across the residual NHS FV estate (Enva).

Environmental stewardship

Environmental stewardship means acting as a steward, or caretaker, of the environment and taking responsibility for the actions which affect our shared environmental quality. This includes any activities which may adversely impact on

land, air and water, either through the unsustainable use of resources or the generation of waste and pollution. Having an Environmental Management System (EMS) in place provides a framework that helps to achieve our environmental goals through consistent review, evaluation, and improvement of our environmental performance.

The NHS Scotland EMS was issued to Boards by Health Facilities Scotland in May 2021 and training provided thereafter. NHS FV staff attended the training sessions and set up an EMS working group to participate in the hosted implementation sessions and the National EMS User Group.

Implementation at a local level has shifted to a phased implementation starting with the Estates Department, but progress has been slow. Successful implementation of an EMS is included as a key control measure within the Boards Strategic Corporate Risk Register as part of the Climate Emergency Risk.

Additional staff resources are required to drive forward this work – discussions have taken place internally with Finance colleagues with a view to securing the budget necessary to build the Climate Change & Sustainability Team as identified in the Workforce Plan.

Sustainable construction

Where there is a need for new healthcare facilities, the aim is to develop buildings and grounds that are safe, nature-rich, sustainable, resilient and accessible. NHS FV is working on the following building projects:

Falkirk Community Hospital Development: a review of the services and facilities currently provided on the Falkirk Community Hospital site, with a mixture of health and social care, inpatient and outpatient requirements - at Strategic Assessment stage in 2021/22.

Primary Care Premises Programme: a thorough review of primary care premises based on the known position with accommodating services identified in the Primary Care Improvement Plan, other strategic service requirements, housing development and the current condition etc of the existing estate – at Initial Agreement stage in 2021/22.

National Treatment Centre – Forth Valley: part of the national Treatment Centre network, provision of a new 30 bed modular extension to Forth Valley Royal Hospital, with associated car parking – design and build project via PPP Contract Variation with module construction off-site, design completed in 2021/22 with preparation for construction in 2022/23.

The Board has previously embraced the Building Research Establishment Environmental Assessment Method (BREEAM) process for major construction projects with success on the two most recent of those, Doune Health Centre and

Stirling Health & Care Village. In future, we will be implementing the Sustainable Design and Construction Guide as well as linking in planning terms with wider sustainability ambitions for our communities, in our work as an Anchor Institution and with 20 Minute Neighbourhoods etc. The design and specification of any new facilities and their infrastructure, fittings and equipment will have sustainability at the core.

Sustainable Communities

The climate emergency undermines the foundations of good health and deepens inequalities for our most deprived communities. The NHS touches every community in Scotland. We have a responsibility to use our abilities as a large employer, a major buyer, and one of the most recognised brands in the world – an ‘anchor’ organisation – to protect and support our communities’ health in every way that we can.

The NHS Forth Valley Anchor Springboard was initiated in October 2021 to facilitate collaborative leadership and use of collective resources to achieve ambitious Forth Valley wide outcomes, particularly for our most disadvantaged populations.

The purpose of the Anchor Springboard is to plan and deliver an ambitious collective contribution to Forth Valley-wide economic development and the health of our communities and neighbourhoods, more enhanced than that which individual services and functions across NHS Forth Valley would otherwise generate. This will complement the work of the community planning partnerships, City Deals and regional strategies and inform the wider Forth Valley Anchor Springboard.

In addition to wide representation from within the NHS Board, the Springboard group’s membership also includes the 3 local authorities in the Forth Valley area, the Health & Social Care Partnerships and Health Improvement Scotland. Work has been ongoing in the reporting period, building on these partnerships to deliver shared outcomes. NHS FV is seeking opportunities to:

- Work more closely with local partners
- Purchase more locally for social and economic benefit
- Use buildings and spaces more effectively to support communities
- Widen access to work
- Reduce environmental impacts

Figure 2 below summarises the most recent achievements:

Figure 2: NHS Forth Valley Anchor Springboard Flash Report

Anchor Springboard Flash Report: Sep– Oct 2022

Situation:
The impact of COVID 19 has worsened poverty, mental and physical health. NHS Forth Valley aims to strengthen it's contribution to community health and wealth building through it's role as an anchor institution in the region and collaboration

Aim:
To have maximised the social, economic and environmental contributions of NHS Forth Valley to support healthy and prosperous people and communities across Forth Valley

Delivered:
Launched University College NHS Partnership on 3rd October
Met with University to explore Modern Physician Associate roles and career pathways
With Clacks Council, used data to agree priorities to focus on for Shaping Places for Wellbeing in Alloa and contributed to a Place and Wellbeing assessment
Shared regional and local transport and travel plans to identify opportunities
4 more applications for Community Benefits Portal assessed and benchmarked with other NHS Boards
Shared workforce plans
Reviewed contribution to Child Poverty
Hosted local NHS Youth Academy Huddle - with education staff from Falkirk & Stirling Councils & FVC – bid submitted for a project with Schools
NHS Board supported Anchor Board initiation



In development:
-Child Health Data Set 2nd session
-FV University College NHS Partnership- Research and Innovation Operational Group
-Forth Valley Schools - testing care homes simulation to attract young people to careers
-Workshop for transport and travel across FV
-Explore Anchor Community Grants
-SERCO, NHS FV, FVC planning job/career Fair in January
-Simulation sessions for FVC for Foundation Apprenticeships

The Board's Head of Climate Change & Sustainability is a member of the Anchor Springboard, and net-zero considerations have been integrated into the Anchor Institution Workplan. A Sustainable Communities Working Group has been established as part of the recent restructure, this aims to ensure NHS FV considers the implications for the wider community when tackling the climate emergency.

A meeting was held in December 2022 with key stakeholders to identify opportunities to collaborate in delivery of community-wide environmental impact reduction and climate emergency initiatives.

Conclusion

NHS Forth Valley has made good progress in relation to climate change and sustainability in the period covered by this report. In particular, restructuring and strengthening governance and operational arrangements and progress in many areas in terms of tackling emissions are points of note.

Progress is being made in the following areas:

- Tackling emissions from buildings – work is ongoing to improve the energy performance of FVRH, which accounts for around half of the Board's total energy consumption, and the 'fabric first' approach, which will see a significant sum of money invested to reduce emissions form buildings in the Primary Care estate
- The Green Theatres Project, which is led by theatre staff at FVRH, has resulted in changes to how surgery is carried out and reduced environmental impacts

- Active travel initiatives that have delivered health and wellbeing benefits to staff, patients and the wider community.

Significant challenges remain, however, if the NHS Board is to achieve its own targets and in doing so, contribute towards achieving NHS Scotland's net-zero ambitions. The risk of not achieving what is required is recognised in the NHS Board's Strategic Risk Register, and in particular the resources required to build and sustain a climate change and sustainability team commensurate with the challenge.