



Green Plan 2019 - 2025

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Responsible Director	Director of Finance
Responsible Manager (Sponsor)	Estates Manager Environmental
For use by	All staff

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Green Plan

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1. Introduction

1.1 Organisation

In the provision of emergency healthcare and patient transport services, The North West Ambulance Service NHS Trust:

- Employs over 6,000 staff;
- Operates in 130 buildings, including ambulance stations, patient transport bases, corporate offices, emergency operations centres, a 111 call centre and vehicle maintenance workshops;
- Operates across Cumbria, Lancashire, Cheshire, Merseyside and Greater Manchester, an area of 5,400 square miles with a population of 7.5 million people; and
- Currently has over 1,000 emergency and non-emergency vehicles in operation.

This Green Plan has been created with this in mind to ensure that, as one of the larger ambulance services in the UK, we act as an anchor institution and reaffirm our commitments to the delivery of a sustainable health and care system.

A sustainable health and care system reduces inequalities, environmental impacts and preventable diseases whilst enabling environmental improvements, independence and wellbeing and the creation of strong social assets.

1.2 Current Progress

The NHS Long Term Plan released in January 2019 included several environmental targets. This Green Plan in conjunction with other Trust documents aims to work towards achieving all of these. The Trust has taken an ambitious approach by aligning its targets with the targets in the NHS Long Term Plan and the updated 2050 target in the Climate Change Act, these five targets are listed below.

- 51% reduction in carbon by 2025 (1990 baseline).
- Net Zero Carbon by 2050.
- Cut business mileages and fleet air pollutant emissions by 20% by 2023/24.
- Ensuring that at least 90% of the NHS fleet uses low-emissions engines (including 25% ultra-low emission) by 2028.
- Phasing out primary heating from coal and oil fuel in NHS sites.

The Trust achieved the 2015 milestone target of a 10% reduction in emissions and the NHS overall managed an 11% reduction. However, it is widely acknowledged that significant progress is still required to meet the 2020 target of 34% and almost zero by 2050.

2. Drivers for change

Drivers provide legal and policy context for improving sustainability and can be categorised into four key groups, as outlined below. These drivers are correct at the time of publication but are subject to regular review and updates across the lifetime of this plan.

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1. Legislative

- Civil Contingencies Act
- Climate Change Act
- Environmental Protection Act
- The Waste Regulations
- European Emissions Trading Scheme
- Public Sector (Social Value) Act

3. International and European Guidance

- European Union Waste Directive
- United Nations Sustainable Development Goals
- World Health Organisation: Environmentally Sustainable Health Systems in Europe
- The Global Climate and Health Alliance
- Intergovernmental Panel on Climate Change Global Warming 1.5°C
- Mitigation and Co-Benefits of Climate Change
- World Health Organisation: European Policy for Health and Wellbeing

2. Healthcare specific guidance, strategies and policy

- Sustainable Development Strategy for the Health and Social Care System
- HM Treasury Sustainability Reporting Framework
- NHS Long Term Plan
- The Carter Review
- The Naylor Review
- Adaptation Report for the Healthcare System
- Public Health Outcome Framework
- Fair Society, Healthy Lives (The Marmot Review)
- NHS Standard Contract 2019/20
- Health Technical Memoranda and Building Notes
- NICE – Physical Activity, Walking and Cycling

4. UK Strategy and Guidance

- The Stern Review 2006: The Economics of Climate Change
- National Policy and Planning Framework 2012
- DEFRA: The Economics of Climate Change
- National Adaptation Program
- HPA Health Effects of Climate Change
- Making the Country Resilient To The Changing Climate
- DEFRA 25 year Environment Plan
- UK Air Quality Strategy
- BEIS Industrial Strategy: Building a Britain Fit For The Future
- DEFRA Waste and Resources Strategy

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- Sustainable Transformation and Partnership Plans

- Building Regulations
- Government Buying Standards
- GM Carbon Neutrality / 5 year plan

3. The NWAS Vision

NWAS Mission Statement: To be the best Ambulance Service in the UK.

NWAS Sustainability Mission Statement: To be a leader in sustainable development and healthcare.

Strategy for Delivery:

- By operating responsibly we aim to enhance social value, protect our environment and reduce our environmental impact.
- We will collaborate with key stakeholders to develop a sustainable health and care system that improves community health and quality of life.
- We will integrate sustainability practices and principals across the Trust and within our supply chain.
- We will empower our staff to drive sustainability forwards.

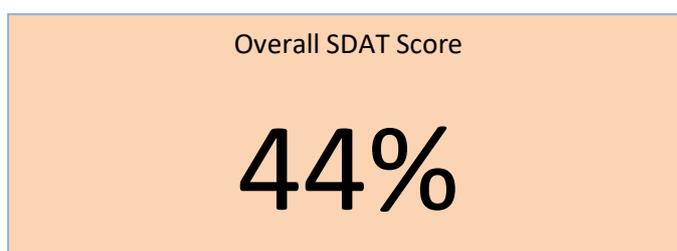
4. Areas of Focus

The Trust completes the NHS approved Sustainable Development Assessment Tool (SDAT) every 6 months to assess its progress towards embedding sustainability within the Trust.

The SDAT measures progress within 10 core modules and has helped inform the development of this Green Plan by highlighting the areas within each module that needs to improve.

Currently in 6 out of 10 of the modules, the Trust has a poor or satisfactory performance, with the remaining 4 modules showing a good or excellent performance. Overall the trust has scored 44% in the most recent assessment which reflects a satisfactory performance overall.

Module	Score
Corporate Approach	33.33%
Asset Management & Utilities	78.95%
Travel and Logistics	38.54%
Adaptation	94.67%
Capital Projects	68.25%
Green Space & Biodiversity	2.9%
Sustainable Care Models	11.54%
Our People	77.42%
Sustainable use of Resources	19.44%



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Carbon / GHGs	36.04%
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	Poor Performance or Insufficient Information
	Satisfactory Performance
	Good Performance
	Excellent Performance

The SDAT also highlights the Trust’s contribution to the United Nations Sustainable Development Goals (SDGs). The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, including the UK. This provide a shared blueprint for achieving peace and prosperity for people and the planet both for now and into the future.

At its heart are the 17 Sustainable Development Goals (SDGs) is an urgent call for action by all countries in a global partnership. They recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all the while tackling climate change and working to preserve our oceans and forests.



The Trust is starting to contribute to the following five goals:

	Gender Equality
	Clean Water and Sanitation
	Affordable and Clean Energy
	Climate Action

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Peace, Justice and Strong Institutions

Using this as a foundation and taking into account the overall SDAT score indicating an overall satisfactory performance, the areas of focus for this Green Plan will align with the core modules of the SDAT and aim to ensure that the Trust starts actively contributing to SDG's.

This approach will improve the Trusts SDAT performance and ensure that the performance makes the intended contribution to the SDG's.

4.1 Corporate Approach

In order to successfully deliver a sustainable healthcare system, NWAS will ensure that the principals of sustainability are embedded throughout all its organisational activity. This will require essential engagement and accountability for senior staff and stakeholders.

Corporate Approach Score

33.33%

Aim:

- To take a holistic approach to delivering sustainable healthcare driven from the top down.

Delivery:

- To support the Board Sustainability Lead (Director of Finance) with training, access to CPD events and local and national forums for knowledge sharing and innovation.
- Include a sustainability and social value assessment on all business cases.
- Create a cross departmental sustainability steering group to ensure the delivery of this Green Plan and the creation of future Green Plans.

Measurement:

- Assess SDAT score and monitor improvements.
- Sustainability Steering Group to report 6 monthly to the Resource Committee
- Include a comprehensive sustainability section in the Annual Report.

4.2 Asset Management and Utilities

The Trust operate 24 hours a day, 7 days a week, 365 days a year and places a constant demand on its utilities which means a continuing impact on the environment.

Asset Management and Utilities Score

78.95%

Aim:

- To continue implementing innovative and new technologies/systems in estates and facilities management where practical.

Delivery:

- To approve and implement a waste and resources strategy.
- To explore the financial feasibility of switching all electricity supplies to green tariffs.

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- To bid for appropriate funding to enable the implementation of energy saving technology where applicable.

Measurement:

- Assess savings via annual reporting.

4.3 Travel and Logistics

Service delivery, staff travel and transportation of goods all have a significant impact on local air quality, road congestion and the health of the communities we serve.



Aim:

- Deliver an ambitious Fleet Strategy, Lease Car and Pool Vehicle Policies and supporting staff and visitors to make more sustainable choices when travelling to or between trust sites.
- To encourage sustainable and active methods of travel for staff and reduce the environmental impacts of operational and business miles.

Delivery:

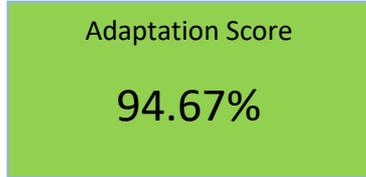
- Engage with sustainable travel groups across the North West to improve access to discounted sustainable travel options.
- Ensure that all new trust vehicles under 3.5t are zero, ultra-low or low emission where practical to do so.
- Continue to review and assess emerging technologies for alternative fuels and engage with vehicle manufactures to ensure suitability for operational vehicles.

Measurement:

- Health Outcomes of Travel Tool (HOTT)
- Increase in travel discounts available to staff
- Proportion of trust vehicles which are EV and associated charging infrastructure.
- Assess carbon reduction via the annual report

4.4 Adaptation

Climate change presents a significant threat to human health and the environment; it presents one of the biggest challenges public health today.



The extreme weather impacts of climate change, such as flooding and heatwaves create new challenges for our operation and place increasing demands on health services and therefore we must adapt to ensure we are able to continue operating under new pressures whilst working to mitigate the acceleration of climate change and its associated risks.

Appendix B is the Trust's current Climate Change Adaptation Plan.

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The Trust will work to raise awareness of the links between climate and increased risks to health and our operation.

Aim:

- To ensure senior level staff have sufficient awareness of climate change to be able to deal with the operational impacts of extreme weather events caused by climate change and continue to invest in mitigation measures.

Delivery:

- To regularly review the climate change risk assessment contained within this Green Plan.
- To include the risks in the climate change risk assessment on the Trust risk register.
- To deliver Carbon Literacy Training to all very senior and senior management and work towards making appropriate sustainability training available to all staff.

Measurement:

- Approved Green Plan
- Approved and implemented Carbon Literacy program
- Ongoing review of the Trust’s Climate Change Adaptation Plan

4.5 Capital Projects

There is a significant opportunity to embed sustainability during refurbishment and development of the Trust’s estate portfolio, by implementing new technologies as standard into improvement / new-build projects.



Aim:

- To reduce the environmental impacts of our building works during construction, refurbishment, operation and decommissioning.

Delivery:

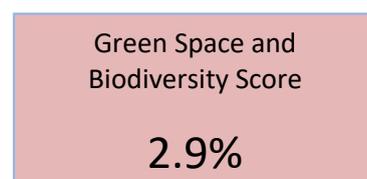
- Integrating sustainability into trust building standards for capital projects.
- Explore the implementation of lifecycle analysis into all capital projects to understand the whole life cost and to drive resource efficiency.
- Ensure that waste disposal costs are captured in all capital business cases.

Measurement

- Reduction in energy use via annual reporting

4.6 Green Space and Biodiversity

Improving and maintaining green space has positive benefits on mental health and wellbeing whilst supporting cleaner air, noise reduction and supporting biodiversity.



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Will we pursue a staff led approach to our green spaces and biodiversity to support staff wellbeing, an improved environment to support good mental health which will provide a safe space for our local wildlife and pollinators.

Aim:

- To empower staff to take pride in and improve their green spaces.

Delivery:

- Create 'no mow' zones at our large corporate sites to encourage growth of wildflowers for pollinators.
- Create a sustainability steering group and use the group to design a biodiversity toolkit to empower staff to look after their on-site green spaces.

Measurement:

- Sustainability Steering Group approved and embedded.
- Toolkit approved.
- Increase biodiversity / green space across the Trust.

4.7 Sustainable Care Models

There is a need for better understanding of how to deliver a low carbon and integrated healthcare service to ensure operational efficiency and environmental impact reduction.



To deliver the right care, at the right time, in the right place, every time and within the environmental, social and economic resources available is an ever growing challenge. As we expect to see the impacts of climate change increase in severity, ensuring we have an ambulance service that is fit for the future is vital to delivering a high quality of care.

Aim:

- To deliver low carbon, high quality healthcare.
- Include a sustainability and social value assessment on all business cases.

Delivery:

- Create a cross departmental sustainability steering group to ensure the delivery of this Green Plan and the creation of future Green Plans.
- Delivery overall of the Green Plan.

Measurement:

- Sustainability Steering Group approved and embedded.

4.8 Our People



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Engaging staff in sustainability is essential to the delivery of a sustainable healthcare system. All staff have a role to play in ensuring the success of this strategy and should be adequately supported.

Aim:

- To empower staff by providing them with the support, knowledge and tools to develop more sustainable habits.

Delivery:

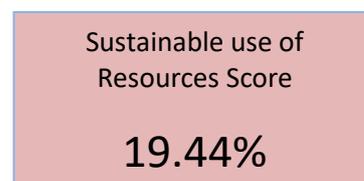
- Deliver programs to raise awareness of sustainability and the links between our environment and health and wellbeing.
- Incorporate sustainability into all job descriptions.
- Develop a sustainability team to provide adequate resource to support staff engagement and education.
- Develop a mandatory training module to be completed by all staff.

Measurement

- Increase in staff participation of sustainability programs.
- All job descriptions refer to personal responsibility within all roles towards sustainability.
- Creation of a mandatory training module on sustainability.

4.9 Sustainable Use of Resources

The Trust produces a significant volume of waste across the organisation and the management of this waste currently meets minimum compliance standards once an item becomes waste.



Better implementation of the waste hierarchy through an approved Waste and Resources Strategy will ensure that the Trust is able to move towards a circular economy.

Aim:

- To focus on waste prevention and reuse to begin eliminating waste by ensuring resources are put back into the system for recycling.

Delivery:

- Maintain the current diversion of domestic waste streams from Landfill to Energy Recovery.
- Implement a Board approved Waste and Resources Strategy

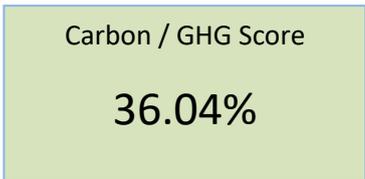
Measurement

- Year on year reduction in waste produced via annual reporting
- Year on year increase in recycling rate via annual reporting
- Improvement in SDAT Score

4.10 Carbon / Greenhouse Gases

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As a large organisation we are required to measure and report on our carbon footprint. This incorporates the emissions from every aspect of our operation.



Aim:

- To engage all stakeholders in carbon reduction and identify opportunities to implement new technologies/innovative ways of working which will result in the reduction of emissions.

Delivery:

- Design, implementation and roll out of a staff training program
- Engage our supply chain in carbon reduction
- Improve data collection on supply chain emissions
- Explore and implement new technologies / innovative

Measurement

- Year on year reduction in total CO₂e via annual reporting
- Active staff training program

5. Tracking Progress

We will track the progress of this Green Plan using both qualitative and quantitative methods of data collection. The main form of measurement the Trust will be via the NHS Sustainable Development Unit's Sustainable Development Assessment Tool (SDAT).

However, we will also continue to measure:

- Health Outcomes of Travel Tool will measure progress towards reducing our impact on air quality.
- Waste Assurance Report for the Safety Management Group uses internal data to measure progress relating to waste reduction and recycling.
- Sustainability Report for the Resources Committee will include updates on our progress towards all targets outlined within this Green Plan and other specific areas of achievement.
- Internal data collation for waste and utilities on a monthly basis.

6. Governance

Senior leadership is vital in order to successfully deliver this strategy, this is due to the behaviour change element required across all departments and the work streams which fall outside the control of the Estates team.

The Governance Structure is outlined below.

The Board – The Director of Finance is the Trust sustainability lead.

The Board offers senior level leadership, supports implementation and ensures alignment with the organisation's value, culture, strategy and operations.

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Sustainability Steering Group – The Sustainability Steering Group will be chaired by the Board Sustainability Lead. The Sustainability Steering Group minutes will be available to the Resources Committee and updates will be communicated in the form of a written bi-annual Sustainability Report to the Resources Committee.

Safety Management Group – The Safety Management Group meets on a quarterly basis to discuss all matters relating to Health and Safety within the Trust; the Safety Management Group reports into the Quality & Performance Committee. Progress on waste reduction and recycling is communicated every 6 months to the group via a Waste Assurance Report.

Sustainability Team – At the time of writing this document there is one full time role, of Environmental Sustainability Officer, which is solely dedicated to Sustainability. This role reports to the Estates Manager (Environmental) who has overarching responsibility for Sustainability alongside an Estates Manager responsibilities. These two roles sit within the Estates team and retain ownership of the delivery of this plan, in addition to compliance, project delivery, education and engagement of staff. Progress is reported via the Waste Assurance Report to the Safety Management Group and the Sustainability Report to the Resources Committee.

7. External Reporting

There are currently a number of mandatory and voluntary reporting streams which Trusts are required to undertake:

Completion of SDAT

This will measure the Trusts qualitative progress on sustainability for the previous year, inform plans for the coming year, and will eventually enable comparative performance against similar Trusts Nationally. The results of the SDAT are reported to the Resources Committee.

Completion SDU Sustainability Reporting Portal

This requires Trusts to input their annual data collection which then calculates the carbon emissions the various areas of organisational activity e.g. energy, estates, travel and procurement etc. which then informs and helps populate the mandatory sustainability section within the Trust’s Annual Report. The portal calculates all of the Trust’s carbon emissions inclusive of Scope 1, 2 and 3 emissions. These are:

Scope 1

- Fuel combustion
- Company vehicles and
- Fugitive emissions

Scope 2

- Electricity
- Heat and steam

Scope 3

- Purchased goods and services
- Business travel
- Employee commuting
- Waste disposal

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- Use of sold products
- Transportation and distribution (up and downstream)
- Investments, leased assets and franchises

ERIC (Estates Return Information Collection)

A mandatory data collection for all NHS Trusts required by the Department of Health and Social Care.

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8. Communications

Good communication is essential to the successful delivery of this Green Plan; the communication plan highlights all the forms of communication to be used to raise awareness, engage and educate various levels of staff across the Trust.

Audience	Objective	Message	Channel	Frequency
Board and EMT	Support the Board in developing a better understanding of Sustainable Healthcare to ensure future decisions are environmentally, socially and financially sustainable, in addition to the Sustainable Development Goals.	Highlight good practice, progress and areas requiring improvement.	Via the Sustainability Report to the Resources Committee.	6 monthly
		What sustainable healthcare is and why it is important to NWAS.	Board engagement session.	Annually
Sustainability Champions	Empower Champions to drive local behavioural change.	Updates on sustainability at NWAS and upcoming events and campaigns which they can support locally.	Email	Relaunch the Sustainability Champions Network and provide a quarterly email to align with upcoming campaigns.
All Staff	Develop staff knowledge on environmental issues, sustainable healthcare and Sustainable Development Goals.	Various	Twitter	The Environmental Sustainability Officer will continue to manage the official NWAS twitter account.
			Bulletin	Provide a regular bulletin piece on sustainability at NWAS.
			Events / campaigns	Support 4 x campaigns each year and reinstate an annual Seminar.
			Seminar	
			Posters / noticeboards	Educational materials will be reviewed annually by the Sustainability Steering
Mandatory / voluntary training				

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9. Risk

The UK Climate Change Risk Assessment 2017 Evidence Report identified 6 priority risks from climate change within the United Kingdom:-

- Flooding and Coastal change risks to communities, business and infrastructure
- Risk to health, well-being and productivity from high temperatures
- Risks of shortages of public water supply
- Risks to natural capital (ecosystems, soil and biodiversity)
- Risks to domestic and international food production
- New and emerging pests and diseases (public and animal health threats)

Climate change is bringing more frequent and severe weather events, as well as more gradual change to the UK. In the North West these risks include hotter, drier summers, warmer, wetter winters, and more extreme weather events, such as downpours, heatwaves and intense periods of snowfall and ice. These events would impact across many sectors and affect the quality of life and health and wellbeing of the communities we serve.

Solutions to such challenges (such as Green Infrastructure) offer a significant opportunity to increase climate resilience, whilst potentially also improving health outcomes, economic performance and overall quality of life.

See Appendix A for the current risk assessment of the likely impact of threats and hazards of climate change to the Trust.

10. Finance

10.1 Known costs

The Carbon Literacy Training program has received funding from the Department for Business, Energy and Industrial Strategy for the development of a bespoke Carbon Literacy Training program, accreditation and 'Train the Trainer', training. However, a cost of £10 per person who undertakes the training will be required to obtain the 'Carbon Literate Citizen' certification.

10.2 Unknown Costs

Currently there is no dedicated budget towards sustainability projects; a business case for each project has been written in the past, funding options or existing budgets have also been used to be able to deliver some projects.

In order to successfully deliver the communications plan and projects required to meet the targets outlined in this plan whilst still maintaining compliance, additional resources maybe needed to support the small environmental team which will need to be explored further.

Revenue funding will be required to deliver an annual engagement program, including the sustainability seminar; this will allow the sustainability team to make small purchases to assist with the behaviour changes required to create a sustainable NWAS.

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10.3 Sources of Funding

There are various external sources of funding available to NWAS, in addition to Trust capital funding, for the delivery of sustainability projects and initiatives. The following funding streams are available:

- **Carbon and Energy Fund** – Launched by Greg Barker MP at IHEEM in 2011, the Carbon and Energy Fund (CEF) has been specifically created to fund, facilitate and project manage complex energy infrastructure upgrades for the NHS and wider Public Sector.
- **Salix** – Salix funding can be used in conjunction with a variety of procurement frameworks and covers over 100 energy efficient technologies including boilers, combined heat and power, LED and lighting upgrades, and heat recovery. Funding for Salix's NHS programme must be repaid within 5 years and cost less than £172 to save one tonne of carbon over the lifetime of the technology being installed.
- **Sponsorship** – Sponsorship from large environmental organisations can be sought to support staff engagement and smaller projects.
- **Charitable Funds** – Some funding is available from charities for environmental improvement projects, historically NWAS have not been eligible for these as our buildings and grounds are not open public access.
- **Government, Local Authority & NHSI / Department of Health and Social Care Funding** – Each year NHSI request funding for sustainability projects, this could include energy efficiency schemes, electric vehicle charging or new and emerging technologies such as hydrogen fuel cell. Local Authorities also have access to funding pots to install electric vehicle charge points in public spaces and solar installations, some Local Authorities are willing to share these funding pots with NHS Trusts. In addition to this there is also funding from central government schemes which can be accessed but it tends to be reserved for specific technologies.

11. What can you do?

Bring your habits to work!

The simple and automatic actions like turning off lights and screens and recycling whilst you're at home can be applied in the workplace too!

Take a moment to consider the bigger picture!

Review the actions within this Green Plan and think about how you can contribute within your own role, is there something you could improve?

Be part of the conversation!

Talk to your colleagues, line manager and embed sustainability practices within your area of work. Whether it's a small or large project, it all adds up to make a difference. Share it on Twitter or in the Staff bulletin.

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APPENDIX A – Climate Change Risk Assessment

1948	20/05/2016	Corporate/Directorate Risk	Service/Business Interruption Resilience	There is a risk of core business interruption through infrastructure challenges, staff absence, loss of estates or increases in activity caused by the direct or indirect impacts of Climate Change.	Winchester, Mr David	12	NWAS Climate Change Adaptation Plan. Business Continuity Management Plans. Specific NWAS Resilience Plans including Heatwave Plan. National Contingency Plans. Local Resilience Forum and other agency contingency plans. Information and intelligence from key agencies to provide early warning of sudden events. Government Emergency Powers under Part 2 of the Civil Contingencies Act (2004)	2	4	8	4	Treat- Implement controls and mitigating actions to reduce the risk.	Currency of some departmental Business Continuity Plans Lack of cross departmental Climate Change plans and mitigation measures.	NWAS Climate Change Adaptation Plan. Internal Contingency Plans External Contingency Plans. NWAS Business Continuity Plans	Widespread nature of Climate Change effects difficult to mitigate against Some impacts of Climate Change likely to be slow and imperceptible Health Impacts of Climate Change may be difficult to attribute to a single causative factor.		4	4	20/12/2024	12/08/2019	20/12/2024
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CLIMATE CHANGE ADAPTATION PLAN

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Recommended by	Estates Manager Environmental
Approved by	
Approval date	
Version number	2.0
Review date	October 2020
Responsible Director	Director of Finance
Responsible Manager (Sponsor)	Assistant Director Estates and Fleet Estates Manager Environmental
For use by	All Trust employees

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1. Introduction

Climate change is associated with substantial risks for both society and nature. The two fundamental response options for reducing the risks posed by climate change are the mitigation of climate change and adaptation to the climate change.

Mitigation means limiting global climate change by reducing the emissions of greenhouse gases and Adaptation means planning and taking action targeted at reducing the effects that climate change has on our environment at a local level. Instigating coping mechanisms will help to overcome or at least manage better the effects on society caused by climate change.

Adaptation Plans are developed in consideration of what actions are required for reducing the risks posed by severe weather conditions caused by climate change.

2. Aims and Objectives

This document follows the principals of the Climate Change Adaptation Report which has been reviewed nationally and approved by the Association of Ambulance Chief Executives (AACE) and adopted as a central ambulance service document. The document was also reviewed by the Green Environmental Ambulance Network (GrEAN). Prior to adoption, access to the document was given nationally, for comment/input to Ambulance Trust resilience managers, estates managers, fleet managers, operational managers and directors of finance.

NWAS has followed the guidance of this and other appropriate documentation then modified it to meet North West's local and regional level context.

3. Stakeholders

Some examples of the stakeholders are considered to be:

- Patients
- Staff
- National Health Service (NHS)
- Local Resilience Forums (LRF) including members from the Police, Fire, Local Authorities
- General public of Great Britain

4. Purpose of the Adaptation Plan

The purpose of this Adaptation Plan is to provide all stakeholders with some background information as to what North West Ambulance Service (NWAS) is doing to reduce and mitigate issues related to climate change as well as their responses to risks in the future.

It is essential that organisations responsible for vital services and infrastructure make the necessary plans to prepare for the risks from a changing climate.

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The Climate Change Act 2008 introduced a new power for the Secretary of State to direct “reporting authorities” (companies with functions of a public nature such as water and energy utilities) to prepare reports on how they are assessing and acting on the risks and opportunities from a changing climate.

5. Background information

In the first round of Climate Adaptation reporting, over 100 organisations, primarily from the energy, transport and water sectors provided reports under the Adaptation Reporting Power to the Department for Environment, food and Rural Affairs (DEFRA).

The National Climate Change Adaptation Report described in section 2 of this plan and on which this plan is based, was carried out in conjunction with DEFRA, Department of Health (DoH) and Climate Ready, as well as the Ambulance Environmental, Business Continuity and Resilience teams across the UK in response to the National Adaptation Programme (NAP).

In order to adapt to climate change and the impact that it could have on the British Ambulance Services, the national climate change adaptation plan guidance document was put together to assess the impacts.

DEFRA have published ‘The Climate Change Risk Assessment’ document that identifies over 700 different climate risks associated with increases in flooding and heatwaves. This report is in response to the impact and effects that climate change is already having:

Climate Ready working on behalf of DEFRA and the DoH are looking to get together a climate adaptation plan that covers all sectors and ensures that there is resilience to a wide range of issues.

DEFRA are trying to identify where there is potential for adaptation plans to be incorporated into future planning.

DEFRA are looking to see what has already been carried out to date – flood risk assessment, planning for the future, business continuity, heatwave plans and what part of this covers adaptation.

Ambulance Services signed up to the Sustainable Development assessment Tool for measuring organisational progress on sustainability are recommended to, and should be working towards having a Climate Change Adaptation Plan in place as part of their Carbon Management Plans/Green Plan.

6. Climate Risks

The following sections identify the risks that the current and predicted impacts of climate change have on the community which the Ambulance Service serves. North West Ambulance Service (NWAS) responses to the issues that have been identified are also detailed.

7. Potential Impacts of Climate Change

The impacts from Climate Change might include increases in flooding, temperature, drought and extreme weather events. These could create risks and opportunities such as: impacts to transport infrastructure from melting roads or buckling rails, increases in tourism, increased damage to buildings from storms, impacts on local ecosystems and biodiversity, scope to grow new crops, changing patterns of disease, impacts on planning and the local economy and

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public health. All of these elements will have an impact on the way in which the Ambulance Service responds as well as the potential drain on resources.

8. Flooding

It is estimated that over 5 million people in England and Wales live and work in properties that are at risk of flooding from rivers or the sea. Identification aids in the form of Flood Mapping and Flood warning direct are both available via the Governments Web site (www.gov.uk) and are available to assist in the identification of areas that are at risk from flooding. The Ambulance Service has to respond to all areas of the country so flooding can detrimentally affect services and response times.

9. Pluvial Flooding

Pluvial flooding occurs when an extremely heavy downpour of rain saturates the urban drainage system and the excess water cannot be absorbed into the system causing flooding. These unpredictable events occur without warning and in the worst cases can cause huge destruction and devastate large areas.

According to the research carried out by the Joseph Rowntree Foundation, around 2 million people are at risk from pluvial flooding, which represents around a third of all flood risk in the UK. This figure could increase by 1.2 million by 2050 due to a combination of climate change and population change. Population change has the potential to put three times more people at risk than climate change.

Existing flood risk assessments are based on the number of properties at risk as opposed to the number of people. This approach downplays the impact on people, and in particular potentially vulnerable groups such as the elderly. Lower income groups and renters are slightly more exposed to pluvial flood risk because of the number that live in low lying areas around town centres dominated by higher density terraced housing and flats.

NWAS Response

Mapping systems have been developed by local councils to identify localised flooding issue into and are available via the central governments web site www.gov.uk which the Business Resilience and Continuity Resilience Teams can tap into.

Staff should undertake dynamic operational risk assessment when driving in flood waters and comply with the guidance issued by the Trust on the matter.

Historical flooding areas will be taken into consideration by the Estates Team when planning for ambulance station and office locations.

The Government has updated their web portal to cover flooding from surface water situations and these are set to be incorporated into flood warnings in the future.

It is Ambulance Service policy that at a major incident involving flooding, all patients and staff are disinfected prior to entering an ambulance to minimise and eliminate contamination of ambulances with sewage and other pathogens if they have been in contact with flood waters.

10. Fluvial Flooding

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Fluvial flooding occurs when rivers overflow and burst their banks. This is due to high or intense rainfall which flows into the rivers. It can cause localised flooding and accentuate pluvial flooding.

NWAS Response

The Government has a mapping system that Ambulance Services across the country have access to in order to gain up to date information on the flood risk associated with ambulance stations, driving routes and communities that may be affected by flooding.

Staff should undertake dynamic operational risk assessment when driving in flood waters and comply with the guidance issued by the Trust on the matter.

NWAS work with other emergency services, local coastal communities and local resilience forums to ensure that the impact can be assessed and management of evacuation programmes can be implemented if required.

At a major incident involving flooding, all patients and staff are disinfected prior to entering an ambulance to minimise and eliminate contamination of ambulances with sewage and other pathogens if they have been in contact with flood waters.

11. Sea Flooding

Through Met Office assessments, coastal Ambulance Services and those further inland will be aware of high sea level issues that may create flooding further inland as well as localised flooding to sea areas as well as erosion. Storm surges can be assessed and at risk areas are identified. All Operations, Business Continuity/Resilience, Estates and Fleet departments should factor in potential sea level rises over the next few decades when identifying where new ambulance stations, fleet workshops, offices and standby locations should be located.

NWAS Response

NWAS actively monitor roads and network infrastructure to aid easy transition throughout the region.

Staff should undertake dynamic operational risk assessment when driving in flood waters and comply with the guidance issued by the Trust on the matter.

Work with Local Resilience Forums (LRFs) to identify areas that could be at risk and implement a strategy to support patients and members of the public at risk.

At a major incident involving flooding, all patients and staff are disinfected prior to entering an ambulance to minimise and eliminate contamination of ambulances with sewage and other pathogens if they have been in contact with flood waters.

12. Storms and Tornados

The impact of storms and tornados can be localised and unpredictable. The most extreme storms can cause widespread structural damage, e.g. roofs blown off, mobile homes overturned, loss of power if the power lines are brought down, risk to personal safety from flying debris and trees, potentially widespread and/or prolonged interruptions to power and widespread transport disruption could be caused due to fallen trees and debris.

NWAS Response:

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NWAS work with local resilience forums and other emergency services to identify areas that have could be affected by storms.

Work with multi agency media teams to recommend that general public stay inside and minimise personal injury by staying out of storm weather and recommend not driving unless your journey is essential and avoiding exposed routes.

13. Temperature

Assessments of who is 'vulnerable' to climate change are highly complex. Vulnerability is generally understood as a combination of someone's exposure and sensitivity to climate hazards (e.g. heatwaves, cold) as well as their ability to adapt.

14. Heat

A heat wave is classified as '...four main levels (Levels 1-4)... Levels 1-3 are based on threshold day and night-time temperatures as defined by the Met Office. These vary from region to region, but the average threshold temperature is 30°C during the day and 15°C overnight.' (Department of Health's Heatwave Plan).

NWAS Response

The Department of Health's Heatwave Plan details how the health and care sectors should respond to heatwaves. Water is supplied to all staff during hot weather.

Ambulance Services will work with media teams to raise awareness of what the Heatwave Plan entails as well as educate the public as to how to minimise the impact to themselves and their family.

By working with local fuel poverty charities, Ambulance Services can ensure that those most vulnerable will be able to obtain help to insulate their homes to reduce the internal temperature, for heat as well as for cold.

Drugs stored in vehicles will need to be kept in cool environments according to the temperatures specified by the drug manufacturers. The Ambulance Association of Chief Executives have a best practice document for the storage of medicines and explains the effects of temperature on ambulance medicines.

15. Drought

A drought is a period of water shortage for people, the environment, agriculture or industry. A drought can be created from a hot, dry summer or a dry winter both having a large impact on water resources. It is extremely unlikely that public health in the UK will be detrimentally and directly affected by drought. However, drought can lead to situations where health can be put at risk. Several factors play a part in contributing to a drought, including:

- lack of rainfall
- an environment/soil which is poor at retaining water
- hot weather which increases evaporation of water

Modern forecasting systems can predict how severe a drought will be and which areas will be affected, but it is difficult to predict a drought more than a month in advance for most locations.

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Several health impacts can be associated with drought, although developed health and sanitation systems reduce the potential for drought-related health effects. Health impacts that may be relevant and could have an impact on the number of calls to the Ambulance Service include:

- Injury due to risk of swimming in rivers, reservoirs and other natural bodies of water. Diving into shallow water can cause injury, including serious spinal injury leading to lifelong paralysis.
- Public water supplies - In the UK, public drinking water supplies are tightly regulated to ensure they are safe. The Drinking Water Inspectorate (DWI) provides an independent reassurance that public water supplies in England and Wales are safe and drinking water quality is acceptable to consumers. Warnings are issued in case of any problems.
- Private water supplies - Private water supplies serve 1% of the population in England and Wales. During a drought, continued vigilance is needed to ensure water remains of adequate quality and quantity.
- Hand washing - Whilst it is important to minimise water wastage during a drought, hand washing should still continue as normal as this is one of the most effective ways to prevent transmission of infectious diseases.
- Algal blooms - Some algal blooms and their surface scums, which grow on open waters and are often blown onto shorelines, can release toxins which adversely affect human and animal health. Symptoms following ingestion of contaminated water during recreational activities include gastro intestinal effects (e.g. abdominal pain, nausea, vomiting and diarrhoea) and respiratory features (e.g. sore throat and cough). Symptoms following recreational exposure include skin and eye irritation, respiratory features, and hay fever/asthma-like symptoms. Water treatment removes algal bloom contamination from drinking water.
- Dust-related problems - Parched soils can increase the amount of dust in the environment as can dust from wildfires/fires which commonly occur during drought. This may have consequences for those with pre-existing respiratory or cardiovascular disease.
- Mental health and wellbeing - Drought can be difficult for those whose livelihood or lifestyle depends on water. If drought conditions continue and worsen then, for example, farmers and rural populations may experience stress related to financial worries and employment uncertainty. (Source: HPA)

Drought is associated with several other natural hazards already detailed including:

- Heat waves - These have well-documented health effects.
- Wildfires - Drought, coupled with extreme heat and low humidity, can increase the risk of wildfire and may lead to air pollution concerns.
- Flood - The risk of flooding may increase following a drought because of extremely dry soil conditions.

NWAS Response

NWAS will work closely with the other emergency services, Environment Agency, local authorities and Water Authorities to identify areas that could be subject to issues associated with drought.

Ambulance Service communication teams to work closely with media teams to raise awareness of droughts and the effects and indirect effects associated with them.

Vehicle washing and cleaning should ideally be minimised or external garages should be used that recycle water.

Hand washing and disinfection will continue in line with infection prevention control policies.

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16. Cold, ice and snow

The impact of cold weather on health is predictable and mostly preventable.

The direct effects of winter weather include an increase in incidence of:

- heart attack
- stroke
- respiratory disease
- flu
- falls and injuries
- hypothermia

Indirect effects of cold include mental health illnesses such as depression, stress as well as carbon monoxide poisoning from poorly maintained or poorly ventilated boilers, cooking and heating appliances and heating systems.

After a mild cold spell the Ambulance Service has identified a rise in health issues:

- After 2 days – rise in heart attacks
- After 5 days – rise in strokes
- After 12 days – rise in respiratory illness

All of these will have an effect on the Ambulance Service and the number of emergency calls that they will receive after cold spells.

NWAS Response:

NWAS will work closely with the other emergency services, Environment Agency and local authorities to identify areas that could be subject to issues associated with cold.

The Ambulance Service should also work with the local authorities to identify routes that should be gritted in the event of ice and snow.

Business Continuity plans are in place across the Trust for each department to ensure continuation of business during this type of disruption.

All Ambulance Services assess their tyres and tyre supplies prior to the winter season. All NWAS emergency vehicles are fitted with cold weather tyres.

The Ambulance Service offers staff the opportunity to have flu jabs.

Drugs stored in vehicles will need to be kept in warm environments according to the temperatures specified by the drug manufacturers to prevent freezing and cracking of the drug bottles. The Ambulance Association of Chief Executives has a best practice document for the storage of medicines and explains the effects of temperature on ambulance medicines.

The Ambulance Service complies with the Cold weather plan as detailed by Public Health England and the Department of Health. The Cold Weather Plan is underpinned by the Cold Weather Alert system which has been updated and now

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comprises five main levels. Level 0 - long term winter planning for between 1st November – 31st March, Levels 1 to 4, comprising winter and cold weather preparedness to a major national emergency. Each alert level should trigger a series of indicative actions.

The Met Office issues cold weather alerts which are used to alleviate pressure on the Ambulance Services across the country. These are integrated into planning and business continuity as well as resilience.

Cold weather alerts are issued by the Met Office on the basis of either two measures: low temperatures or widespread ice/heavy snow. Often low temperature criteria are met at the same time as the ice and snow. However, sometimes one may occur without the other. The thresholds for what constitutes severe winter weather have been developed in consultation between the Met Office, Department of Health, Cabinet Office and other experts.

Cold Weather Plan levels

Level 0	<p>Long-term planning</p> <p>All Year</p>	
Level 1	<p>Winter preparedness programme</p> <p>1 November – 31 March</p>	
Level 2	<p>Severe winter weather is forecast - Alert and readiness</p> <p>Mean temperature of 2°C and/or widespread ice and heavy snow are predicted within 48 hours, with 60% confidence</p>	
Level 3	<p>Response to severe winter weather - Severe weather action</p> <p>Severe winter weather is now occurring: mean temperature 2°C or less and/or widespread ice and heavy snow</p>	

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Level 4	Major Incident - Emergency response	
	Central Government will declare a Level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health	

17. Fuel Poverty

Fuel poverty has several measurable effects of cold housing on adult’s physical health, well-being and self-assessed general health, in particular for vulnerable adults and those with existing health conditions. Effects of cold housing are evident in terms of higher mortality risk, physical health and mental health.

The Department of Health in 2009 estimated that for every cold-related death there are eight non-fatal hospital admissions. In the coldest months of the year, NHS expenditure was reported as rising by 2% in 1998 and it is estimated that the annual cost to the NHS of cold-related ill-health is in excess of £1 billion.

NWAS Response

NWAS works with multiple agencies to help and assist in identifying vulnerable people.

18. Wildfires

Drought, coupled with extreme heat and low humidity, can increase the risk of wildfire and may lead to air pollution concerns. There were over 15,000 wildfires in the UK in 2012. There can also be an increase in the potential health risks associated with wildfires.

- Those with heart or lung disease, such as congestive heart failure, angina, COPD, emphysema, or asthma, are at higher risk of having health problems than healthy people.
- Older adults are more likely to be affected by smoke, possibly because they are more likely to have heart or lung diseases than younger people.
- Children are more likely to be affected by health threats from smoke because their airways are still developing and because they breathe more air per pound of body weight than adults. Children also are more likely to be active outdoors.

NWAS Response

NWAS will work closely with the other emergency services, Environment Agency and local authorities to identify areas that could be subject to issues associated with wildfires and look at affected individuals.

19. Business Continuity and Resilience

Business Continuity and Resilience Business Continuity Management is a management led process which identifies and mitigates the risks and disruptions that could affect the performance of any of the Ambulance Services. The objective of the Business Continuity Management plan is to ensure that during an emergency or disruption, it has identified and

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prioritised those activities at risk of the organisation that are in need of protection planning so that the business can continue to operate effectively with minimal disruption.

NWAS Response

NWAS is committed to having in place, a Business Continuity Management (BCM) programme as required under the Civil Contingencies Act 2004. The NWAS BCM programme provides the framework within which the Trust can comply with the business continuity requirements of our customers by aligning the BCM with ISO 22301:2012. BCM has been established to ensure the Trust can continue to deliver a minimum level of service to our stakeholders in the event of any disruption. The Trust is also committed to meeting legal and regulatory requirements of the BCM and continual improvements of BCM systems.

20. Health Impacts

A changing climate is expected to have significant impacts on human health and wellbeing. The heatwave in 2003 resulted in excess of 35,000 deaths across Europe and at least 2,000 premature deaths in the UK alone. Climate change can also have indirect effects on the population:

- flooding can seriously undermine the mental health of communities that are impacted or those that fear they may be in the future
- the quality and quantity of the food supply chain can be impacted
- high temperatures increase ozone and other pollutants in the air, aggravating cardiac and respiratory problems
- pollen levels are frequently high during a heatwave aggravating allergy sufferers symptoms
- stress and depression can result from climate change effects
- The vulnerable groups in our society such as the elderly, young or chronically ill are likely to be worst affected by the impacts – caring for these groups must be factored into planning to meet future demand for health services.

21. Engagement

To Risk Assess the potential impact and opportunities for business, the Ambulance Service Trusts will engage with many other stakeholders, authorities and trusts:

- **Key Stakeholders**
 - Patient representative groups
 - Trust and Foundation Trust members
 - Staff
 - NHS England
 - Public Health England
 - CCGs
- **Local authorities**
 - Become members of Local Strategic Partnerships to enable interaction and information exchange
 - Potential impact and actions in respect of sea level changes
- **Health Trusts**
 - Liaison with local Acute Trusts will enable planning for the transport of patients between centres

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- access to regional Trauma Centres
- Planning for changes in the local health communities resulting from climatic changes
- **Adjacent Ambulance Trusts**
 - Liaison with other Ambulance Trusts will enable planning for cross border support where environmental factors are identified as potentially joint issues.

22. Guidance Documents

There are several guidance documents that are available to Ambulance Services across the country to aid business resilience and continuity.

- Each Ambulance Service should have in place:
 - A Winter Weather plan
 - Heatwave Plan in line with the Department of Health's Heatwave Plan 2012
 - Business resilience and continuity plans

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