

Environment Scrutiny Committee	
Report Title:	MOTION 861: CLIMATE CHANGE
Meeting Date:	24 November 2020
Chair:	Cllr Rob Bird
Presenting Officer:	Peter Wiggins, Outcome Manager - Sustainability
Purpose of Report:	To consider what lessons the Council has learnt during Covid-19 that the County Council can apply to its policies and practices to meet our climate change targets and produce a cleaner, greener post-Covid County, referring to key strategies.
Planned Dates	Cabinet, 16 December 2020
Background documents:	<p>Gfirst Local Enterprise Partnership, 2019, ‘Draft Local Industrial Strategy’.</p> <p>Gloucestershire Health & Wellbeing Board, May 2019, ‘Item 19. Air Quality Strategy’, Gloucestershire County Council.</p> <p>Gloucestershire County Council, October 2018, ‘Looking to the Future – 2019-2022’.</p> <p>Environment and Climate Action Group, June 2020, ‘Evidence Report’, Gloucestershire County Council.</p> <p>Natural Environment Research Council, July 2020, ‘Virtual Covid-19 Ideas Series – Outputs from thematic workshops’ (Annex 2).</p> <p>Environment Scrutiny Committee, September 2020, ‘Item 3. Local Transport Review’, Gloucestershire County Council.</p>
Annexes	<ol style="list-style-type: none"> 1. Covid-19, Daily Confirmed Cases – Gloucestershire 2. Natural Environment Research Council Virtual Covid-19 Ideas Series – Outputs from thematic workshops held July 2020
Recommendations	To note the report, for discussion at the meeting.

1. Background

Motion 861: Climate Change

- 1.1. County Council, at its meeting on 24 June 2020 resolved that:
This Council notes that the response to Covid-19 in the County has been exceptional, with changes to how we do things delivered at a rapid pace. This Council believes by using existing technology, we can and must change how we do things. As we recover from this health crisis we must also use this new thinking to tackle the climate crisis.
This Council pledges to use the new thinking about how we live and work as a basis for building communities resilient to climate change.
This Council asks the Cabinet member for Environment and Planning who is responsible for climate change strategy to produce a report to Environment Scrutiny Committee on what lessons the Council has learnt during Covid-19 that the County Council can apply to its policies and practices to meet our climate change targets and produce a cleaner, greener post-Covid County.
Referring to key strategies including Vision 2050, Industrial Strategy, Strategic Transport Plan and Council Plan.

2. Covid-19 Coronavirus

- 2.1. As of Thursday 19 November 2020, the cumulative number of positive cases to date in Gloucestershire is 6,579¹. In the 7 days 07/11/2020 – 13/11/2020 there were 995 confirmed cases of Covid-19 in the county, which represents an increase of 20% on the previous week.
- 2.2. [Annex 1](#) shows the daily number of confirmed cases in Gloucestershire, alongside the 7-day rolling average and the 7-day rate per 100,000 population.
- 2.3. The first national lockdown lasted from the end of March to mid-July 2020, when people were then encouraged to return to work.

3. The Effects of Lockdown

- 3.1. Available information on the findings are summarised by theme, below.

Transport

- 3.2. From March 2020 – June 2020 Government lockdown restrictions forced dramatic changes to how, and the extent to which, people moved around. For many, this was the most noticeable impact of the crisis. These restrictions resulted in huge positive shifts in behaviour such as were considered impossible to achieve in such a short timeframe previously.
- 3.3. Data from Google² shows movement trends by region, across different categories of places. These data are valuable to understanding how people's movement patterns have changed. Figure 1 shows patterns of movement from 17 April – 29 May against a baseline of 3 January – 6 February 2020.

¹ <https://coronavirus.data.gov.uk>

² <https://www.google.com/covid19/mobility/>

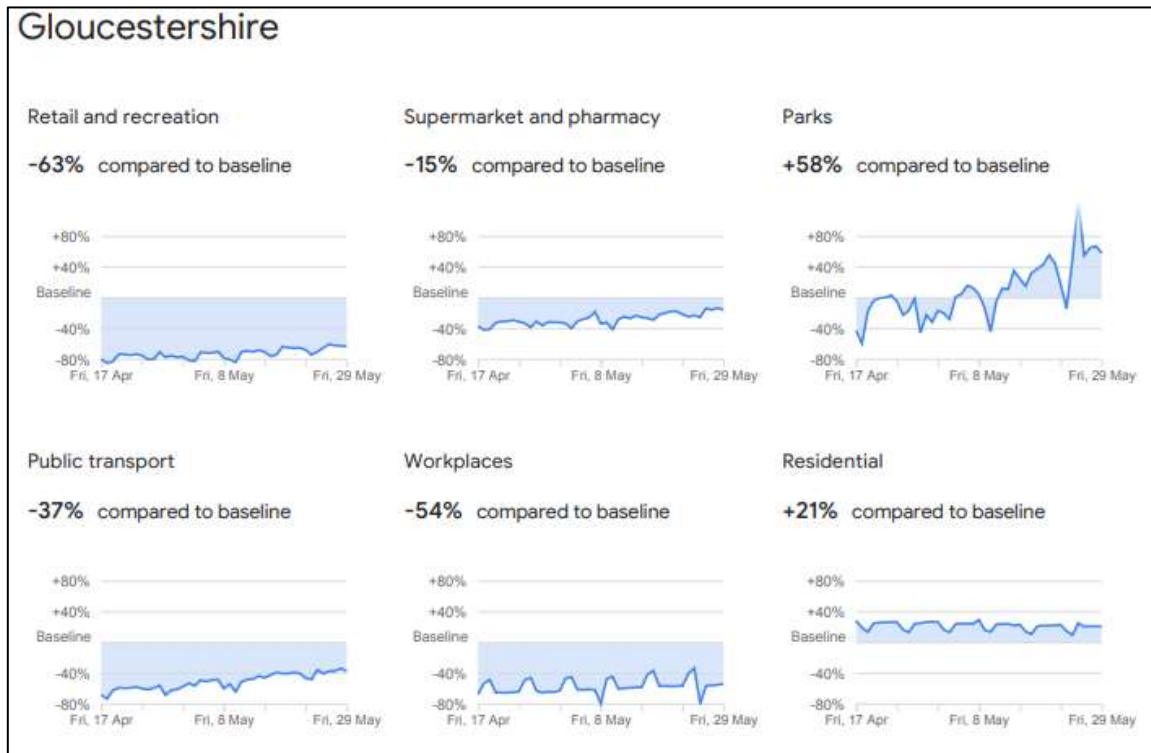


Figure 1: Google API data on time spent in various settings in Gloucestershire, compared to the baseline

- 3.4. **Cycling rates** during the initial national lockdown doubled nationally in the first weeks³ and in Gloucestershire increased by 190%⁴.
- 3.5. The number of people walking regularly increased to around two thirds of all adults.
- 3.6. **Car use** nationally⁵ fell by over 75%; within Gloucestershire car use dropped by 55-67% early on but had risen to 70% of pre-lockdown levels by July.
- 3.7. **Working from home** April saw 45% of people working from home nationally⁶. Zoom usage across the UK increased by 3,000% from February 2020 to April 2020⁷. Working from home does entail slight increases in energy use, but recent modelling shows these are significantly less than reductions elsewhere⁸ (Figure 2).

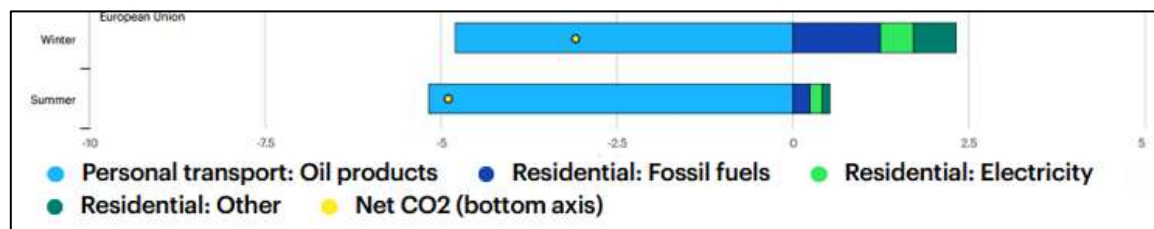


Figure 2: Average change in energy demand and CO₂ emissions from one day home working for a single household with a car commute

⁴ <https://www.gloucestershire.gov.uk/gloucestershire-county-council-news/news-june-2020/cycling-in-gloucestershire-the-way-forward/>

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/886865/2020-05-21_COVID-19_Press_Conference_Slides_-_for_publication.pdf

⁶ <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/coronavirusandthesocialimpactsongreatbritain/29may2020>

⁷ <https://www.theverge.com/2020/4/23/21232401/zoom-300-million-users-growth-coronavirus-pandemic-security-privacy-concerns-response>

⁸ https://energypost.eu/calculating-the-energy-saved-if-home-working-becomes-the-norm-globally/?utm_campaign=shareaholic&utm_medium=twitter&utm_source=socialnetwork

- 3.8. **Air Quality** – nitrogen oxides (NO_x) levels in Stroud Town Centre in April were less than 50% of their usual level, directly correlated with reduced traffic volumes. Nationally there are 40,000 annual avoidable deaths from air pollution. There is no safe level of exposure to key air pollutants such as NO_x and particulate matter. Exposure to poor air quality contributes to the development of long term conditions, and shorter life expectancy.⁹
- 3.9. A converse behaviour change is the reduction in **public transport use**. Government guidelines have led to huge drops in the number of people taking the bus in Gloucestershire¹⁰ (**Error! Reference source not found.**). The Chartered Institute of Logistics and Transport have published a report with insight into how to promote public transport whilst tackling COVID-19¹¹.

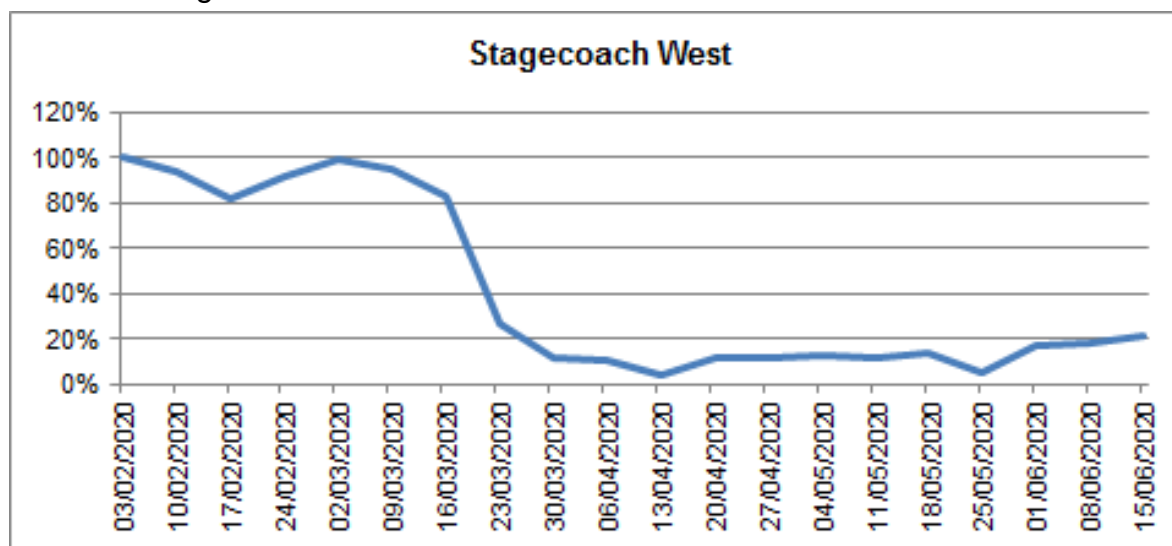


Figure 3: Passenger numbers during the initial national lockdown for Stagecoach Southwest

Food and Farming

- 3.10. Panic buying and disruptions to global, national and local food supply chains saw sales of certain items restricted. Staple items, such as flour, milk and eggs became difficult to source.
- 3.11. Food accounts for 26% of global greenhouse gas emissions. Local food produced to high environmental and animal welfare standards has the potential to reduce much of agriculture's and the food system's impacts on the natural environment.
- 3.12. There is clear support for change:
- 80% of vegetable box schemes in the UK now have waiting lists, a huge increase on pre-COVID-19 levels. Sales increased by 111% in the 6 weeks from the end of February¹². This represents a huge demand from the public for more resilient, sustainable, local food supply.
 - 93% of professionals in the food and farming sector support a focus on local, short supply chains, supporting the trends seen from consumers during the pandemic, with 69% supporting more powers for local authorities to lead and support local food policy¹³.

⁹ Gloucestershire Air Quality and Health Strategy, 2019. Every breath we take: the lifelong impact of air pollution, RCP, <https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>

¹⁰ Passenger numbers since lockdown started of Stagecoach Southwest - Data supplied by James O'Neill of Stagecoach buses to the author, personal email, 17.6.20.

¹¹ Rebuilding the Bus Market to meet the decarbonizing challenge in a post-Covid-19 world, Chartered Institute of Logistics and Transport (CILT), 2020.

¹² <https://foodfoundation.org.uk/wp-content/uploads/2020/05/Food-Foundation-COVID-19-Veg-Box-Scheme-report.pdf>

¹³ <https://www.ffcc.co.uk/lockdown-survey>

Health and Wellbeing and access to Nature

- 3.13. A lack of access to nature is a growing issue, particularly for children¹⁴, and there is growing evidence for the health benefits of having high quality natural green spaces near to where we live¹⁵.
- 3.14. Providing access to high quality green space close to where people live and work is important for good mental and physical health, as well as for a happy society and thriving economy¹⁶.
- 3.15. Nationally, 79% of the public surveyed felt that the COVID-19 pandemic highlighted the inadequate provision of local green spaces¹⁷:
 - Households with an annual income below £10,000 were 3.6 times less likely to have an outdoor green space of their own and 40% less likely to live within 10 minutes of a local green space than more affluent households.
 - Only 51% of urban households were able to spend as much time in nature as they would like.
 - 75% felt that enhancing and expanding nature-rich green spaces to provide equitable access was a key factor in building resilience to future pandemics.
- 3.16. 10% of households in Gloucestershire have no access to a private garden¹⁸.
- 3.17. In England, Black people are four times more likely than people of white ethnicity to have no access to an outdoor space at home¹⁹.
- 3.18. 74% of respondents to a Gloucestershire survey spent more time in nature during lockdown²⁰. Spending time in green spaces played an important role in maintaining physical health (41%) and mental health (44%) of people.
- 3.19. National figures show more than two thirds of adults have reported that nature has made them feel happy during lockdown²¹.
- 3.20. During the recovery period, 57% of people questioned in Gloucestershire planned to spend more time in green spaces with family and friends and 39% felt that increased provision of public natural green space was a priority for new housing. 73% of people in the food and farming sector also believed people need easier access to nature. Many of these are landowners with the ability to provide it²².
- 3.21. 47% of people in England who had left their house had visited a park or public green space in the third week of June²³. In a national YouGov

¹⁴ McCurdy, L. E., Winterbottom, K. E., Mehta, S. S., & Roberts, J. R. (2010). Using nature and outdoor activity to improve children's health. *Current problems in pediatric and adolescent health care*, 40(5), 102-117.

¹⁵ Mensah, C. A., Andres, L., Perera, U., & Roji, A. (2016). Enhancing quality of life through the lens of green spaces: A systematic review approach. *International Journal of Wellbeing*, 6(1).

¹⁶ <https://www.mentalhealth.org.uk/statistics/mental-health-statistics-economic-and-social-costs>

¹⁷ RSPB (2020). A report on public opinion on the role and importance of nature during and in our recovery from the Coronavirus crisis in England. YouGov commissioned survey of 2155 adults, weighted to be representative of all UK adults. Bedfordshire, UK

¹⁸ <https://www.ons.gov.uk/economy/environmentalaccounts/articles/oneineightbritishhouseholdshasnogarden/2020-05-14>

¹⁹ Ibid

²⁰ Gloucestershire Wildlife Trust (2020) Life after lockdown survey of public opinion in Gloucestershire on environmental recovery post-covid. Results from 748 responses as of 12/06/2020. Gloucester, UK

²¹ <https://www.nationaltrust.org.uk/press-release/uk-values-nature-more-as-a-result-of-lockdown-according-to-summer-solstice-poll->

²² <https://ffcc.co.uk/library/learning-from-lockdown>

²³

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/coronavirusandthesocialimpactsongreatbritain/19june2020>

survey over half of respondents said they planned to make a habit of spending longer in nature once things go back to normal²⁴.

Biodiversity and Natural Capital²⁵

- 3.22. In most cases it is too early to tell how or if the pandemic has affected Gloucestershire's wildlife. Gloucestershire Wildlife Trust (GWT) received anecdotal reports of some species initially thriving during lockdown due to a reduction in disturbance from people and dogs, however this changed following the significant increase in visits to green spaces as restrictions were eased, with estimated 100% increases at some GWT reserves.
- 3.23. Species that are reliant on specific land management are likely to have suffered as most organisations have been unable to undertake conservation management activities.
- 3.24. In Gloucestershire, 83% of people are concerned about the impact of food production on wildlife and 50% are willing to buy more wildlife friendly food²⁶. 78% of people questioned felt that economic growth targets must be sustainable by accounting for the protection and restoration of nature²⁷.

4. Natural Environment Research Council (NERC) Covid-19 'Ideas Series'

- 4.1. NERC ran a virtual Ideas Series in response to the Covid-19 pandemic in July 2020. The Series aimed to unearth innovative environmental solutions ideas that will contribute to the response and recovery. The three themes that were explored throughout the Series were:



- 4.2. The outcomes of the second and third themes ([Annex 2](#)) are summarised here.

Greening the 'build back'

- 4.3. Opportunity to improve sustainability, tackle climate change, and enhance biodiversity at a local level.
 - E.g. Exploring how local-scale greenhouse gas removal, nature-based solutions etc can bring benefits at local-, national- and global-scale as well as determining the resilience of local-scale approaches to sustainability to shocks and hazards and understanding how national and global policies can work at the local-scale and grow local partnership approaches.

²⁴ <https://www.nationaltrust.org.uk/press-release/uk-values-nature-more-as-a-result-of-lockdown-according-to-summer-solstice-poll->

²⁵ [Natural capital can be defined as the world's stocks of natural assets which include geology, soil, air, water and all living things.](#)

²⁶ Gloucestershire Wildlife Trust (2020) Life after lockdown survey of public opinion in Gloucestershire on environmental recovery post-covid. Results from 748 responses as of 12/06/2020. Gloucester, UK.

²⁷ More evidence on active and sustainable travel can be found here

<https://wecanmove.ning.com/articles/list/tag/active+travel?page=1>

For detailed insight into Air Quality changes see here:

<https://ee.ricardo.com/downloads/air-quality/life-after-lockdown-%E2%80%93-webinar-materials>

More evidence on food and farming and the impact of Covid-19 can be found here

<http://www.ccri.ac.uk/covid-19-food-system/>

More evidence supporting a natural capital approach to growth for Gloucestershire can be found here

<https://www.gloucestershirenature.org.uk/local-industrial-strategy>

- 4.4. Understanding the global impact of our actions and how to increase sustainability.
 - E.g. Exploring how to reduce the global impact of our supply chains, ensuring that emissions aren't exported to developing countries and how can we help other countries achieve their climate change and biodiversity targets as well as thinking about the role for global policy frameworks, such as the United Nations' Sustainable Development Goals²⁸, in helping to deliver green growth.
- 4.5. Opportunity to move away from Gross Domestic Product²⁹ (GDP) to wider measures of success, including environmental and social benefits.
 - E.g. Sense that the pandemic has made governments, business and public more willing to change in order to deliver environmental benefits, but need to know what changes to make as well as the need to identify opportunities for win-wins for the environment and the economy and understanding how natural capital approaches can be applied in both urban and rural areas.
- 4.6. How to get changes to 'stick' to ensure long-term benefits.
 - E.g. To embed 'good behaviour' and reduce 'bad behaviour' need to engage users in the research to be able to demonstrate benefits and how risks have been mitigated as well as opportunity to explore how policy and fiscal measures can be used to facilitate change.
- 4.7. No magic bullet! Need different solutions in different situations.
 - E.g. Solutions need to be based on whole systems understanding to understand benefits and trade-offs, and ensure they don't exacerbate inequalities or create new problems.

Healthy places, healthy people

- 4.8. Reforming planning processes for a healthy environment.
 - E.g. integrating life, work and a healthy environment as one as well as transport and planning for a healthy environment and healthy people and planning the built environment, especially in cities (what is 'nature' in this context?). Also thinking about what the challenges are of navigating a complex policy space with many stakeholders
- 4.9. Successful interventions for healthy environments.
 - E.g. Thinking about the difference between urban and rural – air pollution from traffic and from agriculture as well as what is successful in this context? Success for what outcomes? For who/what? And given other economic pressures, what are the factors that need to be considered to help prioritise interventions?
- 4.10. What do different people want from a healthy environment.
 - E.g. Think about what does a healthy environment mean to different people. What attributes would they associate with a healthy/quality environment? As well as thinking about inequalities in access to environments and values of environments: ranging from healthy places often being more prosperous/expensive through to access due to ability, gender, location and noticing lack of diversity in our conversation – how to be authentic and frame the right questions?
- 4.11. Engaging communities at the heart of developing and delivering the research agenda.

²⁸ [United Nations' Sustainable Development Goals](#)

²⁹ [Gross Domestic Product \(GDP\): What it means and why it matters](#)

- E.g. Thinking about how we can learn from success elsewhere and valuing this type of community-led research and the skill of the researchers leading it.
- 4.12. Linking natural capital, health and wellbeing in a systematic way.
- E.g. The need to think about what methodologies to prioritise environmental solutions in an economy where job creation is the key driver and how does biodiversity contribute to human health as well as approaches to social prescribing.

5. Links to Gloucestershire Strategies

Vision 2050

- 5.1. Gloucestershire 2050³⁰ is a county-wide conversation to explore ideas and shape our long-term future together. The consultation ran from 1 February 2018 to 31 July 2018 and we received approximately 2,500 responses which we are currently analysing. A full report on the exercise plus next steps in the creation of a vision for Gloucestershire in 2050 has been published
- 5.2. “Gloucestershire: a great place to live, work and do business, with a thriving future.”
- And what does a thriving future mean?
- An inclusive county:** we will ensure that the economic and social benefits of growth are felt by all.
 - A magnet county:** we will see a growing working age population, by keeping and attracting more 18-40 year olds with high level qualifications, who want to live and work in the county.
 - An innovative county:** we will see more businesses starting up, growing, and investing in research and innovation.
 - A skilled county:** we will see more people with high-level skills and jobs in skilled occupations.
 - A prosperous county:** we will see rising productivity and household income, offering higher living standards.
 - A healthy, happy and safe county:** we will ensure people have a good work/life balance and see improved health and wellbeing.
 - A connected county:** we will see improved transport and internet connections so that people and businesses can connect with each other more easily.
 - A sustainable county:** we will see more efficient use of resources and more use of sustainable energy.
- 5.3. **A green recovery would support bringing this Vision about.**

Council Plan

- 5.4. In October 2018, the Council published ‘Looking to the Future 2019-22’. This sets out 9 ambitions for the future of the county, adapted from those established through Vision 2050 to reflect the role the Council plays; including:
- **An Inclusive County** – The economic and social benefits of growth to be felt by all communities, including rural, urban and our areas of highest deprivation. Opportunities to be available for all and good

³⁰ [What is the Gloucestershire 2050 Vision? - Glos2050](#)

relations between those who have protected characteristics and those who do not.

- **A Healthy County** – People to have a good work/life balance and improved health and wellbeing.
- **A Connected County** – Improved transport and internet connections so that people and businesses can connect with each other more easily.
- **A Sustainable county** – More efficient use of resources and more use of sustainable energy.
- **A Resilient County** – Active, resilient local communities that keep people safe, provide them with support and help them to make a positive contribution.

5.5. **Challenges and opportunities:**

5.6. Climate Change – Along with councils up and down the country, Gloucestershire County Council has declared a climate change emergency. This recognises the irreversible impact that humans have already had on climate change and the need for bold and timely action to be taken. The County Council has a leadership role, along with other public sector bodies, to reduce Carbon emissions across the whole county.

5.7. **Delivery of the Council Plan would support a green recovery.**

Industrial Strategy

5.8. The strategy identifies Gloucestershire's strengths, opportunities and challenges. It also aligns with the Government's national Industrial Strategy, which focuses on five 'Foundations' for productivity, and four 'Grand challenges'.

5.9. The five Foundations are:

- Ideas
- People
- Infrastructure
- Business environment
- Places

5.10. The four Grand Challenges are:

- Artificial Intelligence and data
- Ageing society
- Clean growth
- Future of mobility

5.11. The strategy sets out a number of ambitions, including in summary:

5.12. Gloucestershire has the potential to be **the greenest place to live and work** in England.

5.13. We want to:

- Establish Gloucestershire as a **leader** in **sustainable growth** by developing a baseline
- To determine how best to protect, maintain and enhance our natural capital assets.
- Put clean growth at the heart of investment decisions and new developments.

- Build on local green capabilities in the private sector.
 - Reduce carbon emissions to **net zero by 2050** with aspirations to go further and faster.
- 5.14. Infrastructure – we want Gloucestershire to be a fully connected county through innovative transport solutions and digital connectivity so people and businesses can easily connect; and meet our house building commitment to provide more affordable housing for young people.
- 5.15. What we need – to create real alternatives to travel by car in Gloucestershire, and identify priorities for investment, such as:
- **A mass-transit transport solution** that provides a reliable, quick and clean link between Cheltenham and Gloucester;
 - **Better cycle links** to improve health, reduce congestion and protect the environment;
 - **Rail projects** to improve connections within the county and with other major hubs.
 - To become a pilot area for **innovative technology-driven transport solutions** that work in rural areas.
 - Delivery of local plans to significantly **increase the supply of housing** in the county.
 - **High quality digital infrastructure** for everyone in Gloucestershire.
- 5.16. Delivery of this ambitious Local Industrial Strategy will position Gloucestershire as:
- The cyber-tech capital of the UK and beyond;
 - Digitally connected and skilled;
 - The greenest place to live and work in England;
 - The first place in the world to create a healthy circular economy in food and farming;
 - The most flexible place to work in the UK;
 - A ‘magnet county’ that attracts and retains young talent;
 - Inclusive and supportive of all its residents;
 - Delivering sustained productivity improvements; and
 - A great place to live and work.
- 5.17. **Delivery of the draft Industrial Strategy would support a green recovery.**

Local Transport Plan (LTP)

- 5.18. This committee received a presentation on the LTP review at its September 2020 meeting.
- 5.19. The LTP had last been adopted in 2016. The review needed to bring the LTP in line with national, regional, county and local priorities and policies, whilst also strengthening its climate change agenda and reflecting the significant progress in the district local plans, e.g. the Joint Core Strategy and Cotswold Local Plan. The county council and all six district councils had now declared a climate change emergency.
- 5.20. Officers are developing a multi-modal transport model that would be made available to and assist all district councils in developing their future Local Plans.
- 5.21. All new schemes promoted active travel choices – cycling, walking and e-scootering.

- 5.22. The public consultation will result in significant and positive changes for the Plan and enhance its sustainability.
- 5.23. **As such the review of the LTP will support modal shift and so help to retain some of the environmental benefits seen during Covid-19.**

Gloucestershire Climate Change Strategy

- 5.24. This was approved by Cabinet at its meeting on 20 December 2019.
- 5.25. The strategy provides an overarching framework for Gloucestershire over five years, setting out what we will do, working with local communities and partners.
- 5.26. The strategy's Vision is that:
By 2050 we will create a carbon neutral county that provides quality of life now and for future generations, having improved the quality of our natural environment. By 2030 we will have reduced our carbon emissions by 80%.
- 5.27. Cabinet sought to respond urgently to the climate emergency and ensure resources were made available to deliver this change, setting out ten 'Actions by April'. In addition fifteen medium and long term measures were identified to be implemented as part of a five year rolling programme, with more details to be published in annual updates.
- 5.28. The long term strategy is centred around eight key themes:
 1. *Putting climate change at the heart of decision making*
 2. *Buildings – ours, residents, businesses and partners*
 3. *Transport – carbon busting options for all*
 4. *Power – helping everyone convert to green power*
 5. *Waste – reducing and dealing with*
 6. *Influencing others – getting everyone to do their bit*
 7. *Land use*
 8. *Campaigning*
- 5.29. The 'Buildings' theme includes a target for the council to:
 - Reduce our carbon emissions (buildings, street lighting, fleet, business travel) by 80% by 2030, aiming for 100% ('Net Zero') by 2030 through carbon offsetting.
- 5.30. Information on progress and future actions will be available in the Gloucestershire Climate Change Strategy Annual Report & Action Plan, scheduled for December Cabinet.

6. Conclusions

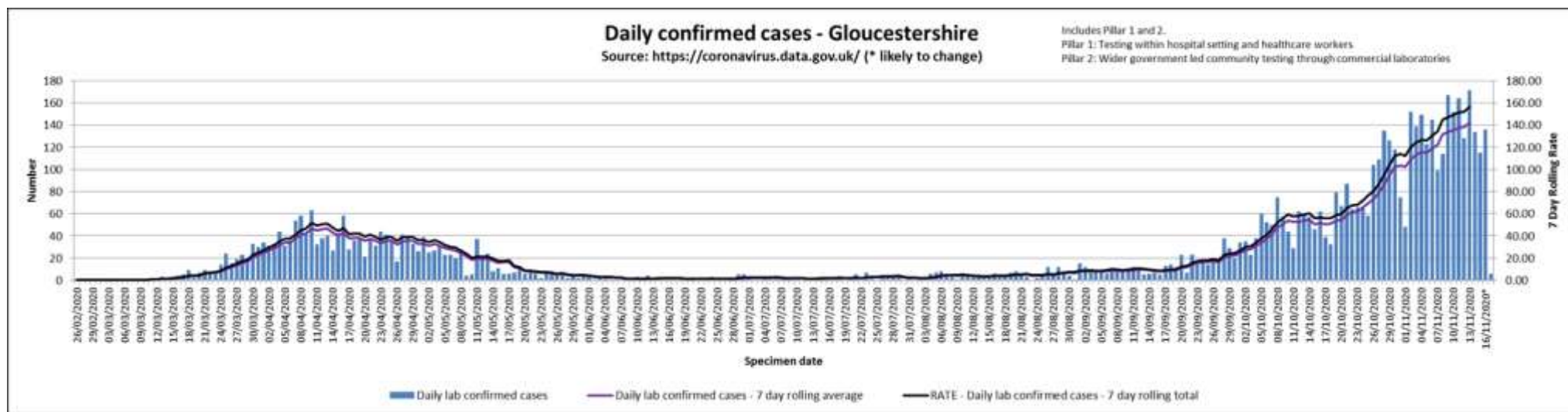
- 6.1. Gloucestershire's key strategies make our collective intentions clear.
- 6.2. The initial national lockdown lasted for around 3 months. Our collective response brought about tangible environmental benefits and demonstrated that rapid, collective positive action can be made, given the right circumstances.
- 6.3. This is supported by evidence on shopping habits, food resilience and transport patterns, which indicate some social readiness for a stronger Place Making, Green Infrastructure and Sustainable Travel agenda. In turn this is linked to the economic growth potential for Gloucestershire, which has the potential to address economic and environmental challenges and open-up new sources of growth through several channels.

- 6.4. In the widely accepted Transtheoretical Model of behaviour change³¹, new behaviours, once enacted, take around 6 months to become normalised (or maintained). The initial national lockdown lasted for around 3 months. Emerging evidence from countries where lockdown has already been lifted shows car use exceeding pre-COVID-19 levels.
- 6.5. However, emerging evidence from countries where lockdown has been lifted shows how quickly things are returning to pre-COVID-19 levels³². This is in line with established psychological models on human habit formation and the fragility of new behaviours over several months.
- 6.6. The challenge of bringing about lasting significant behaviour change remains, particularly around transport and personal car use. Transport is one of the biggest sources of carbon emissions and we have already encountered resistance over changes to individuals' perceived rights to use their own car.

³¹ <http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories6.html>

³² <https://www.theguardian.com/environment/2020/jun/14/congestion-set-to-exceed-pre-lockdown-levels-as-cars-crowd-back-on-to-uk-roads>

Annex 1





Natural Environment Research Council
Virtual Covid-19 Ideas Series
Outputs from thematic workshops held July
2020

Background of the original Ideas Series

The Natural Environment Research Council (NERC) ran a virtual Ideas Series in response to the Covid-19 pandemic in July 2020. The Series set out to explore environmental solutions around three themes as well as exploring the current landscape of research and innovation since the pandemic broke out. The three themes that were explored throughout the Series were:

Managing pathogens in the environment

Environmental solutions to reduce the potential for emergence and spread of pathogens.

Greening the 'build back'

Putting sustainability at the core of rebuilding and reshaping to a Net Zero economy

Healthy places: healthy people

Environmental solutions to increase the health of places to support the mental and physical health of people.

Within each thematic workshop NERC, in consultation with others across UKRI, put together a conceptual framework to set out the ideas space of each individual theme. From that framework discussion was then focussed around exploring what the current challenges are for that theme. The workshops then looked to explore ideas to solutions for the challenges identified in the theme areas.

The Series aimed to unearth innovative environmental solutions ideas that will contribute to the response and recovery, and that might be taken forward through a breadth of existing and future UKRI funding routes.

This document summarises the outputs from the focused thematic workshops that were held over several weeks as part of the original Ideas Series. As part of our next steps NERC stated that the outputs from the original Ideas Series would be shared with the research and innovation community.

Managing Pathogens in the Environment

Points from the conceptual framework put together by NERC, in consultation with others across UKRI before the Ideas Series took place are listed below:

- Tools to predict when and where emerging or existing biohazards may arise. E.g. biomarkers in wastewater and detecting emerging zoonoses
- What are the best environmental interventions to decrease the potential for the emergence of biological hazards? E.g. wildlife populations as reservoirs and ecosystem management
- Understanding the human interaction with and exploitation of the environment and wildlife to develop further interventions that reduce future infection

- What environmentally sustainable mitigation or disinfection processes could be developed and employed? E.g. preventing contamination of water supplies and effective sanitation measures where access to clean water is limited

From these conceptual points above, discussions around the current challenges of managing pathogens in the environment took place at the Ideas Series. The main points identified from those discussions are summarised below:

- The need to be able to understand the effect of environments on pathogens. E.g. Looking into what are the key parameters we need to understand and how we identify them as well as ways in which we might identify hot spots for environmental hazards.
- The need to understand the relationship between humans and animals and how this mediated by the environment. E.g. How and why are pathogens transferred across species and how do pathogens survive and replicate in the vectors and alternative hosts.
- The need to use institutional learning looking at what we can bring in from 'One Health' perspectives, plant health, food processing and farming systems as well as looking at the learning we can take from history and previous pandemics involving other animals. Further, thought needs to be given to ways we might identify and prioritise the sectors that need to contribute/collaborate
- The need to apply whole systems learning. E.g. How we might respond to the need for an international perspective and how we might consider managing pathogens in the environment through other lens' such as economic and policy
- The need to create baselining and monitoring pathogens in the environment. E.g. How could technology be used to provide warning in advance rather than retrospective analysis and what is required from epidemiological models to understand how infections move across/between species.

Further to these themes that came out of the discussions at the sessions, there were a series of themes that emerged from the ideas workshops. These are summarised below:

- Prevent emergence of pathogens – understanding the evolution and interactions of pathogens and how they're most likely to enter the body
- Understand which human practices in the environment support pathogen emergence and changing them both in the short and long term – understanding the interactions and connectivity between human infrastructure and the environment
- Increase resilience of the landscapes to pathogenic outbreaks – understanding the role of biodiversity and how environmental resources might help
- Environmental barriers to prevent pathogens spreading – thinking about climate change adaptation as well as identifying environmental hotspots

- Re-engineer indoor and outdoor environments to mitigate spread – where in the environment does the pathogen remain

Greening the ‘build back’

Points from the conceptual framework put together by NERC, in consultation with others across UKRI before the Ideas Series took place are listed below:

- This unique situation has demonstrated what could be possible – how do we use what we have learnt to embed cleaner consumer/business behaviours that have been adopted during lockdown, and lever the benefits for climate change mitigation and ‘Net Zero’, whilst sustaining our economy?
- Assessing businesses and economic models for regrowth and beyond to determine benefits to the environment and economy and understand trade-offs, tipping points and unintended consequences to inform decision-making on the road to decarbonisation and achieving Net Zero.
- How can we embed our recent knowledge of the consequences of global stressors into our economy and ensure that the interdependency between natural resources and supply chains can withstand dramatic consumption change?
(e.g. learning from the resilience of supermarket supply chains demonstrated during COVID-19)
- What can we learn from the current situation to inform building in future resilience for the environment and communities to withstand multi-hazard events.
(e.g. planning for resilience in the face of a flood hitting during the pandemic)

From these conceptual points above, discussions around the current challenges of greening the ‘build back’ took place at the Ideas Series. The main points identified from those discussions are summarised below:

- Local resilience, adaptation and response – can local approaches be successful in achieving sustainable development and achieving net-zero targets? E.g. The potential for bespoke solutions that can be applied at a local level and thinking about what knowledge do we need to ensure local systems and their interdependencies support economic growth as well as thinking about how local we go
- How can the environment support the economy and society? E.g. the need to think about if there is a trade off needed between achieving biodiversity and net zero targets and can natural capital approaches support long term economic growth and improving standards of living
- How do we green the global build back? The need to think about how we improve the sustainability of global supply chains and supporting global efforts to decarbonise and reduce environmental degradation as well taking account of global factors when addressing net-zero in a UK context

- How do we realise the opportunities created by the lockdown to enable long term change and sustained benefits? The need to think about the opportunity for revolution rather than evolution in tackling climate change and how we embed the 'good' behaviours that lockdown has created as well as how do we change some of the bad behaviours such as not using public transport – when it is safe to do so.

Further to these themes that came out of the discussions at the sessions, there were a series of themes that emerged from the ideas workshops. These are summarised below:

- Opportunity to improve sustainability, tackle climate change, and enhance biodiversity at a local level. E.g. Exploring how local-scale greenhouse gas removal, nature-based solutions etc can bring benefits at local-, national- and global- scale as well as determining the resilience of local-scale approaches to sustainability to shocks and hazards and understanding how national and global policies can work at the local-scale and grow local partnership approaches
- Understanding the global impact of our actions and how to increase sustainability. E.g. Exploring how to reduce the global impact of our supply chains, ensuring that emissions aren't exported to developing countries and how can we help other countries achieve their climate change and biodiversity targets as well as thinking about the role for global policy frameworks, such as SDGs, in helping to deliver green growth
- Opportunity to move away from GDP to wider measures of success, including environmental and social benefits. E.g. Sense that the pandemic has made governments, business and public more willing to change in order to deliver environmental benefits, but need to know what changes to make as well as the need to identify opportunities for win-wins for the environment and the economy and understanding how natural capital approaches can be applied in both urban and rural areas
- How to get changes to 'stick' to ensure long-term benefits. E.g. To embed 'good behaviour' and reduce 'bad behaviour' need to engage users in the research to be able to demonstrate benefits and how risks have been mitigated as well as opportunity to explore how policy and fiscal measures can be used to facilitate change
- No magic bullet! Need different solutions in different situations. E.g. Solutions need to be based on whole systems understanding to understand benefits and trade-offs, and ensure they don't exacerbate inequalities or create new problems

Healthy places, healthy people

Points from the conceptual framework put together by NERC, in consultation with others across UKRI before the Ideas Series took place are listed below:

- Environmental solutions to increase & future proof the health of places to support the mental and physical health of people. Understanding the combined contribution of environment, society, economy and culture to 'healthy places' in order to best support people and communities as we recover.
- Learning from the lockdown 'living lab' to:
 - Understand how to maximise the benefits of a cleaner (more biodiverse, less polluted...) environment on the health of people.
 - Better inform access to the most beneficial environments and how different people and communities' value and engage with nature.
 - Determine which interventions would be most likely to succeed in increasing the health of the environment in different places.
 - Assess the effects of social prescribing of time in the natural environment to create an evidence base for future decisions that build on the growing recognition of the social and cultural values of environmental assets. How to incorporate ecological value to complete the picture?

From these conceptual points above, discussions around the current challenges of healthy people, healthy places took place at the Ideas Series. The main points identified from those discussions are summarised below:

- Communities as catalysts for healthy places. E.g. The need to think about what ways might we ensure community ownership of environmental solutions and in what ways might cultural differences impact which environmental solutions work in different places as well as what way might communities be motivated to prioritise environmental solutions for healthy places as we recover from COVID-19
- Recognising quality healthy places. E.g. the need to think about what we mean by a cleaner environment in relation to healthy places. When is 'less pollution' enough? And how can we embed ecological concepts of biodiversity and nature into environmental solutions for quality healthy places (urban, rural and coastal) as well as what have we learned from COVID-19 about the contemplation of nature for health? (includes virtual space)
- Equitable access to healthy places. E.g. The need to think about what ways might environmental solutions for healthy places be tailored to address growing inequalities arising from COVID-19 and in what ways can barriers to access to healthy environments be overcome (beyond proximity) as well as how can we better understand the value of a healthy environment to different groups across the spectrum of society?
- Improving 'unhealthy' places. E.g. The need to think about what ways might positive behaviours, attitudes and values of the natural world be leveraged to support healthy places and how might we align with other agendas (e.g.



action on climate change and air pollution) to achieve multiple benefits from healthy places as well as how might we strengthen the economic case for healthy places during the COVID-19 recovery? Are there links to economic growth? We also need to think about how can we work through the planning system and influence local government revenue spend to prioritise environmental solutions?

Further to these themes that came out of the discussions at the sessions, there were a series of themes that emerged from the ideas workshops. These are summarised below:

- Reforming planning processes for a healthy environment. E.g. integrating life, work and a healthy environment as one as well as transport and planning for a healthy environment and healthy people and planning the built environment, especially in cities (what is 'nature' in this context?). Also thinking about what the challenges are of navigating a complex policy space with many stakeholders
- Successful interventions for healthy environments. E.g. Thinking about the difference between urban and rural – air pollution from traffic and from agriculture as well as what is successful in this context? Success for what outcomes? For who/what? And given other economic pressures, what are the factors that need to be considered to help prioritise interventions?
- What do different people want from a healthy environment. E.g. Thing about what does a healthy environment mean to different people. What attributes would they associate with a healthy/quality environment? As well as thinking about inequalities in access to environments and values of environments: ranging from healthy places often being more prosperous/expensive through to access due to ability, gender, location and noticing lack of diversity in our conversation – how to be authentic and frame the right questions?
- Engaging communities at the heart of developing and delivering the research agenda. E.g. Thinking about how we can learn from success elsewhere and valuing this type of community-led research and the skill of the researchers leading it.
- Linking natural capital, health and wellbeing in a systematic way. E.g. the need to think about what methodologies to prioritise environmental solutions in an economy where job creation is the key driver and how does biodiversity contribute to human health as well as approaches to social prescribing.

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