**Submission to Oxford Local Plan 2050 Issues Stage consultation: Adapting Oxford to the Climate Emergency: transport and the use of green spaces**

prepared by Hazel and Steve Dawe, Cowley Area Transport Group: [www.catg.org.uk](http://www.catg.org.uk)

**MAIN MESSAGES:** We have to do more to cut traffic in Oxford as quickly as possible, to cut air pollution, noise and gases adding to the Climate Emergency. But we have to accept that not enough is being done globally, and that mitigation/reduction of emissions may not occur quickly enough due to poor political leadership. Mitigation measures must continue, but we face a need to adapt today’s Oxford to more extremes of weather in the future as the Climate Emergency intensifies – not least because of a lack of effective global action. This report looks at what this speedy mitigation and adaptation should mean for transport and the use of all forms of green spaces, public and private, in Oxford. Consequently, this material is about system change in these critical sectors.

This means both mitigation and adaptation measures must be expedited with an exceptional effort to making progress towards ambitious targets no later than 2030. It means that all responsible bodies should recognise that resilience to shocks from the Climate Emergency and ecological emergency require adaptation measures to be taken well in advance of need.

It also means that a Net Zero Carbon Oxford by 2030, including aviation, shipping and imports serving Oxford, should be followed swiftly by a Zero Carbon[[1]](#footnote-1), then carbon negative Oxford, and ultimately by a global reduction of carbon dioxide in the atmosphere to 350ppm or less.

Contents:

**PART ONE: CONTEXT AND GREEN SPACE**

**Introduction: the journey to the year 2100** page 3

**Oxford: the current Climate Emergency context** page 13

**City temperatures and weather if business as usual continues** page 17

**PART TWO: TRANSPORT**

**Transport policy changes for adaptation to Climate Change:**

1. **Pedestrianisation, shade and water features** page 23
2. **Protecting the public on key walking and cycling networks** page 23
3. **The school run: creating better walking and cycling networks to serve schools, complete with protection from heat** page 25
4. **Trees for shade: robust species for hotter, drier summers** page 25
5. **Changing the buses: full electrification** page 26
6. **Air pollution eradication** page 27
7. **Deliveries by cargo bike** page 29
8. **Low Traffic City: achieving Low Traffic Neighbourhoods throughout Oxford and ensuring adaptation is in-built** page 32
9. **Sustainable transport-informed planning: reducing the burden created by vehicle parking throughout the City** page 34
10. **More flooding in a Climate changed Oxford** page 34
11. **Food, localisation and the Climate** page 37
12. **Housing targets and locations need changing** page 40

**Conclusions: will adaptation provide employment in a greener economy?** Page 41

**Appendix: definitions of adaptation** page 42

***Sources*** page 44

**PART ONE: CONTEXT AND GREEN SPACE**

**Introduction: the journey to the year 2100**

“Cities are major contributors to climate change: although they cover less than 2 per cent of the Earth’s surface, cities consume 78 per cent of the world’s energy and produce more than 60 per cent of all carbon dioxide and significant amounts of other greenhouse gas emissions, mainly through energy generation, vehicles, industry and biomass use.”[[2]](#footnote-2) Transport was the largest source of UK air pollution in 2019, reaching a third of all carbon dioxide emissions.[[3]](#footnote-3)

Oxford is a major tourist destination with two universities. Consequently, we may consider its transport footprint, including aviation, to be substantial under normal conditions. More than half of those who work in Oxford do not live in the City. At present, avoidance of public transport due to Government urging during the pandemic has increased car movements above pre-pandemic levels - and increased online shopping means more delivery vehicles too.

The new normal that follows the global pandemic may take some years to reach before we can judge its lasting transport effects. Before we can consider what Adaptation to the Climate Emergency might look like in Oxford, we need to consider what is meant by Adaptation. For the convenience of the reader, further discussion on defining this concept has been placed in an Appendix to this report.

Adapting the Brundtland definition of Sustainable Development, adaptation to Climate Change can be considered to be:

the pursuit of Absolute Zero Carbon sustainable development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

The Brundtland definition adds ‘needs’, particularly of the poorest, and:

“..the idea of limitations imposed by the state of technology and social organisation on the environment’s ability to meet present and future needs.”[[4]](#footnote-4)

Achieving even the UK Government’s Climate goals by the tardy date of 2050 would require the following:

* An end to fossil fuel consumption by civil aviation, because alternatives will not be scaled up by 2050
* An end to the use of conventionally-fuelled shipping, because alternatives will not be scaled up by 2050
* Stopping consumption of carbon intensive beef and lamb
* A recognition that novel technologies for the removal of carbon from the atmosphere are not likely to be scaled-up by 2050, and not necessarily immediately thereafter.

These considerations, all taken from the *Absolute Zero* report published by the Engineering and Physical Sciences Research Council,[[5]](#footnote-5) mean that abrupt, radical cuts in emissions are going to require exceptionally rapid measures. In short, strong and immediate mitigation is necessary alongside adaptation policies since it is unlikely that current UK policies – ‘climate complacency’ – as well as deficient policies elsewhere – will contribute to significant cuts in global emissions.

2050 is too late to meet Climate targets with no guarantee they will be reached globally or nationally. To guarantee meeting targets, more radical steps are needed – preferably during this decade.[[6]](#footnote-6)

The continued pursuit of both mitigation and adaptation in a journey back to carbon dioxide in the atmosphere of 350ppm should be unceasing and scientifically unquestionable. But none of this is going to be easy for those who assume their own personal lifestyle can proceed without reference to the boundaries of the Planet. It also assumes qualities of UK and local leadership we have yet to witness. But we should recognise that slowness is not synonymous with moderation or reasonableness in the Climate and Ecological emergencies. We should recognise that scientific evidence on these emergencies being available does not translate automatically into the political will to act. Institutional Climate complacency appears to have survived declarations of a Climate Emergency, more so in national bodies than cash-strapped local councils. The current Government appears to be content to follow contradictory policies, notably in its C Virus crisis handouts to polluting industries, given without stringent conditions for the achievement of a just, post-Carbon transition.

“The world has been too slow to respond to the extreme dangers we have been creating for the integrity of the planetary climate that is essential to the survival of civilisation.”

*From:* Net Zero Oxford, 2020-25 action plan, p.1, Oxford City Council

For those who would quibble about urgency or still engage in denial, it is worth noting that about half of the Planet’s key tipping points in the Climate and Ecological emergencies appear to have already been breached. And other tipping points may be exceeded soon.[[7]](#footnote-7)

Beginning to apply this discussion specifically to Oxford and Adaptation, this brief report has relevance for the period up to 2100. On 28th January 2019, Oxford City Council made a declaration of a Climate Emergency. This report identifies policy gaps and limited ambition by the Council up to this point, and suggests remedies applicable to improving mitigation and Adaptation. Unfortunately, as noted above, the UK Government is pursuing weak and contradictory policies which undermine local council action on the Climate Emergency, sustainable transport and the ecological emergency. These constraints include:

* Failure to compensate councils in full for the Covid 19 impacts, putting some councils into bankruptcy, with others in extremely difficult financial positions;
* Failure to ensure long-term Council funding fit to meet statutory responsibilities via new funding methods, e.g. Land Value Taxation, re-valuation of properties for the Council Tax as done long ago in Scotland, allowing Councils to keep all business rates income etc.
* Making exceptional cuts in statutory environment bodies needed to back up and constrain planning system weaknesses e.g. the Environment Agency and Natural England.
* Insufficient resources to meet some sector specific needs outlined in the City Council’s key Carbon document.[[8]](#footnote-8)
* No accepted consensus on what Net Zero Carbon means.[[9]](#footnote-9)

So, Councils are obliged to fight for their Climate and ecological emergency goals to be financed, along with resources for all other Council functions. The idea that speculative commercial development will sustain councils in future is not credible and needs abandoning fast, in Oxford and elsewhere. *Private Eye* records repeated local council failures in their involvement with commercial initiatives and many examples of serious cost overruns.

Adaptation could mean nature-based solutions including management of river catchments, planting street trees, and specifically nature-bases sustainable urban drainage solutions.[[10]](#footnote-10) Resilience to the effects of Climate impacts requires building more risk assessment into City planning processes.[[11]](#footnote-11) Vulnerable communities may well lack the means to engage in energy efficiency or Adaptation measures for their own homes, especially in private rented accommodation. They are not going to be able to improve poor quality double glazing, invest in solid wall insulation or even buy trees to plant for shade. What applies to households in the lowest income categories also applies to hospitals, schools and community facilities not designed for weather extremes, and generally under-funded.[[12]](#footnote-12) In addition, materials providing cooler surfaces, flood and storm resilient buildings and water system efficiency represent cost challenges for public sector organisations which have been under-funded in England for over a decade.[[13]](#footnote-13) If the Environment Agency, for example, is going to assist local councils in Adaptation then Hazard maps will be needed which the under-funded Agency is unlikely to be able to provide.[[14]](#footnote-14)

When perhaps as little as 3-5% of Covid 19 ‘stimulus funding’ has been directed specifically to a ‘green recovery’[[15]](#footnote-15), we should note it appears there is a global pattern of Government actions unlikely to result in progress at COP26. It certainly seems unlikely that ‘..over the course of the next decade technologies and policies will change.”[[16]](#footnote-16) This is not likely in terms of the availability and scale up of carbon capture and permanently secure storage, electric shipping or aviation or ending the use of fossil fuels in the production of cement. Policy innovation is needed urgently in these areas. Governments do not offer clear signs of policies or measures likely to result in radical emissions cuts either, in the preparations for COP26.

Given the general failure to cut global greenhouse gas emissions in recent decades, both the UK and each of its council areas must aim for at least carbon neutrality by 2030 at the latest. Our reasoning is partly that States which can attain early carbon neutrality and Zero Carbon can help to compensate for laggard States such as Australia, China, Poland, Russia and others.[[17]](#footnote-17) Also, the general global failure to cut greenhouse gas emissions means deeper cuts by willing States are needed to address the Climate and ecological emergencies which are worsening.[[18]](#footnote-18) The UK, as the first industrial country, should take responsibility for its historic emissions, aiming to reach Net Zero Carbon as near as possible to 2030, and absolute zero as quickly as possible thereafter.[[19]](#footnote-19) We have no doubt that doing this will create a substantial number of Green economy jobs to compensate for forms of employment in decline, or shrinking during the process of a just transition.[[20]](#footnote-20) Heat-proofing the built environment will certainly generate a lot of work and jobs.

Our first consideration needs to be whether anywhere in the UK offers Oxford a model for a detailed approach to Adaptation. In June 2021, the Glasgow City Region launched its Climate Adaptation Strategy and Action Plan.[[21]](#footnote-21) This is the first such local government document of its kind in the UK, offering Oxford a model in addition to the content of the current document. Some key points summarised from the Glasgow Plan are of particular relevance:

* Risks to transport infrastructure from extreme heat and flooding during periods of intense rainfall suggests needs to re-consider steps to improve resilience or face problems created by the failure to do so.[[22]](#footnote-22)
* Recognising the value of waterways and standing water in Adaptation policies,[[23]](#footnote-23) which could include an increased role for electric boats for transportation.[[24]](#footnote-24)
* ‘More of the same will not do. An effective response to climate change will require a revolutionary and systemic approach.’[[25]](#footnote-25) System change not simply minor reforms is clearly necessary for both actual emissions mitigation and adaptation to the Climate Emergency. This principle challenges ideas of versions of economic growth which fail to reduce consumption and therefore transport of goods from around the world to Oxford, making a nonsense of City Climate goals. This principle also implies that the embedded carbon of new buildings needs to be addressed by using the existing built environment first to meet new needs. It is regrettable that the City Council’s Carbon reduction topic paper focuses heavily upon carbon reduction in new buildings. Most buildings present in Oxford, ten, twenty and more years from now have already been built and have to be the major concern in achieving large cuts in Oxford’s emissions.[[26]](#footnote-26) It may be that changed working patterns, with more people working at home and a retail sector contracted by far more online purchasing will free up more space for homes in Oxford. The immense employment potential of sustainable retrofitting of the built environment in Oxford must form a significant part of a Zero Carbon future.
* Even if the entire world meets its Paris Agreement targets, there will be costs and impacts from Climate Change that will require Adaptation in the long-term. The UN has already indicated, after the Paris Agreement, that even if countries reached their targets, a warming of 3 degrees C compared to pre-industrial times could be expected[[27]](#footnote-27) – emphasising the principle above of ‘a revolutionary and systemic approach.’ The Glasgow Plan indicates Adaptation measures will be needed even if Paris Agreement goals are achieved.[[28]](#footnote-28)
* The Plan emphasises that whilst an incremental approach may be appropriate for some constructive interventions in the Glasgow Plan, ‘transformational adaptation’ will be required. This will include changing current approaches and governance arrangements, addressing causal factors creating risks, and potentially rethinking the vision of a future City.[[29]](#footnote-29)
* Enabling adaptation will include engaging with public and private sector bodies, communities and organisations to encourage involvement in adaptation Policy and its financing.[[30]](#footnote-30)
* The cultural sector should not be neglected in Adaptation as each cultural organisation will have types of contributions it may make to the overall Adaptation effort.[[31]](#footnote-31)
* The Plan notes an initiative in Paris to ‘green’ 800 concrete schoolyards.
* The Plan is to deliver include: green walls; more vegetation for shade; replacing concrete with surfaces that will actually drain. Greater access for the general public to the newly-greened spaces is envisaged.[[32]](#footnote-32)
* The Plan draws attention to the importance of peatlands as carbon sinks. Similarly, the City has noted the importance of peatlands for Greenhouse Gas Removal.[[33]](#footnote-33) In Oxford, the Lye Valley SSSI and nature reserve is part of over 11 hectares of peatland in variable condition which are capable of being re-wetted to improve their climate and ecological roles.[[34]](#footnote-34) But the City does not have a City-wide Supplementary Planning Document for the preservation and restoration of peatlands within Oxford’s boundaries, yet.
* Climate Ready Clyde played a key role in the development of the Glasgow Plan, including in the creation of a theory of change, important for taking as many people into the process of adaptation as possible.[[35]](#footnote-35) In the Oxford context, *Climate Outreach* has done a considerable amount of work on persuasion and education about the Climate Emergency.[[36]](#footnote-36)

Transport emissions in Oxford declined by 8% 2005-2014.[[37]](#footnote-37) Unfortunately, transport emissions for Oxfordshire mimic this dip but are then followed by rising emissions to 2019.[[38]](#footnote-38) Initially, lockdown in 2020 visibly and substantially reduced traffic in Oxford. Subsequent stages of lockdown saw traffic rising back towards pre-lockdown levels, unlike the more optimistic view expressed by the City Council,[[39]](#footnote-39) boosted by the Government’s urging of people to avoid public transport if possible. By March 2021, traffic levels in some regions of UK, including the South East in which Oxford is located, had gone above pre-lockdown figures. Customary cycle trips by the authors in Oxford have allowed observation of traffic levels clearly above pre-lockdown movements, and sometimes remarkably high outside school run/rush hours.[[40]](#footnote-40)

Assumptions prepared for the City Council by the *Carbon Trust* indicate expected technological transformations in the transport sector.[[41]](#footnote-41) Policy enhancements at a local level may permit earlier achievement of some of these transformations. For example:

* Making some car parks in Oxford only accessible to electric vehicle users with key cards could encourage more electric vehicle take-up.
* Promoting electric vehicle hire rather than ownership could deal with short-term concerns about the cost of electric vehicles.
* Electrification of HGVs at 14% by 2050 is problematic. Since electric HGVs are likely to come on the market in 2020 from *Tesla,* local authorities could try to partner with locally-based freight distribution companies to see if resources can be deployed, including from national government, to ‘bulk buy’ electric HGVs after ‘field trials’ by potential users.
* Since electric buses are widely available, meeting Climate goals and cutting air pollution should mean conversion of bus and coach fleets no later than 2030. Government policy change is needed for this, ideally with bus re-nationalisation so that profits from bus operation are re-invested in the sector and to allow Government to support lower bus fares, and exemption from bus fares for young people up to age 25 to discourage car ownership and use.
* Green hydrogen is the only acceptable form of hydrogen that should be contemplated, since other forms would just keep fossil fuel industries going. We are concerned about the safety of the public when hydrogen-fuelled vehicles are in use on our roads, and suggest electric options are to be preferred.

We are unable to find Council plans to secure the electrification of powered vessels moving on our waterways. We want to see more river freight, and more secure moorings to allow low cost homes to those who favour this lifestyle choice. But, as in other transport sectors, we want to see a transformation towards sustainable vessels.[[42]](#footnote-42)

Why might Oxford have been part of the trend towards more traffic than pre-lockdown? Government discouraging the use of using public transport has certainly led to low levels of bus use in what is normally a City with very high levels of bus passengers. There are certainly far more online delivery vehicles observably present in Oxford. Since a majority of people who work in Oxford live outside the City, the effect of more car use is not simply about what Oxford residents are doing, but includes those who may have been commuting into Oxford by bus (or rail) switching to a car. More online shopping and home working have occurred through the pandemic but are not currently decreasing car use in Oxford. Encouraging of more of both home working and online shopping as permanent behaviour changes is desirable, with local councils taking the lead. The Campaign for Better Transport is seeking big reductions in bus and rail fares to kickstart more public transport use.[[43]](#footnote-43) So far, Government pronouncements on transport have not included pledges to radically cut public transport fares, creating what may become a long-term problem of higher levels of car use and consequent noise and pollution than before the first lockdown. This certainly does not address Oxford’s pre-existing traffic problems, which included being at full capacity usage of roads when the Gilligan report was published in 2018, which called for major investment in cycling in Cambridge, Milton Keynes and Oxford.[[44]](#footnote-44) We note that the City Council, despite opposing the Cambridge-Oxford Expressway, is not opposing ‘localized road investment’ in the Cambridge-Oxford Arc[[45]](#footnote-45) which could lead to an ‘Expressway by stealth’ – despite the lack of evidence of commuting need across the Arc. Growth in traffic is in opposition to the City Council’s recognition of a Climate Emergency and stated policies about traffic reduction. Growth in new housing at the fringes of Oxford and outside is bound to lead to increased traffic, contradicting the City Council’s stated policies about encouraging more active travel and use of public transport.

It should be noted that mobility is a value, and not automatically a social or environmental advantage. Accessibility for the mobility-impaired is certainly an issue, which is why we support free movement of blue badge holders through Bus Gates, although a better scheme for access to mobility scooters would help to reduce car journeys. Ensuring small urban communities within Oxford have good and accessible facilities for all should be a universal goal for private, public and third sector bodies to cut the need for journeys. What does appear to be lacking is to ensure community and cultural facilities, many dependent on a flow of volunteers,[[46]](#footnote-46) are encouraged to play a part in achieving a Zero Carbon and ultimately carbon negative City. The One Planet Living initiative piloted by Bioregional has already prompted the Rose Hill Community Centre to have its own version of what this may mean for the Centre’s area of coverage, something the City Council supports. Couple this with consistent encouragement from the City Council for ethnic minority associations to help in seeking more, and often younger, Trustees for a variety of charities and similar bodies engaged with the public in Oxford, and it may be possible to improve what is on offer within small localities, capable of being used without access to a car. A younger and more ethnically diverse volunteer base with experience of developing their own ‘take’ on what sustainability means in their local area is a resource the City needs.[[47]](#footnote-47)

High value has been placed on what has been locally available during the pandemic, showing gaps in community provisions in some places. A society with more people working at home, with permanent reductions in commuting for millions, is one which is questioning the value and recognising the disbenefits of the forms of mobility which we have. Ideas of a 15 minute City, where desired facilities might be within a 15 minute walk or 15 minute cycle ride for the able bodied, have much to recommend them in reviving or enhancing localities and their facilities within different parts of Oxford. Online shopping has risen in the pandemic, and may well continue to do so, as another movement against the mobility stimulated by meeting shopping requirements or accessing some facilities. A changing Oxford may well not have a pre-lockdown level of need for current City Centre chain stores. If so, enlarging the very low-cost housing in the Centre will contribute to keeping valued enterprises in operation by providing a larger, settled community who can walk to do shopping.[[48]](#footnote-48) Also, if the City Centre is to retain its tourism offer, better access to College grounds will be needed instead of the form of ‘ground control’[[49]](#footnote-49) currently exercised by University and Colleges with only partial access throughout small parts of the year in some locations. More music, non-commercial stalls and displays are needed inside the Westgate Centre and the re-developed Clarendon Centre, with the removal of ‘ground control’ in these locations as well.

Ideas of how Oxford may be improved depend very much on whether inflated, and almost certainly undeliverable, new housing in Oxfordshire impacts upon commuting into Oxford, and causes further deterioration of traffic conditions. The City Council has supported home building on a massive scale outside the City, to serve Oxford. This contradicts the clear policies of the City Council to reduce traffic, since Oxford is already a major regional employment centre. Consequently, we must reject the ‘growthism’ of the Oxfordshire Growth Board which has attracted considerable amounts of local opposition including the loss of Conservative administrations in the Vale, South Oxfordshire and at County level. The ‘strategic vision’ of the Growth Board[[50]](#footnote-50) lacks a credible evidence base for its sustainability and certainly does not practically meet the imperatives of either Climate or ecological emergencies. We need urban settlement sustainable regeneration, not urban sprawl. We believe that a great deal more housing could be realised from the existing built environment in Oxford, rather than dumping it on other council areas and generating massive traffic increases over time. It is obvious that:

* Empty homes, shopfronts, offices, industrial buildings and empty industrial estate sites are not being utilised through CPOs, with sustainable retrofitting;
* Car parks – private and public - which could be built around or have apartments built over them above surface level are being left in sole use as car parks rather being than put into dual use to include homes.
* Car parks should be reduced in the central area of Oxford to help reduce traffic.
* Private landlord and new market priced homes are not meeting Oxford’s need for very low-cost housing at below 30% of average incomes or lower.
* 14,300 homes in neighbouring districts to meet Oxford’s housing needs[[51]](#footnote-51) – if built – carry the very high risk of 2 car households with increased numbers of utility and delivery vehicles etc. Since most jobs in southern Oxfordshire are in Oxford, this is an anti-Climate policy with severe impacts on the varied uses of greenfield sites.
* The National Planning Policy Framework is at best ‘greenwash’ in its environmental references, and should be challenged as such by the LGA. A supply of homes built on greenfield sites is detrimental to the long-term needs of people in this country, including having jobs very close to where they live for those who cannot work from home; sustainable transport for all is decades away at current rates of progress; we need re-design of existing places rather than the ‘facilities light’ new ones; Green Belt is not being protected; the Committee on Climate Change has repeatedly criticised Government Climate policies, and we have neither the resources nor statutory bodies to cope with worsening flooding, etc.[[52]](#footnote-52)
* The Localism Act 2021 which compels Neighbourhood Plans to be in lockstep with Local Plans does not allow sufficient challenge by Oxford’s local communities to inappropriate local planning decisions.[[53]](#footnote-53)

**Oxford: the current Climate Emergency context**

Oxford breached its 1932 record temperature in 2019, hitting 36.3 degrees C.[[54]](#footnote-54) Some years since 2000 have been showing much higher temperatures than the records obtained since 1815.[[55]](#footnote-55) To be precise, Oxford has already passed the 1.5 degrees C warming threshold and seven of the City’s hottest 10 years have occurred since 2000.[[56]](#footnote-56) However, records do not necessarily show the localised impact of reflected heat in a City which has almost no green walls or roofs, or fountains, in its built up urban centre.

The City Council under-states the UK’s and therefore Oxford’s role in the Climate Emergency in its *Carbon Reduction* paper. The UK is not just responsible for 1.1% of global emissions. It is also responsible for the emissions from civil aviation, shipping which serve Oxford and the embedded emissions of imports brought into Oxford. It has been estimated that half of the UK’s carbon footprint relates to goods made abroad.[[57]](#footnote-57) This means that UK carbon emissions were flat rather than reducing 1997-2015.[[58]](#footnote-58) So Oxford should do what the Government did in 2019, make sure that is Net Zero targets include aviation and shipping,[[59]](#footnote-59) and if the Council is serious – embedded carbon of imports too. Is the City’s transport share of emissions just 17%[[60]](#footnote-60) or do flying, air freight, shipping, embedded carbon of imports such as foodstuffs, all contribute to making it a lot more?

CoHSat challenged all local election candidates to meet a number of policy imperatives if elected.[[61]](#footnote-61) These are part of the Climate Emergency context since they either bind councillors who pledged support or set a bar against which unresponsive councillors may be judged.

The City Council proposes a Net Zero Carbon City by 2040.[[62]](#footnote-62) They have the support of the County Council, the universities and employers including BMW and Unipart.[[63]](#footnote-63) It remains to be seen to what extent the recommendations of the *Oxford Citizens Assembly on Climate Change[[64]](#footnote-64)* will be adopted and funded by the City Council and/or other bodies, and how far the City’s Zero Carbon goals can be funded.[[65]](#footnote-65) The details of *Citizens Assembly* report are not examined in detail here as this is already lodged with the City Council. Adaptation did not form a major area of concern in the discussions of the Assembly, and questions of how more rapid reductions in emissions may be achieved remain to be answered for Oxford and elsewhere.

The University has an Environmental Sustainability Strategy[[66]](#footnote-66) which, like many strategies, needs very detailed policies to accompany a lot of its content. For example, both carbon and biodiversity offsetting are open to question in terms of reliability, constant independent peer review and to the question why offsetting should be done at all rather than eliminating emissions at source. This is a general problem, noted by the City Carbon report,[[67]](#footnote-67) rather than one for the University alone. It would certainly help if the 4000 University and College car parking spaces were reduced to disabled parking only. But, like many institutions with historic buildings, there are also major problems in energy efficiency and the installation of renewable energy. The strategy does note walking, cycling and public transport use have been promoted and that parking has been reduced. However, it also emphasises the £400,000 a year being made from staff car parking charges which the University appears to be loath to give up (p.6 and see also pp13-14). The University is aware of aviation as a key issue and says:

“Net Zero Carbon emissions from aviation will be achieved with a combination of engagement to reduce flights taken, levying sustainability charges on flights and carbon offsetting (p.7).” Clearly, the pandemic expansion of online meetings offers considerable time advantages to academic staff as a result of avoiding flights and the travel to and from airports at either end. This is not just about reducing aviation emissions, it is also about efficiency and productivity compared to the past over-use of aviation. Given that academic staff and international students were responsible for about 51,000 tonnes of carbon emissions in 2018/19, there is considerable scope for cutting emissions from aviation (p.13). And what is true for the University could be valuable for private sector organisations that have previously been sending staff abroad for work reasons.

The University alleges it cannot eliminate all its emissions. However, given the scale of University and College landholdings and the scope for reducing traffic – including more use of cargo bikes for deliveries, this is open to challenge. For all institutions that might prefer to take the University’s view at face value, the case of Bhutan as a carbon negative State, the only one in the world currently, needs careful investigation and emulation.[[68]](#footnote-68)

The University notes food production accounts for 25% of total global greenhouse gas emissions. But food processing and distribution substantially add to this. Section 7.5 on *Sustainable Food* in the Strategy does not mention local food sourcing or the need to avoid food imports to help reduce emissions. In 2016, 326 Million tonnes of food were moved by vehicles in the UK. Airfreight remains small at about 1% of all freight, mainly moved in the belly of passenger aircraft. About one sixth of airfreight by value is food.[[69]](#footnote-69)

October 2021 is the target date for charging vehicles entering the Ultra-Low Emissions Zone in the City – misleadingly called a ‘Zero Emissions Zone’ by City and County councils. The main problem about this Zone is that it is too small, and a staged introduction of the Zone for the whole City is needed, with a completion date ideally no later than 2030.[[70]](#footnote-70)

In July 2021, the City Council released a *Zero Carbon Oxford* paper. This follows the City’s creation of a Zero Carbon Oxford Partnership and the agreement of a coalition of bodies with a 2040 net zero date for the City.[[71]](#footnote-71) From our point of view, this is too late in terms of the actual effects of the Climate and related ecological emergencies and associated loss of life and species. All delay means lives lost and greater difficulty in achieving the very elusive goal of a Zero Carbon planet. At the time of writing, there are a large number of media, academic and other reports indicating that preparations for COP26 are not going well, so each UK local authority area must act with greater urgency.

We accept that local government has considerable difficulty in moving towards Zero Carbon when its funding has been cut to the point where statutory functions are compromised. The Climate Emergency UK campaign, collating work on Climate with local councils which have made declarations of a Climate Emergency, has summarised the current situation as follows:

|  |
| --- |
| “We are very pleased to have been consulted on, and to have some references in, the National Audit Office report "[Local government and net zero in England](https://www.climateemergency.uk?mailpoet_router&endpoint=track&action=click&data=WzI0MzcsIjFjZ2Vta3l0bWZ4Y2cwd2N3YzQwY3d3ZzQ0MG9rNDRjIiwiMjQiLCJmZDEwMDRjYWQ2N2IiLGZhbHNlXQ)" |

|  |
| --- |
| Some of the key findings: |

* Central government has not yet developed with local authorities any overall  
  expectations about their roles in achieving the national net zero target. .  
  Government has not yet set out to local authorities how it will work with them to clarify responsibilities for net zero.
* While the exact scale and nature of local authorities’ roles and responsibilities  
  are to be decided, it is already clear that they have an important part to play.
* Current reforms are a critical opportunity to ensure that the national planning  
  framework supports local authorities to align decisions with net zero.
* There is little consistency in local authorities’ reporting on net zero, which  
  makes it difficult to get an overall picture of what local authorities have achieved.
* Overall, local authorities find it hard to engage with central government on  
  net zero.
* Departments have started to coordinate their engagement with local authorities on net zero but there is no single senior point of responsibility for making more fundamental improvements.”[[72]](#footnote-72)

We note that a plan for a Net Zero Carbon Oxford must include:

* Emissions from aviation where it forms part of the journey to or from Oxford for passengers or freight
* Emissions from shipping where it forms part of the journey to or from Oxford for passengers or freight
* Emissions from international road freight transport where it forms part of the journey to or from Oxford for freight
* Emissions from buses or trains entering or leaving Oxford
* Emissions embedded in goods imported for use/consumption in Oxford

In addition, Oxford planning reflects the general failure that the National Planning Policy Framework support for sustainable development is not consistently supported or funded in terms of local council expertise or planning decisions. Car dependency is reinforced by a general failure to ensure new and retrofitted developments are car free by covenant and design. Whilst the Council is keen for this to apply to new developments, it needs a Supplementary Planning Document for the City in order to apply car free rules to sustainable retrofitting of housing.

Car dependency in this context is intended to denote able bodied people placing avoidable emphasis on a car for short journeys within Oxford when Active Travel and bus use are better for health, and for cutting air pollution and noise. Neither developers nor local landowners are effectively resisted when their proposals will tend to increase traffic,[[73]](#footnote-73) as in the case of HMOs. The decisions to create the Tyndale School on Barracks Lane and follow it up with housing on the William Morris Recreation Ground are examples of exceptional ill-judgement concerning the traffic consequences of these decisions, the impacts on the neighbouring community and the implications for the Barracks Lane-Hollow Way junction. If only this was the single such example.

**City temperatures and weather if business as usual continues**

There is a 40% chance of the Planet reaching 1.5 degrees C above pre-industrial levels in the next five years, according to the UK Met Office.[[74]](#footnote-74) Since we have not, as a planetary civilisation, either cut greenhouse gas emissions or temperatures, we are on a trajectory to far higher temperatures than humans or other species will be able to tolerate in many parts of the Planet, with major questions about our capacity to meet food needs during the rest of this century.[[75]](#footnote-75) Despite COPs and plans to cut greenhouse gas emissions, “..the global consumption of fossil fuels has gone up by 78 per cent in three decades — between 1986 and 2017.”[[76]](#footnote-76)

Mark Lynas has provided a summary of what a world heated up by 4 degrees C will be like, and additional material on impacts of 5 and 6 degrees.[[77]](#footnote-77) Professor Kevin Anderson has suggested that to achieve complete decarbonisation by somewhere between 2035-45, the UK needs to cut carbon emissions by about 10-20% each year. If we stick to a typical minimal UK reduction of 3.5% each year we are contributing to the possibility of a 4 degree C warmed world. However, this means 5-6 degrees C increases on land.[[78]](#footnote-78) This will cut crop yields, contribute to rising sea levels and make life in cities like Oxford with heat reflecting building surfaces intolerable. Imagine the retrofitting that will be needed to keep schools, hospitals and offices cool enough for habitation in the hotter parts of the year. Given the health impacts and risks of a much hotter working environment in such settings, the relevant authorities must plan for this aspect of Adaptation now. There is also the risk that the ‘Grey recovery’ – supporting polluting industries through the pandemic – could appreciably increase greenhouse gas emissions in the immediate future.

Considering the City’s *Air, Water and Land Quality* paper, we note that the City recognises air quality is worst on main roads.[[79]](#footnote-79) There is nothing inevitable about this: it is the result of comprehensive failures in the management of the transport sector. Bus privatization has increased bus fares four-fold since it occurred and diverts funding towards shareholders instead of reinvestment in buses and bus services.[[80]](#footnote-80) This had reduced bus use in many parts of the country before the Government vigorously discouraged public transport use during the pandemic. Government action led to the public preferring more car usage and more air pollution and more traffic congestion as sources of ill-health rather than maintaining pandemic-proofed public transport usage. This has driven up car usage in Oxford as a pre-pandemic high bus usage area. It has also made the need for a Low Traffic Oxford an imperative for public policy – including using any and all means to get bus and trains fares down, although this relies particularly on the current Government. Google data for week ending 25th July indicates public transport use was 44% below baseline.[[81]](#footnote-81)

‘Sustainable growth’[[82]](#footnote-82) is a contradiction in terms on a finite Planet. We cannot limitlessly use physical resources which are exceptionally scarce. We can have prosperity without Growth, favouring a wide range of indicators of well-being and sustainability over GDP.[[83]](#footnote-83)

Housing plans for Oxfordshire do not recognise that usage of water in the Oxford and Swindon water catchments reached maximum in 2020. Getting water from elsewhere would have energy usage implications and supposes such water would be available. The City’s relevant paper includes noting future water shortages from the Thames Water Resources Management Plan 2020-2100:

* 387 million litres of water short per day by 2045
* 688 million litres of water short per day by 2100[[84]](#footnote-84)

This makes a nonsense of housing projections for Oxfordshire as a whole in the period up to 2050 and beyond, just as such projections show no appreciable regard for the traffic implications of 100,000 extra homes by 2030 – if built. It is not particularly useful to mention that new homes will have 110 litres of water per person per day[[85]](#footnote-85) by design, when there is no local or national scheme for sustainable retrofitting of existing properties which do not have greywater recovery e.g. for flushing toilets. It is, however, clear that new toilets when fitted in homes often have much smaller cisterns and need less water to flush than before. However, this overall situation requires Government regulation if lower levels of water usage per person are to be achieved, and very much higher prices for water are to be averted.

Regionally, the SE has serious long-term water shortage issues. Indeed, the whole region is likely to be short of water by 2065, necessitating water transfers – somehow – from other areas – assuming they are in surplus. Severe demand management measures are likely to be needed by the 2050s.[[86]](#footnote-86) Add water and transport implications of the cars, utility vehicles and delivery vehicles to serve 1 million more homes in the Oxford-Cambridge Arc by 2050, and we can see an obviously unsustainable scenario which Oxford City Council needs to oppose.

Land quality is clearly compromised by the low-quality forms of construction our planning system permits. There is no recognition in the spread of development about the needs of an increasing population over decades into the future. Land quality is best protected by sustainable retrofitting of the existing built environment and not the urban sprawl planned for Oxford, or the ‘industrial sprawl’ of more warehousing which may follow within the unsustainable ‘Arc’ proposals.

Air pollution requires national funding programmes to kickstart the deployment of air source heat pumps to substitute for gas space heating. However, the City could do more concerning transport emissions.[[87]](#footnote-87) Existing car parks could include some only available to electric vehicles as a push towards changing the existing vehicle fleet. Also, promoting electric vehicle hire over ownership could push up the number of households in the City without direct access to their own vehicle(s). The Workplace Parking Levy should be extended in 2 ways: first, it should cover all workplace parking in the City above the City’s chosen size including the University, its Colleges, BMW and Unipart; second, the threshold for workplace parking to be covered by the scheme should be reduced to 6 parking spaces. This would have the obvious advantage of a comparatively low charge per year per space being possible, and perhaps a higher overall income for the City’s Active Travel needs in consequence.

The best location for sustainable and useful development is where development is already present, using the existing built environment.[[88]](#footnote-88) This is also the appropriate choice if car free developments close to existing facilities are to be obtained. There is ample evidence that urban extensions – Barton Park or Grenoble Road – are notorious for high levels of car use[[89]](#footnote-89) because of the long-established failure of Councils and developers to provide the range of facilities which communities need and want. Little wonder that the expression ‘sustainable urban extension’ has been popularised in ‘planning speak’ as a built-in alibi for the forthcoming failure of such urban sprawl to constrain car use. It is not credible that sweeping statements are made about how ‘previously developed land’ cannot meet Oxford’s housing and employment needs.[[90]](#footnote-90) No overall assessment has been made which includes building around, above or right over private and public car parks. Recognition of the value of working at home for diminishing the need for employment land and for office space is not present in the Council’s papers. The lasting effects of Brexit, the pandemic, more working from home and continuing preference for online buying on how much retail, office and employment space suggests that the City Council should be far more cautious about its enthusiasm for ‘growth’. Resilience, sustainability, adaptation and flexibility in the use of land currently allocated to employment rather than housing are clearly highly appropriate at this time and should be reflected throughout the entire Local Plan for 2040 and beyond.

Given the importance of meeting housing needs on brownfield sites, higher density than 100 dwellings per hectare[[91]](#footnote-91) needs consideration in locations such as above some car parks, and indeed above some Park and Ride sites. Such development should be very carefully assessed for the proximity of existing facilities, how new ones might be delivered in the same area if needed, and all such development should be car free.

A considerable effort to provide trees, vegetation, green roofs and walls and water features within Oxford is needed as part of measures to counter reflected heat.[[92]](#footnote-92) We should not be complacent about the quality of existing green spaces, which need scientific examination to ensure quality.[[93]](#footnote-93) Also, the City *Air* etc paper notes the possible presence of land of ‘high environmental or biodiversity value’ in brownfield sites.[[94]](#footnote-94) It follows that making corridors for biodiversity needs to be considered to avoid ‘ecological fragments’ as far as practically possible. It would be logical to dramatically increase solar PV on roofs in the City to help meet the need for more renewable source electricity for cooling our built environment. The presumption that existing green spaces provide adequate shade is wrong now, we feel, and will be more so in the hotter summers of the future. Other than peatlands, a new general effort is needed to increase diverse and robust tree cover considering the wetter winters and drier summers associated with the Climate Emergency. The possibility of more water features within existing green spaces should be examined and, in all such sites, a degree of rewilding may be very worthwhile on biodiversity grounds.

Concerning the City’s *Green Infrastructure and Biodiversity Paper* accompanying this consultation, we strongly assert that greenfield sites are not being protected from bad planning by the City Council at present. An increasing population, a poor UK record on biodiversity protection[[95]](#footnote-95) and the ‘urban heat island’ effect justify major changes in the City’s approach to planning. Floodplain and greenfield site protection should be absolute; a general programme of planting street trees is needed.[[96]](#footnote-96) Existing open space, recreational buildings and land, including playing fields, should not be built on.[[97]](#footnote-97) Change of use for existing buildings on such land can be contemplated.

The City’s Green Spaces Strategy[[98]](#footnote-98) suggests green space need no longer be linked to population. This means, in practice, that longer journeys and more of them by car to access green space will be needed as the attrition of Green Spaces of all kinds continues in Oxford, following the Local Plan to 2036 details, and additional planning failures. It contradicts the idea of a 15 minute City promoted in council documentation: green spaces are clearly needed within walking distance of where people live. To compound the error of this contradiction, the *Green Infrastructure* paper quotes short walking distances for people to walk to green spaces.[[99]](#footnote-99) We note also that the Biodiversity Action Plan 2015-2020 has no equivalent Plan to date for the period 2021-26.

The City should be very clear that artificial turf or plastic grass, like concreting over frontages, are unhelpful to biodiversity and drainage. The City needs to back this up with a Supplementary Planning Document setting a block in planning decisions on additions to either of these two unwanted urban features.

Access to comparatively inaccessible Green open spaces should change, with the City leading the University and Colleges away from their ‘gated community’ approach, save where security of students, staff and University property is at risk. Allotment spaces are necessarily inaccessible to non-users but the Council should play a part in promoting use of allotments to enhance local food production.[[100]](#footnote-100)

More generally, if green infrastructure tends to increase commercial activity in its vicinity[[101]](#footnote-101), then we may assume that greenfield sites eliminated by development do the opposite. It is well-known that housing with a lot of greenery and green space in its proximity has higher property values than ‘urban deserts’, so the City needs to halt its enthusiasm for greenfield site development. “Furthermore, the indirect effects of Climate Change, including adaptation action by other sectors that are key to land and water management, could have a significant impact in the short term and may bring positive or negative consequences for biodiversity and the delivery of ecosystem services.”[[102]](#footnote-102) Whilst this section refers to the value of wetland habitats for carbon storage, the City does not have a City-wide approach to the conservation and enhancement of wetlands or peatlands. Also, we remain sceptical about the City commitment to biodiversity given its approach to greenfield site development inside the Oxford city cordon and beyond. ‘Offsetting’ by new biodiversity is not regulated and not guaranteed to last.

In the City Centre vehicles, like buildings, with air conditioning may pump out heat in areas where it is not wanted in the hotter months of the year. Cars in the centre, until pedestrianisation is significantly extended, will pump out heat in queues to pedestrians and cyclists whilst occupants are cool.[[103]](#footnote-103) Buses and taxis in the future, with added air conditioning, may well do the same. This provides additional arguments in favour of pedestrianised and pedestrian priority areas – to control City Centre heat extremes.

**PART TWO: TRANSPORT**

**Transport policy changes for adaptation to Climate Change:**

1. **Pedestrianisation, shade and water features**

To achieve the levels of pedestrianisation which benefit locations such as Canterbury, Norwich and York, and to conform to the National Planning Policy Framework goal of journey reduction as the City suggests,[[104]](#footnote-104) neither urban fringe nor close proximity housing on greenfield sites should be permitted.[[105]](#footnote-105) A cleaner, greener Oxford requires a steadily enlarging pedestrianised area with cycle paths.

We need to undertake the cheapest measures quickly in order to protect the public from ever-worsening traffic levels in the long-term:

* Pedestrianisation must be extended in the centre of Oxford with tree planting for shade, and new water features.
* Green roofs and walls must be increased to cut reflected heat.
* Locked gates in pedestrianised areas can be used by the Emergency Services and for delivery vehicles where using cargo bikes is impractical. Delivery vehicles should have restricted access hours to such areas. Initial steps should include complete and permanent pedestrianisation (with cycle tracks) of Queen Street, Broad Street, Little Clarendon Street, and most of St Giles except for reduced bus access. George Street should remain partly pedestrianised, with the objective that the coach station be moved and become part of the overall Railway station and environs re-development. This would allow complete pedestrianisation of George Street, bearing in mind the need for trader access to set up and clear away in the Gloucester Green Market. All these areas should have marked cycle tracks, unless consultation favours shared space.

We feel making the zone of pedestrianisation reach from the end of the Cornmarket all the way down George Street and parallel roads will assist in improving the footfall in the Market. In general, the area between the rail station and the centre must either be pedestrianised or become pedestrian priority. This will require careful stages of consultation with stakeholders and the local community.

1. **Protecting the public on key walking and cycling networks**

Oxford has broken or disconnected walking and cycling networks throughout the City. If cycle training is to assist in increasing cycling in Oxford rapidly by 2025, then it is going to require improved infrastructure during the same time period for joined-up planning.[[106]](#footnote-106) Junctions and roundabouts need redesigning in line with Local Transport Note 1/20 and the Council’s own cycle design standards to make them safer for cyclists and implement the Gilligan report.[[107]](#footnote-107) Local Cycling and Walking Infrastructure Plans are a welcome innovation,[[108]](#footnote-108) but they are seriously under-funded. The Government’s *Gear Change* proposals for cycling and walking lack credible resources,[[109]](#footnote-109) despite the obvious benefits of Active Travel to public health. Whilst Oxford is 2nd only to Cambridge for cycling, conditions for cyclists are challenging with repairs to cycle tracks difficult to obtain in our experience. We welcome the LCWIP goal of increasing commuter cycling and cycle trips by 50% by 2031.[[110]](#footnote-110) Similarly, we welcome suggested increases in walking and cycling[[111]](#footnote-111) but these rely on improved infrastructure for both and reductions in traffic to improve the experience for walkers and cyclists. There is an urgent need to obtain a return to pre-pandemic bus and train usage levels to make both cycling and walking easier. We note that the Council’s papers lack a clear commitment to re-opening all disused rail lines, and in particular the absence of a commitment to support a rail link from Carterton/Witney to Oxford linking to the Cowley line.

We cannot see how the roll out of Low Traffic Neighbourhoods is going to work without a clear commitment to a Low Traffic City, and the costs involved. City and County, for the previous Local Transport Plan, did agree that Controlled Parking Zones should be spread across the whole of Oxford. Some specific measures that need considering include:

* Double yellow lines need adding to stop pavement parking blocking cycle routes, as it so often does on Barns Road for example.
* Solid lines to protect cycle routes are needed in some places as dotted lines are not protecting these routes from pavement parking.
* Advanced stop lines for bicycles are often occupied by drivers and also need coloured marking and enforcement to stop this common habit.
* The City’s approach to ‘blue infrastructure’ needs to include ensuring walking and cycling networks are improved. Cycling is not mentioned under this topic in the City’s Green Infrastructure paper.[[112]](#footnote-112)
* Reducing the number of bus routes using the Cowley Road and the High Street; increasing bus use of the Iffley Road; gradual movement of bus stops out of an increasing pedestrianised/cycle-tracked central area.
* City and County support for national pavement parking ban, already agreed in Scotland for a 2023 start.[[113]](#footnote-113)

Quickways meetings arranged by the County Council we have attended suggest low spend, modest efforts to improve cycle tracks, at the time of the meetings on 14th June. Health promotion needs resources for new policies:

Walking routes need to be improved by the introduction of more pedestrian crossings particularly near schools, and to slow down traffic on busy roads that are difficult to cross at peak times e.g. the Cowley Road. Walking and cycling maps of the City are needed that are up to date. The City Council should cooperate with relevant local groups to achieve this. However, we also need, as a result of cooperation between local councils, walking and cycling maps which show how Oxford’s walking and cycling networks extend in all directions outside the City boundaries to encourage usage, bearing in mind the problem of addressing broken links. We believe this has potentially high economic value for encouraging eco-tourism and specifically more tourists seeking to walk or cycle in the area, along these extended networks. And residents would automatically benefit too. Investment in ensuring cycling and walking networks are of good quality in Oxford’s neighbouring district council areas is essential.

Reducing or discouraging non-essential car journeys in particular should mean that essential journeys including those of a commercial character gradually become easier to achieve.

1. **The school run: creating better walking and cycling networks to serve schools, complete with protection from heat**

It is obvious that better walking and cycling networks will help to reduce Oxford’s highly problematic school run traffic. Cooperation between parents to get children to school on foot, by bike, by bus and – exceptionally – by car, is essential, but coordination of this by schools is compromised by increasing burdens upon teachers. There are too few teachers and the Brexit exodus of EU citizens and appalling lack of council and keyworker shared ownership homes in Oxford have all made matters worse. Nevertheless, the relevant authorities including academy school owners must achieve detailed Green Travel Plans for staff and students as a contribution to cutting school run traffic. Leadership and coordination by City and County councils will be required.

1. **Trees for shade: robust species for hotter, drier summers**

The Woodland Trust has already provided a general plan for tree conservation and planting for the UK.[[114]](#footnote-114) Hotter, drier summers may attract more pests and prove very difficult for some native species. The Forestry Commission has, with partners, developed documentation on the right trees for our changing Climate, including reference to urban areas, which will help us in Oxford.[[115]](#footnote-115) There is also documentation on trees, planning and development.[[116]](#footnote-116)

Landowners need to add tree species in appropriate areas to increase biodiversity, flood management, shade and the overall attractiveness of the City. This places considerable responsibility upon the University. The University issued an Environmental Sustainability Strategy in March 2021.[[117]](#footnote-117) Regrettably, it does not (p.14) restrict car parking to those with special needs. There is also no clear plan to radically reduce University and College car parking in the City Centre down from 4000 to just meeting the requirements of those with special needs only, and for delivery bays in some locations. The University and Colleges should clearly advise visitors via their websites etc to come to Oxford via public transport, not cars. Page 4 suggests reductions in the use of aviation by staff and students will occur, but not how this will be achieved. There is a timeline (pp15-18) with reference to ‘sustainable travel funding’, which is unexplained. The Strategy needs more detailed planning and bringing forward of the target date of 2035 to increase University savings from, for example, having energy efficient buildings from an earlier date.

1. **Changing the buses: full electrification**

Walking and cycling take up less urban space than vehicles and are to be strongly encouraged on physical and mental health grounds as well. Local authority spending at an average of £6 per person per year on walking and cycling in each of the 4 years before the pandemic was derisory - and a failure to recognise the health benefits of both. £2 billion spending for Active Travel in the UK in the pandemic needs to be maintained year on year[[118]](#footnote-118) on health and Climate Emergency grounds. This is of vital importance to Oxford’s pursuit of the goal of becoming a Low Traffic City.

For those not able to walk far or cycle, buses cover most of the City although incidence and coverage varies. The mobility impaired should be helped by the City Council to purchase mobility scooters at lower prices.[[119]](#footnote-119) We note that Littlemore and the neighbouring Herschel Crescent and Van Diemans Lane communities could do with better bus services, as examples. We do, however, note the physical congestion of too many buses in the same space in the High Street, Cowley Road and St.Aldates making these cyclist- and pedestrian-unfriendly areas. Moving bus routes off these roads should be done progressively, allowing them to become pedestrian priority over time. In short, we want to see these areas populated by more walkers and cyclists because they feel there is more space for them. We note that ambition about getting people to switch from private transport to buses is very low e.g. just 1% by 2025 and 2% by 2030 as examples.[[120]](#footnote-120) Such figures underline the need to reduce car parking in the City as part of the effort to increase bus use, and Active Travel.

We note suggestions on transport initiatives do not include moving the coach station. We suggest consideration of using a car park in Becket Street in close proximity to the rail station, and the allocation of the existing coach station site to Council and shared ownership homes.

An all-electric bus fleet for Oxford is a possibility and we welcome moves in this direction.[[121]](#footnote-121) We are concerned by suggestions of hydrogen-powered long distance buses for the Oxford Bus Company[[122]](#footnote-122) unless this is using 100% green hydrogen. This concern applies to all potential hydrogen use in the transport sector locally. However, the overall context for buses is a major matter of concern. Continuing low levels of bus use could undermine deploying electric buses as fare income needs to support this investment. Decline in national bus use in the past, before lockdown, and inconsistent funding, were undermining services before the Covid 19 crisis.[[123]](#footnote-123) Whilst the Government has supported buses during the pandemic, removing support whilst car use is high due to Government pressure on the public to avoid public transport may well reduce bus services and bus usage will not necessarily recover. This failure would be visited upon Oxford with continuing air pollution, noise and very high car dependency.

1. **Air pollution eradication**

Tail-pipe emissions are not the only consideration when attempting to eradicate air pollution. Research demonstrates about 8.8 million deaths per year globally are due to air pollution of all types, which includes emissions from fossil fuel burning for energy (and from shipping in coastal areas – for example Dover here in the UK). This suggests a figure of about 64,000 premature deaths resulting from air pollution in the UK, annually.[[124]](#footnote-124)

The Oxford City Plan for 2036 failed to mention particulate matter below 2.5µm in size.[[125]](#footnote-125) Such matter is highly toxic, including carcinogenic effects. It arises from road abrasion by tyres, residue from tyres and brake pads, and the disturbance of such particulates on roads and other surfaces by the movement of vehicles and people. Whilst many steps may be and are very, very slowly being taken to reduce vehicle emissions, these ‘fine particulates’ are a neglected area of concern to public health. We submit that:

* such particulates would be a problem even if all vehicles were electric;
* that no obvious technical solution currently exists;
* and that only pedestrianisation and pedestrian priority areas can currently begin to address this problem in the absence of technological answers.

We note that every London Borough has PM2.5s above levels considered to be injurious to human health.[[126]](#footnote-126) In short, in the absence of generalised technological solutions to PM2.5 emissions, we can only rely upon much larger pedestrianised areas and much lower levels of traffic to protect the public. Since both of these are necessary measures to address the Climate Emergency, the relevant authorities should have no trouble supporting them. However, public spaces for walking and new cycle routes can be combined with the planned extension of some cafes, restaurants and pubs on to streets currently occupied by traffic – at least through the warmest parts of the year. This will help with City Centre regeneration, provided City and County ensure that traffic is not allowed to block such innovation. Judicious re-arrangement of bus routes, delivery, utility and emergency vehicle access will all be needed: rising bollards and lockable gates should be used to ensure drivers cannot enter pedestrianised areas.

The City has its own local electric vehicle production at BMW, which we welcome in principle, along with the Plant’s efforts to obtain electricity from solar PV.[[127]](#footnote-127) However, just as we do not regard offsetting as reliable and regulated, we cannot see just substituting polluting vehicles for electric ones as a worthwhile goal. Given continued population growth in the City, and worse outside City borders with excessive housing targets, traffic increases for Oxford are going to be beyond the capacity of many junctions and stretches of road in the City. Many areas are bad now due to low levels of bus use in particular. We need the City Council, neighbouring district councils, and the County to strongly advocate electric vehicle hire over ownership.

Air pollution did increase in 2019 in Oxford, due to specific weather conditions.[[128]](#footnote-128) This broke with a trend towards lower emissions since 2011. The City Council says:

“Over the past decade NO2 levels in Oxford have decreased by 29%, this is mainly due to the introduction of a Low Emission Zone (LEZ) for buses in the city in 2014 and £2.3m Government funding to the retrofit of several buses to cleaner Euro VI engines.  Oxford has also submitted a bid to become Britain’s first all-electric bus city through the Government’s All-Electric Bus Town fund[[129]](#footnote-129)…………….[the transport sector is by far the most significant source of emissions of NO2 in the city, accounting for about 68% of emissions.](https://www.oxford.gov.uk/news/article/1469/new_data_on_key_sources_of_air_pollution_in_oxford) According to the modelling of the Source Apportionment Study, after the conversion of all buses to Euro VI, NOx emissions from buses at St Clements’s are estimated to decrease from 69.9% to 29.3% - a decrease of 40.6%.”[[130]](#footnote-130)

However, we should note that air pollution did drop during 2020 thanks to the Covid 19 crisis. An average drop in pollutants of 29% during 2020, reflected large traffic reductions such as 35% in Oxford City Centre. Big Nitrogen Dioxide reductions of over 40% in George Street were exemplary; with lowest reductions in the Cowley Road, Union Street and Sunderland Avenue of 14-15%. Also important, PM10 levels went down 19% in 2020, and PM2.5s by 22%.[[131]](#footnote-131) Sadly, Government messages that the public should try to avoid public transport have led to traffic levels in 2021 visibly above lockdown levels as people continue generally to not to use buses and trains in Oxford – as has occurred in 4 regions of the UK. We are concerned that, without deep cuts in bus and rail fares, this situation may persist – making more LTNs and a larger charging zone for the City amongst a number of priorities to cut traffic and therefore air pollution.

CATG recognises that about 80% of Oxford’s local emissions are from buildings, with the University being the worse culprit.[[132]](#footnote-132) This does not include flying where connecting surface journeys are starting or terminating in Oxford, shipping emissions similarly related to Oxford, or the embedded emissions of imports. The University and Colleges have about 4000 parking spaces in central Oxford and are excluded from the proposed Working Place Parking Levy, as are some major employers such as BMW and Unipart. This means only about half of workplace parking designated as such in the City would be covered by the Council’s preferred scheme. There is a lot that private and public employers need to do in devising Green Travel Plans, cutting parking spaces and ensuring site deliveries are by cargo bike whenever possible. Efforts to provide council and keyworker housing on, around or above private and public car parks have potential to allow more people to live closer to where they are working, and need City and County support. There are, and have long been, too many car parking spaces in the City, so larger incremental reductions are desirable to clean Oxford’s air. This must include the over-generous and unfortunate provision of parking at the Westgate shopping centre.

1. **Deliveries by cargo bike**

Cargo bikes are helping to reduce delivery vehicle journeys in Oxford. Clearly, improved cycling networks will help to make these more efficient. Cargo Bike deliveries require 1.7m cycle track width, rather than the customary 1.575m. This would mean making some roads one way if this was to be a goal. One-way movements might help the serious congestion on the Cowley Road-Oxford Road axis. (Iffley Road should take more buses.) Cargo bikes are essential because online shopping is causing faster growth in the vans typically used for online deliveries than in other types of traffic. ‘Last mile’ delivery issues are exercising Government given the relentless rise of online shopping and its implications for traffic movements – especially into already congested areas.[[133]](#footnote-133) The RAC, in 2017, reported:

“Statistics show that vans are the fastest-growing traffic segment in the UK, with 70% growth in road miles over the last 20 years, compared to 12% for cars and 5.5% for lorries; this growth is forecast to continue under all economic scenarios. The growth in vans is contributing to traffic congestion that is both acute and chronic, costing the economy billions of pounds annually, as measured using traffic sensors and analysed using ‘big data’ methods – London is the second worst city in Europe, and Greater Manchester ranks 18th – and the UK is Europe’s third most congested country.”[[134]](#footnote-134)

Concerning ‘urban consolidation centres around the edge of Oxford’,[[135]](#footnote-135) these should not present any threat whatsoever to greenfield sites. In principle, given the variety of routes into the City, CATG favours a dispersal of such centres using lay bys such as those on the ring road south of the Green Road roundabout. A ‘carrot’ to encourage use of such lay-bys could include the addition of toilets in such lay bys rather than the tacit permission for long-distance drivers to use neighbouring green spaces as toilets. In addition, spaces within Park and Ride sites should be used. We are sceptical about urban periphery Park and Ride sites given that these are on existing bus routes and people could use buses for all of their commuting journey into Oxford instead of needing Park and Rides at all. Given the planning of a steady reduction in car parking in Oxford year on year, this option could be strongly encouraged.

Freight movements reflect consumption, with embedded carbon implications in transport and goods being moved. Recycling in the City should have much higher targets for different types of materials, aiming for 75% recycling of specific materials by 2030. However, re-use of materials needs targets too, in order to avoid needless additions to the waste stream and associated carbon emissions in refuse vehicle collections. The City should, in order to reduce such emissions, ensure all households and businesses get leaflets advising them of means of using a variety of common waste stream items e.g. plain cardboard is suitable for putting into compost heaps in gardens, allotments and in a variety of parks and institutions where compost is being used. And the City should not shirk from promoting re-use of goods through the *Library of Things,* charity shops by households, public, private and third sector organisations.

Oxford’s comparatively small and concentrated urban centre is highly problematic for deliveries and badly needs extended pedestrianisation to make the Centre more pleasant to use and to live in. Cargo bike movements in this Centre still need to be ensured in future as pedestrianised areas are substantially increased, in coverage over time.[[136]](#footnote-136) We are keen to see pedestrian and pedestrian priority areas stretch from the City Centre all the way to the redeveloped rail station. Our reasoning is that this will help commercial viability in this area, justify more Council home purchase/change of use to achieve a larger residential community comprising mainly very low-cost housing, and lead to a literal ‘greening’ of the area with more green roofs and walls, increased energy efficiency and integrated solar PV. A community in this location has very good public transport, walking and cycling options – minimising need for car parking or car movements.

More generally, we have to consider how re-use and cutting consumption have a role in reducing the need to transport goods long distances, with traffic and air pollution implications. As we rethink the use of the City Centre, and make more of it for homes rather than shops, we also need to strongly support local production for local use. The City identifies ‘uncertainty’ about how HGV decarbonisation may be achieved.[[137]](#footnote-137) It appears Tesla expects its electric ‘semi’ will go into production in 2022.[[138]](#footnote-138) There are a variety of problems associated with the assumption that hydrogen could power HGVs given the weight advantages of batteries,[[139]](#footnote-139) and the problem of ensuring only ‘green hydrogen’ is used.[[140]](#footnote-140) An initiative to test/trial electric HGVs in Oxford and/or environs is worthwhile – especially as the City expects residual emissions from ‘diesel freight transport’ post 2040,[[141]](#footnote-141) despite the possible availability of electric HGVs from 2022.

Farmers and artisan markets should be supported to operate on more days of the week in more locations in Oxford to become better competition to supermarkets for food purchasing, and to increase local sustainable UK food production. And new locations for such markets need to be found within the dispersed shopping centres of the City. This has positive implications for local employment, and means the City Council’s Planning approach to land use within the City and outside has to change. Rewilding, biodiversity, recreation, ecotourism and food production all need addressing on Oxford’s periphery and beyond – with more homes being realised from the existing built environment in the City, and building around, over and above car parks to allow people to live nearer local jobs.[[142]](#footnote-142) We note long-term vacancies in industrial estate/science park areas that should be allocated to housing with supporting community infrastructure.

1. **Low Traffic City: achieving Low Traffic Neighbourhoods throughout Oxford and ensuring Adaption is in-built**

With overwhelming support, Low Traffic Neighbourhoods(LTNs) have been introduced into Florence Park, Temple Cowley, and with more controversy in Church Cowley. Consultation for Divinity Road, St.Clements and St.Marys was just starting and has now been delayed; attempts to achieve something similar for Jericho have had a setback for now. Contributors to this Report have been heavily involved in the promotion process for Church Cowley and Florence Park, and some of us have had many discussions with hundreds of local residents during canvassing in the 2021 local elections, as in previous elections back to 2014. We have also contributed to a number of local Facebook group discussions about LTNs – which continue - and have commented in consultations.[[143]](#footnote-143) We note that the County Council has yet to do its part by providing bus gate camera technology where it is needed in the LTNs, as is already present in the High Street.

What has not happened so far is learning from the Sustainable Travel Towns programme of the past. Communities were selected for persuasion and promotion of active travel and public transport. The extensive report and summary of this highly relevant material needs to influence further consultation on and expansion of LTNs in Oxford, until a Low Traffic City is obtained.[[144]](#footnote-144)

In addition, LTNs are not a novelty since forms of constraining car movements include cul-de-sacs; the speed bumps on Magdalen Road and Bulan Road; the very narrow roads that do not permit traffic movement in central Oxford and in some other locations; bollards such as those at the Oxford Road end of Clive Road; the pedestrianised Cornmarket and pedestrian priority areas nearby; shopping centres including the Westgate, Templars Square and the Clarendon Centre; partial pedestrianisation of George Street; denial of through access through a substantial area in the centre of the City under University and College control. The process of traffic reduction measures consequently goes back a considerable period of time.

Traffic levels in Oxford during 2021 have little to do with the introduction of LTNs. A City with very high levels of bus use before the first lockdown has succumbed to Government advice not to use public transport. This has created large increases in car movements particularly visible in increased traffic congestion, and in junction tailbacks all over the City. Sundry road works are contributing more delays as they do every summer. Traffic congestion will remain at current levels until bus and train usage returns to pre-lockdown levels, including those commuting into Oxford for work.

LTNs do have implications for property values.[[145]](#footnote-145)

In general, we feel that a Low Traffic City consultation should have been promoted for the whole City. Transport is a system, it not particular short car journeys by the able-bodied. In the Climate Emergency and the related ecological emergency, system change needs to occur for the sake of future generations and our Planet. Oxford did have many traffic problems related to high-capacity use of roads long before LTNs became a known term in the City, reflecting a general failure to successfully resist traffic growth. Essentially, too many short car journeys are made within the Oxford cordon, too many people commute into the City by car especially at present, and the City is part of the common UK experience of increased online goods delivery vehicles. The particular issues of a high concentration of schools, of major employment centres including the Hospitals and Universities, all add to traffic problems. A City with much cleaner air, radically reduced traffic congestion and much more electric car hire than any type of car ownership, is what needs to be achieved, ideally between now and 2030. A much healthier City is possible with more walking and cycling too.

Clearly, there is a substantial minority of the able-bodied amongst us who do make nearly all their journeys in a car. Attempt to engage with people who talk in terms of their car journeys and the tiny number of LTNs we now have, and it is possible to judge that thinking of walking, cycling or using buses and trains is not part of their lived experience. This is where learning from the Sustainable Travel Towns household level persuasion efforts could be helpful. Building LTNs everywhere can ultimately change this form of car-dependency, including by promoting the importance of Active Travel for public health.

But there are some transport problems in Oxford that need to be addressed:

* A number of areas poorly served in terms of incidence and coverage of bus services, particularly in the South East quadrant of Oxford including parts of Rose Hill and Littlemore;
* Excessive bus use of the Cowley Road rather than the Iffley Road, ensuring regular congestion on the former;
* Full capacity bus usage in some parts of the City – including up to 200 bus movements each way in a single hour, on the High Street in rush hour;
* Poor walking and cycling network connections East-West in the City, which the Quickways proposals of the County only partially address;
* Many areas plagued by pavement parking, to become illegal in Scotland, with poor maintenance of pavements and of large numbers of roads in residential areas. Check for example the appalling condition of parts of the eastern section of Old Road beyond Windmill Road, and some roads in St.Mary’s ward;

1. **Sustainable transport-informed planning: reducing the burden created by vehicle parking throughout the City**

Neither new homes or past developments in the City show what should have been a consistent effort to keep traffic levels down, despite references to doing so in the 2036 variant of the Local Plan.[[146]](#footnote-146) Decarbonisation of the vehicles present in Oxford and of those entering the City is certainly necessary,[[147]](#footnote-147) but a steady reduction in car parking is needed to act as an incentive to use Active Travel or public transport. You cannot keep traffic levels down by keeping public parking levels at about the same level as now. You cannot promote Active Travel by keeping district/local centres car parking in Oxford at about the same level as now.[[148]](#footnote-148) The proportion of parking provided that is allocated to the disabled, mobility-impaired and their carers should grow, with adjustments to CPZ access if it seems necessary for particular areas. A badge giving CPZ exemption for carer’s cars may well be justified.

New or retrofitted homes in the City should be within the existing built environment, and on or close to good walking, cycling and bus services so that they can be car-free by covenant. Workplace car parking eligible for a Workplace Car Parking Levy is about 18,000 spaces in the City, although the City Council plans to exclude half of these spaces from the Levy. Excluding the University and Colleges, the County Council, and places such as BMW and Unipart from such charges, is wholly unacceptable as it increases the burden on those who will be paying the Levy. This is basic unfairness.

We are concerned that attempts to get homes built around the edges of car parks, or above the surface level of car parks, have been ignored by the City Council. We include in this all the public and private car parks above 6 spaces, rather than the Council’s higher figure. There is also the issue of reducing the overall amount of car parking in City progressively to encourage more active travel, bus use and electric car hire. Air pollution cuts depend on reducing vehicles in the City, as well as emissions from buildings. Transport pollution from tailpipes, road abrasion, erosion of tyres and or brake pads are all attacking the lungs of the most vulnerable and causing premature deaths. Failing to address this, over decades, is one of many avoidable pressures on the NHS.

1. **More flooding in a Climate changed Oxford**

Climate change offers a new problem of more extreme rainfall events with the potential to create more flash flooding.[[149]](#footnote-149) Given Oxford’s extremely variable drainage and the permissiveness of planning towards more impermeable surfaces, this needs to be taken seriously. The City’s *Flood Risk* paper clearly does not have the urgency necessary to support action in the current Climate and Ecological emergencies. There is no mention of how SUDs are to be maintained. There is no mention of how cuts to the Environment Agency undermine its work, and its capacity to work with other relevant bodies.[[150]](#footnote-150) There is no consideration of how the privatised water industry has failed to address leaks in most parts of the country, or to improve poor drainage, or to stop its intolerable pumping of untreated sewage into rivers. Since, as the *Flood Risk* paper indicates,[[151]](#footnote-151) Oxford has a variety of flooding problems, it is curious that this paper places emphasis on new development rather than the existing built environment and infrastructure, and its drainage and flooding problems. Strategically, the Environment Agency was given a pivotal role in leading on flood and coastal risks back in 2010, but it has had very serious spending cuts since that time.[[152]](#footnote-152) We still do not have an absolute protection against building on flood plains, which is essential as extreme rainfall events are tending to increase. It is therefore, very disturbing to find the *Flood Risk* paper mentions of ‘environmental net gain’ concerning development as this remains an improbable concept with a lack of statutory back-up from severely cut bodies like the Environment Agency and Natural England. Retaining flood plain, rewilding, increasing food production, switching land used for crops which are feeding animals to crops feeding humans, eco-tourism, biodiversity corridors, protection and restoration of peatlands – are all amongst the many land uses which should be blocking the development of greenfield sites – with the long-term future interests of people and species in mind. Such concerns are also features of Adaptation to Climate Change.

Concerning river, groundwater, surface water and sewer flooding, it is notable that all occur quite frequently in Oxford. We consider this to be the result of under-investment by privatised bodies and the State. With more extreme rainfall to be expected as a result of the ‘business as usual’ greenhouse gas emissions globally, Adaptation to unconstrained Climate Change means this existing long-term problem will get worse and require substantially more financial resources and work. The Oxford Flood Alleviation Scheme only addresses part of our flooding problems, and at considerable expense compared to a more complex mixture of using new planting and selective actions to achieve the same goals. This is based on earlier judgements we have seen suggesting a comparatively short life for the Scheme, when looking for measures which can be maintained for much longer periods should have been a priority. Building homes in Flood Zone 3a and 3b[[153]](#footnote-153) needs to be re-considered against the very long-term likely flood risk to such properties looking ahead at least 150 years. Bearing in mind that homes, if maintained, can last for hundreds of years, it is appropriate to consider whether homes will be flood proof over such periods since to do otherwise is wasting resources.

In emphasising flood risk, consideration of long periods of drought in predicted drier summers – like 1976 and 2003 – should be considered. Subsidence of buildings and damage to infrastructure is possible when land shrinks in the absence of sufficient moisture. The Environment Agency has said:

“Severe droughts would cause significant deterioration in the environment, partly due   
to continued or unplanned emergency abstraction. Properly planned water supply   
resilience solutions are likely to reduce the frequency and impact of drought   
measures on the environment in both severe and less severe droughts. Therefore   
increasing resilience is likely to benefit the environment.”[[154]](#footnote-154)

One local initiative worth mentioning is the campaign by the Friends of Lye Valley to secure a Special Planning Guidance for the Lye Valley water catchment which covers a significant area of Headington down as far south as the edge of Temple Cowley.[[155]](#footnote-155) Their document on the topic is lodged with the City Council for consideration at present. Since Sustainable Urban Drainage Systems are not generally maintained, more surface flooding and run-off is occurring. This group also offers guidance on the importance of Peatlands.[[156]](#footnote-156)

At its worst, the Lye and Boundary brooks flood and afflict Campbell Road in Florence Park particularly. Because half the homes in the City are privately-rented, many front gardens have been concreted over, creating new impermeable surfaces. But even where a better owner takes the trouble to use initially permeable brick paving, this quickly fills up with dust, and vegetation including moss, and becomes impermeable too.

The vigorous efforts of the Friends of Lye Valley volunteers to slow down water movement through the Lye Valley with so-called ‘leaky dams’ and other measures hold a lot of water back that helps maintain the peatland in the valley, and contributes to its re-wetting. If not for this, flooding into Campbell Road and environs would be worse and impediments to vehicle movement consequently more likely. It is also probable that the maintenance of trees at the north boundary of the Oxford City Farm off Cornwallis Road is contributing to soaking up a lot of water from the brook. If the City Council continues to neglect flooding issues without factoring in flash flooding at times of extreme rainfall such as early October 2020,[[157]](#footnote-157) then the consequences for walking, cycling and traffic movements will worsen. Whether the under-funded and cut back Environment Agency,[[158]](#footnote-158) or the privatised water industry, are doing enough to adapt existing drainage arrangements to ensure walking, cycling and road networks are ‘proofed’ against flash flooding in particular seems very unlikely. Drainage at the side of many roads in Oxford overflows very frequently during heavy rainfall and is problematic for walkers and cyclists, and narrows cycle tracks and road lane space.

The Trees and Design Action Group has been looking at issues concerning integration of trees into designed environments.[[159]](#footnote-159) Particularly useful pages in their report are pp21-27 on integrating trees with SUDS to reduce run off and flooding (and to give trees water). Evapotranspiration from trees returns water to air, cooling the City. This does give rise to a potential problem, since it is of course expensive to do this kind of combined tree/SUDS structures in the urban environment.[[160]](#footnote-160) Trees will also contribute to reducing traffic and other noise in the City Centre. In general, the City Council needs to take a pro-active approach to extending Tree Preservation Orders within Oxford, to maintain habitats, offer shade and to control drainage and the effects of extreme rainfall.

It is, of course, absolutely vital that greenfield sites within Oxford’s boundaries, as elsewhere, are protected from development or we face more flooding and drainage issues in more locations. The current Oxford City Plan is certainly not appropriate for dealing with this task and needs early and comprehensive revision, which this document and our response to the Oxford City Plan 2040 address.[[161]](#footnote-161)

1. **Food, localisation and the Climate**

**Food is a transport issue** and a major consideration in the connected Climate and ecological emergencies. If we cannot obtain our food organically and with zero carbon transportation, the sheer scale of the impacts of our globalised food system will defeat efforts to achieve an absolute zero carbon future. *Grain,* based in Oxford, has investigated the Climate impacts of the existing food system.[[162]](#footnote-162) To summarise their key findings of the global situation:

* Between 44 and 57% of all greenhouse gas emissions originate in the global food system, divided approximately as follows:
* Deforestation: 15-18%
* Waste: 3-4%
* Freezing and retail: 2-4%
* Farming: 11-15%
* Transport: 5-6%
* Processing and packaging: 8-10%[[163]](#footnote-163)

As of December 2020, the UK was importing about 30% of its food from the EU. This included half of our fresh vegetables and nearly all of our fruit.[[164]](#footnote-164) Other individual countries have met less than 5% of our food needs recently, with UK food production meeting roughly 55% of needs.[[165]](#footnote-165) If we are serious about dealing with the Climate and ecological emergencies, we need to achieve food security and food sovereignty:

* Food security: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”[[166]](#footnote-166)
* Food sovereignty: “Food Sovereignty is about systemic change – about human beings having direct, democratic control over the most important elements of their society – how we feed and nourish ourselves, how we use and maintain the land, water and other resources around us for the benefit of current and future generations, and how we interact with other groups, peoples and cultures.”[[167]](#footnote-167)

Climate Change is producing more extreme weather events with impacts on crop yields, throughout the world.[[168]](#footnote-168) In the UK, and within Oxford, food insecurity has led to a range of initiatives designed to support those who cannot afford an adequate diet. In Oxford, the Oxford Food Hub coordinates the distribution of food that might otherwise be wasted, to those in need due to very low incomes and ultra-low benefits. In addition, the Oxford Good Food Network links a wide range of local organisations concerned about both food quality and access to food.[[169]](#footnote-169) Whilst a £12 an hour compulsory Living Wage, preferably set at the same level as London given Oxford housing costs, and adjusted benefits, would increase incomes, getting rid of Zero Hours Contracts and abuses that lead to unwarranted deductions from pay would also be needed to ensure household food security. To illustrate this, the City Council has noted that about 29% of children in Oxford are living in poverty.[[170]](#footnote-170) The implications of ending furlough and removing protection from evictions, combined with cutting back Universal Credit, suggest an Oxford with far more poverty quite soon. Given high costs of bus fares, ‘transport poverty’ for the poorest of those without access to a car is a real issue of social exclusion.

Under the continuing ‘business as usual’ approach to the Climate and Ecological emergencies, extreme weather events and changes in seasonal patterns may alter the availability of crops in this country and elsewhere. To counter this, increased local and regional food production will be essential to cut transport emissions, avoid price increases and the possibility of shortages of some foods.[[171]](#footnote-171) The embedded fossil fuels of food imports have to be countered as part of cutting greenhouse gas emissions. This certainly will involve using far less land to feed domesticated animals, meaning amongst other things phasing out factory farming. This form of Adaptation is therefore dependent upon localisation and regionalisation.

Localisation can be considered to cover a wide range of topics, within the UK and globally.[[172]](#footnote-172) Essentially, where possible and practical, food should be produced as near as possible to the people consuming it so that fossil fuel energy use in its distribution, and production, is systematically eliminated. The advocacy of more local food production has been the subject of a vigorous effort by locally-based *Campaign for Real Farming* and the Landworkers’ Alliance amongst others. In short, Adaptation for Oxford must mean taking these efforts more seriously and cooperating with other local authorities to create more local food production close to Oxford and within Oxford in gardens and allotments, and through longer periods of Farmers’ Market activities each month in the City. Apart from Good Food Oxford’s Charter[[173]](#footnote-173), the Landworkers’ Alliance offers a recent detailed report on local and regional food systems.[[174]](#footnote-174)

Within the notional region created by quango *England’s Economic Heartland,* we are supposed to be ‘..achieving net zero carbon emissions from transport no later than 2050, with an ambition to each this by 2040,” in line with Government targets.[[175]](#footnote-175) Since the Government added aviation and shipping emissions to carbon targets in 2019, and embedded emissions in imports must be included, we are obliged to consider what the localisation of the means of production, distribution and exchange might look like in a more sustainable future. Certainly, more food would be produced within 30 miles of Oxford and regionally. But this also has a clear implication of far better re-use and recycling of materials to help cut down long-distance imports. Without this, we certainly could not achieve a Zero Carbon Oxford.

1. **Housing targets and locations need changing**

Housing targets for Oxford and Oxfordshire do not appear to reflect actual population growth, average incomes bearing in mind housing costs, or the need for very low-cost housing close to where people live.[[176]](#footnote-176) As the worst place in the country for first time buyers,[[177]](#footnote-177) and a terrible place for private renters with sky-high rents and unregulated supplementary charges, it is no surprise to be found in problems obtaining and retaining many types of key workers including nurses and teachers. Brexit is creating major new problems in the UK supply of hospitality industry workers, with a 188,000-worker shortage; care workers remain in demand with around 100,000 vacancies; the construction industry, long dependent on workers from overseas, is slowing down due to shortages of labour. It has been estimated about 1.3 million EU citizens have left the UK for good, with housing availability implications which have yet to be factored into projected housing demand.[[178]](#footnote-178) Given the Government’s ‘hostile environment’ to both migrant workers and refugees, despite skills shortages, this is likely to continue.

Traffic reduction efforts to cut carbon emissions mean using the existing built environment for housing in Oxford, and building around, above or right over the huge area of car parking the City. People need to be able to walk, cycle or take the bus to work, not add to the commuting burden on Oxford which is already bad enough.

Clearly, housing projections have not taken into account the implication of more people working wholly or partly at home. This gives the people involved the option of living in cheaper places than Oxfordshire, making housing predictions very much developer and private landlord preference-based and not realistic in terms of real need for lower paid groups. CPRE reports how population figures are to be questioned, but people working from home makes a nonsense of housing aimed at high paid or high rent-paying groups:

“Our local authorities signed up to the Oxon Housing & Growth Deal, which commits us to 100,000 houses in 2011-2031, a 40% growth in housing stock. From 2011 to 2019, Oxfordshire population growth was approx. 5%, despite the focus on housing. Does this indicate the size of the market/ willingness for people to move here? It certainly seems unlikely that growth targets will be met. 40% increase in housing can of course equate to less than 40% population growth, because reduced occupancy can be encouraged (although they aren't generally building small homes and people can't afford to under-occupy large homes!). But if that 5% is scaled up over the 20 years of the Plan period, we are heading for less than 12.5% population growth, noting that the national growth rate is also slowing. The figures don't seem to tie up. Does that mean our current housing targets could be rolled over to the Oxon 2050 Plan? Certainly food for thought.”[[179]](#footnote-179)

To avoid embedded carbon in construction, or the increased car use generated by locations far from workplaces, adaptation to Climate Change in the housing sector means radically reducing the emphasis on new build to a negligible part of additional homes. All new build should be passivhaus standard with grey water recycling exclusively on brownfield sites as greenfield sites have key biodiversity, recreation and drainage roles. The City’s *Carbon Reduction paper* correctly points out that the Government’s *Future Homes Standard* to be achieved by 2025 promises only 75% lower carbon emissions in new build, with better policies relegated to some unspecified date.[[180]](#footnote-180) So what types of homes are best for Oxford to reduce greenhouse gas emissions?

* Homes bought for council housing from those on sale, which can be retrofitted for sustainability before residents inhabit them – including heat-proofing measures
* Homes bought from those on sale for shared ownership (part-rent, part-buy) for keyworkers, which can be retrofitted for sustainability before residents inhabit them
* Support for groups to purchase housing for new housing cooperatives
* Further additions to secure moorings along Oxford’s waterways and beyond
* Allocation of long-term unoccupied industrial estate/science park buildings and land to highest quality sustainable retrofitting and passivhaus high density housing, with some key facilities provided e.g. corner shops. These should be very low-cost housing only – council housing, housing associations or shared ownership
* Homes with covenants to make them car-free – no parking provided
* Homes provided, by Government, with grants for external solid wall insulation, and air source heat pumps to replace gas for domestic and non-domestic space heating.

**Conclusions: will Adaptation provide employment in a greener economy?**

A greener economy in Oxford is essential. The City faces further job losses in the retail sector as online shopping continues to grow. Mindless Government cuts in public spending over more than 10 years are not helping, and neither is a tax base that takes too little from those on highest incomes or with the greatest wealth.

The transport system of the City is part of its selling point to visitors and tourists, including walking and cycling networks. The relevant forms of employment this includes can expand if political leadership supports improvements as suggested in this report, and through the work of cycling and other voluntary transport-related organisations in the City. Retaining green space instead of building on it is vital for drainage, and for preventing more areas having an ‘urban heat island’ effect due to larger surfaces reflecting heat as a result of thoughtless development and unguided refurbishment. A City with more green roofs and walls will need people to maintain them. This would be an enhanced part of the tourism offer in the City, and as part of attracting students to the Universities, Colleges and language schools. But a fundamental change in the general mindset of City councillors and officers away from short-termism, commercial property spending, excessive car parking etc and a vision that imagines economic growth is desirable, rather than meeting a host of positive alternative economic, social and environmental indicators. This point is based on the belief that the City both needs a 50 year forward plan with outline policies, and far more detail in Climate and Ecological Emergency policies for the next 5 years too. Also, the current City Plan is far from adequate for the adaptation of Oxford to the Climate Emergency.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**Appendix:** **definitions of Adaptation**

First, Adaptation to Climate Change does not mean mitigation measures should cease. Even if we achieved zero carbon emissions globally, greenhouse gas emissions might carry on rising for a period of decades, making both Mitigation and Adaptation policies essential. Definitions of Adaptation to Climate Change are inherently difficult because of the large range of factors that can be considered to be involved.[[181]](#footnote-181) The IPCC 2nd Assessment Report defined adaptation as:

“..the degree to which adjustments are possible in practices, processes or structures of systems to projected or actual changes of Climate.”[[182]](#footnote-182)

However, in 2001, the IPCC instead offered:

“..adjustment in natural or human systems in response to expected climate stimuli or their effects, which moderates harm or exploits beneficial opportunities.”[[183]](#footnote-183)

Elinor Ostrom viewed Adaptation as changes necessary to reduce additional greenhouse gas concentrations rather than reducing their impacts. But this really appears to be mitigation,[[184]](#footnote-184) and sets aside, or at least does not appear to include, economic, environmental, social, political and cultural factors which may be crucial to achieving a social consensus for effective Adaptation measures. This may be difficult in a democracy since changes that might have occurred slowly if started in about 1990 need far more rapid implementation to achieve deep cuts in greenhouse gas emissions in the UK. Essentially, our politicians have failed us and may continue to do so in fear of public reaction to necessary, radical steps. The reaction of some to LTNs in Oxford is a case in point and requires local councillors to stand up for the Climate, and for public health, whilst listening to the specifics of public concern and noting where minor modifications to LTNs may be needed – to alter them without removing their emissions and public health benefits. But they need to be very clear about the Adaptation value of having a Low Traffic City.

The above, and other readings of literature on what we should call the Climate and ecological emergencies, reflect the problem of inclusive definitions suiting the large range of disciplines involved. Apart from academics involved, this is also inherently difficult for both campaigners and policy-makers so this report provides an elaborated definition of adaptation that may be easier to consider than a lot of literature on offer. Using the Brundtland definition of Sustainable Development, adaptation to Climate Change can be considered to be:

Adaptation to Climate Change can be explained as the pursuit of Absolute Zero Carbon sustainable development which meets the needs of the present without compromising the ability of future generations to meet their own needs. The Brundtland definition adds ‘needs’, particularly of the poorest, and:

“..the idea of limitations imposed by the state of technology and social organisation on the environment’s ability to meet present and future needs.”[[185]](#footnote-185)

To reiterate and emphasise, Adaptation to Climate Change requires consideration of economic, environmental, social, political and cultural factors conditioned by the need to avoid technological optimism about the speed at which market entities might develop and deploy means of extracting greenhouse gas emissions from the air, or from industrial processes.[[186]](#footnote-186) In short, achieving carbon neutrality in Oxford by 2030 should be a goal, with Net Zero Carbon no later than 2035. However, Net Zero Carbon as referred to by Government includes offsetting and in consequence may not be as reliable as an actual national Absolute Zero carbon plan.[[187]](#footnote-187)

***Sources***

Absolute Zero - UK FIRES, Engineering and Physical Sciences Research Council – Julian Allwood et al, 2019.

<https://ukfires.org/absolute-zero/>

Anderson, Kevin – ‘..Twenty-four COPs on, annual carbon dioxide emissions are over 60% higher now than in 1990…..’ January 2019: <http://kevinanderson.info/blog/capricious-foes-big-sister-high-carbon-plutocrats-irreverent-musings-from-katowices-cop24/>

Anderson, Kevin <https://kevinanderson.info/blog/wp-content/uploads/2013/02/Stormont-Feb-13-PDF-Anderson-Climate-Change1.pdf>

BBC How dependent is the UK on the EU for food: <https://www.bbc.co.uk/news/business-55408788>

Bhutan – as carbon negative country: <https://www.gvi.co.uk/blog/bhutan-carbon-negative-country-world/> & <https://www.nationalgeographic.com/travel/article/carbon-negative-country-sustainability> & <https://www.climatecouncil.org.au/bhutan-is-the-world-s-only-carbon-negative-country-so-how-did-they-do-it/>

Business Insider – Tesla electric semi truck delayed: <https://www.businessinsider.com/tesla-electric-semi-truck-delayed-again-2022-now-2021-7?r=US&IR=T>

C40 Cities and McKinsey Sustainability – *Focused adaptation: a strategic approach to climate adaptation in cities,* July 2021.

Campaign Against Climate – One Million Climate Jobs <https://www.campaigncc.org/sites/data/files/Docs/one_million_climate_jobs_2014.pdf>

Campaign for Real Farming: <https://www.campaignforrealfarming.org/about/>

Carbon Brief <https://www.carbonbrief.org/guest-post-hundreds-of-planned-coal-mines-incompatible-with-1-5c-target?fbclid=IwAR1luFRXMVRV-GmURGQrECB9ErD7R5q8PEnFXaRxy0bQkyjXfyvtsC1O86k>

Carbon Brief: <https://www.carbonbrief.org/in-depth-qa-the-uk-becomes-first-major-economy-to-set-net-zero-climate-goal>

Climate and Ecological Emergency newsletter, 3/2021.

Climate Outreach – Britain Talks Climate: <https://climateoutreach.org/reports/britain-talks-climate/>

Climate Ready Clyde – Glasgow City Region Climate Adaptation Strategy and Action Plan, June 2021. <http://climatereadyclyde.org.uk/gcr-adaptation-strategy-and-action-plan/>

COHSAT: <https://cohsat.org.uk/manifesto/?mc_cid=e381f13f30&mc_eid=a5941b5e76>

Columbia University: <https://news.climate.columbia.edu/2021/01/07/need-green-hydrogen/>

Committee on Climate Change – Local Authorities and the 6th Carbon Budget, December 2020. <https://www.theccc.org.uk/publication/local-authorities-and-the-sixth-carbon-budget/>

Cowley Area Transport Group – Submission on Oxford City Plan 2036 under OTHER RELEVANT SUBMISSIONS:

Cowley Area Transport Group – [www.catg.org.uk](http://www.catg.org.uk)

CPRE Oxfordshire, Facebook: <https://www.facebook.com/CPREOxfordshire>

Department of Transport, *Gear Change: a bold vision for cycling and walking,* 2020.

DFT – Oxfordshire traffic statistics 2000-20: <https://roadtraffic.dft.gov.uk/local-authorities/142>

Down to Earth, news site: <https://www.downtoearth.org.in/news/environment/world-breached-safe-atmospheric-co2-levels-33-years-ago-64546>

Electric Boat Association: <https://www.electricboatassociation.org/>

ELTIS – urban mobility observatory: <https://www.eltis.org/discover/news/car-dependency-driven-deep-flaws-uk-transport-planning-system>

Environment Agency – analysis of the water sector: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/504682/ea-analysis-water-sector.pdf>

Essex, Jonathon – *What would a UK climate emergency plan that faces up to climate reality look like?* Green House, May 2020. <https://www.greenhousethinktank.org/uploads/4/8/3/2/48324387/climate_emergency_plan_that_fucr_may20.pdf>

FAO - Briefing document on Food Security: Food and Agriculture Organisation of the UN: <http://www.fao.org/fileadmin/templates/faoitaly/documents/pdf/pdf_Food_Security_Cocept_Note.pdf>

Friends of Lye Valley – Peat carbon in fens: <http://www.friendsoflyevalley.org.uk/about/peat_carbon_in_fens.pdf>

Friends of Lye Valley – Supplementary Planning Guidance for the Lye Valley water catchment: <http://www.friendsoflyevalley.org.uk/news/pdf/FoLV%20Supp%20Planning%20Guidance%20Lye%20Valley.pdf>

Friends of Lye Valley: <http://www.friendsoflyevalley.org.uk/news/index.html>

Global Food Security – UK Government programme <https://www.foodsecurity.ac.uk/challenge/your-food-is-global/>

Good Food Oxford: <https://goodfoodoxford.org/network/>

Government Office for Science – Last mile urban freight in the UK <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777682/fom_last_mile_road_freight.pdf>

Grain – Factory farming: <https://grain.org/en/article/6435-what-does-factory-farming-have-to-do-with-the-climate-crisis> and other materials on their website.

Grain – *The Great Climate Robbery: how the food system drives climate change and what we can do about it,* 2016.

Green Alliance – *The local climate challenge: a new partnership approach,* December 2020. <https://green-alliance.org.uk/the_local_climate_challenge.php>

Green New Deal Group - <https://greennewdealgroup.org/wp-content/uploads/2013/09/Green-New-Deal-5th-Anniversary.pdf>

Helm, Dieter – *Net Zero: how we stop causing Climate Change,* 2020.

Hines, Colin – *Localization – a global manifesto,* 2000.

<https://www.oxfordmail.co.uk/news/17933638.buildings-responsible-80-oxfords-emissions---university-single-biggest-polluter/>

I newspaper <https://inews.co.uk/news/health/air-pollution-kills-64000-people-in-the-uk-every-year-268508>

I Newspaper, 25th March 2021: <https://inews.co.uk/news/environment/traffic-car-communte-london-up-30-per-cent-since-before-covid-pandemic-929784>

I Newspaper: <https://inews.co.uk/inews-lifestyle/money/motoring/cities-vehicle-emission-taxes-end-year-1033605?ito=email_share_article-top>

I newspaper - <https://inews.co.uk/news/climate-change-flash-flooding-cities-1037926?ito=email_share_article-top>

Independent – Immigrants and job losses <https://www.independent.co.uk/news/uk/politics/covid-uk-immigrants-job-loss-b1787785.html>

Independent <https://www.independent.co.uk/climate-change/news/uk-emission-targets-johnson-cop26-b1834132.html>

Intergovernmental Panel on Climate Change: <https://www.ipcc.ch/site/assets/uploads/2018/05/2nd-assessment-en-1.pdf>

IRENA – Green Hydrogen <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2021/May/IRENA_Green_Hydrogen_Supply_2021.pdf>

J.G.J. Olivier, J.G.J and J.A.H.W. Peters - Trends In Global Co2 And Total Greenhouse Gas Emissions   
2019 Report (released 2020) <https://www.pbl.nl/sites/default/files/downloads/pbl-2020-trends-in-global-co2-and-total-greenhouse-gas-emissions-2019-report_4068.pdf>

Jackson, Tim - *Prosperity without Growth: foundations for the economy of tomorrow,* 2ND Edition, 2016.

John Whitelegg – *Mobility,* 2016.

Lang, Tim – *Feeding Britain: our food problems and how to fix them,* 2020.

Living Streets - <https://www.livingstreets.org.uk/media/3895/pedestrian-pound-briefing-for-mps.pdf>

Lynas, Mark – *Our Final Warning: six degrees of Climate Emergency,* 2020.

Minton, Anna – *Ground Control,* 2012.

Moser, Susanne C and Boykoff, Maxwell F., eds – *Successful adaptation to Climate Change,* 2013.

National Infrastructure Commission – Running out of Road, <https://nic.org.uk/app/uploads//Running-out-of-Road-June-2018.pdf>

Nature India – Urban greenspaces are sources of pathogens and greenhouse gases <https://jwp-nindia.public.springernature.app/en/nindia/article/10.1038/nindia.2021.100?WT.ec_id=NINDIA-20210721&sap-outbound-id=6522CADCC6FAF6D898CB2312CD4617D8BF569685>

Norberg-Hodge, Helena: *Local is our future,* 2019 edition.

Nuclear Free Local Authorities Policy Briefing no 199 – Tackling the climate emergency in the UK and Ireland – how Councils can own their commitments and demonstrate their low carbon ambition, May 2020. <https://www.nuclearpolicy.info/briefings/nfla-policy-briefing-199-tackling-climate-emergency-uk-ireland-councils-commitments-demonstrate-low-carbon-ambition/>

Oxfam report: Extreme weather events and crops: <https://www-cdn.oxfam.org/s3fs-public/file_attachments/rr-extreme-weather-events-crop-price-spikes-05092012-en_0.pdf>

Oxford Citizens Assembly: Final report

Oxford City Council – Air Pollution in Oxford: Air pollution increase <https://www.oxford.gov.uk/news/article/1482/air_pollution_in_oxford_increased_for_the_first_time_in_years_during_2019_due_to_extreme_weather>

Oxford City Council – Green Infrastructure paper

Oxford City Council - Oxford Local Plan 2040 Issues Paper

Oxford City Council – Poverty and deprivation: <https://www.oxford.gov.uk/info/20131/population/497/poverty_and_deprivation>

Oxford City Council – *Sustainability Appraisal scoping report,* June 2021.

Oxford City Council 2040 Net Zero Carbon pledge: <https://www.oxford.gov.uk/news/article/1708/leaders_across_oxford_support_2040_net_zero_carbon_emissions_pledge>

Oxford City Council and the Carbon Trust – *Zero Carbon Oxford,* 2021.

Oxford City Council Carbon Reduction topic paper, undated p.1. <file:///C:/Users/Steve/AppData/Local/Temp/1_Carbon_reduction_topic_paper.pdf>

Oxford City Council Environment and Energy Statistics: <https://www.oxford.gov.uk/info/20129/environment_and_energy/499/environment_and_energy_statistics>

Oxford City Council, *Air, Water and Land Quality topic paper*.

Oxford City Council, *Community and Cultural facilities* paper.

Oxford City Council, *Flood risk and new development*.

Oxford City Council, Net Zero Oxford 2020-25 Action Plan.

Oxford City Council, *Transport topic paper*

Oxford Food Hub: <https://oxfordfoodhub.org/>

Oxford Mail, Electric Buses: <https://www.oxfordmail.co.uk/news/18991618.oxford-coventry-set-become-first-all-electric-bus-cities/>

Oxford Mail: <https://www.oxfordmail.co.uk/homes/property_news_config/19392505.oxford-tops-list-least-affordable-locations-first-time-buyers/>

Oxford Mail: <https://www.oxfordmail.co.uk/news/17618597.oxford-average-temperature-rises-1-5c-hot-years-increase/>

Oxford Mail: <https://www.oxfordmail.co.uk/news/17796922.oxford-smashes-record-hottest-ever-day-36-5c/>

Oxford Mail: <https://www.oxfordmail.co.uk/news/national/19312373.ministers-urged-slash-bus-train-fares-get-passengers-back/>

Oxford Mail, *No big return to the office with City workplaces quiet,* 4th August 2021.

Oxford Times - David Lynch – *Air Pollution is City at the lowest level for 10 years,* Oxford Times 10th June 2021.

Oxford University – Summary of Long Period Observations – School of Geography and Environment: <https://www.geog.ox.ac.uk/research/climate/rms/summary.html>

Oxford University Sustainability Strategy: <https://sustainability.admin.ox.ac.uk/files/environmentalsustainabilitystrategy.pdf>

Oxford University, School of Geography and the Environment – October 2020 was the wettest in Oxford for 145 years <https://www.geog.ox.ac.uk/news/2020/20201102-wettest-october.html>

POETS (Planning Oxfordshire’s Environment and Transport Sustainably) – *The Oxford-Cambridge Arc: a critical assessment by POETS,* July 2021.

RAC – Internet shopping and vans: <https://www.racfoundation.org/wp-content/uploads/2017/11/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf>

Renew Economy AU: <https://reneweconomy.com.au/why-a-net-zero-target-for-2050-is-a-strategy-for-climate-failure/?fbclid=IwAR3ZzKIH-z7tO0T3Od6ZUUfkMAksnpHUbJSG9eWR3VgYNrV6hofe8L3gSRo>

Right Trees for Changing Climate database: <http://www.righttrees4cc.org.uk/>

Schipper, E. Lisa F & Burton, Ian eds. *The Earthscan Reader on Adaptation to Climate Change,* 2009.

Science Daily: <https://www.sciencedaily.com/releases/2019/03/190312075933.htm>

Sekara, June and Lichtenberger, Andreas <https://www.researchgate.net/publication/345326366_Assessing_Carbon_Capture_Public_Policy_Science_and_Societal_Need>

Smolker, Rachel – *Negative Emission Technologies: can they deliver? –* December 2020, Biofuelwatch. Concise, cautionary piece about the problems of these technologies that have yet to be addressed: <https://www.biofuelwatch.org.uk/wp-content/uploads/BFW_NETS.pdf>

Sustainable Travel Towns – full report: <https://webarchive.nationalarchives.gov.uk/20111005180101/http://www.dft.gov.uk/publications/the-effects-of-smarter-choice-programmes-in-the-sustainable-travel-towns-full-report>

The Conversation: <https://theconversation.com/uk-target-to-cut-emissions-78-by-2035-is-world-leading-but-to-hit-it-action-is-needed-now-159398>

The Engineer – Hydrogen fuel cells and HGVs <https://www.theengineer.co.uk/hydrogen-fuel-cells-battery-hgvs/>

The Guardian - The Environment Agency has lost about 2/3 of its funding since 2010: <https://www.theguardian.com/environment/2021/jun/22/cutbacks-stopping-vital-work-on-river-pollution-and-floods-in-england-environment-agency>

The Guardian <https://www.theguardian.com/environment/2020/apr/16/britain-climate-efforts-undermined-failure-imports-carbon>

The Guardian <https://www.theguardian.com/environment/2021/apr/19/uk-to-toughen-targets-on-greenhouse-gas-emissions-sources-say>

The Guardian <https://www.theguardian.com/environment/2021/jul/27/global-heating-critical-measures-tipping-point-study>

The Guardian, Bus privatization: <https://www.theguardian.com/commentisfree/2021/jul/26/bus-privatisation-public-service-strategy-british-private-market?fbclid=IwAR3nCdXNuqNqkeZcOWgPiba_V9_SJzkZY-LGiT6Di_recCl4s7_38WOzTqw>

The Met Office: <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2021/chance-of-temporarily-reaching-1.5-c-in-next-five-years-is-increasing>

The Scotsman, Pavement Parking: <https://www.scotsman.com/news/transport/pavement-parking-ban-delay-in-scotland-to-2023-angers-campaigners-3219838>

Thompson, Isabella et al, *Vocal for Local: why regional food systems are the future,* 2021. <https://landworkersalliance.org.uk/wp-content/uploads/2021/06/Vocal-for-Local.pdf>

Lang, Tim – *Feeding Britain: our food problems and how to fix them,* 2020.

Transport Network, 2018: <https://www.transport-network.co.uk/Estates-without-footways-homes-without-transport/14106>

## Trees, Planning and Development: ﻿﻿﻿A﻿ ﻿﻿Guide for Delivery: <https://www.tdag.org.uk/trees-planning-and-development.html>

UK Government – 78% carbon emissions cut by 2035: SEE: <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>

UK Government: National Flood and coastal erosion risk management strategy: <https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2>

UN emissions report, 2019: <https://news.un.org/en/story/2019/11/1052171>

UN Habitat, 2012 and quoted in: Elisabeth M. Hamin Infield et al – eds – *Planning for Climate Change: a reader in Green Infrastructure and sustainable design for resilient cities,* 2019.

Urban Transport Group – White vans and Cities: <https://www.urbantransportgroup.org/system/files/general-docs/White%20Van%20Cities.pdf>

Via Campesina: <https://viacampesina.org/en/wp-content/uploads/sites/2/2018/02/Food-Sovereignty-A-guide-Low-Res-Vresion.pdf>

Woodland Trust – Emergency Tree Plan for the UK, 2020: <https://www.woodlandtrust.org.uk/publications/2020/01/emergency-tree-plan/>

World Commission on Environment and Development – *Our Common Future,* 1987.

Zero Carbon Britain – <https://cat.org.uk/info-resources/zero-carbon-britain/research-reports/zero-carbon-britain-rising-to-the-climate-emergency/>

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

1. Sometimes referred to as ‘Absolute Zero Carbon’. See: <https://ukfires.org/absolute-zero/> [↑](#footnote-ref-1)
2. UN Habitat, 2012 and quoted in: Elisabeth M. Hamin Infield et al – eds – *Planning for Climate Change: a reader in Green Infrastructure and sustainable design for resilient cities,* 2019, p. 2. [↑](#footnote-ref-2)
3. This includes aviation and shipping. Green Alliance – *The local climate challenge: a new partnership approach,* December 2020, p.6. <https://green-alliance.org.uk/the_local_climate_challenge.php> & Committee on Climate Change – Local Authorities and the 6th Carbon Budget, December 2020. <https://www.theccc.org.uk/publication/local-authorities-and-the-sixth-carbon-budget/>

   A substantial effort is needed to reduce these emissions from all the relevant forms of transport including aviation and shipping. The Committee on Climate Change has provided a report on local authorities and the 6th Carbon Budget, now partially superseded by an improved Government emissions target for 2035 of 78% although how this is to be achieved has yet to be made clear. The Nuclear Free Local Authorities have laid out a set of priority local authority Climate actions which councils such as Oxford and Oxfordshire should be following and building from. SEE: <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>

   & See: <https://theconversation.com/uk-target-to-cut-emissions-78-by-2035-is-world-leading-but-to-hit-it-action-is-needed-now-159398> & <https://www.theguardian.com/environment/2021/apr/19/uk-to-toughen-targets-on-greenhouse-gas-emissions-sources-say> & <https://www.independent.co.uk/climate-change/news/uk-emission-targets-johnson-cop26-b1834132.html>

   &

   Nuclear Free Local Authorities Policy Briefing no 199 – Tackling the climate emergency in the UK and Ireland – how Councils can own their commitments and demonstrate their low carbon ambition, May 2020. <https://www.nuclearpolicy.info/briefings/nfla-policy-briefing-199-tackling-climate-emergency-uk-ireland-councils-commitments-demonstrate-low-carbon-ambition/> [↑](#footnote-ref-3)
4. World Commission on Environment and Development – *Our Common Future,* 1987, p.43. [↑](#footnote-ref-4)
5. UK FIRES, Engineering and Physical Sciences Research Council – Julian Allwood et al, 2019. [↑](#footnote-ref-5)
6. See for example: <https://reneweconomy.com.au/why-a-net-zero-target-for-2050-is-a-strategy-for-climate-failure/?fbclid=IwAR3ZzKIH-z7tO0T3Od6ZUUfkMAksnpHUbJSG9eWR3VgYNrV6hofe8L3gSRo> [↑](#footnote-ref-6)
7. <https://www.theguardian.com/environment/2021/jul/27/global-heating-critical-measures-tipping-point-study> [↑](#footnote-ref-7)
8. Oxford City Council and the Carbon Trust – *Zero Carbon Oxford,* p.7. [↑](#footnote-ref-8)
9. Ibid. [↑](#footnote-ref-9)
10. C40 Cities and McKinsey Sustainability – *Focused adaptation: a strategic approach to climate adaptation in cities,* July 2021, p.3. [↑](#footnote-ref-10)
11. Focused adaptation, pp3-4. [↑](#footnote-ref-11)
12. Focused adaptation, p.7. [↑](#footnote-ref-12)
13. Focused adaptation, p.9, and p.15.. [↑](#footnote-ref-13)
14. Focused adaptation, pp10-11. [↑](#footnote-ref-14)
15. Oxford City Council, Net Zero Oxford 2020-25 Action Plan, p.6. [↑](#footnote-ref-15)
16. Net Zero Oxford, p.15. [↑](#footnote-ref-16)
17. At present, plans remain in place in a small number of countries for hundreds of new coal mines: <https://www.carbonbrief.org/guest-post-hundreds-of-planned-coal-mines-incompatible-with-1-5c-target?fbclid=IwAR1luFRXMVRV-GmURGQrECB9ErD7R5q8PEnFXaRxy0bQkyjXfyvtsC1O86k> [↑](#footnote-ref-17)
18. See: <https://www.pbl.nl/sites/default/files/downloads/pbl-2020-trends-in-global-co2-and-total-greenhouse-gas-emissions-2019-report_4068.pdf> [↑](#footnote-ref-18)
19. Absolute Zero [↑](#footnote-ref-19)
20. Campaign for Climate Change useful source on this transition: <https://www.campaigncc.org/sites/data/files/Docs/one_million_climate_jobs_2014.pdf> & Green New Deal Group - <https://greennewdealgroup.org/wp-content/uploads/2013/09/Green-New-Deal-5th-Anniversary.pdf> & publications of Zero Carbon Britain – e.g. <file:///C:/Users/Steve/AppData/Local/Temp/Zero-Carbon-Britain-Rising-to-the-Climate-Emergency.pdf> [↑](#footnote-ref-20)
21. <http://climatereadyclyde.org.uk/gcr-adaptation-strategy-and-action-plan/> Hereinafter referred to as ‘Glasgow Plan’ with page numbers. [↑](#footnote-ref-21)
22. Glasgow Plan, p.9 & p.27. [↑](#footnote-ref-22)
23. Glasgow Plan pp46-47. [↑](#footnote-ref-23)
24. See the Electric Boat Association’s website on this topic: <https://www.electricboatassociation.org/> [↑](#footnote-ref-24)
25. Glasgow Plan, p.12. This is the first principle of the vision and Theory of Change underlying the Glasgow Plan. The other principles are shown on this page. See also for applicable policies: p.20. [↑](#footnote-ref-25)
26. Oxford City Council Carbon Reduction topic paper, undated p.1. <file:///C:/Users/Steve/AppData/Local/Temp/1_Carbon_reduction_topic_paper.pdf> [↑](#footnote-ref-26)
27. See: <https://news.un.org/en/story/2019/11/1052171> [↑](#footnote-ref-27)
28. Glasgow Plan p.13. [↑](#footnote-ref-28)
29. Glasgow Plan p.21. This would mean fundamental alterations to the existing City Plan, to Oxfordshire 2050 proposals and raises the need to transfer all OxLep funds to local councils in Oxfordshire to help them to meet their Adaptation needs. [↑](#footnote-ref-29)
30. Glasgow Plan pp28-29. [↑](#footnote-ref-30)
31. Glasgow Plan pp38-39. [↑](#footnote-ref-31)
32. Glasgow Plan p.51. [↑](#footnote-ref-32)
33. Zero Carbon Oxford, p.16. Other methods include adding to forest cover and hopefully biodiversity, which could mean far more TPOs in Oxford as well as an effort, perhaps with the County, to increase numbers of street trees. [↑](#footnote-ref-33)
34. See: <http://www.friendsoflyevalley.org.uk/news/index.html> [↑](#footnote-ref-34)
35. See: <http://climatereadyclyde.org.uk/theory-of-change/> [↑](#footnote-ref-35)
36. See in particular: <https://climateoutreach.org/reports/britain-talks-climate/> [↑](#footnote-ref-36)
37. <https://www.oxford.gov.uk/info/20129/environment_and_energy/499/environment_and_energy_statistics> [↑](#footnote-ref-37)
38. <https://roadtraffic.dft.gov.uk/local-authorities/142> [↑](#footnote-ref-38)
39. See City, Carbon Reduction paper, p.12. [↑](#footnote-ref-39)
40. The traffic increase was severe in London, which has seen traffic delays increasing due to traffic levels 30 per cent above pre-lockdown conditions, January 2020-January 2021. In the same period, the East of England experienced am overall rise of 5 per cent, the West Midlands 4 per cent and the South East 2 per cent - iNews 25th March 2021: <https://inews.co.uk/news/environment/traffic-car-communte-london-up-30-per-cent-since-before-covid-pandemic-929784> [↑](#footnote-ref-40)
41. Zero Carbon Oxford, pp88-89. [↑](#footnote-ref-41)
42. We suggest the Council engage with the Electric Boat Association - <https://www.electricboatassociation.org/> and electric boat manufacturers to consider what elements a policy to increase electric boats on our waterways may involve, and how the existing boat-dwelling community may be involved in the process. Also, more solar panels to meet the internal power needs of vessels could be made more accessible by supporting bulk purchasing to assist boat dwellers. [↑](#footnote-ref-42)
43. <https://www.oxfordmail.co.uk/news/national/19312373.ministers-urged-slash-bus-train-fares-get-passengers-back/> [↑](#footnote-ref-43)
44. See: <https://nic.org.uk/app/uploads//Running-out-of-Road-June-2018.pdf> [↑](#footnote-ref-44)
45. Oxford City Council – *Sustainability Appraisal scoping report,* June 2021, p. 6. [↑](#footnote-ref-45)
46. See Oxford City Council, *Community and Cultural facilities* paper. [↑](#footnote-ref-46)
47. See Community paper, p.3. [↑](#footnote-ref-47)
48. For a detailed discussion, see: John Whitelegg – *Mobility,* 2016. [↑](#footnote-ref-48)
49. The term ‘ground control’ refers to the privatisation of public space associated with the rise of shopping centres in particular, although similar restraints exist in access to Oxford University/College grounds. See: Anna Minton – *Ground Control,* 2012. [↑](#footnote-ref-49)
50. Sustainability Appraisal, p.7. [↑](#footnote-ref-50)
51. See for example, Sustainability Appraisal, p.8. [↑](#footnote-ref-51)
52. See Sustainability Appraisal, p.9. [↑](#footnote-ref-52)
53. Section 2.15, Sustainability Appraisal, p.9. [↑](#footnote-ref-53)
54. <https://www.oxfordmail.co.uk/news/17796922.oxford-smashes-record-hottest-ever-day-36-5c/> [↑](#footnote-ref-54)
55. See summary: <https://www.geog.ox.ac.uk/research/climate/rms/summary.html> [↑](#footnote-ref-55)
56. <https://www.oxfordmail.co.uk/news/17618597.oxford-average-temperature-rises-1-5c-hot-years-increase/> [↑](#footnote-ref-56)
57. <https://www.theguardian.com/environment/2020/apr/16/britain-climate-efforts-undermined-failure-imports-carbon> [↑](#footnote-ref-57)
58. <https://www.theguardian.com/environment/2020/apr/16/britain-climate-efforts-undermined-failure-imports-carbon> [↑](#footnote-ref-58)
59. <https://www.carbonbrief.org/in-depth-qa-the-uk-becomes-first-major-economy-to-set-net-zero-climate-goal> [↑](#footnote-ref-59)
60. From City’s Carbon Reduction paper, p.7. [↑](#footnote-ref-60)
61. See this at: <https://cohsat.org.uk/manifesto/?mc_cid=e381f13f30&mc_eid=a5941b5e76> [↑](#footnote-ref-61)
62. An introduction to what this may involve is provided by Dieter Helm – *Net Zero: how we stop causing Climate Change,* 2020. [↑](#footnote-ref-62)
63. Further details at: <https://www.oxford.gov.uk/news/article/1708/leaders_across_oxford_support_2040_net_zero_carbon_emissions_pledge> [↑](#footnote-ref-63)
64. <file:///C:/Users/Steve/AppData/Local/Temp/Oxford_Citizens_Assembly_on_Climate_Change_report_V14_CLEAN_FINAL_201119_PUBLIC.pdf> [↑](#footnote-ref-64)
65. See: Zero Carbon Oxford. [↑](#footnote-ref-65)
66. <https://sustainability.admin.ox.ac.uk/files/environmentalsustainabilitystrategy.pdf> [↑](#footnote-ref-66)
67. Zero Carbon Oxford, p.15. [↑](#footnote-ref-67)
68. See: <https://www.gvi.co.uk/blog/bhutan-carbon-negative-country-world/> & <https://www.nationalgeographic.com/travel/article/carbon-negative-country-sustainability> & <https://www.climatecouncil.org.au/bhutan-is-the-world-s-only-carbon-negative-country-so-how-did-they-do-it/> [↑](#footnote-ref-68)
69. Tim Lang – *Feeding Britain: our food problems and how to fix them,* 2020, pp148-152. [↑](#footnote-ref-69)
70. See: <https://inews.co.uk/inews-lifestyle/money/motoring/cities-vehicle-emission-taxes-end-year-1033605?ito=email_share_article-top>  [↑](#footnote-ref-70)
71. City Carbon Reduction paper, p.11. [↑](#footnote-ref-71)
72. Climate and Ecological Emergency newsletter, 3/2021. [↑](#footnote-ref-72)
73. Green Alliance, 2020, pp16-17. [↑](#footnote-ref-73)
74. <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2021/chance-of-temporarily-reaching-1.5-c-in-next-five-years-is-increasing> [↑](#footnote-ref-74)
75. Kevin Anderson – ‘..Twenty-four COPs on, annual carbon dioxide emissions are over 60% higher now than in 1990…..’ January 2019: <http://kevinanderson.info/blog/capricious-foes-big-sister-high-carbon-plutocrats-irreverent-musings-from-katowices-cop24/> [↑](#footnote-ref-75)
76. <https://www.downtoearth.org.in/news/environment/world-breached-safe-atmospheric-co2-levels-33-years-ago-64546> [↑](#footnote-ref-76)
77. Mark Lynas – *Our Final Warning: six degrees of Climate Emergency,* 2020. [↑](#footnote-ref-77)
78. See: <https://kevinanderson.info/blog/wp-content/uploads/2013/02/Stormont-Feb-13-PDF-Anderson-Climate-Change1.pdf> [↑](#footnote-ref-78)
79. Oxford City Council, *Air, Water and Land Quality topic paper,* p.1. [↑](#footnote-ref-79)
80. See for example: <https://www.theguardian.com/commentisfree/2021/jul/26/bus-privatisation-public-service-strategy-british-private-market?fbclid=IwAR3nCdXNuqNqkeZcOWgPiba_V9_SJzkZY-LGiT6Di_recCl4s7_38WOzTqw> [↑](#footnote-ref-80)
81. Oxford Mail, *No big return to the office with City workplaces quiet,* 4th August 2021. [↑](#footnote-ref-81)
82. *Air et al Quality* paper, p.2. [↑](#footnote-ref-82)
83. Tim Jackson, *Prosperity without Growth: foundations for the economy of tomorrow,* 2ND Edition, 2016. [↑](#footnote-ref-83)
84. *Air et al Quality* paper, p.6. [↑](#footnote-ref-84)
85. *Air et al Quality* paper, p.15. [↑](#footnote-ref-85)
86. POETS (Planning Oxfordshire’s Environment and Transport Sustainably) – *The Oxford-Cambridge Arc: a critical assessment by POETS,* July 2021, p.2 [↑](#footnote-ref-86)
87. *Air et al Quality* paper p.3. [↑](#footnote-ref-87)
88. *Air et al Quality* paper, p.5. [↑](#footnote-ref-88)
89. See: <https://www.eltis.org/discover/news/car-dependency-driven-deep-flaws-uk-transport-planning-system> & <https://www.transport-network.co.uk/Estates-without-footways-homes-without-transport/14106> [↑](#footnote-ref-89)
90. *Air et al Quality* paper, p.12. [↑](#footnote-ref-90)
91. *Air et al Quality* paper, p.12. [↑](#footnote-ref-91)
92. Infield et al, chapter 21. In addition, the City’s Oxford Local Plan 2040 Issues Paper suggests (p.10), shutters to reduce solar gain in buildings and reflective material on buildings. [↑](#footnote-ref-92)
93. See for the legitimacy of this concern: <https://jwp-nindia.public.springernature.app/en/nindia/article/10.1038/nindia.2021.100?WT.ec_id=NINDIA-20210721&sap-outbound-id=6522CADCC6FAF6D898CB2312CD4617D8BF569685> [↑](#footnote-ref-93)
94. *Air et al Quality* paper, p.4. [↑](#footnote-ref-94)
95. Biodiversity in the SE is already being undermined by unsustainable development. The UK is the most biodiversity-depleted of the G7 States, failing to meet 14 out of 19 obligations under the UN Convention on Biodiversity agreements which had a target date of 2020. FROM: POETS (Planning Oxfordshire’s Environment and Transport Sustainably) – *The Oxford-Cambridge Arc: a critical assessment by POETS,* July 2021, p.2 [↑](#footnote-ref-95)
96. Green Infrastructure, pp1-2. Section needs clear commitment and stronger forms of protection e.g. more Supplementary Planning Guidance documentation to prevent bad planning decisions. [↑](#footnote-ref-96)
97. Green Infrastructure, p.4. [↑](#footnote-ref-97)
98. Green Infrastructure, p.7. [↑](#footnote-ref-98)
99. Green Infrastructure, p.7. [↑](#footnote-ref-99)
100. Green Infrastructure, pp13-14. [↑](#footnote-ref-100)
101. Green Infrastructure, p.23. [↑](#footnote-ref-101)
102. Green Infrastructure, p.24. [↑](#footnote-ref-102)
103. Thanks to Judy Webb for this observation. [↑](#footnote-ref-103)
104. Oxford City Council, *Transport topic paper,* p.1. [↑](#footnote-ref-104)
105. Housing must be derived from the existing built environment, re-zoning of under-utilised industrial estate and Science Park land and designating all private and public car parks for dual use with housing: building around, above surface level, or with complete conversion to very low-cost housing. [↑](#footnote-ref-105)
106. Zero Carbon Oxford, p.33. [↑](#footnote-ref-106)
107. Ibid. [↑](#footnote-ref-107)
108. Transport paper, pp3-4. [↑](#footnote-ref-108)
109. Department of Transport, *Gear Change: a bold vision for cycling and walking,* 2020. [↑](#footnote-ref-109)
110. Transport paper, p.7. [↑](#footnote-ref-110)
111. Zero Carbon Oxford, p.69, pp71-73. [↑](#footnote-ref-111)
112. Green Infrastructure, p.18. [↑](#footnote-ref-112)
113. See: <https://www.scotsman.com/news/transport/pavement-parking-ban-delay-in-scotland-to-2023-angers-campaigners-3219838> [↑](#footnote-ref-113)
114. See: <https://www.woodlandtrust.org.uk/publications/2020/01/emergency-tree-plan/> [↑](#footnote-ref-114)
115. <http://www.righttrees4cc.org.uk/> [↑](#footnote-ref-115)
116. Thanks to Judy Webb for this reference: <https://www.tdag.org.uk/trees-planning-and-development.html>   [↑](#footnote-ref-116)
117. <https://sustainability.admin.ox.ac.uk/files/environmentalsustainabilitystrategy.pdf> [↑](#footnote-ref-117)
118. Green Alliance, 2020, p.13. [↑](#footnote-ref-118)
119. This was previously done in Kent. [↑](#footnote-ref-119)
120. Zero Carbon Oxford, p.66. [↑](#footnote-ref-120)
121. See for example: https://www.oxfordmail.co.uk/news/18991618.oxford-coventry-set-become-first-all-electric-bus-cities/ [↑](#footnote-ref-121)
122. Zero Carbon Oxford, p.21. [↑](#footnote-ref-122)
123. Green Alliance, 2020, pp12-13. [↑](#footnote-ref-123)
124. See: <https://www.sciencedaily.com/releases/2019/03/190312075933.htm> & <https://inews.co.uk/news/health/air-pollution-kills-64000-people-in-the-uk-every-year-268508> [↑](#footnote-ref-124)
125. PM2.5 means the mass per cubic metre of air of particles with a size (diameter) generally less than 2.5 micrometres (µm). Also known as fine particulate matter, PM2.5 is one 400th of a millimetre. [↑](#footnote-ref-125)
126. Extract from submission on the previous iteration of the Oxford City Plan. See full submission at [www.catg.org.uk](http://www.catg.org.uk) under OTHER RELEVANT SUBMISSIONS. [↑](#footnote-ref-126)
127. City Carbon Reduction paper, p.9. [↑](#footnote-ref-127)
128. <https://www.oxford.gov.uk/news/article/1482/air_pollution_in_oxford_increased_for_the_first_time_in_years_during_2019_due_to_extreme_weather> [↑](#footnote-ref-128)
129. This bid was successful. [↑](#footnote-ref-129)
130. Ibid. [↑](#footnote-ref-130)
131. David Lynch – *Air Pollution is City at the lowest level for 10 years,* Oxford Times 10th June 2021. [↑](#footnote-ref-131)
132. <https://www.oxfordmail.co.uk/news/17933638.buildings-responsible-80-oxfords-emissions---university-single-biggest-polluter/> [↑](#footnote-ref-132)
133. <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777682/fom_last_mile_road_freight.pdf> [↑](#footnote-ref-133)
134. <https://www.racfoundation.org/wp-content/uploads/2017/11/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf> From the Executive Summary. See also: <https://www.urbantransportgroup.org/system/files/general-docs/White%20Van%20Cities.pdf> [↑](#footnote-ref-134)
135. Zero Carbon Oxford, p.56. [↑](#footnote-ref-135)
136. Cycle tracks are needed, and shared space options should be available, to improve East-West and North-South options for cyclists in central Oxford. [↑](#footnote-ref-136)
137. Zero Carbon Oxford, p.15. [↑](#footnote-ref-137)
138. <https://www.businessinsider.com/tesla-electric-semi-truck-delayed-again-2022-now-2021-7?r=US&IR=T> [↑](#footnote-ref-138)
139. <https://www.theengineer.co.uk/hydrogen-fuel-cells-battery-hgvs/> [↑](#footnote-ref-139)
140. See: <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2021/May/IRENA_Green_Hydrogen_Supply_2021.pdf> & <https://news.climate.columbia.edu/2021/01/07/need-green-hydrogen/> [↑](#footnote-ref-140)
141. Zero Carbon Oxford, p.23. [↑](#footnote-ref-141)
142. For more detail on this see Essex, 2020, pp12-16. [↑](#footnote-ref-142)
143. See [www.catg.org.uk](http://www.catg.org.uk) and Facebook groups Liveable Oxford and Liveable Cowley. [↑](#footnote-ref-143)
144. See: <https://webarchive.nationalarchives.gov.uk/20111005180101/http://www.dft.gov.uk/publications/the-effects-of-smarter-choice-programmes-in-the-sustainable-travel-towns-full-report> [↑](#footnote-ref-144)
145. LTNs will increase property values for home owners and private landlords, so one might assume people in both categories would be calling for LTNs to be extended. We cannot see efforts by councils to make this clear to people so far. See: <https://www.livingstreets.org.uk/media/3895/pedestrian-pound-briefing-for-mps.pdf> [↑](#footnote-ref-145)
146. Transport paper, p.7. [↑](#footnote-ref-146)
147. Zero Carbon Oxford, p.20. [↑](#footnote-ref-147)
148. Transport paper, p.12. [↑](#footnote-ref-148)
149. <https://inews.co.uk/news/climate-change-flash-flooding-cities-1037926?ito=email_share_article-top>  [↑](#footnote-ref-149)
150. About 75% budget cut over 10 years. [↑](#footnote-ref-150)
151. Oxford City Council, *Flood risk and new development,* p.1. [↑](#footnote-ref-151)
152. See: <https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2> [↑](#footnote-ref-152)
153. Flood Risk paper, p.11. [↑](#footnote-ref-153)
154. <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/504682/ea-analysis-water-sector.pdf> [↑](#footnote-ref-154)
155. <http://www.friendsoflyevalley.org.uk/news/pdf/FoLV%20Supp%20Planning%20Guidance%20Lye%20Valley.pdf> [↑](#footnote-ref-155)
156. <http://www.friendsoflyevalley.org.uk/about/peat_carbon_in_fens.pdf> [↑](#footnote-ref-156)
157. <https://www.geog.ox.ac.uk/news/2020/20201102-wettest-october.html> [↑](#footnote-ref-157)
158. The Environment Agency has lost about 2/3 of its funding since 2010: <https://www.theguardian.com/environment/2021/jun/22/cutbacks-stopping-vital-work-on-river-pollution-and-floods-in-england-environment-agency> [↑](#footnote-ref-158)
159. ## Trees, Planning and Development: ﻿﻿﻿A﻿ ﻿﻿Guide for Delivery: <https://www.tdag.org.uk/trees-planning-and-development.html>

     [↑](#footnote-ref-159)
160. We are grateful to Judy Webb for the reference and observations. [↑](#footnote-ref-160)
161. See critical analysis of this City Plan which was quite out of date when written, and is not compatible with many aspects of seeking sustainable development for our City. Under OTHER RELEVANT SUBMISSIONS: <https://www.catg.org.uk/other-relevant-submissions/> [↑](#footnote-ref-161)
162. Grain – *The Great Climate Robbery: how the food system drives climate change and what we can do about it,* 2016. [↑](#footnote-ref-162)
163. See also: <https://grain.org/en/article/6435-what-does-factory-farming-have-to-do-with-the-climate-crisis> and other materials on their website. [↑](#footnote-ref-163)
164. <https://www.bbc.co.uk/news/business-55408788> [↑](#footnote-ref-164)
165. <https://www.foodsecurity.ac.uk/challenge/your-food-is-global/> [↑](#footnote-ref-165)
166. Briefing document on Food Security: Food and Agriculture Organisation of the UN: <http://www.fao.org/fileadmin/templates/faoitaly/documents/pdf/pdf_Food_Security_Cocept_Note.pdf> [↑](#footnote-ref-166)
167. <https://viacampesina.org/en/wp-content/uploads/sites/2/2018/02/Food-Sovereignty-A-guide-Low-Res-Vresion.pdf> See also, Campaign for Real Farming: <https://www.campaignforrealfarming.org/about/> [↑](#footnote-ref-167)
168. Oxfam report on this: <https://www-cdn.oxfam.org/s3fs-public/file_attachments/rr-extreme-weather-events-crop-price-spikes-05092012-en_0.pdf> & <file:///C:/Users/Steve/AppData/Local/Temp/sustainability-11-02547.pdf> [↑](#footnote-ref-168)
169. See for full details: <https://oxfordfoodhub.org/> & <https://goodfoodoxford.org/network/> [↑](#footnote-ref-169)
170. <https://www.oxford.gov.uk/info/20131/population/497/poverty_and_deprivation> [↑](#footnote-ref-170)
171. A comprehensive assessment of addressing our food needs is provided in: Tim Lang *Feeding Britain: our food problems and how to fix them,* 2020. [↑](#footnote-ref-171)
172. Colin Hines – *Localization – a global manifesto,* 2000; Helena Norberg-Hodge *Local is our future,* 2019 edition. [↑](#footnote-ref-172)
173. <https://goodfoodoxford.org/good-food-charter/> [↑](#footnote-ref-173)
174. Isabella Thompson et al, *Vocal for Local: why regional food systems are the future,* 2021. <https://landworkersalliance.org.uk/wp-content/uploads/2021/06/Vocal-for-Local.pdf> [↑](#footnote-ref-174)
175. Transport paper, p.2. [↑](#footnote-ref-175)
176. Figures have been repeatedly challenged by CPRE for Oxfordshire, and groups including Need Not Greed and POETS. [↑](#footnote-ref-176)
177. <https://www.oxfordmail.co.uk/homes/property_news_config/19392505.oxford-tops-list-least-affordable-locations-first-time-buyers/> [↑](#footnote-ref-177)
178. See for example: <https://www.independent.co.uk/news/uk/politics/covid-uk-immigrants-job-loss-b1787785.html> [↑](#footnote-ref-178)
179. From: <https://www.facebook.com/CPREOxfordshire> CPRE source for this evidence is [https://www.plumplot.co.uk/Oxfordshire-population-changes...](https://www.plumplot.co.uk/Oxfordshire-population-changes.html?fbclid=IwAR1zazwkkOfdKToAapYTE99b-nnrt2hqPWPpoZWpTyPvVCeBp2r1HlbDVTg) [↑](#footnote-ref-179)
180. Oxford, Carbon Reduction paper, p.4. [↑](#footnote-ref-180)
181. Schipper and Burton offer a concise summary of this problem and responses to it in Schipper, E. Lisa F & Burton, Ian eds. *The Earthscan Reader on Adaptation to Climate Change,* 2009, pp1-8. [↑](#footnote-ref-181)
182. <https://www.ipcc.ch/site/assets/uploads/2018/05/2nd-assessment-en-1.pdf> [↑](#footnote-ref-182)
183. Moser, Susanne C and Boykoff, Maxwell F., eds – *Successful adaptation to Climate Change,* 2013, p.7. [↑](#footnote-ref-183)
184. T. Forsyth in Schipper et al – eds - *Community-based adaptation to Climate Change: scaling it up,* 2014, p.90. [↑](#footnote-ref-184)
185. World Commission on Environment and Development – *Our Common Future,* 1987, p.43. See also Lang, 2020, pp199-201 for the relationship between sustainability and changing the Food system. [↑](#footnote-ref-185)
186. See for such caution: <https://www.researchgate.net/publication/345326366_Assessing_Carbon_Capture_Public_Policy_Science_and_Societal_Need> & Rachel Smolker – *Negative Emission Technologies: can they deliver? –* December 2020, Biofuelwatch. Concise, cautionary piece about the problems of these technologies that have yet to be addressed: <https://www.biofuelwatch.org.uk/wp-content/uploads/BFW_NETS.pdf> [↑](#footnote-ref-186)
187. Jonathan Essex – *What would a UK climate emergency plan that faces up to climate reality look like?* Green House, May 2020, pp6-8. <https://www.greenhousethinktank.org/uploads/4/8/3/2/48324387/climate_emergency_plan_that_fucr_may20.pdf> [↑](#footnote-ref-187)