**REPORT: Adapting Oxford to the Climate Emergency: transport and the use of green spaces**

**Second edition – December 2021**

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**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 and private sector market failures and obstructionism. 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. DEFRA has suggested that adaptation is the only way to cope with change of climate and extreme weather in the future. They have also pointed out that early and effective action for mitigation will reduce adaptation costs in the future.[[1]](#footnote-1) 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. The European Commission has said:

“People, planet and prosperity are vulnerable to climate change, so we need to prevent the un-adaptable and adapt to the un-preventable. And we must do it faster, and in a smarter and more systemic way.”[[2]](#footnote-2)

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[[3]](#footnote-3), then carbon negative Oxford, and ultimately by a global reduction of carbon dioxide in the atmosphere to 350ppm or less.

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**PART ONE: CONTEXT AND GREEN SPACE**

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

Awareness of human-induced Climate Change began with an intervention by James Hansen of NASA in June 1988, in the US Congress. If a global response based on his evidence had cut emissions globally at just 2% a year at that point then we would now have a two out of three chance in keeping below 1.5 degrees C of warming. Ideas about market-based approaches and ‘incremental changes to legislation and taxes’ were predominant responses.[[4]](#footnote-4) However, these considerations were never applied rigorously – resulting in an increase in carbon dioxide in our atmosphere of about 60% from 1992 to the present, and supplementary additions from other greenhouse gases such as methane.

How should we judge COP26 at Glasgow, held in November 2021? The clue is in the number:

* 26 Climate conferences, beginning in 1995, have failed to reduce global carbon dioxide emissions, or make notable progress in addressing the issue of other greenhouse gases arising from human action, or reduce global temperatures;
* “If incumbent governments and incumbent high-emitting businesses are the main players in defining pathways to reach zero emissions, they will only consider mitigation options that are direct substitutes for the activities that cause emissions today. Their goal is that mitigation should be delivered in such a way that voters/consumers don’t notice. Thus: fossil-aviation will be replaced with ‘jet-zero’ aviation; blast-furnace steel will be replaced with hydrogen-steel; ruminant emissions, which cannot be avoided, must be countered with ‘negative emissions technologies.’ The political discussions at COP26 only considered solutions of this form.”[[5]](#footnote-5) Examination of the content and implications of such discussions suggested that the ‘solutions’ cannot even be delivered.[[6]](#footnote-6)
* ‘Net Zero’ is undefined, unregulated and relies on improbable levels of technological change and offsets occurring during the current decade if impacts upon even distant goals like 2050 for achieving Net Zero Carbon are to be achieved. In short, there is no substitute for making deep cuts in emissions each month before 2030, if we are at all serious about dealing with the Climate Emergency – in Oxford, in the UK and globally.

“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.”[[7]](#footnote-7) Transport was the largest source of UK air pollution in 2019, reaching a third of all carbon dioxide emissions.[[8]](#footnote-8) “There has been no net reduction in carbon or energy from UK transport since 1990.”[[9]](#footnote-9)

Has the UK Government response improved as the Climate Emergency has worsened? A 75% cut in Environment Agency spending in the last ten years and a feeble Environment Bill suggest it has not. The Environment Agency has said:

“Climate adaptation is integral to everything the Environment Agency does.”[[10]](#footnote-10)

In the absence of sustained UK progress or global reductions in greenhouse gas emissions, it is not surprising that the Environment Agency sees significant climate impacts as ‘inevitable.’[[11]](#footnote-11) This places, in practice, a burden on other statutory, private sector and voluntary bodies, and households, which cannot be expected to be successful in many areas. For Oxford, as elsewhere, the Agency sees five major areas of impacts:

* The Agency cannot protect everyone from increasing flood risks
* Climate Change will make supplying water of good quality and in quantity more difficult
* Environmental regulation is not currently equal to the challenge of a changing Climate
* Ecosystems cannot adapt as quickly as the Climate changes
* More and worse environmental incidents will occur[[12]](#footnote-12)

Bearing these exceptionally serious challenges in mind, the Environment Agency has an eight-part approach to adaptation,[[13]](#footnote-13) which has to ‘dove-tail’ with whatever Oxford City Council and the County Council may succeed in doing:

* Thinking differently as ‘business as usual’ is not an option
* Creating partnerships for adaptation
* Private and public finance for adaptation
* Working with nature by addressing biodiversity and climate crises simultaneously
* Designing low carbon futures and a low carbon economy
* Strengthening community resilience
* Helping businesses adapt through regulation and advice
* Demonstrate what it takes to live better when the climate continues to change

A current problem is that achieving adaptation progress is difficult to conceive within the limitations of the overall tax base. Attempting to address the Climate and ecological emergencies and achieve a just transition to sustainability is suffering from the political equivalent of Neville Chamberlain declaring war on Germany on 3rd September 1939 and proposing to make radical cuts in defence spending on the same day. Councils that have declared a Climate Emergency but are severely constrained financially appear to be numerous; failure of Government to compensate councils for spending on Covid 19 is not helping.

We should note that City dwellers are not equal. It can be argued, with evidence, that we are all witnessing the theft of a decent Climate by polluting corporations and the wealthiest of consumers from the rest of us and future generations. From a leaked major IPCC report:

“The top 10% of emitters globally, who [are the wealthiest 10%](https://www.theguardian.com/environment/2020/sep/21/worlds-richest-1-cause-double-co2-emissions-of-poorest-50-says-oxfam), contribute between 36 and 45% of emissions, which is 10 times as much as the poorest 10%, who are responsible for only about three to 5%, the report finds. “The consumption patterns of higher income consumers are associated with large carbon footprints. Top emitters dominate emissions in key sectors, for example the top 1% account for 50% of [emissions from aviation](https://www.theguardian.com/environment/ng-interactive/2019/jul/19/carbon-calculator-how-taking-one-flight-emits-as-much-as-many-people-do-in-a-year),” the summary says.”[[14]](#footnote-14)

There are, it should be noted, concerns about how the IPCC may under-state risks, in part due to political involvement in the process of finalising its reports. It has been accused of underestimation of current and future warming, excluding feedback mechanisms and making potentially dangerous assumptions about risk. It has been argued that 1.5 degrees of warming is likely to be reached before 2030, and that evidence suggests there is no available carbon budget to be used if this is to be prevented, particularly as they rely on improbable levels of drawdown from the atmosphere. Specifically, the IPCC fifth assessment report showed a budget of 400 gigatonnes of carbon dioxide for 2011-2100 in order to stay within the 1.5 degree C threshold. However, emissions 2011-2019 exceeded this amount, meaning the budget from 2020 onwards concerning 1.5 degrees as a goal became zero.[[15]](#footnote-15)

The high emissions path the planet is currently on promises 3-5 degrees C of warming by 2100, meaning the planet would need zero emissions by 2030 at the very latest to remain within the 2 degree C threshold. For the UK, its role in keeping below 2 degrees of warming gives a window of about 7-9 years to reach zero emissions.[[16]](#footnote-16) Research suggests the IPCC has under-estimated recent warming by 0.3 degrees C, which has the effect of halving the allowable carbon budget for remaining below 2 degrees C.[[17]](#footnote-17)

Sir David King, formerly Chief Scientific Adviser for the UK Government, has said:

“Where we are today at just over 500 parts per million of carbon dioxide, methane and NOx [greenhouse] gases, we have already passed the tipping point [for systemic Arctic and Greenland systems change], we are already into a negative carbon budget. There is much discussion about how much carbon budget there is left to burn, and there is none, we have already burned far too much and we need to go into reverse.”[[18]](#footnote-18)

Consequently, we are in a combined Climate and ecological emergency and the terms of climate complacency – climate breakdown, climate crisis – should be discarded. Adaptation will be necessary due to failures to achieve deep cuts in carbon emissions globally in the period since 1990, and deep cuts are needed now to avert damaging temperature increases adding to the global impacts of warming so far. But, in 2019, only 25% of Climate funding was for adaptation. Worse, a large part of Climate finance and especially for adaptation, is loans requiring repayment – adding to the debts of poorer States.[[19]](#footnote-19) The European Commission has noted:

“Recent projections estimate global warming of up to 4 degrees C by 2100 under current climate policies, and around 3 degrees C if all countries meet the Nationally Determined Contribution targets of the Paris Agreement.”[[20]](#footnote-20) Pledges made at COP26 may improve on the 3 degrees C estimate IF all countries keep to their pledges, but past experience is not encouraging.

The European Commission has also expressed concern that halting greenhouse gas emissions would still mean that “substantial adaptation efforts would still be required.”[[21]](#footnote-21) Greenhouse gases will remain in the atmosphere in the long-term, requiring a consistent decades long effort to adapt to the consequences of their presence.

We should note that, like Oxford with its 2040 Net Zero target, the EU has yet to adopt an adaptation strategy which has: “.. concrete, measurable and time-bound targets for the EU and Member States to become climate resilient.”[[22]](#footnote-22)

Given uncertainty about future Government financial support for Climate policy including adaptation policies by local government, local councils need to consider the cheapest possible options for adaptation to Climate Change, implying engagement with voluntary, public and private sector bodies to support this effort. In the case of Oxford, this will require a ‘roll back’ of the City Council’s enthusiasm for the development of greenfield sites which form a critical part of a future Adaptation strategy for the City.[[23]](#footnote-23) Essentially, the City needs a consistent support providing or enhancing existing nature-based solutions for climate change and disaster risk reduction.[[24]](#footnote-24) Green spaces have value for drainage and flood prevention at times of extreme rainfall events, maintaining lower temperatures in the City as part of combatting the ‘urban heat island’ effect in Oxford, maintaining and potentially improving biodiversity and wildlife corridors in the City. This can ensure quiet areas without lighting are protected for their value to diverse species including people living nearby and is consistent with any reasonable notion of a Green New Deal. They offer opportunities for tree planting and peatland restoration to mitigate climate change, as well as amenity value to people.[[25]](#footnote-25)

Our biodiversity is regrettably now part of the ecological emergency inter-linked with the Climate Emergency. The UK is one of the most nature-depleted countries in the world, ranked 189 out of 218 countries. 90% of wetland habitats have been lost in 100 years; about 66% of existing species show decline; 41% of species have declined since 1970; of 8431 species examined, 15% face extinction.[[26]](#footnote-26) Despite this, our City Council planning decisions do not take the environment into account sufficiently.

UK Climate policy is to reduce greenhouse gas emissions by 78%, by 2035, against a 1990 baseline.[[27]](#footnote-27) However, precise plans to achieve this are not in evidence at present. Worse, Government support for road-building, aviation, super-expensive nuclear power and handouts on various pretexts to private sector organisations during the Covid 19 crisis are all examples of how this objective is not being consistently pursued. The 10 warmest years known to have occurred in UK records have all been since 2002; rainfall went up 4.5% mid-1970s to mid-2010s; six of the wettest years recorded for the UK 1862 onwards have all been since 1998.[[28]](#footnote-28) But our Government ignores evidence freely as if future generations need not be considered.

It should be noted that nature-based solutions can be very small scale, applying to single buildings or streets. Rainwater harvesting, green walls and roofs, how gardens are designed, how water permeation on plots is retained indefinitely by ensuring long-term permeable surfaces are all small measures of value in the general adaptation effort.[[29]](#footnote-29) Street trees have the capacity to take in about 6.7 cubic metres of water per year, reducing sewage water overflow events,[[30]](#footnote-30) provided the City Council strongly encourages tree preservation orders and retention of trees by property owners. We should also note:

“Street trees are associated with slower cars, better air quality, moderated energy usages and happier and healthier residents. One study found that the presence of trees reduced speeds by seven to eight miles per hour.”[[31]](#footnote-31) It was also observed that street trees tend to cut car crashes and improve air quality.

In general, the City Council and other councils needs to build adaptive capacity which will include consistent gathering and sharing of relevant information, and creating and maintaining a supportive institutional framework. This framework needs to include all statutory bodies; the private sector; households; many types of voluntary organisations. From this basis, the City needs to deliver adaptation actions to avert or alleviate impacts and build resilience. The above implies costs would be shared across society as part of a common effort. Within the concerted efforts, cost effective actions which provide results exceeding costs need to be included: such as tree planting, hedges inside school boundaries and restoration of peatlands within the City; low cost measures with large benefits need to be considered as part of this process, including measures which cut across sectors with a variety of benefits. These could include a general reduction in internal combustion engine (ICE) vehicles in Oxford as a contribution to cutting emissions, improving air quality, allocating more road space to walkers and cyclists in the interests of public health and pedestrianizing a much larger area of central Oxford which would have benefits to all users and to businesses with improved footfall as research shows occurs in newly-pedestrianised areas. It cannot be emphasised enough that the overall adaptation effort would become part of Council policy indefinitely.

Urban trees store carbon, but need to be carefully chosen by species and for locations if they are to be retained in the long-term. Management activities, if needed, should be minimal and no longer involve the use of fossil fuels.[[32]](#footnote-32)

Greening the urban environment includes ensuring LTNs have appreciably more permanent planting than has been done so far, making areas both more attractive and providing them with more shade. Playgrounds in schools and elsewhere can be made greener too. Linkages between levels of traffic and the importance of green space to help mitigate them should be made in policy since there are risks the UN Sustainable Development Goals will not be met if this is not done effectively. Also, since ‘..negative externalities of transportation congregate in cities..’ more walking and cycling and a declining role for cars[[33]](#footnote-33) need to be high priorities for local councils.

Oxford is a major tourist destination with two universities. Consequently, we may consider its transport footprint, including aviation, to be substantial under normal conditions. The Government has chosen to: ignore the Committee on Climate Change advice to curb aviation growth made in December 2020; place reliance on unknown technologies to reduce aviation emissions; construct a non-strategy likely to lead to a 14% increase in UK aviation emissions by 2050; made no apparent attempt to stop airport expansion plans.[[34]](#footnote-34)

More than half of those who work in Oxford do not live in the City. At present, avoidance of public transport due to Government messages during the pandemic has increased car movements above pre-pandemic levels – and increased online shopping means more delivery vehicles too. It should be noted that online shopping peaked in 2020, under lockdown, at 33% of retail sales but dropped back towards an estimated steady figure of 23% more recently. British shoppers do spend more online than any other European country,[[35]](#footnote-35) so price pressures may push people back online in the search for lower prices e.g. for Xmas. Happily, there are signs of increased bus use (October 2021), with the new students and what appears to be some increased shopping perhaps for Xmas 2021. However, cuts to bus services announced late in November 2021 will cause more car journeys in Oxford, and into Oxford.

The new normal that follows the global pandemic may take some years to reach before we can judge its lasting transport effects. Unfortunately, the Local Transport Plan 4 predicted that, by 2031, Oxford would have 26,000 additional trips – half of which would be commuter trips.[[36]](#footnote-36) With an estimated 40% bus increase as well, it is exceptionally difficult to see how such journeys by vehicles could be accommodated inside Oxford’s crammed road space. The Oxford LCWIP indicates that cycling, walking and bus use must increase to accommodate all of the increase. But current policies are nowhere near to suppressing car use or switching deliveries to cargo bikes as much as possible from delivery vehicles. Car parking reductions, electronic road pricing, far better walking and cycling networks must all be implemented. However, some key bus routes are evidently at capacity – for example the High Street and St.Aldates – and far too much space is allocated to buses in the central area instead of pedestrianised areas with cycle tracks. With about 300,000 cycle journeys each week in Oxford, far more space for cycling needs to be provided.[[37]](#footnote-37)

It is surprising that Oxford City Council, and the County Council, have yet to consider that adaptation to Climate Change requires a comprehensive overall package of policies for the very long-term. The UK Government has been developing a National Adaptation Programme[[38]](#footnote-38) with many implications for local level policy development. They recommend, for example:

* Public, private and third sector efforts to protect those at most risk of harm
* Flood risk should appear in adaptation reporting from organisations dealing with infrastructure
* Increased and better-quality Green infrastructure is needed – with clear implications of getting rid of the City Council’s predilection for building on greenfield sites both within and outside the City cordon.
* Addressing water leakage – although how this will ever occur without water industry renationalisation is a question[[39]](#footnote-39)
* Protection of soils and natural carbon stores – including peatlands,[[40]](#footnote-40) which may involve restoration efforts
* An effort to deal with invasive species

It should be emphasised that these policy actions, and others related to adaptation, will be needed indefinitely. The National Adaptation programme documentation notes:

“Adaptation, by its very nature, needs to be seen in the context of a changing climate over a long period of time. It is recognised that the process to adapt takes place over decades.”[[41]](#footnote-41) This report includes adaptation measures that may be required from the present to 2100 and beyond.

The Government assumes civil society, local government and private and public sectors will address Adaptation.[[42]](#footnote-42) The use of the Place-based Carbon Calculator[[43]](#footnote-43) may help, but more hard cash is needed to fund local government in particular. The current overall tax base is not equal to this challenge, just as it is too small in scale to address many UK needs. References to the exposure of our severely under-funded railways to the effects of worsening Climate Change are very telling on this point.[[44]](#footnote-44)

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.”[[45]](#footnote-45)

And a carbon negative planet must be a goal too.

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,[[46]](#footnote-46) mean that abrupt, radical cuts in emissions are going to require exceptionally rapid measures comparable to wartime conditions. This is justified since global freight is forecast to triple by 2050; airfreight, as the most Climate damaging aspect of this, is expected to have a 500% increase.[[47]](#footnote-47) 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. Anable and Goodwin have stressed that we now face two futures:

* Runaway Climate Change
* Accelerated decarbonisation, including ‘deep reductions’ in fossil fuel-powered traffic[[48]](#footnote-48)

2050 is also 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.[[49]](#footnote-49)

The Committee on Climate Change has identified the highest priorities for adaptation policies required in the two years from 2021. It has also specified 10 principles for good adaptation. Probably the most important of these, from the basis of this report, is to ‘integrate adaptation into other policies.’[[50]](#footnote-50) Most of these priorities and principles have transport elements and touch upon the use of land and green spaces.

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 political 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. This makes for a challenging ‘mission to explain’ to the public why what is being done is essential. 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 Government 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

Transport is a worsening sector in the Climate Emergency because it continues to expand. For example, current Government decarbonisation plans for surface transport are likely to lead to an 11% increase in traffic 2021-2050 and a 28% increase in car ownership by 2050.[[51]](#footnote-51) Carbon emissions from ALL transport need to decline to zero by 2050,[[52]](#footnote-52) and clearly much earlier would be better.

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.[[53]](#footnote-53)

Beginning to apply this discussion specifically to Oxford and Adaptation, this 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, involving cooperation with the County Council in some areas and dependent on changes in Government policy towards local government in others. 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 sustainable environmental policies, and to 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.[[54]](#footnote-54)
* No accepted consensus on what Net Zero Carbon means,[[55]](#footnote-55) or global regulation of offsetting and agreed definitions of what is acceptable. No general recognition that Net Zero carbon is primarily a means to allow polluters to continue polluting in the absence of details against which enforcement might be applied. Examination of Net Zero plans finds 80% do not have robust criteria, lack substance and do not have short-term ambition.[[56]](#footnote-56) Worse, there is no carbon budget left to allow us to remain below the 1.5 degree C threshold.[[57]](#footnote-57) The UK Government has made much of its Net Zero commitment but proposes, as of October 2021 in its Net Zero Strategy to spend about 0.05 of GDP on it. The strategy is also dependent on technologies not yet present in the UK. Matters that might be addressed in it such as completing rail electrification, cutting aviation or reducing ruminant herds, have no commitments in this Strategy.[[58]](#footnote-58)
* Obligations for local government to meet the challenge of adaptation to Climate Change without an obvious tranche of money to make this very long-term local government function a financial possibility.[[59]](#footnote-59) And we should note that the Revenue Support Grant cut during the recent decade has reduced normal local government funding by 38%.[[60]](#footnote-60)
* “The lack of local authority powers and responsibilities in the UK and Ireland…has been highlighted recently by several commentators as a major barrier impeding the transition to a low carbon future.”[[61]](#footnote-61)
* “Build Back Greener” accounts for only about 17% of recovery funding from the pandemic, compared to an EU average of 30% and 47% in Germany.[[62]](#footnote-62) Much of this should have been used to reinforce Climate and ecological emergency priorities in local government, including sustainable retrofitting of council housing.

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. Revaluation of properties for council tax needs to be done, followed by Land Value Taxation to create a new long-term basis for the provision of most local government funding. High speed internet roll-out to allow as many people to work at home as possible is very important to strengthening the mixed economy in a City like Oxford.[[63]](#footnote-63)

Adaptation could mean nature-based solutions including management of river catchments, planting street trees, and specifically nature-based sustainable urban drainage solutions.[[64]](#footnote-64) Resilience to the effects of Climate impacts requires building more risk assessment into City planning processes.[[65]](#footnote-65) 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.[[66]](#footnote-66) 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.[[67]](#footnote-67) 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.[[68]](#footnote-68)

Researchers at the Tyndall Centre of the University of Manchester have offered a concentrated assessment of how each local council area can meet the Paris Agreement targets. It should be borne in mind that the UN has pointed out that the Paris Agreement targets if achieved would still mean reaching 3.2 degrees C of warming, far beyond the desired 1.5 degrees C.[[69]](#footnote-69) More recently, UN officials were indicating that the revised nationally-determined contributions of States prior to the COP26 conference in Glasgow in November 2021 would still lead to at least 3 degrees C of warming – in part because of the absence of improved action by some of the major polluting states.[[70]](#footnote-70) So arguing for the Oxford area to play its part in helping to meet the Paris Agreement goals may well not be enough, especially as aviation, shipping and import-related emissions are not included in the researchers assessment. The researchers do argue that:

* Oxford’s entire carbon budget for 2020-2100 will be exhausted within 7 years from 2020.
* Cuts in emissions of 12.5% per year are needed to meet even the Paris targets.[[71]](#footnote-71) This level of cuts is needed each year to 2100.
* Oxford’s role in creating aviation and shipping emissions should be tackled.[[72]](#footnote-72) The Government is proposing to include international (not domestic) aviation and shipping emissions in the UK carbon budget, but only in 2033[[73]](#footnote-73) which makes policy initiatives to achieve cuts in these emissions before that date unlikely. Having cut Air Passenger Duty on domestic flights in the October 2021 Budget, this inclusion looks fragile at best.

Clearly radical and necessary steps will be easier to achieve with something resembling a consistent approach from the UK Government. But deeper and faster cuts would be better for people and planet. The planet needs to be at zero emissions by 2030 to remain within the 2 degree C threshold target for warming. Double digit percentage cuts in greenhouse gas emissions are required in the implemented annual policies of developed States.[[74]](#footnote-74) To put this another way:

“There is no longer any gradualist solution which, for example, might allow the existing economic approach to be preserved with even substantial change. Discontinuity and disruption are now inevitable: either by moving too slowly and allowing a climate-warming physical and social catastrophe, or moving at the emergency speed necessary to achieve a ‘big minus’ goal of returning the Earth to a safe Climate.”[[75]](#footnote-75)

When perhaps as little as 3-5% of Covid 19 ‘stimulus funding’ has been directed specifically to a ‘green recovery’[[76]](#footnote-76), we should note there was a global pattern of Government actions that were unlikely to result in progress at COP26. It certainly seems unlikely that ‘..over the course of the next decade technologies and policies will change.”[[77]](#footnote-77) This is not likely in terms of the availability and scale up of carbon capture and permanently secure storage, electric shipping or electric aviation or ending the use of fossil fuels in the production of cement or steel. We should note:

“Beyond a single demonstrator, there has never been any capture of carbon dioxide from a coal fired power station chimney with that captured carbon then being stored underground.”[[78]](#footnote-78)

Also, achieving Net Zero would require a minimum of 25% of the Planet’s agricultural land and possibly as much as 80%. This conflicts with feeding 8-10bn people on our Planet, expected to be present by mid-century.[[79]](#footnote-79) Such planting would require prodigious amounts of water on a Planet with a scarcity of fresh water and problems ensuring equitable supply to those who need it. Policy innovation is needed urgently in these areas. Governments did not offer clear signs of policies or measures likely to result in radical emissions cuts either, in the preparations for COP26 or its final results.

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 zero emissions by 2030 at the latest. Our reasoning is partly that States which can attain early carbon neutrality and then zero emissions, can help to compensate for laggard States such as Australia, China, Poland, Russia, the US and others.[[80]](#footnote-80) 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.[[81]](#footnote-81) The UK, as the first industrial country, should take responsibility for its historic emissions, aiming to reach zero carbon as near as possible to 2030.[[82]](#footnote-82) 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.[[83]](#footnote-83) 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,[[84]](#footnote-84) offering Oxford a model in addition to the content of the current document. In fact, about 62% of UK cities have adaptation plans although with difficulties meeting the financial obligations involved.[[85]](#footnote-85) Some of these plans are very limited, unlike the Glasgow Plan. 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.[[86]](#footnote-86)
* Recognising the value of waterways and standing water in Adaptation policies,[[87]](#footnote-87) which could include an increased role for electric boats for transportation.[[88]](#footnote-88)
* ‘More of the same will not do. An effective response to climate change will require a revolutionary and systemic approach.’[[89]](#footnote-89) A more fundamental approach has been referred to as ‘transformational adaptation’, addressing both the current adaptation deficit and the idea that incremental measures will be enough.[[90]](#footnote-90) System change and not simply minor reforms is clearly necessary for both actual emissions mitigation and adaptation to the Climate Emergency. This principle challenges ideas of economic growth which fail to reduce consumption and therefore transport of goods from around the world to Oxford, which is making a nonsense of City Climate goals. The notion of a circular economy needs to made operational in the conduct of Oxford’s mixed economy.
* Transformational adaptation implies that the embedded carbon of new buildings needs to be addressed by using the existing built environment first to meet new needs. More generally, Growth is not acceptable where any aspect of it is causing additions to greenhouse gas emissions, or raising consumption of finite resources, or generating more polluting traffic, or recklessly consuming greenfield sites. 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.[[91]](#footnote-91) 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.
* A sustainable welfare State is possible without Growth as conventionally measured. Since growth-dependent States are adding to the Climate Emergency, it is not surprising that 11,000 scientists have called for growth to be quickly curtailed on the grounds of maintaining long-term viability of the biosphere: this involves shifting from growth in GDP towards meeting the basic needs of people and reducing inequality.[[92]](#footnote-92) The basic needs of people can only be met by addressing the Climate and ecological emergencies with urgency.
* 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[[93]](#footnote-93) – 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.[[94]](#footnote-94)
* 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.[[95]](#footnote-95)
* Enabling adaptation will include engaging with public and private sector bodies, communities and organisations to encourage involvement in adaptation Policy and its financing.[[96]](#footnote-96)
* 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.[[97]](#footnote-97)
* The Plan notes an initiative in Paris to ‘green’ 800 concrete schoolyards.
* The Plan is to deliver: 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.[[98]](#footnote-98)
* The Plan draws attention to the importance of peatlands as carbon sinks. Similarly, the City Council has noted the importance of peatlands for Greenhouse Gas Removal.[[99]](#footnote-99) In Oxford, the Lye Valley SSSI and nature reserve is part of over 11 hectares of peatland in variable condition in the same area which are capable of being re-wetted to improve their climate and ecological roles.[[100]](#footnote-100) But the City does not have a City-wide Supplementary Planning Document for the preservation and restoration of all peatlands within Oxford’s boundaries yet.[[101]](#footnote-101) The Committee on Climate Change has stressed the importance of peatland restoration.[[102]](#footnote-102) It should be noted that about 94% of the UK’s biogenic terrestrial carbon is stored in our soils, especially in peat,[[103]](#footnote-103) making its conservation a vital part of the Climate Emergency effort. Unfortunately, poor management of UK peatlands means they are currently emitting about 16 million tons of carbon dioxide equivalent each year,[[104]](#footnote-104) making their restoration a key objective for environmental policy.
* 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.[[105]](#footnote-105) In the Oxford context, *Climate Outreach* has done a considerable amount of work on persuasion and education about the Climate Emergency.[[106]](#footnote-106)

To give another example, the *Essex Climate Commission* has prepared a report on making Essex carbon neutral.[[107]](#footnote-107) Some points of interest, and probably of relevance to Oxford, and perhaps Oxfordshire:

* “Sustainable land stewardship can a) absorb carbon by increasing organic matter in plants, roots, and soils; and b) lower carbon use through less artificial inputs.” (p.16) This places a permanent constraint upon using greenfield sites for new development in places like Oxford.
* Amongst the many benefits of greening the urban environment is that it will “..improve the mental and physical health and wellbeing of residents.” (p.18) Clearly, the image of Oxford to tourists and students can also be enhanced. It is suggested that urban areas should have a target of 30% greening (p.19).
* City and County could adopt the use of ‘warm tarmac’, a form of asphalt using less energy when mixed and laid, and reducing carbon emissions by over 25% (p.45).
* Traffic congestion is a major economic burden. The calculated direct and indirect losses it caused in 2017 alone was about £37.7bn (p.46). There is, of course, no road-building solution to this problem. Road traffic reduction is needed to allow those vehicles that are on the road as a result of necessity to move more easily.
* Targets for walkable neighbourhoods and school streets have been set in Essex (p.48). City and County should cooperate in setting ambitious targets for Oxford too.
* The Commission supports road tolling, charges for car use in City centres, reducing city centre car parking, increased pedestrianisation, car sharing and five workplace levy initiatives (p.49). It should be noted that the RAC is amongst those organisations supporting Electronic Road Pricing, and that *Cowley Area Transport Group* has done a report on applying this approach to Oxford.[[108]](#footnote-108)
* More re-use, repair and recycling is envisaged in Essex – all with positive implications for traffic reduction, and imports (p.59).
* “Every Parish to have a Climate Emergency strategy.” (p.63)

From the Essex Action Plan, these points are of note:

* Action is need to prevent flooding that disrupts public transport.[[109]](#footnote-109)
* Under conditions of ice and snow, a pre-wet method of using salt will allow it go further on roads and pavements as it will stick to the ground. This also controls how much it might reach neighbouring vegetation (p.7).
* Staff unable to get to work due to weather conditions will benefit from a consistent effort to ensure that front line services can be supported by home working, whenever practical (p.9)
* “Non-fully hardy tree species suffering in hard winters. Late frosts and cold weather causing drought conditions in frozen ground affecting onset of spring growth – early flowering/leafing trees affected. Increased snowfall = loading on branches not adapted to significant snowfall increasing the likelihood of limb/tree failure especially in certain species (p.8).”
* There is a potential risk to infrastructure due to excessive heat, possibly leading to shutdowns in some types of equipment. Protection measures may include air conditioning (p.12), but this raises electricity costs so means of cooling avoiding this need to be investigated.
* Road melting and bridge expansion can both occur under prolonged spells of heat. Speed restrictions may be needed but ideally pre-examination of the most vulnerable locations should give rise to emergency actions which can be readily implemented (p.12).
* Hotter temperatures can be accompanied by a rising concentration of air pollutants, sun scorch on native trees with thin bark and increased watering requirements for many species. The pressure of higher temperatures will increase the need for a larger tree canopy in areas of pedestrian movements (p.13).

In addition, some points from the Cambridge City Council Climate Change Adaptation Plan[[110]](#footnote-110):

* The Plan envisages more surface water and river flooding, with a wide variety of impacts and an extensive range of health impacts from hotter summers (p.10).
* “Recent research by the Joseph Rowntree Foundation found that poverty can increase the vulnerability of individuals and communities to climate change impacts. The extent to which individuals are able to cope with the impacts of climate change is influenced by the interaction between personal factors (e.g. health, age), social factors (e.g. income, neighbourhood cohesion, isolation), and environmental factors (e.g. building quality, green space).” The report stresses, in consequence, the need for long-term resilience as a goal (pp10-11).

Transport emissions in Oxford declined by 8% 2005-2014.[[111]](#footnote-111) Unfortunately, transport emissions for Oxfordshire as a whole mimic this dip but are then followed by rising emissions to 2019.[[112]](#footnote-112) 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,[[113]](#footnote-113) 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.[[114]](#footnote-114)

Government is clearly not helping. We agree that:

“Local authority planners should be given the power and backing of national governments to refuse planning applications that generate extra traffic and do not contribute to reducing car dependence.”[[115]](#footnote-115)

Assumptions prepared for the City Council by the *Carbon Trust* indicate expected technological transformations in the transport sector.[[116]](#footnote-116) 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 soon 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. At present, only about 10% of freight by weight is going by rail.[[117]](#footnote-117)
* 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. It is likely that Government support will meet at least part of such a goal here in Oxfordshire. Government policy change is needed for this to become universal however, 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.[[118]](#footnote-118)

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.[[119]](#footnote-119) 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.[[120]](#footnote-120) We favour bus re-nationalisation to remove fragmentation, consolidate purchasing of all-electric buses to reduce costs and cut bus emissions, and to allow Government to ensure a radical cut in bus fares of at least half – although wholly free fares for buses should be considered, which would cost about £3.5bn per year[[121]](#footnote-121) but lead to more exercise and better health for bus users than is true for those who are heavily car-dependent. 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. The report called for major investment in cycling in Cambridge, Milton Keynes and Oxford.[[122]](#footnote-122) We note that the City Council, despite opposing the Cambridge-Oxford Expressway, is not opposing ‘localized road investment’ in the Cambridge-Oxford Arc[[123]](#footnote-123) 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,[[124]](#footnote-124) 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.[[125]](#footnote-125)

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, 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,[[126]](#footnote-126) in a greener City Centre with qualities to be replicated in each of Oxford’s key community-shopping hubs.[[127]](#footnote-127) 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’[[128]](#footnote-128) currently exercised by University and Colleges with only partial access throughout small parts of the year in some locations. Why can’t far more Colleges open up as Christchurch meadow has done? 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[[129]](#footnote-129) lacks a credible evidence base for its sustainability and certainly does not practically meet the imperatives of either Climate or ecological emergencies. We need sustainable regeneration of our urban settlement, 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 or other means, 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[[130]](#footnote-130) – 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 public 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.[[131]](#footnote-131)
* 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.[[132]](#footnote-132)

**Oxford: the current Climate Emergency context**

Oxford breached its 1932 record temperature in 2019, hitting 36.3 degrees C.[[133]](#footnote-133) Some years since 2000 have been showing much higher temperatures than the records obtained since 1815.[[134]](#footnote-134) 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.[[135]](#footnote-135) However, records do not necessarily show the localised impact of reflected heat in a City which has almost no green walls or roofs, and no fountains, in its built up urban centre. Oxfordshire’s carbon dioxide emissions did drop by 3.3% in 2019,[[136]](#footnote-136) but this does not include aviation, shipping or the embedded carbon dioxide emissions of imports.

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.[[137]](#footnote-137) This means that UK carbon emissions were flat rather than reducing 1997-2015.[[138]](#footnote-138) So Oxford should do what the Government did in 2019, make sure that its Net Zero targets include aviation and shipping,[[139]](#footnote-139) and if the Council is serious – embedded carbon of imports too. Is the City’s transport share of emissions just 17%[[140]](#footnote-140) or do flying, air freight, shipping, embedded carbon of imports such as foodstuffs, all contribute to making it a lot more? About 70% of flights are being taken by just 15% of the population,[[141]](#footnote-141) so we must question this elite form of carbon emissions and reduce it as much as possible by actions within Oxford’s institutions. This should be put into the context of the Government’s Net Zero Strategy up to 2030. This would require cutting annual car mileage by 20%; cutting annual mileage of trucks by nearly half; re-opening 350 miles of rail track; electrifying half of the remaining rail system which remains without electric power; cutting rail fares and increasing fuel duties; international taxation on aviation and shipping.[[142]](#footnote-142) The Government has committed itself to a 78% cut in aviation and shipping emissions by 2035.[[143]](#footnote-143) It remains to be seen what measures it will take to achieve these objectives.

CoHSat challenged all local election candidates to meet a number of policy imperatives if elected.[[144]](#footnote-144) 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.[[145]](#footnote-145) They have the support of the County Council, the universities and employers including BMW and Unipart.[[146]](#footnote-146) It remains to be seen to what extent the recommendations of the *Oxford Citizens Assembly on Climate Change[[147]](#footnote-147)* 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.[[148]](#footnote-148) 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[[149]](#footnote-149) which, like many strategies, needs very detailed policies to accompany a lot of its goals. 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,[[150]](#footnote-150) rather than one for the University alone.[[151]](#footnote-151) It would certainly help if the 4000 University and College car parking spaces in the City Centre 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 University 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.[[152]](#footnote-152)

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.[[153]](#footnote-153) Research, such as that done by the Landworkers’ Alliance and Sustain justifies shorter supply chains, which tend to ensure more money goes to producers and can lead to better prices[[154]](#footnote-154) – e.g. when local producers sell direct to their customers through farmers markets. Imagine an Oxford with more frequent farmers and artisan markets than at present.

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.[[155]](#footnote-155)

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.[[156]](#footnote-156) 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 and species lost and greater difficulty in achieving the very elusive goal of an actually Zero Carbon planet. 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, but this does not excuse the use of the ‘soft option’ myth of Net Zero Carbon.

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:

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| --- |
| “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.”[[157]](#footnote-157)

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 claimed 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. Since there has been negligible transport decarbonisation in the entire ‘England’s Economic Heartland’ area since 2005,[[158]](#footnote-158) the City and the County in its transport role have a lot of catching up to do. In the EEH region, surface transport emissions are running at Cars (59%), HGVs (22%) and Vans (16%).[[159]](#footnote-159) In Oxford, all transport emissions are running at about 120 ktCO2 each year,[[160]](#footnote-160) but this excludes civil aviation and shipping serving the City. EEH indicates both a reduction in journeys and decarbonisation of vehicles will be required.[[161]](#footnote-161) But achieving this requires more action by statutory bodies including the Government.

Car dependency in this context is intended to denote able bodied people placing avoidable emphasis on a car particularly 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,[[162]](#footnote-162) 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.[[163]](#footnote-163) As noted above, Oxford is already there. 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.[[164]](#footnote-164) COP26 pledges did not change this. Despite such 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.”[[165]](#footnote-165)

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.[[166]](#footnote-166) 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.[[167]](#footnote-167) This will cut crop yields, contribute to rising sea levels[[168]](#footnote-168) 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 – a concern expressed as a global problem by the International Energy Agency.

Considering the City’s *Air, Water and Land Quality* paper, we note that the City recognises air quality is worst on main roads.[[169]](#footnote-169) 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.[[170]](#footnote-170) 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.[[171]](#footnote-171)

‘Sustainable growth’[[172]](#footnote-172) 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.[[173]](#footnote-173) Without an elimination of carbon content from human activity through very deep cuts in emissions, the Planet will break through the 1.5 and 2 degrees C thresholds during this century,[[174]](#footnote-174) and possibly within the next few decades. To emphasise that this if far from the whole story, we should consider being guided towards rapid action by this observation from the IPCC:

“If global net negative CO2 emissions were to be achieved and sustained, the global CO2-induced surface temperature increase would be gradually reversed but other climate changes would continue in their current direction for decades to millennia (*high confidence).* For instance, it would take several centuries to millennia for global mean sea level rise to reverse course even under large net negative CO2 emissions *(high confidence).”[[175]](#footnote-175)*

The Committee on Climate Change is recommending to Government that it should: ‘…seek to reverse the increasing relative price advantage of car travel over public transport.’[[176]](#footnote-176) The same report recommends adaptation measures in every Government department which would, in practice, mean local government needs generally to adopt area-specific adaptation plans. Separately, the Committee notes negative economic effects will follow from scenarios it has examined that neglect adaptation measures.[[177]](#footnote-177)

Housing plans for Oxfordshire do not recognise that water usage in the Oxford and Swindon water catchments will reach maximum in 2023.[[178]](#footnote-178) 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[[179]](#footnote-179)

Population growth and climate change nudge the Environment Agency to observe that, without major action 2025-2050, 3400 million extra litres will be needed for water supply per day.[[180]](#footnote-180) Where this will come from is left unanswered. Worse, the Environment Agency has noted that about 50% of additional public water supply needed by 2050 is needed in the south east of England.[[181]](#footnote-181) This is the south of England where the Government wants 1 million homes at the end of the Thames Estuary by 2050 and another 1 million across the Cambridge-Oxford Arc – much of both of these inside the South East Region. These are extraordinary goals given the physical resource, Climate, environment, transport and water supply implications. Why would anyone want such development given the scarcity of water in the south east? Note, for example:

“In the South-East of England, the average annual rainfall [lingers around 500-600mm](https://www.metoffice.gov.uk/climate/uk/regional-climates/so#rainfall) – less than South Sudan, or [Perth, Western Australia.](http://www.bom.gov.au/climate/current/annual/wa/perth.shtml) This also happens to be the UK’s most populated area, packing some 18 million inhabitants into just 19,000 sq. km (the size of New Jersey), including its capital, London. And this region is drying up, fast. Last year (2018) saw six consecutive months of below average rainfall in England, causing many reservoirs to run dangerously low. This was no ‘one off’ event. The previous year, 2017, saw the driest 10-month period for more than 100 years.”[[182]](#footnote-182)

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 need 110 litres of water per person per day[[183]](#footnote-183) 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.[[184]](#footnote-184) 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 as well as improved insulation. However, the City could do more concerning transport emissions.[[185]](#footnote-185) 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 pilot area so that it includes 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.[[186]](#footnote-186) 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 – think of Barton Park or Grenoble Road – are notorious for high levels of car use[[187]](#footnote-187) 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.[[188]](#footnote-188) 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 reducing 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. Height restrictions need exploration for some locations, to make better use of industrial estates and science parks, allowing allocation of areas in them to very low-cost housing.

Given the importance of meeting housing needs on brownfield sites, higher density than 100 dwellings per hectare[[189]](#footnote-189) needs consideration in locations such as above some car parks, and indeed above 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.[[190]](#footnote-190) We should not be complacent about the quality of existing green spaces, which need scientific examination to ensure quality.[[191]](#footnote-191) Also, the City *Air* etc paper notes the possible presence of land of ‘high environmental or biodiversity value’ in brownfield sites.[[192]](#footnote-192) 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.

Is the City’s current *Green Spaces Strategy 2013-2027* adequate?[[193]](#footnote-193)

Green spaces can and should include the use of opportunities to increase biodiversity and join up biodiversity corridors throughout the City. The Strategy does suggest linking up green spaces to ‘recreational opportunities’ outside the City (p.12), but this sounds like creating a reason to reduce green spaces within the City as the City has already done – including for example Barton Park. Biodiversity is not emphasised adequately in the current *Green Spaces Strategy.* To ‘conserve and encourage biodiversity’ (p.18) means not building on it or the Objective 21 in this Strategy (p.20), is of no value. As an example, the conservation and restoration of hedgerows and their addition to parks (and school fields) could be very valuable for biodiversity, cutting noise and air pollution and increasing bird and other wildlife habitats.[[194]](#footnote-194) It should also be noted that planting silver birch and yew along roads has been shown to reduce indoor air pollution by as much as 79%, where this is possible.[[195]](#footnote-195) Standards for access to nature in Oxford should be generously applied, as part of retaining greenfield sites.[[196]](#footnote-196) The many vacant spaces in the existing built environment should be made available for meeting housing needs primarily – through council purchase and sustainable retrofitting and reductions in car parking to maximise the use of such spaces for living.

There is an open contradiction between protection of allotments stated in this Strategy and allegedly derelict allotment removal at Horspath and Minchery Farm. Given demand, these should have been advertised and their plots put under the management of the nearest available and willing allotments association (pp9-10). In transport terms, allotments need to be as near as possible to where people live.

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[[197]](#footnote-197) and the ‘urban heat island’ effect justify major changes in the City’s approach to planning.[[198]](#footnote-198) Floodplain and greenfield site protection should be absolute; a general programme of planting street trees is needed.[[199]](#footnote-199) Existing open space, recreational buildings and land, including playing fields, should not be built on.[[200]](#footnote-200) Change of use for existing buildings on such land can be contemplated.

We note this report’s observation for the JNCC:

“In the UK over 40% of species are in decline, more than 40 million birds have been lost from our skies over the past 50 years, and a quarter of UK mammals are threatened with extinction.”[[201]](#footnote-201)

The City’s Green Spaces Strategy[[202]](#footnote-202) 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 policies, 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.[[203]](#footnote-203) 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 actually 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.[[204]](#footnote-204)

More generally, if green infrastructure tends to increase commercial activity in its vicinity[[205]](#footnote-205), 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.”[[206]](#footnote-206) 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. The British Ecological Society offers a comprehensive case for the importance of peatlands related to carbon storage and biodiversity.[[207]](#footnote-207) Also, we remain sceptical about the City’s 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. Also, from the *Nature Positive 2030* report:

“For species to be increasing by 2030, as much action for habitats as possible needs to be underway in the next 2-3 years.”[[208]](#footnote-208)

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.[[209]](#footnote-209) 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.

In concluding this first section, it is worth recognising that the UK in 2021 is actually less prepared for Climate Change than it was five years previously.[[210]](#footnote-210) “Only a combined approach to tackling climate change through reducing emissions (mitigation) and building resilience (adaptation) will be successful in protecting the UK from the worst effects of climate change.”[[211]](#footnote-211)

Oxford, like other communities, needs to compensate for the failings of Government as best it can.

**PART TWO: TRANSPORT**

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

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

“In the UK initiatives and interventions to reduce transport emissions have largely failed.”[[212]](#footnote-212) The World Health Organization has firmly linked progress on reducing greenhouse gas emissions, air pollution, encouraging active travel and improving the quality of urban green spaces together into one broad health argument for radical Climate action to save lives and improve health.[[213]](#footnote-213) The WHO is clear that this will mean reductions in aviation, shipping freight and surface transport of goods.[[214]](#footnote-214) In 2019, the UK emissions from surface transport were: 111.7 MtCO2e and from aviation and shipping a further 52 MtCO2e.[[215]](#footnote-215) So aviation and shipping emissions serving Oxford MUST be considered as part of a rapid and adequate response to meeting needs. How much people can obtain of what they need by walking and cycling is a carbon question to be answered by council policies and the actions of private and voluntary sector bodies.

What the Committee on Climate Change calls ‘maladaptive decisions’ are taking place all too frequently in Oxford, undermining resilience and running the risk of ‘locking-in’ future emissions. These include any increases in car parking capacity including Park and Ride sites, which will – for example - lead to more tailpipe and non-exhaust emissions from vehicles. These will add to air pollution and greenhouse gas emissions.

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,[[216]](#footnote-216) neither urban fringe nor close proximity housing on greenfield sites should be permitted.[[217]](#footnote-217) 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. We should note that there were 2500 heat-related deaths in the UK in 2020, during the heatwave in England – the highest level since 2003.[[218]](#footnote-218) It is also predicted heat related deaths will rise from the current average of 2000 per year to 6000 a year by 2050.
* 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 severely restricted access hours to such areas, as should vehicles belonging to those working on specific buildings. 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, and fringe of area limited taxi pick-up points. George Street should remain partly pedestrianised, with the objective that the coach station be moved to the Becket Street car park 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. This could be achieved using electric vans such as those provided to the Covered Market, and by the use of cargo bikes. 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. It is well-established that pedestrianisation increases footfall and makes local on-street businesses more sustainable:[[219]](#footnote-219)

Stoke on Trent invested £10 million in a more pedestrian-friendly central area and increased footfall by 30%. This is in the context of UK high street footfall going down by over 22% from 2007-2018, and subsequently being damaged by Covid 19 as well - including by a boost to online shopping. Since pedestrians have been shown to spend more than car drivers, businesses should be campaigning for far more pedestrianisation in the tired and shabby looking shopping centres of a post-Covid Oxford, although a greater diversity of uses in City Centre properties are highly desirable, including more use of empty shops and offices for housing. Unfortunately, businesses tend to heavily over-emphasise the role of the car in how people get to their particular enterprise, when walking, cycling, bus and rail use all produce customers too. After all, Oxford’s 1999 traffic constraining and pedestrianisation scheme did not lead in reductions in visitor numbers to central Oxford despite a decline in car trips to the Centre of 17%. However, trends concerning high streets suggest long-term decline in shops, unsurprising given high rents in City centres and the availability of better prices for consumers online. 29% of high street space was taken up by shops in 2012 and 25% by 2017. The British Retail Consortium suggests 20% of shop units were empty in July 2021.[[220]](#footnote-220) In short, the provision of car parking in central Oxford should reflect less shoppers as well as the evidence of more footfall in pedestrianised areas. Both County and City should collaborate to cut traffic and increase the resilience of Oxford City Centre by planning for more very low-cost homes in its built environment.

At present, roughly 43% of all urban car journeys are under 2 miles. Since a third of UK children and 60% of adults are obese, radically reducing these journeys is a significant contribution to health promotion and relieving an avoidable burden of ill-health on the NHS.[[221]](#footnote-221) In addition, 58% of private car journeys in 2019 were under 5 miles.[[222]](#footnote-222) More walking, cycling and bus use are clearly needed – justifying further measures to reduce car journeys, including cuts in car parking as suggested in the Quickways consultations during 2021. There is also an issue of occupancy: in England, 62% of car journeys are taken by lone drivers.[[223]](#footnote-223) Able-bodied lone driver very short journeys are a major contribution to traffic congestion in Oxford and councils and voluntary bodies should join their voices together to raise social pressure against such behaviour.

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.[[224]](#footnote-224) 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.[[225]](#footnote-225) Urban design in general needs to reflect a desire to encourage and support cycling. This should involve considering how to represent all types of cyclists in design processes, planning future evolution over time, bearing in mind speeds of movement of cyclists and pedestrians in differing conditions, and recognising the physical and social needs of both groups.[[226]](#footnote-226) Local Cycling and Walking Infrastructure Plans are a welcome innovation,[[227]](#footnote-227) but they are seriously under-funded. The Oxford LCWIP notes that as much as 90% of cycle accidents may not be reported.[[228]](#footnote-228) The Government’s *Gear Change* proposals for cycling and walking lack credible resources,[[229]](#footnote-229) 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.[[230]](#footnote-230) Similarly, we welcome suggested increases in walking and cycling[[231]](#footnote-231) but these rely on improved infrastructure 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. But expectations cannot be high when only about 38% of the rail network is electrified at present,[[232]](#footnote-232) with HS2 creating cost-overruns beyond the dreams of avarice for contractors and immense environmental damage.

Whether more walking and cycling will be safer requires a step up in institutions notionally responsible for public safety. This is part of adaptation to the Climate Emergency in reducing polluting and congesting traffic, and part of health promotion. But people do have to feel safer. The Government has begun to respond to this issue.[[233]](#footnote-233) The Alliance which prepared *Safe Roads for All* offers a concise and comprehensive approach to safety currently lacking in our car-dominated transport culture. Precisely defined as ‘Safe System’, this involves:

“A cycle path segregated from traffic and connecting homes to the places we want to go; a town centre that excludes and restricts vehicles; intelligent speed assistance – a vehicle technology helping drivers stay within limits; lorries and buses with large cab windows, so drivers can see more of the road.” (p.5)

Also, reducing car use and increasing public transport will contribute to dealing with the Climate Emergency (p.7).

It needs to be borne in mind that walking and cycling have been shown to have significant economic benefits compared to car driving. Improvements in both of these modes of Active Travel have been shown to increase retail spending by as much as 30%; cycle parking delivers 5 times the retail spending per square metre than car driving; over one month periods, those who walk to high streets spend 40% more than those who drive; retail vacancies drop and retail rental values rise with walking/cycling improvements in access to high streets; cargo bike freight offers savings to companies on delivery costs.[[234]](#footnote-234) If the City Council is serious about regenerating a City Centre with a lot of empty slots, it needs to increase the residential population throughout the area by turning empty units into very low cost housing – council homes, housing association homes and some keyworker homes too.

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 to meeting 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, and parts of Hollow Way.
* 20 mph limit on all roads including ‘main’ roads.
* Average speed cameras for traffic speed enforcement, on roads with most accidents first, then those with most incidence of speeding, then all roads beginning with ‘main’ roads.
* 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, e.g. by ensuring more and better tow path routes for cycling. Cycling is not mentioned under this topic in the City’s Green Infrastructure paper.[[235]](#footnote-235)
* 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 increasingly pedestrianised/cycle-tracked central area.
* City and County support for national pavement parking ban, already agreed in Scotland for a 2023 start.[[236]](#footnote-236)

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 and 5th October, 2021. 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. Separate walking and cycling maps of the City, as well as for buses, 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. Cycling signage needs improvement generally and should be standardised. And we should note that traffic noise is associated with the onset of dementia.[[237]](#footnote-237)

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.[[238]](#footnote-238) 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.[[239]](#footnote-239) There is also documentation on trees, planning and development.[[240]](#footnote-240)

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.[[241]](#footnote-241) 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 does clearly recommend visitors via their website to come to Oxford via public transport, not cars. Page 4 of their Strategy 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.

It is important to note that the UK is:

‘..one of the most nature-depleted countries in the world. 15 per cent of UK species are threatened with extinction. Of the G7 countries, The UK has the lowest level of diversity remaining. At a minimum, the UK has failed to meet 14 of the 19 Aichi biodiversity targets, the global nature goals the UK committed to meet by 2020.”[[242]](#footnote-242)

Coupled with this is Government neglect. The net decrease in funding for biodiversity in the UK 2008-9 to 2018-19 was 42%.[[243]](#footnote-243) Since emissions from transport as the largest sector for carbon dioxide emissions need to be cut at source rapidly, the role of biodiversity in improving mitigation, through tree growth for example, is important and can be led by the County and City council through planning decisions, and in cooperation with other statutory bodies and voluntary organisations. It has been estimated that, for the UK as a whole:

“…protecting natural ecosystems would secure 16,231 Mt carbon dioxide equivalent while the restoration of degraded peatlands and native woodland would provide additional climate change mitigation of 75-123 Mt Carbon Dioxide equivalent by 2030 and 278-492 Mt Carbon Dioxide equivalent by 2050. To put this in perspective, the Committee on Climate Change state that for the UK to meet its net zero target, emissions will need to fall by around 14 Mt Carbon Dioxide equivalent every year. So, nature-based solutions could substantially contribute to meeting the UK’s net zero goals.”

But this will only occur if the problem of planning failures is addressed. Constant new environmental damage and extra traffic generation arise from local planning decisions all the time and needs correction in Oxford, as elsewhere, as part of the process of building resilience to a changing Climate within an overall Adaptation Plan for the City.

It should be noted that natural systems are in decline, as a result of human action and the effects of the Climate and ecological emergencies. This may undermine the capacity of societies to use nature-based solutions for both mitigation and adaptation in future,[[244]](#footnote-244) unless immediate action is taken.

It is also important to note that urban rewilding has value for mental health, and improving the ‘green desert’ -like quality of school playing fields - with educational opportunities in mind.

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

We should first note that walking and cycling take up less urban space than vehicles, including buses, 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 fails to recognise the health benefits of both. £2 billion spending allocated for Active Travel in the UK in the pandemic for a few years needs to be maintained as a year on year[[245]](#footnote-245) figure, 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 or making longer journeys, buses cover most of the City although incidence and coverage varies. Buses are vital in the UK context:

“Buses account for some 4.5 billion journeys per year in Britain, the majority of all journeys on public transportation. More people commute to work by bus than all other forms of public transportation combined. They provide an essential service, connect communities, strengthen society, and a lifeline for people without other options.”[[246]](#footnote-246) Sadly, it is obvious that bus privatization has created fare increases, decline in passengers, service fragmentation, increased car dependence and social exclusion for those unable to access a bus service.[[247]](#footnote-247) 3000 bus routes have been cut since 2009; 54% of bus services have had mileage reductions 2009-10 to 2017-18.[[248]](#footnote-248) By contrast, in the regulated bus environment of London there has been an 89% passenger increase since bus de-regulation in the rest of the country.[[249]](#footnote-249) But only 2% of the UK bus fleet is zero tail-pipe emission at present.[[250]](#footnote-250)

In Oxford, Low Carbon Oxford North has suggested bus stops need to be within 400m of each person’s home. This is based upon a Department for Transport observation that bus use decreases where bus stops are further than 250m away.[[251]](#footnote-251) However, bearing in mind the desire of the City Council in its City Plan 2040 documentation to reduce car parking and increase the proportion of homes which are designated as ‘car free’, it is possible that the able-bodied may walk further for buses than otherwise thought, or make use of bicycles a bit more often. Of course, the mobility-impaired need consideration including increased availability of mobility scooters to add to the adaptations already made to buses.[[252]](#footnote-252) And it is clear that the aspirations people have for what they expect bus services to provide, in terms of access to locations such as Summertown, have yet to be met.[[253]](#footnote-253) Bus services should, however, be guided by long-term planning about spreading Low Traffic Neighbourhoods throughout the City, favouring better active travel and health promotion amongst all those able to walk and cycle any distance. For those who cannot, we would favour better access to mobility scooters: the mobility impaired should be helped by the City Council to purchase mobility scooters at lower prices, as this will reduce road traffic.[[254]](#footnote-254)

We note that Littlemore and the neighbouring Herschel Crescent and Van Diemans Lane communities could do with better bus services, as examples of urban gaps in quality of services. 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, and pedestrianised with cycle tracks eventually. The Government’s national bus strategy favours more traffic signal priority for buses, bus gates and improvements in signage.[[255]](#footnote-255) In short, we want to see these named areas populated by more walkers and cyclists because they feel there is more space for them. We note that council 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.[[256]](#footnote-256) Such figures underline the need to reduce car parking in the City as part of the effort to increase bus use, and increase Active Travel. There is, however, a constraint created by heavy bus use of some roads such as the High Street-St. Aldates and also the Cowley Road-Oxford Road, meaning that the aspiration to get more buses in depends on getting other vehicles out – although the pedestrianisation of the former is highly desirable.

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, with continuing use of the turning loop at the station, and the allocation of the existing coach station site to Council and shared ownership homes.

We are concerned about the high level of bus fares in Oxford as a deterrent to bus use. Efforts by bus companies to return to pre-pandemic levels of bus use are welcome, especially if fares are halved. About 40% of people in the lowest income households do not have access to a car.[[257]](#footnote-257) However, there is a strong case for free bus fares, which already exist in 96 locations and have the potential to cut car use.[[258]](#footnote-258) The Government’s national bus strategy indicates:

“Average bus fares have risen by 403% since 1987, compared to 325% for rail fares and 163% for motoring costs.”[[259]](#footnote-259)

We support ensuring that using buses and trains must become cheaper than using cars, to radically reduce tailpipe and Non-Exhaust Emissions. We affirm that the best way to do this is Electronic Road Pricing, as in use in Singapore since 1998.[[260]](#footnote-260) The RAC supports Electronic Road Pricing[[261]](#footnote-261) and an IPPR report affirms:

“..the governments of the UK should commit to a national road user charging scheme to replace fuel duty designed through meaningful deliberation with the public.”[[262]](#footnote-262)

An all-electric bus fleet for Oxford is a possibility and we welcome moves in this direction.[[263]](#footnote-263) A loaded double decker bus takes up to 75 cars off the road.[[264]](#footnote-264) We are concerned by suggestions of hydrogen-powered long-distance buses for the Oxford Bus Company[[265]](#footnote-265) 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.[[266]](#footnote-266) 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 – as suggested by service cuts announced for Oxford and Oxfordshire in November 2021. This failure may well have negative consequences for Oxford with continuing air pollution, noise and very high car dependency. The Government needs to ensure its transport policies are proofed against worsening inequality or forms of exclusion[[267]](#footnote-267) - which is why free bus fares for all should be considered. The Government’s Decarbonisation plan for transport does not use the words ‘equity’ or ‘equitable.’[[268]](#footnote-268)

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.[[269]](#footnote-269)

The Oxford City Plan for 2036 failed to mention particulate matter below 2.5µm in size.[[270]](#footnote-270) 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.[[271]](#footnote-271) PM2.5s are responsible for 1 in 20 premature deaths in England. It is expected that the Non-Exhaust Emissions proportion of PM2.5s will actually increase over the next ten years.[[272]](#footnote-272) 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. 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 corporation’s efforts to obtain electricity from solar PV.[[273]](#footnote-273) 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 badly congested now due to low levels of bus use in particular, and recent cuts in bus services will not help. We need the City Council, neighbouring district councils, and the County to strongly advocate electric vehicle hire over ownership, as a contribution to cutting overall traffic levels.

Air pollution did increase in 2019 in Oxford, due to specific weather conditions.[[274]](#footnote-274) 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[[275]](#footnote-275)…………….[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%.”[[276]](#footnote-276)

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%.[[277]](#footnote-277) 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 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.

Nationally, surface transport provided about 22% of UK greenhouse emissions in 2019, with car use responsible for about 60% of these emissions.[[278]](#footnote-278) This justifies extensive and comprehensive interventions to reduce car journeys and to encourage electric car hire rather than car ownership. This would get around the problem of up-front costs for a cleaner vehicle. We emphasise ‘cleaner’ not ‘clean’ since non-exhaust emissions (see above) still kill people. Creating areas where car ownership is not necessary,[[279]](#footnote-279) where other options are well-funded and fully developed, should be a goal for local councils. Since the average car is parked 96% of the time,[[280]](#footnote-280) car ownership whilst the car depreciates in value appears to be a form of ‘negative savings.’ It has been suggested that Government work towards car ownership peaking before 2030.[[281]](#footnote-281)

A study of European cities found that ‘..reduced commuting and car ownership has a positive impact on air quality, thereby reducing the social costs of poor city air quality.’[[282]](#footnote-282) Consequently, vigorous campaigns by City and County councils to encourage a high level of home working and electric car hire instead of ownership are part of the effort to remove air pollution which must be vigorously pursued. We could set targets for our urban areas to allocate more road space to cycling, walking and green space each year.[[283]](#footnote-283)

CATG recognises that about 80% of Oxford’s local emissions are from buildings, with the University being the worse culprit.[[284]](#footnote-284) This clearly 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, the County Council 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.)

At present, cargo bikes are limited in one respect: the problem of getting up hills when fully loaded. However, e-cargo bikes exist, and are already in use by *Pedal and Post* for example, and may well expand the scope of such deliveries in the future.[[285]](#footnote-285) 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.[[286]](#footnote-286) 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.”[[287]](#footnote-287)

Concerning ‘urban consolidation centres around the edge of Oxford’,[[288]](#footnote-288) 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 byes 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 byes rather than the tacit permission for long-distance drivers to use neighbouring green spaces as toilets. In addition, spaces within Park and Ride sites and industrial 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. Apart from building a circular economy, 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 and* 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 City 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.[[289]](#footnote-289) 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 the 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.[[290]](#footnote-290) It appears Tesla expects its electric ‘semi’ will go into production in 2022.[[291]](#footnote-291) There are a variety of problems associated with the assumption that hydrogen could power HGVs given the weight advantages of batteries,[[292]](#footnote-292) and the problem of ensuring only ‘green hydrogen’ is used.[[293]](#footnote-293) 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,[[294]](#footnote-294) 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.[[295]](#footnote-295) 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 online group discussions about LTNs – which continue - and have commented in consultations.[[296]](#footnote-296) We note that the County Council has yet to do its full 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. Three towns – Darlington, Peterborough and Worcester – were selected. Communities were chosen for face to face persuasion and promotion of active travel and public transport. The results were decreases in car use and significant increases in bus use, walking and cycling. This was achieved through direct persuasion of households as well as other publicity measures. 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 created.[[297]](#footnote-297)

In addition, LTNs are not really 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 increases and congestion in Oxford during 2021 had little to do with the introduction of LTNs. A City with very high levels of bus use before the first lockdown had 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 tailbacks at junctions all over the City. Sundry road works contributed more delays as they do every summer. Traffic congestion will remain a major problem until bus and train usage returns to pre-lockdown levels, including those commuting into Oxford for work, and active travel becomes more widespread.

LTNs do have positive implications for property values.[[298]](#footnote-298)

In general, we feel that a Low Traffic City consultation should have been promoted for the whole City. Transport is a system, it is 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.

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.

There is some conflicting evidence about traffic growth. Phil Goodwin brings together some of this, suggesting factors limiting traffic growth.[[299]](#footnote-299) Pedestrianisation, traffic calming and land use planning all feature. Oxford’s road junctions were already at capacity when the Gilligan report on investing in cycling in Oxford, Cambridge and Milton Keynes was published in 2018.[[300]](#footnote-300) Many junctions don’t cope with current levels of traffic in rush hours and at school run times. But the government forecasts 17-51% UK traffic increases from different scenarios for 2015-2050.[[301]](#footnote-301) Clearly, we cannot rebuild every junction in Oxford to accommodate such volumes since many are bounded by homes, businesses, essential public service facilities and historic buildings.

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 services in some parts of the City on the High Street in rush hours;
* 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 in 2023, 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 nor 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.[[302]](#footnote-302) Decarbonisation of the vehicles present in Oxford and of those entering the City is certainly necessary,[[303]](#footnote-303) 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.[[304]](#footnote-304) 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 the City expeditiously 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**

Flooding and drainage problems undermine transport systems and lower the quality of life of those whose homes are flooded. Climate change offers a new problem of more extreme rainfall events with the potential to create more flash flooding.[[305]](#footnote-305) Given Oxford’s extremely variable drainage and the permissiveness of planning towards more impermeable surfaces, this needs to be taken seriously. The City enthusiastically gives permission to build on greenfield sites including flood plains. This is part of a nationally-irresponsible trend. The Environment Agency notes:

“The number of properties and infrastructure in flood plains is also increasing, and we estimate this will almost double from 2.4 to 4.6 million over the next 50 years. Two-thirds of properties in England are served by infrastructure sites and networks located in, or dependent on others located in, areas at risk of flooding.”[[306]](#footnote-306)

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.[[307]](#footnote-307) 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,[[308]](#footnote-308) 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.[[309]](#footnote-309) 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. The Committee on Climate Change has specified that it wants to see ‘green sustainable urban drainage systems’ that have amenity and biodiversity value.[[310]](#footnote-310) A model for this is offered by the Friends of Lye Valley in its work in the Lye Valley SSSI and nature reserve. Also, the *Nature Positive 2030* report stresses the importance of improving protecting areas and ‘..tackling sources of harm’[[311]](#footnote-311) – which in the case of the Valley necessitate rigorous action in the water catchment.

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’ approach to greenhouse gas emissions globally, Adaptation to unconstrained Climate Change means existing long-term problems 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 measures which can be maintained for much longer periods should have been a priority. Building homes in Flood Zone 3a and 3b[[312]](#footnote-312) 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.”[[313]](#footnote-313)

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.[[314]](#footnote-314) 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.[[315]](#footnote-315)

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 more responsible 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,[[316]](#footnote-316) then the consequences for walking, cycling and traffic movements will worsen. Whether the under-funded and cut back Environment Agency,[[317]](#footnote-317) 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.[[318]](#footnote-318) 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.[[319]](#footnote-319) 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.[[320]](#footnote-320)

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.[[321]](#footnote-321) 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%[[322]](#footnote-322)

It should be noted that food packaging contributes to the overall waste burden:

“Rather than shipping waste around the world to be recycled, then re-manufacturing, material re-use needs to primarily happen locally and regionally. The ‘scale’ of circularity matters.”[[323]](#footnote-323)

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.[[324]](#footnote-324) Other individual countries have met less than 5% of our food needs recently, with UK food production meeting roughly 55% of needs.[[325]](#footnote-325) 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.”[[326]](#footnote-326)
* 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.”[[327]](#footnote-327)

In 2021, bearing in mind the effects of the pandemic, food conditions for the poorest are worse and access remains challenging, even in Oxford with its complex of groups assisting those lacking food security. Nationally, about 8.4 million people struggle to get enough to eat each day; and 4.7 million go some days without eating at all. Food insecurity has quadrupled and now afflicts 16% of people.[[328]](#footnote-328) The closer the production of food is to those consuming it, the less transport and emissions are required to get it to the consumer. But local production is better than supermarkets: 93 supermarket openings cut 276 jobs in a 10-mile radius of each supermarket over 4 years. The New Economics Foundations also found that £10 spend with a local food enterprise was worth about £25 to the local economy, whereas £10 spent in a supermarket was likely to lead to only £2.40 being spent in the local economy.[[329]](#footnote-329) So we may conclude reducing transport emissions must include cuts in transport sector emissions by building up local food production for local consumption. In a world with diminishing food security in the Climate Emergency, adaptation must include strengthening local resilience against ‘food shocks.’

During 2021, much mention was made in the media of ‘nationally-determined contributions’ being improved by States as their obligation in the face of a worsening Climate Emergency. But every nation State has localities:

“When combined with transport, food and biodiversity plans the resulting local authority climate change plans can be seen as ‘Locally Determined Contributions’ – (a local version of Nationally Determined Contributions (NDCs) offered by national governments to the UN) to deliver the UK’s Net Zero objectives.”[[330]](#footnote-330)

Climate Change is producing more extreme weather events with impacts on crop yields, throughout the world.[[331]](#footnote-331) 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.[[332]](#footnote-332) 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.[[333]](#footnote-333) 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 the high cost 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.[[334]](#footnote-334) 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.[[335]](#footnote-335) 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[[336]](#footnote-336), the Landworkers’ Alliance offers a recent detailed report on local and regional food systems.[[337]](#footnote-337)

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 reach this by 2040,” in line with Government targets.[[338]](#footnote-338) 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.[[339]](#footnote-339) As one of the worst places in the country for first time buyers,[[340]](#footnote-340) and a terrible place for private renters with sky-high rents and unregulated supplementary charges, it is no surprise to find 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.[[341]](#footnote-341) 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 considerable.

Clearly, housing projections have not considered 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 in Oxford 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.”[[342]](#footnote-342)

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.[[343]](#footnote-343) 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 society and economy in Oxford are both 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 should be 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 transport-related voluntary 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 support for a vision that imagines conventional economic growth is unsustainable, rather than the City 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. To avoid slippage, we suggest using indicators which are capable of being checked on a monthly basis. Also, the current City Plan is far from adequate for the adaptation of Oxford to the Climate Emergency.

After its valuable *One Million Climate Jobs* report, the Campaign Against Climate Change has created a successor document. This incorporates the idea of a National Climate Service to address the multiplicity of challenges in achieving a just transition to near zero Carbon by 2030, and extensions of public ownership to ensure success and compensate for market failures.[[344]](#footnote-344) We should note that this report emphasises that the UK Government Skills for Jobs White Paper, January 2021, has a single sentence on the green economy,[[345]](#footnote-345) despite the enormous range of jobs to be created or enhanced by a consistent decarbonisation of the economy and society, creating resilience and sustainability for the future. In more detail:

“Research that models a pathway to net zero carbon by 2050 has found that the number of new jobs created in the UK by shifting to an energy system based only on wind, water and sun and with a range of energy storage technologies would create 568,814 more jobs than the number lost in fossil fuel extraction and power generation. That’s not including the hundreds of thousands of additional jobs needed to slash the amount of energy we use.”[[346]](#footnote-346)

This does not include job creation in private and public sectors which is possible in the environment and transport sectors for Oxford, as suggested in this Adaptation report. Much more useful employment in forestry, land use, food and food processing are other examples of what is possible. Another example:

“Many UK conservation organisations have called for a ‘National Nature Service’, creating around 70,000 ongoing jobs in restoring landscapes, protecting species and planting trees. One of the main aims of the proposal is youth job creation.”[[347]](#footnote-347)

There remain unanswered questions about the Climate Emergency. Perhaps the most disturbing of these is how soon many coastal and estuary settlements may begin to empty out as their residents go in search of the security of higher ground. This is an adaptation issue, where we do not know how much protection Government will choose to provide for communities at risk. For some vulnerable coastlines already being eroded, probably very little; for the Thames Estuary with its existing Thames Barrier apparently protecting about 1.75 million people, a new Barrier at the mouth of the estuary to protect both Thames and Medway estuaries seems likely. How this might be achieved with minimum greenhouse gas emissions remains to be seen, when so many coastal and estuary protection structures could be needed in the UK.

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**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.[[348]](#footnote-348) 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.”[[349]](#footnote-349)

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.”[[350]](#footnote-350)

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,[[351]](#footnote-351) 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.”[[352]](#footnote-352)

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.[[353]](#footnote-353) But adaptation is more than a tick box in a Strategy. It is going to require monitoring, reporting and evaluation so that progress or the lack of it can be identified. This is coupled with a need for policy coherence, where adaptation (like mitigation) is considered in policies in a consistent fashion.[[354]](#footnote-354) In short, achieving carbon neutrality in Oxford by 2030 should be a goal, with a carbon negative Oxford at the earliest possible date thereafter. To emphasise, the mythological 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.[[355]](#footnote-355)

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   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>

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297. 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> p.6 & pp17-18. [↑](#footnote-ref-297)
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300. National Infrastructure Commission, 2018. [↑](#footnote-ref-300)
301. See: Department for Transport, Road Traffic Forecasts 2018. <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873929/road-traffic-forecasts-2018-document.pdf> One of the reasons for this is exceptional expansion in delivery vehicles: see: <https://www.bbc.co.uk/news/business-57723836> & “The number of vans in Great Britain has also increased substantially over the last 25 years, increasing 93 per cent from 2.1 million licensed vans in 1994 to 4.1 million licensed vans in 2019.” - <https://www.racfoundation.org/motoring-faqs/mobility#a2> [↑](#footnote-ref-301)
302. Transport paper, p.7. [↑](#footnote-ref-302)
303. Zero Carbon Oxford, p.20. [↑](#footnote-ref-303)
304. Transport paper, p.12. [↑](#footnote-ref-304)
305. <https://inews.co.uk/news/climate-change-flash-flooding-cities-1037926?ito=email_share_article-top>  [↑](#footnote-ref-305)
306. Environment Agency, Living Better, p. 29 [↑](#footnote-ref-306)
307. About 75% budget cut over 10 years. [↑](#footnote-ref-307)
308. Oxford City Council, *Flood risk and new development,* p.1. [↑](#footnote-ref-308)
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310. CCC, 2021, p.111, pp127-129: <https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/> [↑](#footnote-ref-310)
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314. <http://www.friendsoflyevalley.org.uk/news/pdf/FoLV%20Supp%20Planning%20Guidance%20Lye%20Valley.pdf> [↑](#footnote-ref-314)
315. <http://www.friendsoflyevalley.org.uk/about/peat_carbon_in_fens.pdf> [↑](#footnote-ref-315)
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318. ## Trees, Planning and Development: ﻿﻿﻿A﻿ ﻿﻿Guide for Delivery: <https://www.tdag.org.uk/trees-planning-and-development.html>

     [↑](#footnote-ref-318)
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323. Essex and Sims, 2021, p.11. [↑](#footnote-ref-323)
324. <https://www.bbc.co.uk/news/business-55408788> [↑](#footnote-ref-324)
325. <https://www.foodsecurity.ac.uk/challenge/your-food-is-global/> [↑](#footnote-ref-325)
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342. 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-342)
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346. Campaign Against Climate Change, 2021, p.13. See also: 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-346)
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