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OXFORD CITY COUNCIL

Natural resources including air, water, soil/land quality

Oxford Local Plan 2040

BACKGROUND PAPER 11

This paper addresses the protection of Oxford's natural resources including the quality of air, water and land/soil.
SA Objective(s): 8. *To reduce traffic and associated air pollution by improving travel choice, shortening journeys and reducing the need to travel by car/ lorry.*
9. *To achieve water quality targets and manage water resources.*
SEA theme(s): *Water, air and climatic factors, soil, material assets, landscape*

1. Introduction

1.1 This background paper addresses the topic of environmental quality and natural resources in the city. In particular, it focuses on three aspects of Oxford's environment: the quality of air, land (including soils), and water and discusses how the Local Plan has been formulated to address issues that relate to these different aspects of the environment. Oxford is a small city with a tightly drawn administrative boundary and contains a number of physical and policy constraints which means that land must be used prudently. Where land is available, it needs to be used in the most efficient way possible while ensuring that there is no harm to the city's natural environment, human health and well-being.

1.2 The issue of poor air quality is multi-faceted and has various causes which are discussed in greater detail later. It is an important topic for the Local Plan to address because air pollution has a direct link with health and well-being and has been evidenced to cause and exacerbate health problems. Poor air quality also have negative impacts for the wider natural environment, especially our most sensitive ecological habitats.

1.3 Oxford has a long history of settlement with different parts of the city having been used for a variety of types of development in the past, some of which can leave behind a legacy of contaminated materials and other pollution which is another issue the planning process needs to address. The development process can play an important role in helping to identify historic contamination and contributing to its remediation to make it safe for future generations, however, where this is not carried out appropriately, people can be brought into contact with harmful pollutants that can damage health. Equally, it is important to ensure that the quality of our soils is protected as these act as important natural capital which supports the environment in a number of ways, from mitigating flood risk and supporting healthy habitats, to acting as important sinks of carbon which could otherwise be released into the atmosphere exacerbating our impacts on climate change.

1.4 Water quality issues have been brought to the forefront of planning since the introduction of the Water Environment Regulations, which seek to ensure that the biological and chemical quality of watercourses in England and Wales reach a "good standard". Key concerns for the Local Plan to address include whether the availability of sufficient water resources for the existing and future population of Oxford. Also, that the quality of the

water environment is preserved from further harm arising from new development, particularly because certain nature sites rely on certain amounts and quality of water to maintain the particular habitats and species for which they are protected.

1.5 The paper starts with an analysis of relevant national and local policy and other strategies before proceeding to setting out a summary of the current situation in the city and the likely future without a new Local Plan. The paper then proceeds to set out some discussion around the key issues that have informed the relevant policies in the Local Plan, this also factors in wider issues of pollution such as impacts of noise and light which are also important for new development to address where necessary.

2. Policy Framework

2.1 There are a range of national and local plans, policies and strategies which form important context for the policies of the new Local Plan. Those of most relevance to the natural resources policies are summarised below:

National Planning Policy Framework (NPPF)

The NPPF addresses topics of natural resources and environmental quality in various places. In particular, paragraph 174 states that policies should contribute to and enhance the natural and local environment in a number of ways including:

- Protecting and enhancing soils (in a manner commensurate with statutory status or identified quality in the development plan)
- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Paragraphs 183 to 188 set out various requirements relating to ground conditions and pollution including:

- Sites are suitable for proposed use taking account of ground conditions and any risks arising from land instability and contamination, minimum standards of remediation as well as that assessments are informed by adequate site investigation.
- That new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment
- Policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, (including presence of Air Quality Management Areas and Clean Air Zones). Ensure new development is consistent with air quality action plan. Identify opportunities to improve air quality

or mitigate impacts such as through traffic and travel management, and green infrastructure.

Paragraph 120 sets out various requirements for policies and decisions in relation to effective use of land including that they should:

- recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production;
- give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land;

Water supply and wastewater treatment is touched upon in a couple of places, including that strategic policies should set out a strategy for and make provision for infrastructure to address this (paragraph 20). Also, take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications of water supply (paragraph 153).

National Planning Practice Guidance (PPG) including National Design Guide/ National Model Design Code

The Planning Practice Guidance provides additional support for interpreting the policies of the NPPF and has various sections of relevance. For example, there is guidance addressing:

- Air quality[1], covering topics such as: the air quality considerations planning and local plans address; information sources available to assess air quality; detail required within air quality assessments; and how can air quality impacts be mitigated.
- Water supply, wastewater and water quality[2], which sets out how this should be addressed within planning processes as well as where information can be obtained with respect to the water environment.
- Land quality, which is addressed in several places including in relation to contaminated land issues[3], land stability[4], which again sets out how planning processes should interpret and address these issues as well as relevant information sources and potential mitigation measures.

The National Design Guide sets out ten components of what the government considers to be good design. One of these components is the efficient use of resources which touches upon issues of prudent use of resources and factoring risks of pollution into the design process.

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[1] https://www.gov.uk/guidance/air-quality--3
[2] https://www.gov.uk/guidance/water-supply-wastewater-and-water-quality
[3] https://www.gov.uk/guidance/land-affected-by-contamination
[4] https://www.gov.uk/guidance/land-stability

The existing Local Plan has a number of policies of relevance to this background paper. Policy RE6 specifically addresses air quality requiring mitigation measures to be put in place where negative impacts on air quality are identified. It also sets requirements for air quality assessments to be carried out for major development which would carry risk of exposing individuals to unacceptable levels of air pollution. This policy is supported by a guidance document relating to air quality and planning applications which is intended to help ensure that air quality is adequately considered in the preparation of development proposals and planning applications and elaborates on the air quality requirements that need to be considered and taken into account prior to the submission of a valid planning proposal.

Policy RE9 meanwhile addresses Land Quality with requirements for development proposals where there is a likelihood of land contamination including the need for investigations and mitigation and/ or remediation as required. Other policies in the Plan also contain requirements for waste management, for example Policy RE7 relates to managing the impact of development.

There are several policies that relate to the management of water resources and the protection of water quality. For instance, Policy RE1 contains requirements for improved water efficiency standards in order to limit water use in new developments. Policy RE4 sets out requirements for sustainable drainage, surface water flows and groundwater recharge.

The Environment Act 2021

In November 2021 the Environment Act 2021 received Royal Assent. It does not revoke or replace the Environment Act 1995, but it does make amendments to strengthen and enforce adoption of the environmental provisions. The Act introduces for requirements for the Secretary of State for DEFRA, to set long-term legally binding targets on air quality, biodiversity, water, resource efficiency and waste reduction within the UK. Part 5 of the Act also introduces aims at tackling discharge of sewage and places several duties on water companies regarding monitoring of water quality near storm overflows and sewage disposal works to secure a reduction in the adverse impacts of discharges from storm overflows.

Air Quality: other specific context

Air Quality Standards Regulations 2010 (as amended) and Air Quality Strategy

The European Directive 2008/50/EC was transposed to UK law through the UK Air Quality Standards Regulations 2010. This legislation sets short and long term legally binding limits for concentrations in outdoor air for major air pollutants that impact public health such as particulate matter (PM10 and PM2.5) and nitrogen dioxide (NO2). Particularly important is the annual mean standard for NO2, which is 40 µg/m3 for humans and 30 µg/m3 for vegetation. The UK Air Quality Strategy sets out the UK government's plans for dealing with all sources of air pollution.

The Environment Act 1995

Part IV of the Environment Act 1995 requires the Secretary of State to publish a national Air Quality Strategy and established the system of local air quality management. The Act also requires local authorities to regularly monitor air pollution in their areas against national targets and to take action where it is found that these targets are unlikely to be met. If areas

are found to be in exceedance of the legal limit values and improvements are necessary, those areas need to be designated Air Quality Management Areas, and an Action Plan need to be developed and put in place by the local authority which set up the actions that are going to be put in place to address air quality.

Oxford City Air Quality Action Plan 2021-2025[5]
Adopted in January 2021 this Air Quality Action Plan sets an ambitious target of meeting a local annual mean (Nitrogen Dioxide) NO2 target of 30µg/m3 by 2025. The Plan has developed a set of 30 actions and measures that will be delivery by Oxford City Council and partners. The Plan includes four priority areas of intervention which are as follows:

a. Developing partnerships and public education;
b. Support for the uptake of Low and Zero emission vehicles;
c. Reducing emissions from domestic heating, industry and services;
d. Reduce the need to travel, explore opportunities for modal shift and increase the uptake of sustainable transport.

Land Quality: other specific context

Oxfordshire County Council Minerals and Waste Plan
Oxfordshire County Council has an adopted Minerals and Waste Core Strategy which sets out the over-arching county policy for minerals and waste in Oxfordshire to 2031.

Land Quality Strategy for Oxford (2020)[6]
This City Council strategy seeks to ensure that Oxford's residents and the natural environment are not exposed to unacceptable risks from land contamination and to improve our environment for a sustainable future. The strategy seeks to achieve this through working with developers, landowners and other key stakeholders to manage risks from land contamination effectively and efficiently. The first objective of the strategy is "To deal with contamination through development control and building control wherever possible". In order to achieve this, the strategy sets out that it seeks to "ensure that land contamination is taken into account when developing planning policy documents".

Water Quality: other specific context

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017
These regulations aim to improve and integrate the way water bodies are managed in England and Wales. They require England and Wales to reach good chemical and ecological status in inland and coastal waters by 2027.

Thames River Basin District Management Plan, Environment Agency 2022
River Basin District Management Plans provide a framework for the protection and enhancement of water environments in river basin districts nationwide. The Thames River Basin District Management Plan covers a wide area including Oxford, and it identified a

[5] More info: https://www.oxford.gov.uk/info/20216/air_quality_management/206/air_quality_management_in_oxford/2
[6] More info: https://www.oxford.gov.uk/downloads/20054/environmental_health

number of significant water management issues impacting upon the river basin as a whole, (though not necessarily reflective of Oxford specifically) including issues relating to physical modifications to water bodies; pollution from waste water; pollution from towns, cities and transport; changes to the natural flow and level of water; negative effects of invasive non-native species; and pollution from rural areas.

Thames Water Draft Water Resources Management Plan 2020-2100
Thames Water are currently updating their Water Resources Management Plan (WRMP) which will cover the period 2020 – 2100[7]. WRMPs are important strategic plans that set out the preferred programme for managing water resources in the Thames Water supply area. The plan sets out forecasts of supply and demand, alongside demand management and water supply options across the Thames Water supply area. It also sets out a programme of investment to ensure that water resources with the Thames Water area are appropriately managed.

Thames Water Drainage and Wastewater Management Plan (DWMP)
Thames Water's DWMP[8] meanwhile addresses future pressures on our wastewater service and sets out their approach and the investment needed to deliver a sustainable service that manages wastewater for the area and protects the environment. The DWMP covers a 25 year period and was published in May 2023.

3. Current situation

Air quality
3.1 The City Council declared an Air Quality Management Area (AQMA) for Nitrogen Dioxide (NO2) in central Oxford in 2003, which was expanded in 2005. Despite good progress being made as part of the responses enacted to address these designations, significant breaches of the national objectives for NO2 still existed and additional hotspots were identified. Following further detailed assessments of air quality, a city-wide AQMA was declared in September 2010. In 2021 the Council published its Air Quality Action Plan (AQAP) prepared to address poor air quality in the city covers the period from 2021-2025 and includes an ambitious headline target to "achieve a local mean NO2 target of 30µg/m3 by 2025".

3.2 Air pollution can have a variety of causes including tail pipe emissions from transport, the wearing of tyre and brake pads, as well as emissions from heating sources within buildings. The pollutants are comprised of various substances including, nitrogen dioxide, ozone, and particulate matter (small particles of solids like soot and dust). According to analysis from the Council's most recent (2020) source apportionment study[9], the transport sector is the largest contributor (68%) to total emissions of Nitrogen Oxides (NOx) in the city, followed by domestic combustion (19%), combustion from industry and services (12%) and others: waste, agriculture, solvents, nature (<1%).

[7] More information: https://thames-wrmp.co.uk/
[8] https://www.thameswater.co.uk/about-us/regulation/drainage-and-wastewater-management
[9] Available from here: https://www.oxford.gov.uk/info/20298/air_quality_data

3.3 Reporting from the Council's annual air quality status report (2022)[10] indicates the following in terms of current situation:

- One legal breach of the UK's NO2 annual mean limit value was observed in the city of Oxford at locations considered of relevant exposure in 2022. This was at St Clements (The Plain) – the city's historic air quality hotspot, with an annual mean of NO2 43 µg/m3.
- Twelve locations within the city were above Oxford's local annual mean target of 30 µg/m3 for NO2. These locations are: Cutteslowe Roundabout; St Aldates; High Street (2x); Long Wall St; St Clements (2x); Hollow Way Road; Worcester St., Park End St, Oxford Road (intersection with Newman's Road) and Oliver Road (facing Eastern bypass Road).
- 2022 saw an average decrease in NO2 levels in the city of 8% compared with the previous monitoring year of 2021. Compared to the levels of NO2 measured in 2019, the last pre-pandemic year, there was an average reduction of 24% of NO2 levels. Notably, despite county monitoring indicating traffic levels have increased (on average) within the city of Oxford by 8.2% in 2022, NO2 levels have reduced in the city despite the observed traffic increases.
- Annual mean for particulate matter PM2.5 levels is measured in fewer locations than NO2, but is marginally above the annual mean of 5 µg/m3 recommended by the WHO for this pollutant. Annual mean PM10 levels have slightly increased at our monitoring sites in 2022. Values are well within compliance with the UK's annual mean limit value of 40 µg/m3 , and very close to the 15 µg/m3 guideline value recommended by WHO for this pollutant.
- Ozone is measured at one site in Oxford and levels exceeded the daily objective 159 times over a total of 24 days during the year. This represents a significant increase in the number of exceedances (99 more), and days (12 more), when compared with 2021. However, local measures alone are not enough to tackle the problem and actions at different levels of governance (i.e. regionally and internationally) are required.
- The report also details various positive steps that have happened over the last year with regard to addressing transport emissions. For example, a deal to bring 159 electric buses (and the infrastructure to charge them) to Oxford officially being signed, with all buses expected to arrive in the city by March 2024; Oxford City Council now having a total of 27% of their fleet fully electric, exceeding the Council's original AQAP commitment of having 25% of its fleet fully electric by the end of 202; completing the last stage of a working driver focussed project (T-GULO) to support the Oxford Hackney Carriage and Private Hire (PH) trades with electrification including delivering 9 rapid chargers dedicated to the taxi trades.

3.4 Long-term exposure to air pollution has been linked to chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to reduced life expectancy. Short-term increases in levels of air pollution is associated with a range of health impacts, including lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality. It can be particularly detrimental for society's most vulnerable including the children, the elderly, those with long-term health

[10] https://www.oxford.gov.uk/info/20298/air_quality_data/1216/air_quality_annual_status_reports

conditions. Air quality was legally recognised as a contributing factor in the death of an individual in the UK for the first time in 2020. The issues of poor air quality affect everyone, but there are often inequalities in exposure towards those living in more deprived communities for reasons such as: living in poorer quality buildings; reduced access to open space and green infrastructure; proximity to busier main roads where pollution is worst.

3.5 Poor air quality can also have negative impacts on sensitive habitats, particularly near to sources of emissions like roads with deposits of substances like nitrogen altering the suitability of the environment for certain species and changing the makeup of the ecosystem over time.

Land quality/soils

3.6 Oxford contains several wedges of agricultural land. The best and most versatile agricultural land (Grades 1, 2, and 3a) is considered to be a national resource and should not be lost. Most of the agricultural land in Oxford is not of this quality, however, there are some parcels of Grade 2 agricultural land north of Binsey and in the Cherwell Valley.

3.7 Oxford has seen significant industrial change to the present day in fact Oxford's industrial history has resulted in a substantial amount of land affected by contamination. Almost all of the former major industrial sites have now been remediated and redeveloped, such as Lucy's in Jericho and the former car factory site in Cowley. However, there remain a number of smaller sites that have the potential to be affected by contamination.

3.8 In 1989, Oxford City Council commissioned a review of former landfill sites in the city. It was a comprehensive review that allowed the city council to manage the risks associated with those sites. A review of council owned allotment sites was also carried out in the 1990s following some concerns about the quality of the land for growing produce. Since then, some council-owned land, such as former depots, has been redeveloped for housing and the necessary site investigations and remediation has been secured through the planning process.

3.9 Oxford City Council maintains a public Contaminated Land Register in accordance with the relevant legislation. There are currently no entries on the Contaminated Land Register. It is worth noting that the register does not included the details of sites that have been remediated through the planning process. There is the possibility that contaminated sites which have not been identified remain and thus could be added to the register in the future.

3.10 Oxford has a number of peat-rich soil deposits which are located in several locations across the city. Peat rich soils are particularly valuable natural features which not only act as important storage for carbon (carbon sinks) but are also important for managing/storing water and also for retaining archaeological deposits[11]. Mapping from Natural England's

[11] More info: https://www.nationaltrust.org.uk/our-cause/nature-climate/climate-change-sustainability/preserving-our-peatland

website[12] has these identified at Dunstan park, around the Churchill Hospital and Lye Valley, as well as along Littlemore Brook in the south of the city. Engagement with Natural England officers suggests that this mapping is only approximate and that a future project is likely to result in refinements to this mapping. Indeed the Council is aware of potential for deposits more widely in the city despite historic development having likely removed much of what was once present.

Water Quality

3.11 The Council has undertaken a separate Water Cycle Study update which builds on work for the previous Local Plan 2036 and updates the situation where things have changed, this should be referred to for a detailed assessment of water conditions in the city. The following is a summary of the findings from that study.

3.12 In terms of water supply, the city remains in an area of serious water stress as identified by the EA in their most recent review in 2021. Thames Water are responsible for water supply for the city and their draft Water Resources Management Plan notes three key challenges facing the management of the water supply for the region in the future: a growing population, climate change and the need to protect the environment. By 2045, without taking action, the plan projects a water supply shortfall of 387 million litres per day, which increases to 688 million litres per day by 2100. In order to tackle the shortfall, the plan proposes a variety of measures including leakage reduction, smart meter installation, free water efficiency measures and advice for customers, as well as new water supply schemes.

3.13 Oxford is located within the Thames River Basin District which is covered by the Thames River Basin Management Plan (TRBMP) which was last updated by the Environment Agency in 2022. As part of this update, revised condition assessments are available showing that water quality across the waterbodies in the city remain moderate or poor for a variety of reasons, in particular:

- Agricultural practices (poor nutrient management)
- Sewage discharge
- Invasive species
- Urbanisation
- Global pollutants (uPBTs) - *causing all waterbodies across country to currently be classed as fail for chemical status*

3.14 Wastewater infrastructure in the city does not present significant capacity concerns although there are likely to be areas of the city which will require upgrades to accommodate new development. Thames Water have confirmed they are in process of finalising plans for a significant upgrade to the Oxford Wastewater Treatment Works which will help with capacity concerns. Separately, Thames Water's Drainage and Wastewater Management Plan (covering the period 2025 to 2050), proposes various measures to address targets for

[12] https://naturalengland-defra.opendata.arcgis.com/datasets/1e5a1cdb2ab64b1a94852fb982c42b52_0/explore?location=51.723328%2C-1.214275%2C15.27

addressing known issues with the wastewater and drainage systems across their region which will include Oxford.

3.15 Climate change is likely to put additional pressures on the water environment in future. Drier, warmer summers could put pressure on water supply and the quality of waterbodies in the city. Equally, more intense rainfall events could put additional pressures on wastewater systems and result in additional releases of pollutants into waterbodies without appropriate mitigation measures in place.

Other impacts on the environment

3.16 The development process can have other impacts on the environment and people's health unless sufficient mitigations are put in place. For example, impacts of noise pollution arising from construction processes as well as when a development is in operation and from other sources such as traffic can have a variety of health impacts such as sleep disturbance, impairing concentration and causing stress[13] in people whilst also disturbing wildlife. Impacts of dust released arising from during construction processes like demolition and processing materials can exacerbate air pollution, whilst excessive artificial lighting can impair natural functions of wildlife such as birds and insects. In denser urban areas, the sources of these types of pollution can be more common and their impacts increased.

Feedback from previous consultations

3.17 Feedback from the 2021 Issues consultation was varied reflecting the broad scope of that initial consultation process, the comments are summarised in detail in the full consultation report, however some of the main topics addressed include:

- The need for addressing poor air quality in the city
- Impacts of various sources of air pollution including congestion particularly on more busy roads, as well as heating systems (e.g. boilers, wood burners)
- Concerns over water quality and importance of this to the environment including the need to improve quality of watercourses like rivers
- Condition of sewage and wastewater systems
- Impacts of other sources of pollution on health such as noise

3.18 Feedback from the 2022 Preferred Options consultation again was quite varied and is summarised in detail in the full consultation summary, however some key feedback included the following:

Natural England:

- supported the approach of incorporating water quality issues into a range of policies. Went on to reiterate the need for the Local Plan to be based on an up-to-date evidence base on the water environment and to have regard to the relevant River Basin Management Plans and use them to inform the Local Plan. Also stated the need for policies which protect habitats from water-related impacts and where appropriate seek enhancement of habitats.

[13] More info: https://www.eea.europa.eu/articles/noise-pollution-is-a-major

- Expect Local Plan to address issues of air quality on natural environment including traffic impacts on the sensitive ecological sites.

Historic England:

- Support approach of incorporating water quality issues into a range of policies and the approach set out for addressing air quality.
- flagged concern that the archaeological aspect of considering issues of contamination in the ground and that the Local Plan needs to give this due consideration. Also highlighted that there may be important peat reserves in the city which have natural and historic environment benefits and need to be considered by the LP.

Environment Agency:

- felt there should be bespoke policy for water quality in order to address the various pressures on the water environment and development should not be permitted where there are concerns about insufficient capacity in Sewage Treatment Works. Want to see commitment between Council and Thames Water to ensure that the Oxford STW is resilient to future demand and work on addressing current issues before new development occurs.
- support having policy which addresses contaminated land as gives more confidence site investigations will happen on suspected sites, particularly in cases where the EA is not involved (as they do not provide consultee requests on every application based on their own internal criteria).

Thames Water:

- Expressed support for bespoke policy approach to water quality and wastewater and flag importance of water supply/wastewater management to supporting any development.
- Flag that there are significant lead in times to waterwater upgrades which need to be factored in to development process as early as possible. Developers can access various resources on their website.
- Flag Oxford is in a water stress area and LP needs to continue to apply the more stringent water use limits from Building Regs.
- Amenity policy also needs to include issues of odour and LP allocations need to consider impacts of any development on existign sewage works.

Other comments:

- National development management policies may make many of these policies redundant.
- Concerns about overburdening developers.
- Concerns about air quality being poor, particularly in certain areas of city – need to support more rapid improvements.
- Concern around impacts of measures such as LTNs (Low Traffic Neighbourhoods).
- Need to think about air quality requirements are monitored and enforced.
- Differing opinions about the need for local policy on air quality – some feeling that it is better to rely on other regulatory regimes.

- Concerns about water quality, water supplies, groundwater flows. Also the need for encouraging water efficiency measures like grey water recycling in new development.
- Concerns about sewage system infrastructure including aging infrastructure and need for separating out rainwater and sewage systems.
- Want to see consideration for land's ability to sequester carbon and address issues of peat conservation.
- Need to consider impacts from lighting

4. Likely trends without a new local plan

4.1 Up until 2036, the policies of the currently adopted Local Plan as discussed earlier will continue to apply. After that, protection would fall to national policy which affords various protections and requirements for addressing issues of pollution/contamination of air, land and water.

4.2 Whilst air pollution arises from various sources, it is predominantly transport (particularly fossil fuel burning engines) which is responsible for the bulk of pollutants in the city. The Local Plan has limited influence on transport emissions as the Council is not the highways authority but it can be expected that improvements in conditions are likely to continue into the future. Nationally, whilst government has recently delayed the phase out of petrol/diesel engines to 2035, emissions are expected to continue to reduce as transport shifts towards electric vehicles. Indeed, the most recent Air Quality Status (AQS) report highlights how Oxfordshire has some of the highest EV uptake figures for newly registered vehicles in the UK, with uptake consistently above 44% (and rising) from November 2022 onwards. There are likely to remain impacts from brakes/tyres, however, small improvements could also occur as technologies improve in this regard.

4.3 Locally, a number of schemes proposed in the city through the Local Transport and Connectivity Plan (LTCP)[14] and the Central Oxfordshire Travel Plan (COTP)[15] including traffic filters, LTNs and the zero emission zone for example, are expected, in combination, to improve air quality by reducing emissions associated with transport. These are also likely to bring benefits without a new local plan as they are being driven via different work-programmes. The transport and connectivity background paper should be referred to for more details.

4.4 Development pressures will continue in the city regardless of a new Local Plan, including ongoing demand for land for housing and other uses; increased pressure for higher densities; and a continued reliance on previously developed land. The absence of Local Plan strategy and framework could therefore potentially put pressure on greenfield sites, including agricultural land, within the city boundary, which could have subsequent

[14] https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/ltcp
[15] https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/central-oxon-travel-plan

implications for degrading soils if unmitigated, as well as the potential to have an adverse impact on the amenity of residents and visitors to the city. It also means that there will be a continued need for addressing issues of contaminated land including appropriate remediation where necessary to ensure people do not come into contact with harmful pollutants.

4.5 Thames Water have a variety of plans in place to address water supply and wastewater treatment which will likely have benefits for Oxford, though these will not be as successful if not combined with sufficient efficiency measures as part of new development. The absence of a Local Plan would also mean that Thames Water would have less certainty over the location and scale of future development which would make it harder for them to plan for future needs. In terms of water quality, development processes, over which the Local Plan has most influence are likely to impact some of these factors set out earlier, particularly urbanisation and sewage discharge, so without sufficient Local Plan policies these may remain or worsen.

5. Approach taken for Local Plan 2040

5.1 Local Plan 2040 continues approach of the Local Plan 2036 in addressing different elements of natural resources and environmental quality across a number of policies. Overarching across all the topics discussed in this paper is policy R7 Amenity and Environmental Health impacts of development which covers a wide range of issues that can arise during the construction and operational phases of development. The policy sets out various impacts a development may need to mitigate including various types of pollution such as noise and vibration, light as well as impacts of odour. This is supported by requirements for construction management plans as set out in policy C6. The Local Plan then also includes several bespoke policies which address particular issues that need more nuanced responses.

5.2 Policy R4 sets out requirements in relation to air quality including requirements for Air Quality Assessments on major developments as well as general requirements with regard to designing to mitigate impacts of poor air quality, particularly on sensitive receptors. Air quality limits of new development are expected to fall in line with the local target for Nitrogen Dioxide (NO2) as set within the Council's Air Quality Action Plan, this ensures that the standards of development are aligned with the wider strategy for addressing poor air quality in the city. With the shift towards electric vehicles and electric forms of heating in buildings (as opposed to burning fossil fuels), it is expected that accordance with this target should become increasingly manageable over time.

5.3 There are a couple of policies which address land and soil quality. Policy R5 addresses land contamination. This policy is largely unchanged from the currently adopted policy within the Local Plan 2036, with minor revisions including reference to sustainable remediation practices.

5.4 A new policy has been incorporated which addresses soils and peat reserves. General requirements are included which encourage more sustainable use of soils, and whilst these will be more relevant on greenfield sites, it is important that they are considered in any development which affects soil as these are important resources. The policy also includes requirements for addressing peat reserves in the city, there are several known reserves in Oxford. The Council's engagement with Natural England on their mapping of peat across the UK has identified that this is likely to be subject to further refinement in future and may not identify all potential reserves, meaning there is potential for other undisturbed peat sources nearby. For this reason, the policy includes a requirement for investigations within 200m of the known reserves identified by Natural England if proposing development on greenfield sites. This requirement is considered necessary so that the development is informed by a sound understanding of below ground conditions and that the Council is provided with sufficient information to make a determination about impact on other peat deposits in the city.

5.5 Unlike air and land, water is not dealt with in a specific policy due to the more complex conditions that can affect this element of the environment. Water quality is addressed as part of requirements for multi-functional green Sustainable Drainage Systems (SuDS) which are important for helping to filter contaminants of surface water run off (policy G8) and the protections for amenity and environmental quality (R7). Where water quality is a concern particularly for the condition of ecological sites – a number of which are sensitive to changes in hydrology, policy G6 sets out the protection and mitigations required where development could potentially have an impact.

5.6 Water resources (supplies) are addressed largely through policy G9 which requires resilient design in relation to future climate change impacts. This policy sets various requirements on the design of development and includes the higher water use restriction of Building Regulations, as well as more general water saving/efficiency measures. In addition, policy G1 protects the GI network which includes blue spaces, so will help to protect these environments, equally, G2 encourages buffers along watercourses which seeks to protect and enhance these areas where development happens adjacent to them. The Water Cycle Study details our discussion with Thames Water and their plans for infrastructure provision in relation to water supply and wastewater.

6. Conclusions

6.1 The analysis and discussion as set out above has led to the inclusion of the following policies in the new Local Plan which are as follows:

Policy R4 – Air quality assessments and standards

Planning permission will only be granted where the impact of new development on air quality is mitigated and where exposure to poor air quality is minimised or reduced as far as is reasonably practicable.

The design of new development (during construction and in operation) needs to consider the potential impacts upon air quality for current and new occupants. Sensitive uses such as schools, nurseries, care homes and healthcare settings, should be located away from areas of poor air quality as far as reasonably practical through careful site layout designed to protect human exposure to high pollution levels.

Air Quality Assessments (AQA) will be required for all major developments. Planning permission will only be granted for major developments where the AQA meets the following criteria:

a) **provides an assessment of the impacts of all the different sources of air pollution generated during the development's operational and construction phases, (including but not limited to transport, heating, dust generated from demolition/construction/earthworks activities); and**
b) **has considered the cumulative impacts from other sources of air pollution in the local area where relevant; and**
c) **clearly identifies any potential negative air quality impacts, including where these would compromise achievement of the local annual mean air quality target for Nitrogen Dioxide (NO_2), as set out in the city's Air Quality Action Plan (AQAP) and**
d) **sets out appropriate site-specific mitigation measures to address negative impacts identified, following the principle of redesign – mitigate – offset.**

Planning applications for proposals that involve significant demolition, construction or earthworks will also be required to submit a dust assessment as part of the AQA, to assess the potential impacts and health risks of dust emissions from those activities. Any appropriate site-specific dust mitigation measures will be secured as part of the Construction Management Plan (CMP) as required by Policy C6.

All applications are expected to follow the guidance set out in the Oxford City Council's Air Quality Planning Application Guidance Note.

Policy R5 – Land contamination

Planning applications where proposals could be affected by contamination or where contamination may present a risk to the surrounding environment, must be accompanied by a report which:

a) details the investigations that have been carried out to assess the nature and extent of contamination and the possible impacts it may have on the development and its future users, biodiversity, the natural and built environment; and
b) sets out detailed mitigation measures to allow the development to go ahead safely and without adverse effect, including, as appropriate:

I. **removing the contamination;**
II. **treating the contamination;**
III. **protecting and/or separating the development from the effects of the contamination;**
IV. **validation of mitigation measures.**

Where site investigation and mitigation measures are needed, these will be required as a condition of any planning permission.

Policy R6 – Soil quality

Planning applications will be expected to demonstrate how the impact of development on soils has been mitigated and opportunities for conserving and enhancing the capacity/quality of soil maximised. The design and access statement and associated landscape plans should include details setting out the following where relevant:

a. **How impact on soils during the construction process has been minimised through avoiding: soil loss, compaction, pollution and reduction in the quality of soil; and**
b. **Development has been located in a way that avoids highest quality soils on sites where possible; and**
c. **Beneficial soil reuse and sustainable soil management has been implemented where possible; and**
d. **Artificial surface cover that seals off soils has been minimised.**

Planning permission will not be granted for proposals that would remove or dewater 10m³ or more of peat.

Major developments on undeveloped land upon, or within 200m of, known peat reserves should submit an assessment, informed by borehole sampling, to allow the Council to determine any potential impacts on reserves. The assessment should include details of the following:

- **The estimated carbon footprint of the peat impacted by development.**
- **Its palaeo-archaeological interest.**
- **Its function in the surrounding habitats.**
- **Its hydrological condition and stability.**

Policy R7 – Amenity and Environmental Health Impacts of Development

Planning permission will only be granted for development that:

a. **ensures that the amenity of communities, occupiers, neighbours and the natural environment is protected; and**
b. **does not have unacceptable transport impacts affecting communities, occupiers, neighbours and the existing transport network; and**
c. **provides mitigation measures where necessary.**

The factors the City Council will consider in determining compliance with the above elements of this policy will also include where relevant:

d. **visual privacy, outlook;**
e. **sunlight, daylight, overshadowing and mitigating glare from solar panels and windows where applicable;**
f. **artificial lighting levels;**
g. **transport impacts;**
h. **impacts of the construction phase including the assessment of these impacts within the construction traffic management plans (refer to Policy C6);**
i. **odour, fumes and dust;**
j. **microclimate e.g., wind, overheating**
k. **contaminated land;**
l. **impact upon waste and wastewater infrastructure;**
m. **noise and vibration; and**
n. **preserving surrounding water quality.**

Planning permission will not be granted for development sensitive to noise in locations which experience high levels of noise, unless it can be demonstrated through a noise assessment, that appropriate attenuation measures will be provided to ensure an acceptable level of amenity for end users and to prevent harm to the continued operation of existing uses.