4. Making wise use of our resources and securing a good quality local environment

4.1 *Objectives*

- To achieve improved air quality and high levels of energy efficiency, renewable energy provision and water conservation, maximising Oxford's potential in low carbon technologies
- To ensure efficient use of land by seeking opportunities for facilities to be multi-functional, and by maximising efficient use of scarce land
- To manage water flow and to help protect people and their property from the impacts of flooding
- To achieve significant progress towards its net zero greenhouse gas emissions aspiration across Oxford, with the City Council leading by example by continuing to reduce its own emissions and increase its use of renewable energy

Making wise use of our resources to meet Oxford's development needs in the most appropriate way

National Planning Policy says:

4.2 The *National Planning Policy Framework* (NPPF) states that planning should encourage the effective use of land by re using land that has been previously developed (brownfield land), provided that it is not of high environmental value. The NPPF also states that LPAs can consider whether to set a locally appropriate target for the use of PDL and also that they should set out their own approach to housing density to reflect local circumstances (paragraph 111).

4.3 The NPPF states that government attaches great importance to Green Belts; it also states that "local planning authorities should plan positively to enhance the beneficial use of the Green Belt, such as looking for opportunities to provide access; to provide opportunities for outdoor sport and recreation; to retain and enhance landscapes, visual amenity and biodiversity; or to improve damaged and derelict land" (paragraph 81). Green Belt boundaries should only be altered in exceptional circumstances, through the preparation or review of the Local Plan (paragraph 83).

4.4 Local authorities must prepare local policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to climate change (Section 19 of the Planning and Compulsory Purchase Act 2004). The NPPF expands on this duty, stating that: "local planning authorities should adopt proactive strategies to mitigate and adapt to climate change (In line with the objectives and provisions of the Climate Change Act 2008) (paragraph 94)." The *Planning Practice Guidance* (PPG) gives examples of policies for

mitigating climate change, they include reducing the need to travel and sustainable travel; providing opportunities for renewable and low carbon energy technologies; providing opportunities for decentralised energy and heating; and promoting low carbon building design approaches.

4.5 The NPPF encourages the use of renewable and low carbon energy and sets out the following in terms of what LPAs should do:

- Have a positive energy strategy to promote energy from renewable and low carbon sources;
- Design their policies to maximise renewable and low carbon energy development, while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts;
- Consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources;
- Support community led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and:
- Identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon supply systems and from co locating potential heat customers and suppliers (paragraph 97).

The Oxford story – background evidence and the Sustainability Appraisal:

4.6 Efficient use of land to meet Oxford's needs

Using scarce resources efficiently is vital to ensuring Oxford's sustainable growth and development. Oxford is a small city with a tightly drawn administrative boundary and a growing population. It has a total area of about 46km^2, with parts of the urban area very densely developed. The river corridors of the Thames and Cherwell penetrate as extensive green and blue wedges into the heart of the city. These corridors together with their flood plains form much of the city's 1287m^2 of Green Belt land.

4.7 Oxford has a good record for re-using previously developed land efficiently. Some parts of the city, including town and district centres, are densely populated but nonetheless have capacity to accommodate further residential development sensitively. This approach should as it promotes more sustainable and cohesive communities, and also has a number of positive environmental and economic effects. However, given that previously developed land can only meet a limited supply of Oxford's economic and housing needs, there is a need to look at a range of additional greenfield sites to see if any are suitable to help meet needs.

4.8 Climate Change

The Local Plan should ensure that our fossil fuel derived energy use and CO_2 emissions per capita continue to reduce. Oxford's Sustainability Strategy, Low Emission Strategy and forthcoming Sustainable Energy Action Plan (SEAP) set the ambition to reduce GHG emissions across the city. Oxford's per capita CO_2 emissions were 5.9 tonnes in 2013 and are projected to continue falling and the target to reduce the city's emissions by 40% by 2020 compared to a 2005 baseline is likely to be achieved. The Local Plan should support actions that will support further reductions in CO_2 emissions in order to achieve the 4.8 tonnes per capita emissions target required in 2030 to limit global warming to 1.5°C.

4.9 The Oxford Sustainability Index Report 2016[1] highlights that Oxford, compared to other similar urban areas, performs less well in terms of locally generated renewable energy. Of the approximately 5,500 MWh of locally sourced renewable electricity generated each year, approximately 77%

[1] Oxford Sustainability Index 2016 is available at www.oxford.gov.uk/info/20062/carbon_reduction_and_energy_saving/1094/oxford_sustainability_index_2016

comes from photovoltaics. There remains provision within the Planning and Energy Act 2008 for councils to continue to apply on-site renewable energy policies within Local Plans.

4.10 In 2015 the Government introduced significant changes to energy and sustainability standards in spatial planning. The new national technical housing standards were introduced on 1 October 2015 through Building Regulations. This new system will comprise additional optional Building Regulations on water use and access. The Government's intention is that local planning authorities should not set energy efficiency standards for residential properties. However, renewable energy targets can still be set. Also, the Climate Change Act is referenced in the NPPF as a relevant consideration in decision making, meaning that planning authorities have a duty to shape policy that reduces carbon dioxide emissions.

4.11 In 2016 a heat network feasibility study[2] was jointly been commissioned by Oxford City Council and the University of Oxford with additional funding provided by the Heat Network Delivery Unit at the Department of Energy and Climate Change (now BEIS). The study investigated a number of heat network options for Oxford city centre (including the science area and wider) and the Headington area, connecting a wide range of potential heat and power consumers and a range of baseload supply technologies.

[2] Heat Networks for Oxford - city centre feasibility study is available at www.oxford.gov.uk/info/20062/carbon_reduction_and_energy_saving/1147/heat_networks_for_oxford_-_city_centre_feasibility_study

4.12 The SA highlighted how a Green Belt review and release of some Green Belt sites would have a potentially positive impact on several sustainability objectives (notably housing, essential services and facilities and economy and employment) and a potentially negative impact on others (in particular green spaces and water and soil quality). Clearly a measured and balanced approach will need to be taken in drafting these policies. The SA also identified the potential positive benefits of including a suite of policies in the Local Plan on sustainable design, carbon reduction and other sustainable buildings issues. In contrast the SA identified potential risks that could result from relying on national policies alone.

Responses to first steps consultation:

4.13 Use of land

It is clear from the consultation responses received that views were mixed on the idea of a Green Belt review with the possibility of urban extensions. The majority of respondents (282) supported the idea of urban extensions close to Oxford. However, a significant minority of people (111 respondents) were against any development on Green Belt land. Many respondents suggested the City Council should explore a variety of options for increasing housing supply within the city, including removing land from the Green Belt within Oxford, developing taller buildings in some areas, promoting development on previously developed land and considering developing parts of recreational areas that are of poor quality or under-used.

4.14 The issue about allowing some poor quality/under-used green spaces to be partly developed for housing generated a high level of responses with views quite evenly split between those who agreed with this approach (196 respondents) and those who were against it (168).

4.15 Climate change

Regarding on-site renewable energy generation, the majority of respondents agreed that new developments should be required to include renewable installations (181 out of 245 on-line responses). In addition to generally supportive comments, there were some respondents who

considered that on-site renewable energy generation can be ineffective and the focus should be on large scale projects. A number of respondents suggested that the focus should be on energy efficiency of new buildings, and that any new policy requirements should take account of the energy hierarchy (the most practical and cost effective methods to achieve low carbon development). Thames Water recommended a policy requiring new dwellings to incorporate water efficiency measures and a policy which specifically addresses the need for all development to incorporate SuDS.

Potential policy responses:

4.16 Efficient use of land to meet Oxford's needs

Because of the shortage of developable land in Oxford, it is important that options consider the best way to use that land. Focusing development on previously developed land can ensure efficient use of land and tends to concentrate development in areas where it will support facilities and services such as bus routes. Greenfield sites deliver many functions and benefits and are highly valuable, so will generally be protected. However, policy approaches should consider how to identify the greenfield sites with less value that could be suitable for development. This will include Green Belt sites. Sites in Green Belt have been identified that are of low recreational, biodiversity and flood storage value and which have landowner interest in developing the site. An Oxford Green Belt Study has been prepared by Land Use Consultants, which assesses the impact that development on these identified Green Belt sites would have on the integrity of the remaining Green Belt.

Opt 29: Making use of previously developed land

Policy approach	Consequences of approach/discussion
A) Preferred option: Restrict development to previously developed land (with a special focus on developing higher density schemes around transport hubs such as the district centres and the railway station) and specific greenfield sites that have been identified as suitable for allocation.	This approach would deliver more residential and key essential services sites than the other policy options. It would support resisting a piecemeal and ad hoc approach to development. Depending on its implementation this approach may have a number of positive effects, including social and environmental (e.g. it should be easier for larger sites to deliver net biodiversity gain). This approach encourages the redevelopment of underused and vacant sites.
B) Rejected Option: Focus all new development just on previously developed land.	This policy approach would significantly restrict the amount of land for residential and other key essential services. This approach is also likely to restrict opportunities to expand existing educational and other essential services and facilities or to develop new ones. This approach would have a positive impact on biodiversity and green spaces and recreational land.
C) Rejected Option: Allow new development on any greenfield land not protected by other designations such as flood plain.	This approach prioritises the delivery of new development sites for housing and other key essential services over the reuse and intensification of existing sites and the protection of green spaces. This approach would have negative impacts on a number of areas, including biodiversity, climate change, recreational opportunities and historic environment that are critical to the sustainable development within the city. This blanket approach to allowing new development on greenfield land would not be in compliance with the NPPF.

Opt 30: Density and efficient use of land

Policy approach	Consequences of approach/discussion
A) Preferred option: Have a policy requiring that development proposals make the best use of site capacity, in a way that is compatible with both the	This option will require developers to show that opportunities for maximising the development opportunities of the site have been explored. It would enable applications to be refused if they do not make efficient use of land. However, it also acknowledges that proposals should make an individual design response to

site itself and the surrounding area, with building heights and massing at least equivalent to the surrounding area, and bearing in mind that larger-scale proposals will be suitable in many situations.	site specific circumstances and surroundings, and that capacity will be guided by the appropriate use for the site. Generally a greater intensity of development will be expected on sites with good local facilities and public transport accessibility. This will include the district and city centres, and also will include the main arterial routes in the city and areas around the station, and potentially the new Cowley Branchline stops. This option relates to the design options in the chapter on "Built environment, heritage and creating quality new development".
B) Alternative Option: Have minimum housing density requirements in all locations.	This would ensure efficient use is made of land, and maximise the potential of new development to meet needs. However, it does not allow an individual response to surroundings, which should be encouraged to ensure good urban design. The suitable minimum density would be too variable depending on the part of the city. In many cases, a density well above that set as a minimum may be suitable, but this may not be explored if policy suggests a suitable density. In other cases, a low density development on a small site may be the best response to surroundings.
C) Rejected Option: Do not include a policy on density and efficient use of land but rely on national planning policy.	This option relates to the design options in the chapter on "Built environment, heritage and creating quality new development". This will mean that developments of a low density could come forward which to not take account of the scarcity of land in Oxford and the need to ensure maximum use is made of that land.

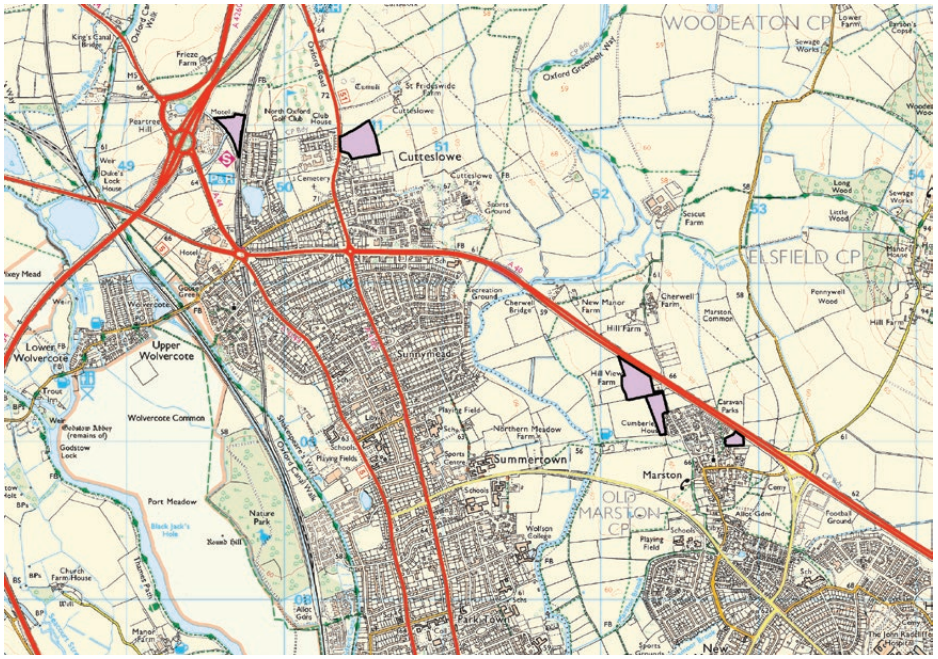
Opt 31: Green Belt

Policy approach	Consequences of approach/discussion
A) Preferred option: Review the Green Belt boundaries and be predisposed to allocate Green Belt sites within the city for housing (taking into account other relevant considerations) that are rated as having a 'moderate' and 'low' impact on the Green Belt, as determined by the Green Belt Study 2016, undertaken by LUC. Do not review the Green Belt boundary or allocate sites where the impact would be 'high'.	This approach will mean allocating 8 sites of about 18 hectares in total where development would have a moderate impact on the integrity of the Green Belt. (To put this in context, there is of a total of 1,287 hectares of Green Belt within the city. The city is 4,559.58 hectares in total). It will avoid allocating any sites for development where the impact on the integrity of the Green Belt would be high. It strikes a balance between protecting the integrity of the Green belt and ensuring sites come forward to meet development needs in the city in sustainable locations. As well as the Green belt assessment, all sites would be appraised to ensure they are good locations for development, although generally any site in Oxford is likely to be a sustainable location for new development. This approach would require Green Belt boundaries to be reviewed and amended. Site allocations policies should also mention any other potentially mitigating measures that could minimise any harmful impact on the Green belt.
B) Alternative Option: Review the Green Belt boundaries and be predisposed to allocate Green Belt sites for housing (taking into account other relevant considerations) that are rated as having a 'low' impact on the Green Belt, as determined by the Green Belt Study.	This approach will ensure very little harm to the overall integrity of the Green Belt. However, given the need for new housing in Oxford, particularly to support the economy and the functioning of the city, further consideration than this should be given to potential development on sites in the Green Belt.
C) Rejected Option: Review the Green Belt boundaries and be predisposed to allocate Green Belt sites for housing (taking into account other relevant considerations) that are rated as having a 'high', 'moderate' and 'low' impact on the Green Belt, as determined by the Green Belt Study.	This approach is likely to have a significant harm to the overall integrity of the Green Belt in Oxford. The important functions, and ultimate aim of the Green Belt to protect Oxford's setting would be significantly harmed.

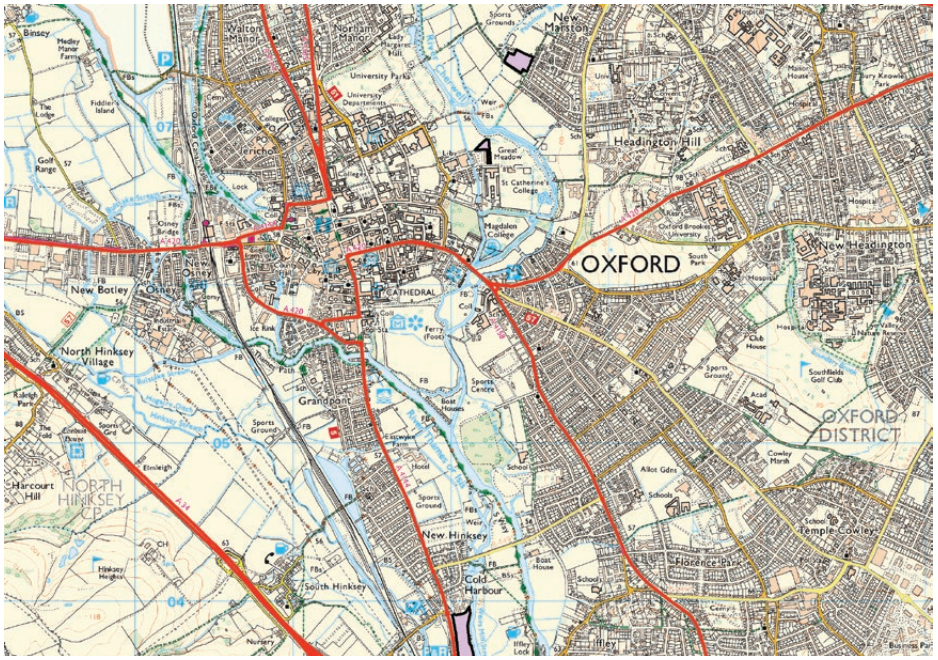
D) Rejected Option: Do not allocate Green Belt sites for housing.	This would have no negative impact on the overall function of the Green Belt. However, it would also mean that sites where there would be only a moderate or low impact on Green Belt, and which otherwise have minimal recreational, biodiversity and flood storage value, would not come forward to help meet Oxford's significant development needs. This would mean more development would need to be outside of the Green Belt, which could be in less sustainable locations. Many Green Belt locations are in all other ways very sustainable locations for new development as they are in well-connected locations on sustainable transport networks and close to existing facilities. This approach would not be consistent with the approach neighbouring Oxfordshire authorities are taking to Oxford's Green Belt in their own Local Plans.

4.17 The Green Belt sites considered in the Green Belt Study that are recommended for further consideration as development sites are shown below (note that the Green Belt Study assesses another site, 112b-4, as having potentially moderate impact, but that site is not recommended for further consideration as the landowner has stated they have no intention to develop):

Map 1



Map 2



4.18 Climate change adaptation and mitigation

Given the nature of Oxford, renewable energy cannot be derived from large installations of wind turbines or solar panels. Therefore, it is particularly important that each development over a certain size makes a contribution. Energy efficiency and provision of energy from on-site renewable energy can also help to reduce fuel poverty and therefore could help address some of the inequality seen in Oxford.

Opt 32: Energy efficient design and construction

Policy approach	Consequences of approach/discussion
A) Preferred option: Include a policy that has specific requirements for design and construction, including energy performance or carbon emission target standards that exceed current Building Regulations. This policy would set out a number of design principles that would have to be considered by applicants.	As a result of the Housing Standards Review and subsequent changes to the PPG (2015) Local Authorities are no longer able to include in planning policies local building standards relating to energy efficiency, water efficiency or building materials. Instead, the new optional Building Regulations standards (on accessibility, water, waste, and security) can be adopted by a Local Authority via its Local Plan. New Local Plans can set and apply energy performance standards for new homes that exceed current Building Regulations (2013) providing LPAs can evidence need and viability. But Local Authorities are 'not expected' to require energy performance above that required by Code for Sustainable Homes Level 4 (19% above Building Regulations 2013). If the changes to the Planning and Energy Act are brought into effect in future, this ability may be removed (although potentially it is more likely that targets for carbon reduction can continue to be set through Local Plans).This policy approach would help to respond positively to the issues of climate change, but may have some minor adverse impacts on development viability and housing affordability.
B) Alternative Option: Include a generally supportive policy on energy efficient design and construction.	This policy approach is likely to add weight to the overall policy direction of the Local Plan aiming to adapt and mitigate to the impacts of climate change. However, this policy would not respond as strongly as the previous option to issues of climate change. This option should not have any unreasonable adverse impacts on development viability.
C) Rejected Option: Do not include a policy on energy efficient design and construction.	The NPPF and PPG do not require Local Planning Authorities to include such policies in their Local Plans. This policy approach would not have any adverse impacts on development viability, but could possibly have implications on health and wellbeing of future occupants. Absence of a specific policy would weaken the overall policy response to climate change adaptation and mitigation.

Opt 33: Carbon reduction in non-residential development (demonstrated through BREEAM)

Policy approach	Consequences of approach/discussion
A) Preferred option (Combination of A + B)**:** Require non-residential development of 1000m^2 or more to demonstrate carbon reduction by meeting BREEAM outstanding or excellent.	This approach would introduce a simple and effective means of ensuring that most applicable non-residential developments respond positively to climate change. BREEAM is a widely recognised, accredited, independent method for assessing environmental performance of non-residential buildings. The BREEAM standard incorporates a number of climate adaptation measures helping to ensure that new buildings are more resilient to extreme weather conditions. This policy approach would help to contribute to a low carbon economy resulting in new developments being more competitive and responding better to changing economic circumstances. BREEAM will ensure the best approach to energy efficiency and carbon reduction, which will require attention to the energy efficiency of the materials and construction, and at the higher levels will also require energy provision from low-carbon sources such as on-site renewable energy generation. The policy approach will choose a BREEAM rating to reflect this, taking into account viability testing and other priorities.
B) Preferred option (Combination of A + B)**:** Require non-residential	This approach will require smaller non-residential developments than currently to submit information relating to carbon reduction. Because of the nature of

development of 500-1000m^2 to demonstrate carbon reduction by meeting BREEAM excellent or very good.	development sites in Oxford, there are few larger developments, so reducing the threshold will have a more beneficial effect. Because smaller developments will have less scope to introduce measures to reduce carbon, the BREEAM target suggested, and that is likely to be viable, is lower than for larger schemes. The option will need to be subject to viability testing in conjunction with viability testing of other policy options, before it is drafted into a policy.
C) Alternative Option: Continue with the existing approach to require 20% of total energy demands expected from a development to be met by renewable energy generation.	This policy approach has led to on-site renewable energy installations in many new developments. This is beneficial for carbon reduction and also reduces bills for occupants. However, the ultimate aim of the policy approach is to reduce carbon emissions, rather than to only achieve on-site renewable energy, so a policy that takes a more rounded approach, rather than narrowly focusing on renewable energy, is likely to be beneficial.
D) Rejected Option: Do not include a policy on BREEAM but rely on building regulations.	This approach would rely on the national standards and would not help in creating a proactive strategy to mitigate and adapt to climate change. This approach would not have any implications on financial feasibility of the schemes.

Opt 34: Carbon reduction from residential development (not mutually exclusive)

Policy approach	Consequences of approach/discussion
A) Preferred option (Combination of A + B)**:** Include a policy requiring a percentage carbon reduction from on-site renewable energy systems and low carbon technologies from residential development.	This approach would help to deliver more locally deployed renewable energy and low carbon technology, addressing the need to reduce CO_2 emissions and improve air quality in Oxford. The inclusion of a minimum % target for the reduction of carbon emissions in the Local Plan would add clarity for developers and residents. Importantly, it could contribute to reducing poverty, as it would reduce the cost of energy bills for residents, or allow heating to a level required for health and wellbeing. Currently in Oxford policy requires a 20% of total energy needs to be met by on-site renewable energy generation. However, the ultimate aim of the policies is to reduce carbon, so it is clearest and will have the best outcomes if the policy requires it to be demonstrated that a percentage reduction in carbon emissions will be achieved, rather than focusing on energy generation. The expected carbon reduction could be stated either in policy, or in a Supplementary Planning Document. The carbon reduction target will be set a level that will require energy generation from low-carbon sources, such as on-site renewables.
B) Preferred option (Combination of A + B)**:** Reduce the policy threshold down from the current level of 10 dwellings for developments that will be required to meet the carbon reduction target, to apply to all new dwellings.	Most developments in Oxford are smaller developments of under 10 dwellings. This means that few developments are required to incorporate on-site renewable energy technologies. If the threshold were to be reduced this would have a very positive impact on aims to reduce carbon emissions. Reducing the threshold may have an impact on the viability of schemes; it will need to be tested for viability, in particular to ensure it would not have a negative impact on housing delivery.
C) Alternative Option: Continue with the existing approach to require 20% of total energy demands expected from a development to be met by renewable energy generation.	This policy approach has led to on-site renewable energy installations in many new developments. This is beneficial for carbon reduction and also reduces bills for occupants. However, the ultimate aim of the policy approach is to reduce carbon emissions, rather than to only achieve on-site renewable energy, so a policy that takes a more rounded approach, rather than narrowly focusing on renewable energy, is likely to be beneficial.
D) Rejected Option: Increase the policy threshold from 10 to 20 dwellings for developments that will be required to provide a percentage of renewable energy.	This option will lead to fewer new residential developments being built with renewable energy installations. It is likely that a significant proportion of housing completions in Oxford will continue to be from smaller sites and therefore this option could have significant implications on the overall delivery of renewable energy capacity in the city.

E) Rejected Option: Do not include a policy on carbon reduction or renewable energy requirements from residential development.	This option would rely on developers providing on-site renewable energy on a voluntary basis rather than being required by the Local Plan standards to do so. This approach would result in uncertainty in terms of increasing the proportion of local energy generated from renewable and low carbon sources. The option could contribute to increasing poverty as the cost of energy from non-renewable sources is expected to continue to rise. Under this option new dwellings would likely to produce more carbon emissions and this could have a negative impact on air quality and biodiversity.

Opt 35: Sustainable Retrofitting of Existing Buildings

Policy approach	Consequences of approach/discussion
A) Preferred option (Combination of A + B)**:** Include a policy supporting appropriate measures to sustainably retrofit existing homes and non-residential buildings. This could include energy efficiency measures, such as internal/external roof, wall or floor insulation.	This option would support renovation/retrofitting of the city's existing housing stock leading to improvements in its energy efficiency and reductions in CO_2 emissions. For the most vulnerable groups, including those living in fuel poverty, the low-energy refurbishment of homes could help significantly reducing hardship and health problems. In addition, sustainable retrofit investment would be beneficial to the local economy as it generates many types of jobs from high-tech to manual.
B) Preferred option (Combination of A + B)**:** Include a policy expecting a) proposals for new residential development (10 dwellings or more) involving the refurbishment or change of use of an existing building to achieve a minimum 'very good'/'excellent' rating of the BREEAM Domestic Refurbishment scheme, or an equivalent rating of a similar performance scheme; b) proposals for new major ($1000m^2$/$2,000m^2$ or greater) non-residential development, including refurbishment and change of use will be expected to achieve a minimum 'very good'/'excellent' rating of the BREEAM Non-Domestic Refurbishment and Fit-Out scheme, once adopted, or an equivalent rating of a similar performance scheme. In addition, a policy would encourage whole building/deep energy retrofitting schemes, especially at an area-wide scale.	This option would make it mandatory for any major schemes involving the refurbishment or change of use of an existing building to achieve environmental improvements as required by BREEAM schemes. This policy approach would lead to more retrofitting projects across the city. However, it should be recognised that the overwhelming proportion of CO_2 emissions in the residential sector is produced by the existing housing stock, which is both large (approx. 55,000 homes) and often relatively energy inefficient; however continuing to reuse existing housing stock is more efficient use of resources than it would be to replace it, even if the replacement were to very high energy efficient standards. This policy approach will need to be tested for viability to ensure that it did not conflict with delivery of other aspirations.
C) Rejected Option: Include a policy requiring proposals involving residential and non-residential extensions to apply energy efficient retrofitting measures to the existing property, where practical and feasible, having regard to other policy requirements relevant to the extensions.	This approach would seek to secure energy efficiency improvements to existing buildings where an extension is proposed. Whilst this approach may seem to offer an opportunity to secure improvements to existing buildings, there are likely to be significant issues. This approach would involve the imposition of a planning condition. However, it is likely that any such condition would be legally invalid as it would not relate to the development being permitted. It would not be possible to enforce any such condition – this would fail one of the tests for conditions set out in Circular 11/95. The option of including a policy requiring proposals for residential and non-residential extensions to apply energy efficiency retrofitting measures to the existing property has therefore been rejected.

D) Rejected Option: Do not include a policy on retrofitting of existing buildings but rely on national planning policy and other regulatory regimes.	The absence of any specific policy on retrofitting in the Local Plan would not prevent the Council from playing an important role in supporting low carbon initiatives and retrofitting projects in the city. There are a number of existing carbon reduction projects led by the Low Carbon Oxford and the OxFutures which are, and would continue to be supported by Oxford City Council. However, without the local plan policy explicitly supporting retrofitting of the existing building stock there is a risk that fewer opportunities emerge for positive synergistic effects of different carbon reduction initiatives and programmes.

Opt 36: Water efficiency (residential)

Policy approach	Consequences of approach/discussion
A) Preferred option: Introduce a policy requiring proposals for new residential development to meet the Building Regulations higher optional water efficiency requirement of 110 litres per person per day.	In 2015, following the Housing Standards Review the Government introduced an optional water efficiency standard of 110 litres per person per day in the Building Regulations. This higher optional standard for water efficiency can be applied where there is an evidence based need and local policy to support that need. The area of South East England in which Thames Water operates has been classified by the Environment Agency (EA) as being under serious water stress. The requirements can be applied through planning policy by way of condition attached to planning consents which can be enforced through building regulations. This policy option apart from resulting in better water efficiency would have a number of environmental, social and economic benefits.
B) Alternative Option: Require proposals to incorporate some water efficiency measures, such as water-saving devices, rainwater harvesting etc.	From October 2015 local planning authorities are no longer able to include technical standards in their local plans other than optional standards included in Building Regulations or other national technical standards. National planning practice guidance encourages local planning authorities to consider whether a tighter water efficiency requirement for new homes is justified to help manage demand. This policy option apart from resulting in better water efficiency would have a number of environmental, social and economic benefits.
C) Rejected Option: Do not include a policy on water efficiency.	This option offers no benefits to local residents and the city's environment that are associated with better water efficiency.

Opt 37: Community energy schemes, heat networks and Combined Heat and Power (CHP)

Policy approach	Consequences of approach/discussion
A) Preferred option (Combination of A + B)**:** Include a policy supporting community/local energy schemes, heat networks and CHP (or CCHP i.e. Combined Cooling Heat & Power) and explaining how they could contribute to any carbon reduction targets.	CHP is an integrated energy system that provides both electricity and heat. Energy is generally generated from fossil fuels, particularly natural gas, but increasingly renewable energy generation is used. CHP captures heat that is normally wasted. Less fuel is burned to produce each unit of energy and transmission losses are avoided. It therefore reduces emissions of carbon and other air pollutants. This option would have a number of positive social and environmental effects, including providing housing that is sustainably constructed with the reduced cost of energy helping to tackle fuel poverty. This option would contribute to improving air quality in Oxford, by reducing the use of energy generated from non-renewable sources. Also, the NPPF encourages local planning authorities to support opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers. Any CHP used in development should comply with the Good Quality CHP standard (CHPQA).

	The Council is working with the University of Oxford, Oxford Brookes University and a number of industrial partners to look into heat networks and local energy generation across the city. The Council is currently investigating the feasibility of distributed heat networks around the city centre University science area, Cowley (around the MINI Plant) and the Headington hospital area. This option responds positively to the NPPF that expects local planning authorities to set out in their Local Plan strategic policies to deliver the provision of energy (including heat). The development of decentralised energy, and particularly (C)CHP distribution networks, is strongly supported by the NPPF.
B) Preferred option (Combination of A + B)**:** Require new development to connect to a heat network if there is one in proximity.	Heat networks (also known as district heating) supply heat from a central source to consumers, via a network of underground pipes carrying hot water. Heat networks can cover a large area or be fairly local supplying a small cluster of buildings. They can be used to supply new buildings and existing buildings; a wide mix of building types is generally desirable as this provides a diversity of heat demands at different times of the day and year. This is likely to be attractive to developers as it would count towards any carbon reduction target included in policy. This option will help to support the implementation of heat networks and ensure that their potential to lead to carbon reduction is maximised.
C) Alternative Option: Attempt to identify locations suitable for community/local energy generation and heat networks and require it from development on that site/in that area.	The preferred option is to be generally supportive of these types of infrastructure. This option would mean allocating/protecting sites for the provision of these schemes. Although the Council is working with the University of Oxford, Oxford Brookes University and a number of industrial partners to look into heat networks across the city, this is work in progress and suitable locations will vary depending on the nature of schemes proposed and also the changing nature of the infrastructure. Therefore, this option could result in sites being proposed that later turn out to be unfeasible, and other sites may come forward that are not allocated anyway.
D) Rejected Option: Do not include a policy on community/local energy or CHP.	This option would not contribute to increasing the % of energy generated from renewable resources and improving air quality in Oxford. Indirectly, it is also not contributing positively to biodiversity.

Securing a good quality local environment

National Planning Policy says:

4.19 Flooding and drainage

The NPPF suggests that Local Planning Authorities should adopt proactive strategies to mitigate and adapt to climate change, taking account of flood risk and water supply considerations. NPPF flooding policy seeks to direct development away from areas at highest risk, and where development is necessary, to make it safe without increasing flooding elsewhere (sequential and exception tests). The NPPF requires that Local Plans should be supported by a Strategic Flood Risk Assessment and include policies to manage flood risk from all sources (not just flooding from rivers but also including groundwater flooding for example), taking account of advice from the Environment Agency and other relevant flood risk management bodies, such as Lead Local Flood Authorities (in Oxford's case: Oxfordshire County Council). The NPPF requires Local Planning Authorities to have appropriate policies in place to support use of sustainable drainage systems (paragraphs 100-103).

4.20 Health

The NPPF states that "the planning system can play an important role in facilitating social interaction and creating health, inclusive communities" (paragraph 69). The PPG states that: "Local planning authorities should ensure that health and wellbeing, and health infrastructure are considered in local plans and in planning decision making." There is an established link between planning and health as both the built and natural environments are major determinants of health and wellbeing. The PPG is clear that a wide range of planning policies have a positive impact on health and mitigate the negative health impacts of proposed developments. Such policy approaches include providing for healthy lifestyles, dealing with environmental hazards and providing health infrastructure.

4.21 Air quality

Action to manage and improve air quality is largely driven by national legislative context. The 2008 Ambient Air Quality Directive sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health such as particulate matter and nitrogen dioxide. The NPPF requires that Local Plans include policies to assist in compliance with these limits (paragraph 124). The PPG recognises that Local Plans can affect air quality in a number of ways, including through what development is proposed where, and the encouragement given to sustainable transport. The PPG states that Local Plans must take into account designated air quality management areas and their associated air quality action plans.

Action to manage and improve air quality is largely driven by national legislative context.

4.22 Noise, light pollution and nuisance

The NPPF (paragraph 123) and PPG state that planning policies should avoid noise giving rise to significant adverse impacts on health and quality of life as a result of new development; not place unreasonable conditions on existing businesses because of changes in nearby land uses since they were established; identify and protect areas of tranquillity. In terms of lighting, the NPPG states that encouraging good design should limit the impact of light pollution on local amenity, intrinsically dark landscapes and nature conservation

4.23 Land contamination

The NPPF (paragraph 120) and PPG establish that Local Plans have a role in considering contamination in several ways: that land affected by

contamination should only be allocated for appropriate development; they should have regard to possible impact of land contamination on neighbouring areas; and be clear on the role of developers.

The Oxford story – background evidence and the Sustainability Appraisal:

4.24 Flooding and drainage

Significant areas of Oxford are at risk of flooding. Large parts of the built-up areas in South Oxford, West Oxford and Lower Wolvercote currently have a 1% or greater annual risk of flooding (Zone 3). In addition, large parts of the undeveloped flood plains of the Thames and Cherwell regularly flood. The principal source of flood risk in Oxford is from our rivers. The most recent flood events in Oxford were in January 2014, November 2012 and July 2007 and they resulted in significant disruption. Climate change is likely to increase the areas at risk of flooding, as well as the frequency and severity of floods. New development has the potential to interfere with existing drainage systems, decrease floodplain storage, reduce permeable surface areas and increase the volume and speed of runoff through a catchment, ultimately leading to significant changes to river catchment characteristics and subsequently increase food risk.

4.25 A new *Strategic Flood Risk Assessment Level One* (December 2016) has been carried out for Oxford as part of the Local Plan project and is published alongside this document. The SFRA Level 1 concludes that a considerable proportion of Oxford is at some risk from flooding; this is predominantly fluvial flooding from the rivers but there is also some flood risk to properties from other sources including surface water, sewer and groundwater flooding. The SFRA suggests policies on the requirement of Flood Risk Assessments for development proposals and in relation to the NPPF's sequential approach. The Oxford flood alleviation scheme is going through initial planning stages. The SFRA Level 1 notes that the Oxford Flood Alleviation scheme will help convey water away from development infrastructure and will reduce flooding in the areas of greatest flood risk. The Local Plan can introduce a number of other measures that could play an important role in reducing the risk of flooding.

4.26 Sustainable urban drainage systems (SuDS) can be used to manage surface water flows and are an important tool in minimising flood risk. SuDS can fulfil various other green infrastructure functions such as improving filtration and habitat creation, helping control pollution and enhancing biodiversity.

4.27 Air Quality

An Air Quality Management Area (AQMA) is designated where defined air quality standards and objectives are not being met. The City Council declared an AQMA for central Oxford in 2003. This was expanded in 2005 and following further detailed assessments of air quality, a city-wide AQMA was declared in September 2010. The City Council produced an Air Quality Action Plan (AQAP)[3] to address the issues of the AQMA. This proposes a range of measures that will be required to reduce emissions across Oxford. The AQAP addresses the integrated approach to air quality and carbon emissions by setting reduction targets for air pollution and carbon emissions from road transport. A low emission zone was introduced in the city centre in 2014 to encourage use of cleaner, greener vehicles.

[3] More information on AQMA and AQAP is available at www.oxford.gov.uk/info/20216/air_quality_management/206/air_quality_management_in_oxford

4.28 Noise, Pollution & Nuisance

One of the key objectives of sustainable development is to minimise pollution. This refers to minimising the harm to human health and the environment from noise, light, vibration, effluent, fumes or odour and

other types of pollution. The City Council will need to be satisfied that proposals for development will not have unacceptable environmental impacts.

4.29 Land Contamination

In 2014, the City Council produced a Land Quality Strategy[4]. This Strategy seeks to ensure that Oxford's residents and natural environment are not exposed to unacceptable risks from land contamination and to improve our environment for a sustainable future. It recommends that land contamination is taken into account when developing planning policy documents.

[4] Land Quality Strategy is available at /www.oxford.gov.uk/download/downloads/id/581/land_quality_strategy.pdf

4.30 Oxford's industrial history has resulted in a substantial amount of land affected by contamination. Almost all of the major former industrial sites have been remediated and redeveloped, such as Lucy's in Jericho and the former British Leyland car factory site in Cowley. However, there remain a significant number of smaller sites that may still have the potential to be affected by contamination. Other sources of contamination in Oxford include former landfill sites and areas near a water source that have been raised (potentially with contaminated materials) to avoid flooding, and made ground. Made ground is ground made up of artificial fill. Large areas of Oxford contain made ground at varying depths. The source of the made ground is generally unknown and often contains contaminants of concern.

Responses to first steps consultation:

4.31 The majority of respondents on flooding commented that the Local Plan should restrict development on floodplain and consider how development of green spaces will affect flood risk. Some respondents suggested that homes on stilts could be allowed on the floodplain.

4.32 Traffic pollution was viewed as the major issue affecting human health and quality of life. The majority of respondents (162 out of 249) to the online questionnaire supported the idea of more restrictive emissions zones in Oxford. Some respondents pointed out that air pollution needs to be minimised to encourage cycling. Some commenters supported the idea of a congestion charge. Natural England said that the Plan should address the traffic impacts associated with new development, particularly where this impacts on European sites and SSSIs. Oxfordshire County Council endorsed the implementation of a city centre Zero Emission Zone as a further solution to reduce air pollution. Some stakeholders (Oxford Civic Society, Oxford Friends of the Earth and University of Oxford) suggested that more restrictive emissions zones should be introduced progressively. Oxford's two major bus operators said that the greatest short-term improvements in air quality would be achievable through addressing tailpipe emissions from taxis and private hire vehicles, and goods vehicles.

Traffic pollution was viewed as the major issue affecting human health and quality of life.

Potential policy responses:

4.33 Flood risk and drainage

Oxford's location at the confluence of two rivers means that flood risk is a significant issue. National policy requires that Strategic Flood Risk Assessments are undertaken in order to identify the parts of Flood Zone 3 (at 1/100 risk of flooding or greater) which are functional flood plain (Flood Zone 3b). The Local Plan should set policies relating to these Flood Risk Zones. The need for development and the fact that Oxford is an accessible and sustainable location means that consideration should be given to how policies could mitigate potentially negative effects of developing in areas at risk of flooding.

Opt 38: Flood risk zones

Policy approach	Consequences of approach/discussion
A) Preferred option (Combination of A + B)**:** Include a policy that allows only water-compatible uses and essential infrastructure in undeveloped parts of flood zone 3b (the functional floodplain), and applies the sequential test for developments in other flood zones (in-line with NPPF guidance). Include a requirement to reduce or not increase run-off.	This approach is designed to reduce the risk of flooding and its impacts on people, the economy and environment. Allowing water-compatible and essential infrastructure development on undeveloped 3b sites should not increase the risk of flooding elsewhere or result in net loss of floodplain storage. Using the sequential test for other sites (also in line with NPPF guidance) would ensure that development is directed towards land in flood zone 1 where possible. It would also enable development to come forward on flood zone 3a sites where the sequential test has been passed because of the huge need for development in Oxford and the lack of availability of sites in other locations.
B) Preferred option (Combination of A + B)**:** Allow some development on brownfield, previously developed land in flood zone 3b, either small-scale household extensions or redevelopment of sites that does not increase the footprint of built development. Very high standards of flood mitigation measures and reduced run-off will be required to ensure it will not reduce flood storage or lead to increased risk of flooding elsewhere and to ensure its occupants are not put at risk.	This option would allow development on brownfield sites in floodplains where evidence shows this development would have a neutral or positive effect on water retention and storage. Existing developments e.g. buildings may contribute to surface-level run-off. Some brownfield sites, particularly areas of hardstanding, can have a function in flood storage and decreasing flood flow to other areas. Therefore, in most cases the overall footprint of development should not be substantially increased. It will be vital that it is clearly demonstrated that new development would not impede the flow of water, reduce the capacity of the floodplain to store water, create or increase any risk for occupants, or increase the risk of flooding elsewhere. This option encourages efficient use of land and may also allow development close to where people live, helping to sustain vibrant communities. It could enable the delivery of more housing, education or health facilities on sites that are already well served by essential services and facilities. Greater use of brownfield sites for new development is likely to reduce the need to use greenfield sites and this should help to maintain and where possible improve water quality.
C) Alternative Option: Prevent development on greenfield sites in flood zone 3a (with a 1/100 risk of flooding or greater) with specified exceptions, e.g. car parks, or exceptions for allocated sites.	This option would have some additional positive effects on minimising risk of flooding as it would be expected that greenfield sites in flood zone 3a act as flood storage areas. Preventing development in these areas will help to ensure they maintain their full function as flood storage areas, which will ensure no increase in flood risk elsewhere. The option adds to protection of greenfield sites and there may be an additional benefit in terms of water quality. However, it could also prevent some sites coming forward that might be used for housing, education or health facilities, in situations which would be fully compliant with the NPPF. In a city such as Oxford, where all development is well located for accessing facilities and sustainable travel modes, and where there is such demand for scarce land, opportunities to find suitable development sites should be maximised.
D) Alternative Option: Do not include a policy on flood risk zones but rely on national planning policy.	The guidance in the NPPF steers development to flood zone 1, and then follows the sequential and exception tests. This option aims to reduce the risk of flooding in all flood zones. Without robust policy on mitigation measures and reduced run-off, this could lead to the delivery of development that is not sustainably constructed, and that is not adaptable to the changing climate.

Opt 39: Flood risk assessment

Policy approach	Consequences of approach/discussion
A) Preferred option: Include a policy setting out when a FRA is required, i.e. for all development in Flood Zone 2 or 3, for all development over 1 ha, for all development, including change of use in to a more vulnerable class where it	This option would ensure a flood risk assessment is carried out for all developments that are likely to have an impact on or be impacted upon by flooding. The assessment would set out how flood risk would be avoided, managed and mitigated. The application of this option could restrict the level of development, if sites are deemed to be at too great a risk from flooding, but it also would ensure that development is designed sustainably, is resilient to the

would be affected by sources of flooding other than rivers, e.g. surface water drains. Set out in the policy that the broad approach of assessing, avoiding, managing and mitigating flood risk should be followed.	changing climate and would not put people at additional risk from flooding.
B) Rejected Option: Do not include a policy on flood risk assessment but rely on national planning policy.	This option is likely to ensure a flood risk assessment is carried out for all developments that are likely to have an impact on or be impacted on by flooding. However it would not make it explicit when FRA is required, and does not factor in flood risk from sources than rivers, including surface water and groundwater.

Table 40: Sustainable drainage

Policy approach	Consequences of approach/discussion
A) Preferred option: Include a policy to give guidance on the implementation of SuDS and also when SuDS will be required, which would be for all developments unless shown not to be feasible.	This would provide certainty over when SuDS is required, and enable more specific requirements for Oxford in the context of the local flood risk. The policy could include reference to the emerging Design and Evaluation Guide to SuDS being produced by the City and County Council. Reference to the design guide would enable other important SuDS issues to be highlighted, such as biodiversity and the ability to additionally use SuDS as green infrastructure and open space. Well-designed (and not hard engineered) SuDS can offer a wide range of ancillary benefits including improved water quality, increased tolerance of droughts and enhanced amenity and habitat features.
B) Alternative Option: Do not include a policy on sustainable drainage but rely on national planning policy and other regulatory regimes.	Relying on national guidance and non-statutory standards would underplay the significance of flood risk in the city and the important role that SuDS play in the mitigation of that risk. In this context it is important that a locally specific approach to SuDs is brought forward into policy. In addition the national standards so not include consideration of the water quality benefits of SuDS and so this element would be missed.

Opt 41: Surface and groundwater flow and groundwater recharge

Policy approach	Consequences of approach/discussion
A) Preferred option (Combination of A + B + C)**:** Include a policy that only permits development where there is no adverse impact on groundwater flow.	Development involving underground structures may adversely affect groundwater flow to springs, rivers or both, which can adversely impact wildlife habitats and cause local flooding. This policy option will seek to ensure that groundwater flow is not adversely impacted by development proposals. It would help to ensure that effective preventative measures are taken to ensure that groundwater flow is not obstructed through underground structures.
B) Preferred option (Combination of A + B + C)**:** Include a policy that requires SuDS and an assessment to demonstrate there will be no adverse impact upon the surface and groundwater flow to the Lye Valley SSSI.	The Lye Valley SSSI is a rare habitat that is sensitive to both groundwater and surface water flow. The policy could apply to a defined area, but this could be difficult because of a lack of detailed information on the hydrology of the area, or it could be applied to allocated sites within the area that is likely to impact on the hydrology of the SSSI.
C) Preferred option (Combination of A + B + C)**:** Include a policy that requires SuDS and a hydrological survey assessing the impact of development proposals on groundwater flows to the SAC.	The Oxford Meadows Special Area of Conservation (SAC - of European importance) is sensitive to groundwater recharge through the north Oxford gravel terrace. To ensure the quality of the SAC is maintained, it is important that effects of developments in the surrounding area are understood and managed. This policy could apply to all developments on or near to the north Oxford gravel terrace, or to allocated sites in the area
D) Alternative Option: Do not have a policy on groundwater or surface water flow but rely on national planning policy and other regulatory regimes.	This option would not offer any additional protection against the risk of flooding e.g. as a result of basement development.

4.34 Health and Pollution

The environment is a major determinant of the health and wellbeing of the population and therefore the planning system has an important role to play. To achieve the vision of a healthy and sustainable city the Local Plan should include policies to help improve the health of residents and to minimise pollution and its effects.

4.35 National Planning Guidance directs Local Authorities to address health and a range of environmental hazards in Local Plans including air quality, land contamination, light pollution and noise. Noise can significantly affect the environment, health and quality of life enjoyed by individuals and communities. In some circumstances noise can have an adverse impact on local wildlife.

Opt 42: Health Impact Assessment

Policy approach	Consequences of approach/discussion
A) Preferred option: Include a policy that requires all developments over a certain size (e.g. major developments) to submit a Health Impact Assessment as part of an application	One of the themes of the Local Plan is a healthy city. A development that is good for health will be a better development and will be more attractive and pleasant for people who live, work or visit it. The NPPG notes that a "health impact assessment may be a useful tool to use where there are expected to be significant impacts." HIAs offer a mechanism for to understanding the potential health risks and benefits of any proposed development in a rigorous fashion. They can identify potential impacts and quantify or describe positive and negative health impacts on different groups. As with other assessment tools HIAs can be a short simple exercise for smaller, less complex developments and more extensive and detailed for larger complex developments. A HIA can be a freestanding document or incorporated into an environmental impact assessment or other form of assessment. A policy requirement would need to be clear about the thresholds for requiring HIAs and the level of detail sought.
B) Alternative Option: Do not include a policy on Health Impact Assessment but rely on the use of other planning policies in determining the proposals' impact on health (e.g. open space, sustainable travel, housing standards, air quality etc.)	One of the themes of the Local Plan is to help create a healthy city. As such there are a range of policy approaches included in this document which will collectively ensure that development help address health impacts. Policies on open space and sports provision, sustainable travel and promotion of walking and cycling, housing standards and a range of environmental issues including air quality all seek to ensure that the health impact of development is positive and that negative impacts are mitigated. In this context it may be unnecessary to require an additional, specific assessment when in practice all the measures that would be documented in a HIA would already need to be evidenced for policy compliance.

4.36 Air quality

It is clear from the consultation responses and background data that air pollution is of particular concern in Oxford. The primary source of air pollution is Oxford is from motorised transport. The whole of Oxford is an Air Quality Management Area and while there has been an improvement in air quality in the city in recent years there is still a need for more action as air pollution, monitored at 75 locations across Oxford, is still breaching targets set by the European Union in 32 per cent of the locations. A study that investigates options for introducing a Zero Emission Zone in Oxford from 2020 will be completed shortly.

4.37 Options can consider various ways to ensure that the air quality does not worsen because of the introduction of a development, and also to manage the impact of air pollution on new occupants. It is also possible to look at

ways to minimise potential negative impacts of poor air quality. The NPPF (paragraph 120) says: *"To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate to its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account."*

It is clear from the consultation responses and background data that air pollution is of particular concern in Oxford.

Opt 43: Air quality assessments

Policy approach	Consequences of approach/discussion
A) Preferred option: Air Quality Assessment will be required for all major developments, or any other development considered to have a potentially significant impact on air quality. Any resultant significant impacts on air quality in an air quality management area must be mitigated. The Air Quality Assessment should consider sources of air pollution including transport generated and from combustion systems.	The Planning Practice Guidance (PPG) sets out the information that may be required in an air quality assessment, making clear that "Assessments should be proportional to the nature and scale of development proposed and the level of concern about air quality". Many Air Quality Assessments currently tend to neglect the contributions of the emissions from energy centres/combustion systems, and focus mainly on emissions resultant from traffic. The introduction of this policy re-enforces the importance of assessing the emissions of this significant source of air pollution. According to the latest figures (Air Quality Action Plan for Oxford – AQAP), commercial, institutional and residential combustion processes are responsible for 17% of the total NOx emissions of the city. If the Air Quality Assessment shows a negative impact on air quality then the appropriate cost and level of mitigation should be calculated. This can be done through an air quality damage cost calculation. Damage costs are a simple way to value changes in air pollution. They estimate the cost to society of a change in emissions of different pollutants. Damage costs are provided by pollutant, source and location. This is appropriate for small air quality impacts (below £50 million) provided the proposal does not affect areas likely to breach legally binding air quality limits. A full list of damage costs is available (www.gov.uk/guidance/air-quality-economic-analysis).

	A mitigation approach implemented in London requires development to be 'air quality neutral', meaning the building and transport emissions must be calculated and compared with a benchmark for development. The calculations cover the emissions of nitrogen oxides and PM10. The guidance also sets emission limits for boilers and centralised energy plant. This approach can be used as an alternative to damage costs and could be clearer and easier to calculate.
B) Rejected Option: Do not include a policy on air quality assessments, but rely on other regulatory regimes.	This option is not considered to be reasonable due to the current position with the city's air quality breaching EU/UK legal targets.

Opt 44: Air Quality Management Area

Policy approach	Consequences of approach/discussion
A) Preferred option (Combination of A + C)**:** Include a policy which ensures that future development does not conflict with the Oxford Air Quality Action Plan, and that development does not have a net adverse impact on the air quality in the Air Quality Management Area, or in other areas where air quality objectives are unlikely to be met.	The entire city of Oxford has been designated an Air Quality Management Area (AQMA) in 2010 due to the constant breach of NO_2 annual mean limit values. As such, an action plan has been put in place by Oxford City Council with measures to tackle this issue. The evaluation of air quality impacts caused by the introduction of any new development, taking into account both construction and operational phases, is therefore essential for the maintenance/reduction of the pollution levels in the city. This will ensure that measures to improve air quality are not impacted by poorly designed developments. This policy will allow us to ensure that developers are constantly aligned with the plans we have for the reduction of air quality concentrations up to safe levels in the city. The NPPF (paragraph 124) supports this approach clearly:" (…)Planning decisions should ensure that any new development in AQMA's is consistent with the local air quality action plan."
B) Rejected Option: Do not include an air quality policy that contributes to the prevention of any potential degradation of air quality inside an AQMA, but rely on other regulatory regimes.	This option is not considered to be viable due to current breaches of air quality EU/UK legal targets. This approach is also not supported by the NPPF.
C) Preferred option (Combination of A + C)**:** Planning Permission will not be granted for any development that introduces new occupants in areas where air quality objectives are not being met, without making provisions to address local problems of air quality [particularly within AQMAs], such as by design solutions, buffer zones or steps to promote greater use of sustainable transport modes through travel plans. Particular attention should be paid to development proposals such as housing, homes for elderly people, schools and nurseries in those locations.	Poor air quality is the largest environmental risk to public health in the UK. It is known to have most severe effects on vulnerable groups, for example the elderly, children and people already suffering from pre-existing health conditions such as respiratory and cardiovascular conditions (WHO, 2013). This approach will make sure that we protect people from breathing very poor air, with all the known health impacts that could have. The impacts of poor air quality on people's health need to be addressed, even if there is no expected increase in emissions.
D) Rejected Option: Do not include an air quality policy that could protect the introduction of new occupants in areas of already existing poor air quality.	The links between poor air pollution and health are clear, and over the last few years have been confirmed by many reports. In 2014 Public Health England estimated the mortality burden attributed to long term fine particulate air pollution exposure in Oxfordshire to be 5.6% of the population, equivalent to 276 deaths (Age 25+) and equivalent to 2944 life years lost. This also presents a huge monetary and social burden for the NHS. This option should therefore be rejected.

Opt 45: Protection of future occupants against nuisances such as noise and light

Policy approach	Consequences of approach/discussion
A) Preferred option: Require adequate protective measures if future occupants of residential development would otherwise suffer from nuisance, e.g. from noise, dust, fumes, odour, vibration, light or proximity to hazardous materials.	This option should provide greater protection to health and wellbeing of the population. In principle, a policy that defines unacceptable levels of environmental impact can only be considered in general terms. It is impossible to define unacceptable levels of impact in all circumstances, given the different types of development, locations, land use and their relative sensitivity. In some cases detailed planning conditions (for example relating to the specific time at which an activity is acceptable) may be required.
B) Alternative Option: Do not include a policy on nuisance but rely on other regulatory regimes.	This option would rely on other regulatory regimes (the Environmental Protection Act 1990) and general development management policies covering design and residential amenity for example.

Opt 46: Lighting and light pollution

Policy approach	Consequences of approach/discussion
A) Preferred option: Include a policy to ensure that new proposals do not result in unacceptable levels of light pollution and light spillage	This option would address the inappropriate use of lighting (including for example floodlighting) which can cause an unacceptable nuisance and loss of public amenity. The NPPF (para 125) requires planning policies to encourage good design which would limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and ecology. This policy option could consider the impact of lighting in terms of 'light spill', the impact it will have on the night-time sky, the loss of amenity to residential properties and any impact on local wildlife.
B) Alternative Option: Do not include a policy on lighting but rely on national planning policy.	This option would rely on national polices and guidance included in the NPPF and PPG.

Opt 47: Noise and noise pollution

Policy approach	Consequences of approach/discussion
A) Preferred option: Include a policy which only permits development where it will not cause unacceptable noise, particularly near noise-sensitive uses and amenity spaces.	This option may result in a number of positive effects on human health and quality of life as well as the natural environment. Any policy on noise should be compliant with the NPPF (para 123) that recognises that development will often create some noise and existing businesses wanting to expand should not have unreasonable restrictions put on them.
B) Alternative Option: Do not include a policy on noise pollution but rely on national planning policy and other regulatory regimes.	This option would rely on the NPPF and any other regulatory regimes (the Environmental Protection Act 1990).

Opt 48: Contaminated land

Policy approach	Consequences of approach/discussion
A) Preferred option: Require submission of details of investigation of any site suspected to be contaminated and details of remedial measures, which must then be carried out.	Oxford has a number of closed landfill sites of varying ages, some of which are producing landfill gas. There are previously developed sites that have been contaminated by historic industrial processes. This policy option would ensure there will be no threat to the health of future users or occupiers and no adverse impact on the quality of local groundwater or surface water quality.
B) Alternative Option: Do not include a policy on contaminated land but rely on national planning policy and other regulatory regimes.	This option would rely on policies included in the NPPF (para 120 and 121) and any other regulatory regimes (the Environmental Protection Act 1990)