



## **Chilterns Conservation Board – Position Statement**



View from Whiteleaf, January 2017 (© Colin Drake)

## **Cumulative Impacts of Development on the Chilterns AONB**

## Foreword from Sue Holden, Chief Officer of the Chilterns Conservation Board

The Chilterns AONB is under pressure from development as never before. HS2, new housing, expanded airports all have implications for the natural beauty, health, intactness and tranquillity of this nationally protected landscape.

In the face of this:

- We will take the long view – incremental change over the next 50-100 years could, cumulatively, result in the loss of special qualities in the long term.
- We will take a holistic and landscape scale view of the place and our responsibilities for the place – protected landscapes are complex webs of interconnecting geology, ecology, heritage, natural capital and special features which do not function well ecologically or for society if many small pieces are lost.
- To fulfil our primary duty, we will take a position on the total quantity of development, siting and quality of development, pressures from development such as water abstraction and traffic, and impacts on special qualities including noise and light pollution.
- We cannot only consider each local authority's need for development, we must consider total quantity of development, and the cumulative impacts of development, across the AONB and to all the special qualities.

The Chilterns Conservation Board is well placed to lead work on cumulative impacts, as we work across local planning authority boundaries and for the long-term interests of our protected landscape.

We convened a Planning Forum in March 2017 for local authority planners and stakeholders, to improve knowledge about cumulative impacts. We started to identify and map the long-term combined impacts of all the development planned across the Chilterns, including HS2, airport expansion, housing and other growth. It was requested that an advice guide on Cumulative Impacts of Development on the AONB be produced aimed at planners working on Local Plans. Our thanks go to leading expert on Strategic Environmental Assessment, Professor Riki Therivel, who ran the workshop and prepared this guide, and to the Chiltern Society who kindly funded it.

**Levett–Therivel**  
sustainability consultants

**Chiltern**  
Society  
We care for the Chilterns

## Introduction

1. Areas of Outstanding Natural Beauty (AONBs) are designated by the Government for the purpose of ensuring that the special qualities of the finest landscapes in England and Wales are conserved and enhanced. In policy terms they have the same planning status as National Parks (see endnote<sup>1</sup>).
2. The Chilterns Conservation Board is the body set up by Parliament to conserve and enhance the natural beauty of the Chilterns AONB and increase the understanding and enjoyment of the special qualities of the AONB. The Board also has a duty to have regard to the social and economic wellbeing of those who live and work in the Chilterns AONB.

## Purpose of this Position Statement

3. This Position Statement is intended to provide guidance to local planning authorities and other interested parties in connection with the need to consider cumulative impacts of development on the AONB. It focusses on how to assess cumulative impacts in the development plan process (mainly for the preparation of Local Plans and possibly Neighbourhood Plans), although its principles will also be useful in the separate process of Environmental Impact Assessments for more significant planning applications.
4. As guardians of a nationally protected landscape, local authority planners and members will want to ensure that planning decisions leave the AONB in at least as good, or preferably a better, state for the future. This means thinking about cross-boundary impacts and what effect their plans will have on the Chilterns AONB in combination with other plans and projects like HS2.
5. This Statement expands upon the [Chilterns AONB Management Plan 2014-2019: A Framework for Action](#), in particular Policy L10:  
*L10 The cumulative impact of development and land use change should not adversely affect landscape quality and character.*

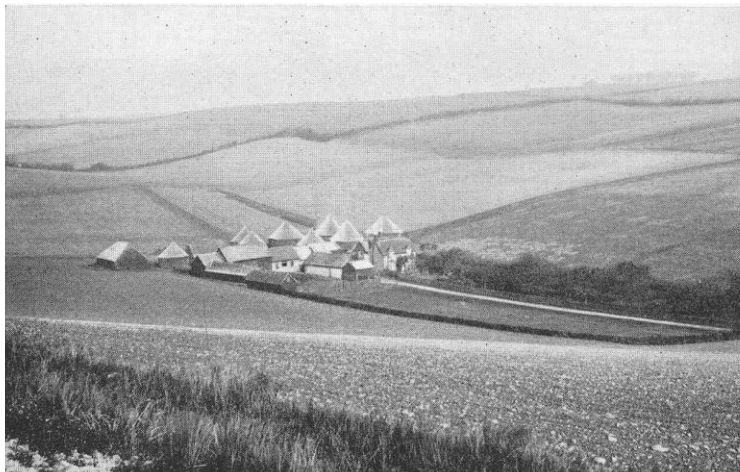
## What are Cumulative Impacts?

6. Cumulative impacts are impacts that are caused by multiple actions (plans, projects, behaviour etc.), and that normally can only be solved through multiple actions. Cumulative impacts are essentially the impacts **on** environmental/social resources, rather than impacts **of** individual plans or projects. They can be positive – for instance people’s personal choices to walk rather than take the car – as well as negative. Sustainability Appraisal (SA)/ Strategic Environmental Assessment (SEA) is concerned with identifying and managing negative cumulative impacts as part of plan-making.

## Legislation on Cumulative Impacts

7. The SEA Directive on the assessment of the effects of certain plans and programmes on the environment legally requires the consideration of ‘likely

future without the implementation of the plan' and 'cumulative impacts' (see endnote<sup>2</sup>). The Habitats Directive requires consideration of 'in combination' impacts<sup>3</sup>. Assessing cumulative impacts is a chance to consider how your plan fits with the overall management of environmental and social issues, including those affecting the AONB.



114, 115 BOWERDEAN FARM AND ITS VALLEY, NEAR BEACONSFIELD  
As they were originally, and as they are after "Development"


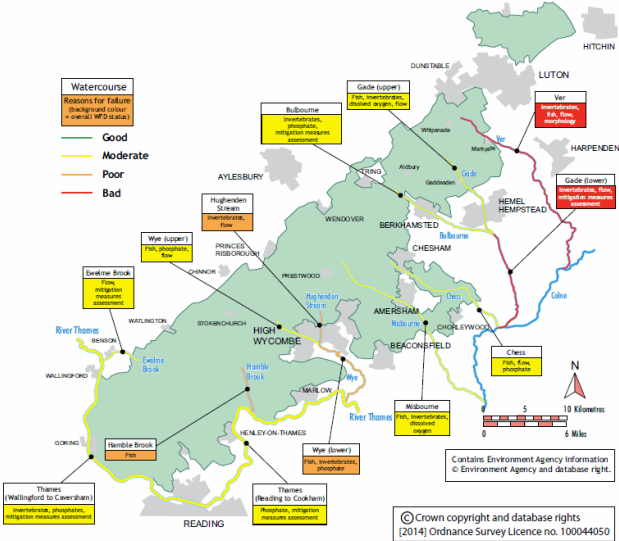



*Change over time to the same Chilterns view, now part of High Wycombe*  
Sources: HJ Massingham, *Chiltern Country* 1940, and Michael Bowler Chiltern Society Photogroup

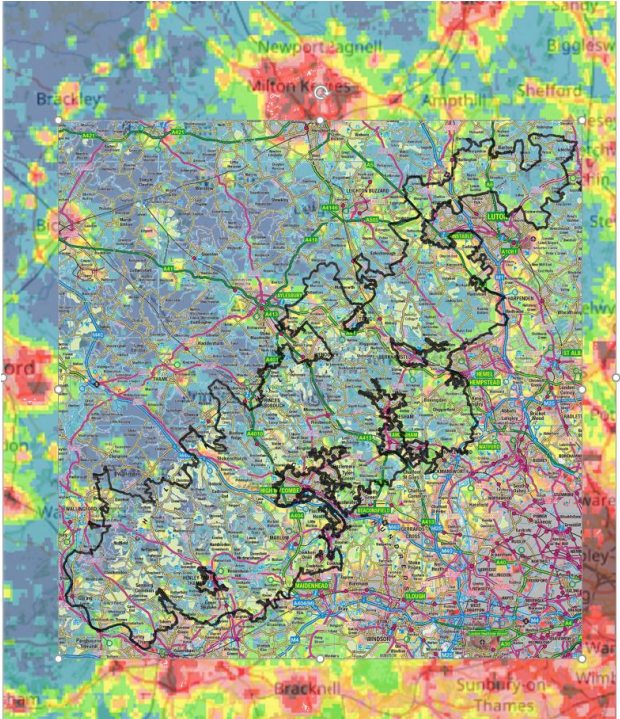


## Key cumulative impacts on the Chilterns Area of Outstanding Natural Beauty

Impact	Evidence of impact	Main causes
<p><b>Land take, urbanisation, harm to scenic beauty and views, habitat loss and fragmentation</b></p>	<p>The beauty of the Chilterns is already under pressure from change. 80,000 people live in the AONB, and many more in urban areas nearby (Luton, Reading, High Wycombe, Hemel Hempstead, Aylesbury etc). Motorways, railways and towns already sever natural habitats. Added together, the local planning authorities with land in the Chilterns AONB are facing housing need figures of between 7,400 and 9,800 new dwellings per annum. Severance by HS2 and 'nibbling' from proposed future development would further urbanise and fragment the AONB.</p> 	<p>Incremental development; planned strategic growth (housing, infrastructure etc.); agricultural intensification and diversification</p>
<p><b>Air pollution, dust and associated reduction in plant diversity</b></p>	<p>Although air pollution in the UK continues to decrease<sup>4</sup>, 40,000 deaths per year are still attributable to exposure to outdoor air pollution<sup>5</sup>. Almost all habitats in England are receiving too much NO<sub>x</sub> pollution<sup>6</sup>. Nitrogen deposited on habitats from the air and in rain, enriches the soil, favouring species like nettles and dock, to the detriment of rarer plants. Of the ten local planning authorities in the Chilterns AONB, only Chiltern DC does not have an Air Quality Management Area<sup>7</sup>.</p>	<p>Vehicles; power stations; industrial and extractive industries</p>

Impact	Evidence of impact	Main causes
<p><b>Water pollution and low flows</b></p>	<p>Chalk streams are a globally rare habitat. None of the nine chalk streams in the Chilterns are of good water quality, mostly because of low flows<sup>8</sup>.</p>  <p><i>Chalk stream in poor condition</i></p> <p>2009 baseline Water Framework Directive status for Chilterns surface water bodies</p> 	<p>Water abstraction for urban areas and agriculture</p>
<p><b>High house prices, lack of affordable housing</b></p>	<p>Three of the district councils in the Chilterns AONB have average house prices that are more than twice the England average; only Luton BC has average prices that are slightly lower than the England average<sup>9</sup>.</p> <p>People in the district councils in the Chilterns AONB pay on average 7.4 - 18.2 times their annual earnings for a home, compared to a</p>	<p>Housing scarcity, housing treated as an investment</p>

Impact	Evidence of impact	Main causes
	7.6 average for England & Wales <sup>10</sup> . This makes it difficult for people on limited means to afford a home and increases the need for affordable housing.	
<b>Social change</b>	Again with the exception of Luton, in June 2017 the median age of the population in the Chilterns AONB district councils is at or higher than the English average <sup>11</sup> . This, and the increasing unaffordability of housing, means that many families from the area can no longer afford to live in the area. This is leading to a loss of cultural heritage and a shortage of people with skills to manage land in traditional way.	High house prices
<b>Loss of natural beauty and distinctive character</b>	<p>Large and small changes by householders, land owners and developers incrementally erode the special character of the Chilterns. For example inappropriate fencing or lighting, poorly designed extensions and replacement dwellings, conversion of farm buildings, failing to use local vernacular materials.</p> 	Incremental development: housing, infrastructure etc. <sup>12</sup> Lack of knowledge or restraint

Impact	Evidence of impact	Main causes
<p><b>Light pollution</b></p>	<p>Light pollution from London, Reading and other urban areas, and from lit-up roads already affects the Chilterns<sup>13</sup>, and is likely to increase with further development in those areas.</p> 	<p>Urban development, roads that are lit up at night</p>

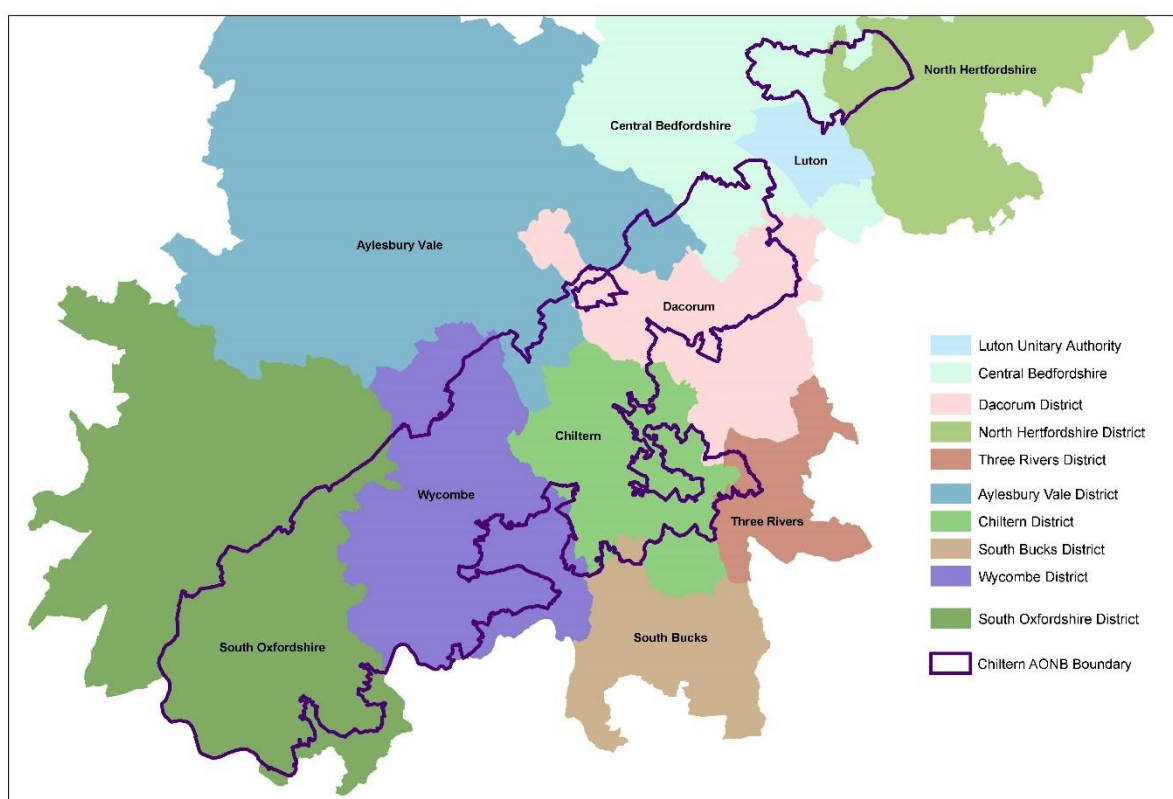
Other cumulative impacts include

- climate change with increased risk of flooding and droughts,
- visitor/ recreational pressures including erosion
- loss of natural capital fundamental to a healthy economy and healthy society



The emerging plans of the Chilterns AONB local authorities, plus recreational and visitor pressures from London, HS2, expansion plans for Luton and Heathrow airports etc. are all likely to exacerbate these impacts. Research on housing pressures in AONBs<sup>14</sup> shows a step change upwards in housing approvals over the last two years. There is a concentration of development pressure in the South East and South West AONBs: with eight AONBs including the Chilterns accounting for 79% of all homes approved within England’s AONBs. Between 2012 and 2017 there were 1,213 homes approved in the Chilterns AONB on schemes of 10 units or more, and a further 922 homes within 500m of the AONB.

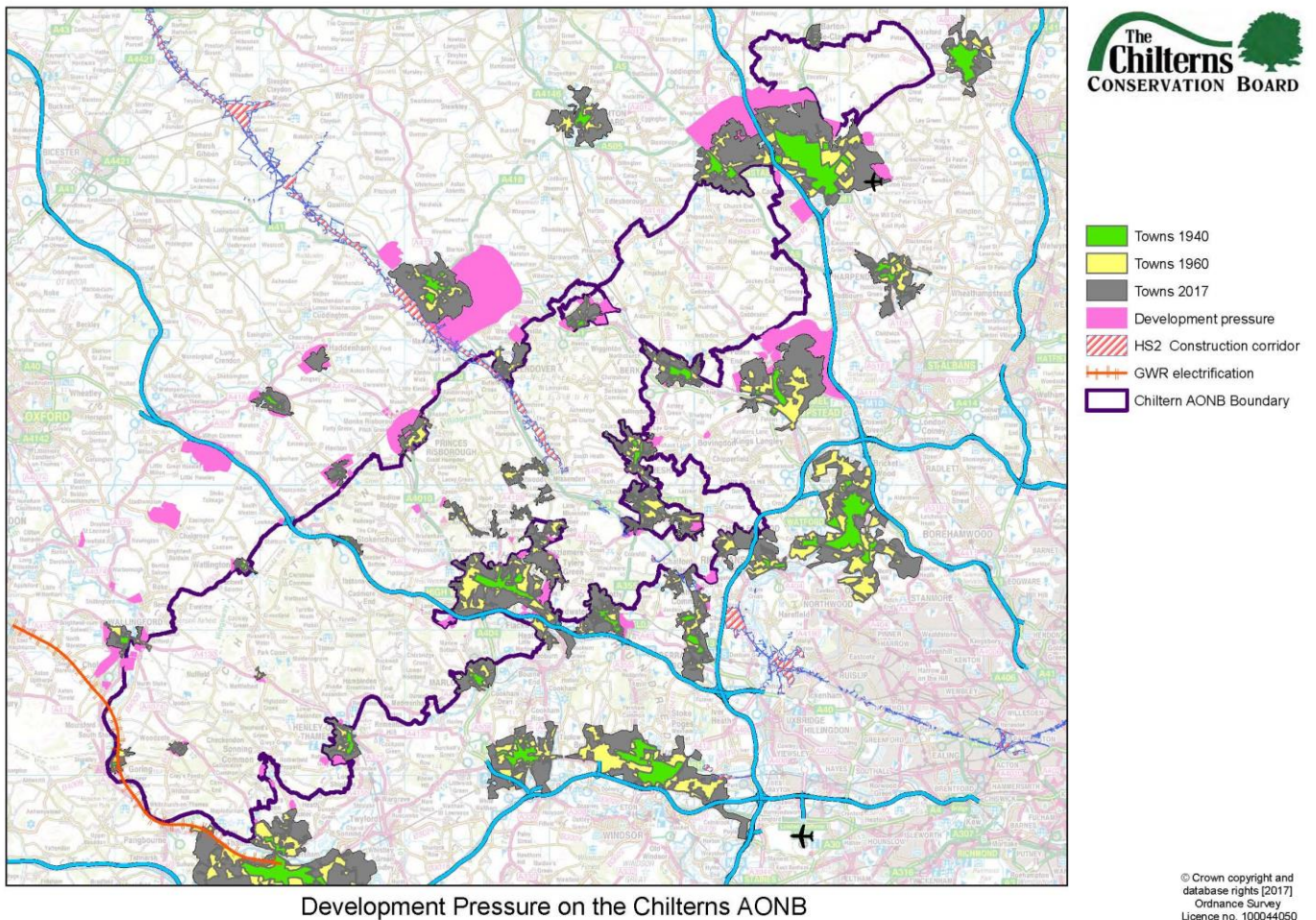
The Chilterns area is administered by three county councils and ten district/borough/unitary councils, as shown on the map below:



Local Planning Authorities and the Chilterns AONB

To coordinate partnership working on cumulative impacts, the Chilterns Conservation Board is piloting a web-based map to act as a central information store on developments proposed across the Chilterns AONB and its setting. The aim is to help local authorities, developers and stakeholders more easily take account of cross-boundary proposals and identify cumulative effects.

*Map showing the route of HS2 and emerging areas of development pressure (as at Nov 2017)*



Development Pressure on the Chilterns AONB

## How to consider cumulative impacts in SA/SEAs

### Step 1 In your SA/SEA scoping report, under 'likely future without the implementation of the plan'

- Identify projects that you know (or are reasonably certain) will be built over the plan period independently of your plan, or pressures that are likely to lead to such projects, e.g. new roads, railways, adjacent authorities' objectively assessed housing need. If you are not certain whether something important will be implemented, consider 'with' and 'without' scenarios<sup>15</sup>.
- Determine how these will affect the future environmental/social/economic conditions.
- Identify other trends that will affect the baseline, e.g. reduction in overall national air pollution, climate change, habitat loss, biodiversity decline, growth of London and major urban areas adjoining the AONB
- Where possible, compare these to legal or agreed standards, e.g. national air quality standards, Water Framework Directive, SSSI condition.

#### Hypothetical example

Include development that has received, or is likely to receive, planning permission; or that is otherwise likely to go ahead

A bypass to the west of X is expected to be built in 2020. Expansion of Y Airport will allow a 50% increase in passenger numbers by 2020, from 10 million to 15 million per year. HS7 will run through the AONB for 15km, severing farmland, natural habitats and public rights of way and generating noise, motion and visual impacts.

District Council Z is proposing 7000 homes to the west of the district, adjacent to the AONB; and Borough Council W's local plan includes 4000 homes to the south of the district. These will increase traffic through the district, including through the narrow rural lanes of the AONB.

Include relevant development in other local authorities

Compare to standards

The district already has two AQMAs, and  $\text{NO}_x$  levels at X are at  $54\mu\text{g}/\text{m}^3$ . The legal standard is  $40\mu\text{g}/\text{m}^3$ . The environmental statement for Y Airport shows that air pollution within 1km of the airport would increase by  $2\mu\text{g}/\text{m}^3$  at 15 million passengers per year, to  $38\mu\text{g}/\text{m}^3$ .

Good examples of this stage are the Fareham and Oxford Local Plan Scoping Reports<sup>16</sup>.

**Step 2** In your SA/SEA framework, **include checks against legal standards or agreed targets** where these exist. That will help to test capacity limits.  
 Warning: when you answer the question in the Stage 3 assessment stage, the answer will often be ‘no’.

Hypothetical example

<b>SA objective</b>	<b>Test against standard/target</b> (could be added as a sub-objective)
<b>To conserve and enhance the Chilterns AONB</b>	Will the plan/option/policy meet the duty in the CROW Act 2000 Section 85 to have regard to conserving and enhancing the natural beauty of the AONB?
<b>To maintain and enhance the quality and quantity of water</b>	Will the plan/option/policy achieve EU Water Framework Directive ‘good’ condition for all the water bodies in the district
<b>To reduce air pollution and contributions to climate change</b>	Will the plan/option/policy achieve national air quality standards in all parts of the district/borough?
<b>To provide decent housing for existing and future residents</b>	Will the plan/option/policy meet the overall housing requirement of the district/borough?
<b>To reduce deprivation in the district</b>	Will the plan ensure that no part of the district is in the lowest 20% IMD areas of greatest deprivation?



**Step 3** After you have completed your assessments of your preferred options or your draft plan, consider the **‘total’ impacts of all of the preferred options together, or your entire draft plan**, on each SA objective. Refer to the standards/targets and be quantitative where possible<sup>17</sup>.

Warning: the output will be a BIG table, but it is also very helpful for getting a general overview of your plan, and can be used in the SA/SEA non-technical summary.

### Hypothetical example

Test against legal standards as well as the more general SA objective. This could be done by adding a sub-objective

SA objective	P1	P2	P3	...					Total impact of plan
<b>To conserve and enhance the Chilterns AONB</b>	-	-	+	-	0	0	+		- ‘Nibbling’ of AONB at sites A, B and C likely to reduce its natural beauty
<b>To maintain and enhance the quality and quantity of water</b>	+	+	0	0	0	-	+	...	+/- Aims to reduce per capita water use and ensure adequate water infrastructure.
• To achieve Water Framework Dir. standards									+/- Development X near River Y means that Water Framework Directive standards are unlikely to be achieved
<b>To reduce air pollution and contributions to climate change</b>	-	+	+	0	0	+	0	...	+ Promotes walking, cycling and public transport etc.
• To achieve air quality standards									+/- Air quality standards likely to be achieved for 90-95% of district, but unlikely to be achieved within 200m of main roads and near airport
<b>To provide decent housing...</b>	...								

Quantify the impact predictions where possible

Good examples of this stage are the Oxford Sites and Mansfield Interim Plan SAs<sup>18</sup>.

**Step 4.** Now bring together the ‘**likely future without the plan**’ plus ‘**total impact of the plan**’: these are the cumulative impacts.

When determining whether the cumulative impacts are significant, think about how the environmental/social resource will be cumulatively affected over the plan period, focusing on any standards/ targets.

Hypothetical example

SA objective	Current status	Likely future without the plan	Total impact of plan	Cumulative impacts
<b>To conserve and enhance the Chilterns AONB</b>	+/-	- X bypass, HS7, 7000 homes at Z, 4000 homes at W etc.	- Nibbling of AONB minimised but will still occur at A, B and C	- Fragmentation of AONB due to bypass and HS7, nibbling by housing by local plan and adjacent local authorities
<b>To maintain and enhance the quality and quantity of water</b> • To achieve Water Framework Dir. standards	+/-	- Ongoing abstraction & agricultural impacts	+ but - at River X	- Issue mostly outside plan remit. Water Framework Directive unlikely to be achieved at Rivers A, B and X
<b>To reduce air pollution and contributions to climate change</b> • To achieve air quality standards	-	- esp. Airport Y	+ but - near main roads	- Despite plan, air quality near roads and the airport is likely to worsen. Air quality standards unlikely to be achieved in much of the borough.
<b>To provide decent housing...</b>	-- Deficit of 6,000	-- Deficit of 13,000	+ Provides for 8,500	- Ongoing deficit of 4,500

**Step 5** Where there are negative cumulative impacts, even if your plan impacts are already positive, consider whether your plan can do anything more to **mitigate these impacts.**

This may mean working with other authorities or trying to influence other plans, for example:

- Set CIL or other developer contribution requirements to pay for new parks that could act as biodiversity ‘stepping stones’, draw visitors away from sensitive sites, or provide transport improvement measures to reduce air pollution<sup>18</sup>.
- Find space for nature through more, bigger, better joined-up protected areas, and make the wider countryside and developed landscape more permeable to wildlife<sup>19</sup>.
- Coordinate green infrastructure plans with other local authorities.
- Consider protective limits e.g. to limit nitrogen deposition on the Ashdown Forest SAC, Wealden DC requires developers to demonstrate that development would provide no more vehicle emissions than currently along affected roads<sup>20</sup>.
- Promote only car-free development in and within a given distance of an Air Quality Management Area<sup>21</sup>.
- Locate new development further away from the AONB to avoid visual and other impacts on this nationally protected landscape<sup>22</sup>.
- Apply design standards that development in the AONB should meet, such as those in the Chilterns Buildings Design Guide<sup>23</sup>.
- Promote ‘impact neutrality’, e.g. where a new intrusive development is proposed, developers pay for existing detractors like electricity lines to be laid underground so that pylons can be removed.

N.B. Requiring developers to prepare specialist assessments (e.g. on their air quality impacts) is *not* a mitigation measure: it simply studies the problem but does not solve it.

## Conclusion

The Chilterns AONB provides a huge number of benefits, including health and wellbeing, biodiversity, recreation and employment. Considering cumulative impacts on the AONB, and on the environmental and social qualities that underlie it, can help to ensure that these benefits are protected and enhanced for future generations as well as today's residents and visitors.



**For more information please contact**

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## Find out more

1. [National Planning Policy Framework para 115](#) sets out that in planning policy AONBs have the highest status of protection in relation to landscape and scenic beauty, equal to National Parks.
2. Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32001L0042>. Annex I(b) requires consideration of “the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan”. Annex I(f) requires assessment of “secondary, cumulative, synergistic... effects”.
3. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043>. Habitats Directive Article 6(3) requires that “Any plan or project... likely to have a significant effect [on the integrity of an SPA or SAC], either individually or in combination with other plans or projects, shall be subject to appropriate assessment...”
4. Air pollution emission 1970-2015: [www.gov.uk/government/statistics/emissions-of-air-pollutants](http://www.gov.uk/government/statistics/emissions-of-air-pollutants)
5. RCP and RCPCH 2016 report: <https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>
6. Plantlife 2017 report on impact of nitrogen: [www.plantlife.org.uk/uk/our-work/publications/we-need-to-talk-about-nitrogen](http://www.plantlife.org.uk/uk/our-work/publications/we-need-to-talk-about-nitrogen)
7. Defra Air Quality Management Areas list: <https://uk-air.defra.gov.uk/aqma/list>
8. Chilterns AONB management plan: [www.chilternsaonb.org/uploads/files/ConservationBoard/ManagementPlan/Management%20Plan%202014-19/chilterns\\_management\\_plan\\_2014-19\\_final.pdf](http://www.chilternsaonb.org/uploads/files/ConservationBoard/ManagementPlan/Management%20Plan%202014-19/chilterns_management_plan_2014-19_final.pdf). This was based on 2009 data, but still holds true with 2015 data: <https://ea.sharefile.com/share?#/view/s25aecb60c464ccd9> For more on Chilterns Chalk Streams see <http://www.chilternsaonb.org/about-chilterns/chalk-streams.html>
9. <http://landregistry.data.gov.uk/app/ukhpi>, June 2017
10. <https://www.ons.gov.uk/peoplepopulationandcommunity/housing/bulletins/housingaffordabilityinenglandandwales/1997to2016>
11. <https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/populationandmigration/populationestimates/adhocs/006346medianageforlocalauthoritiesintheukmid2015/medianageforlocalauthoritiesintheukmid2015.xls>
12. CPRE 2016 report: <http://www.cpre.org.uk/what-we-do/countryside/tranquil-places>
13. <https://nightblight.cpre.org.uk/>
14. An Independent Review of Housing in England’s Areas of Outstanding Natural Beauty 2012-2017, November 2017, by Dixon, Sinden and Crabtree
15. The legal case *Heard v. Broadland District Council and others* ([2012] EWHC 344 (Admin)) suggested this as the correct course of action where a project/action is not within the plan’s remit.

16. [www.fareham.gov.uk/PDF/planning/local\\_plan/SEAFarehamLPRScoping.pdf](http://www.fareham.gov.uk/PDF/planning/local_plan/SEAFarehamLPRScoping.pdf);  
[www.oxford.gov.uk/download/downloads/id/2640/sustainability\\_appraisal\\_scoping\\_report\\_local\\_plan\\_2036.pdf](http://www.oxford.gov.uk/download/downloads/id/2640/sustainability_appraisal_scoping_report_local_plan_2036.pdf)
17. For instance, transport models already model cumulative impacts; cumulative impact on air quality may be able to be based on transport models; and some Habitat Regulations Assessment may act as a basis for more quantitative assessments.
18. [https://www.oxford.gov.uk/download/downloads/id/1423/site\\_allocations\\_sustainability\\_appraisal\\_feb\\_2012.pdf](https://www.oxford.gov.uk/download/downloads/id/1423/site_allocations_sustainability_appraisal_feb_2012.pdf) see Tables 8 and 10; and  
[www.mansfield.gov.uk/CHttpHandler.ashx?id=8742&p=0](http://www.mansfield.gov.uk/CHttpHandler.ashx?id=8742&p=0) see Table 7.2
19. See Lawton Principles <https://www.gov.uk/government/news/making-space-for-nature-a-review-of-englands-wildlife-sites-published-today>
20. [http://www.wealden.gov.uk/Wealden/Planning\\_and\\_Building\\_Control/Planning\\_Development\\_Management/Agents\\_and\\_Parish\\_Council\\_Information/Planning\\_Agents\\_Ashdown\\_Forest.aspx](http://www.wealden.gov.uk/Wealden/Planning_and_Building_Control/Planning_Development_Management/Agents_and_Parish_Council_Information/Planning_Agents_Ashdown_Forest.aspx)
21. For instance, LB Camden successfully argued for car-free development in most of the borough because of existing problems including poor air quality: see  
[https://camden.gov.uk/ccm/cms-service/stream/asset/?asset\\_id=3414522](https://camden.gov.uk/ccm/cms-service/stream/asset/?asset_id=3414522)
22. This is already being done by local authorities near the Thames Basin Heaths SPA, e.g.  
[www.rushmoor.gov.uk/CHttpHandler.ashx?id=7902&p=0](http://www.rushmoor.gov.uk/CHttpHandler.ashx?id=7902&p=0)
23. Chilterns Buildings Design Guide <http://www.chilternsaonb.org/buildings-design-guidance>