

Draft Buckinghamshire Green Belt Assessment

Appendix 5: Flood risk

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Introduction

A5.1. This appendix supplements Section 5 of the main report and specifically deals with Stage 3 of the footnote 7 assessment method, namely assessment of AAs in terms of flood risk. This appendix covers:

- Approach and method
- Outcomes.

Approach and method

Introduction

A5.2. This section covers the following:

- A summary of the approach taken
- Detailed discussion of the approach taken

Summary

A5.3. The approach taken is to rely heavily on **GIS analysis**, and specifically analysis of the proportion of AAs intersecting flood risk zones (i.e. 'percentage intersect'). However, there is a need to apply caution, because there are no nationally established decision rules regarding the degree of percentage intersect that precludes development, or is seen as a significant constraint potentially to the extent of precluding grey belt. Also, it is appropriate to consider **wider qualitative factors** (i.e. factors beyond quantitative consideration of percentage intersect with flood zones), and specifically the configuration of flood risk zones within the AA.

Detailed discussion

A5.4. In the absence of guidance, the approach taken is as follows:

- Account for **both fluvial and surface water flood risk** but give weight to fluvial as the primary factor.
- With regards to **fluvial flood risk**, focus primarily on flood risk zone 2 as a suitably precautionary approach. Whilst housing is not necessarily incompatible with flood zone 2, the sequential approach dictates that housing should be directed to flood risk zone 1 (i.e. the lowest risk zone) ahead of flood risk zone 2 where possible and doing so typically will be possible in the context of preparing a local plan. Also, a focus on flood zone 2 acknowledges worsening flood risk due to climate change.
- With regards to **surface water risk**, focus attention primarily on the middle of the three defined risk zones, namely 1 in 100 year flood risk.
- Draw upon **GIS analysis** that records the percentage intersect of flood risk zones but recognise the limitations of such analysis in two respects:

- There are no established rules regarding percentage intersect with risk zones that enables a conclusion that any given area is unsuitable for development, let alone a conclusion that an AA is constrained to the extent that it is not grey belt or can only be provisional grey belt.
- It is appropriate to account for the configuration of the various flood risk zones within an AA as part of the assessment (in addition to percentage intersect). For example, if flood risk only constrains the edge of an AA, then this can suggest good potential to avoid development within the flood risk zone (without an undue impact on wider masterplanning / layout objectives) but if the edge of the AA affected by flood risk is also where it seems likely that key access would need to be achieved then this is suggestive of a concern. Also, if land outside of the flood risk zone is likely to have limited development potential, for example because it comprises ancient woodland, then this can be factored in.

- A5.5. In light of these points, the assessment finds that of the 416 AAs progressed to this stage of the assessment, 28 AAs are **constrained** such that they are not grey belt and therefore need not be taken forward to Stage 4.
- A5.6. 24 of these intersect fluvial flood risk zone 2 by more than 50%, such that the decision is clear cut. Most also intersect fluvial flood risk zone 3 by a significant extent, although 3 of the 28 intersect zone 3 by less than 20%.
- A5.7. Of the 4 AAs assessed as clearly constrained despite intersecting fluvial flood risk zone 2 by less than 50%, the average intersect is 39.5% and, in each case, a specific reason is given for the conclusion reached.
- A5.8. The conclusion for these four AAs is flagged as 'marginal'.
- A5.9. In addition, 14 AAs are found to be **provisionally constrained** such that they do progress to Stage 4 but ultimately can only be provisional grey belt, i.e. they cannot be identified as grey belt through this GBA.
- A5.10. The average intersect with flood zone 2 is 23% and, in each case, a specific reason is given for the conclusion reached. Key factors are the configuration of the fluvial flood risk zone and the extent of surface water flood risk.
- A5.11. The remaining 374 AAs are judged to be **unconstrained** such that they can be grey belt. Of these, 29 are assessed in detail whilst 345 do not require assessment on account of little or no intersect with a flood zone.
- A5.12. Of the 29 AAs assessed, the average intersect with fluvial flood zone 2 is 10% (none intersect by more than 20%); and the average intersect with the 1 in 100 year surface water flood risk zone is 10% (none intersect by more than 33%). The conclusion for 4 of these AAs is flagged as 'marginal'.

Outcomes

- A5.13. Of the 426 AAs assessed at this stage:

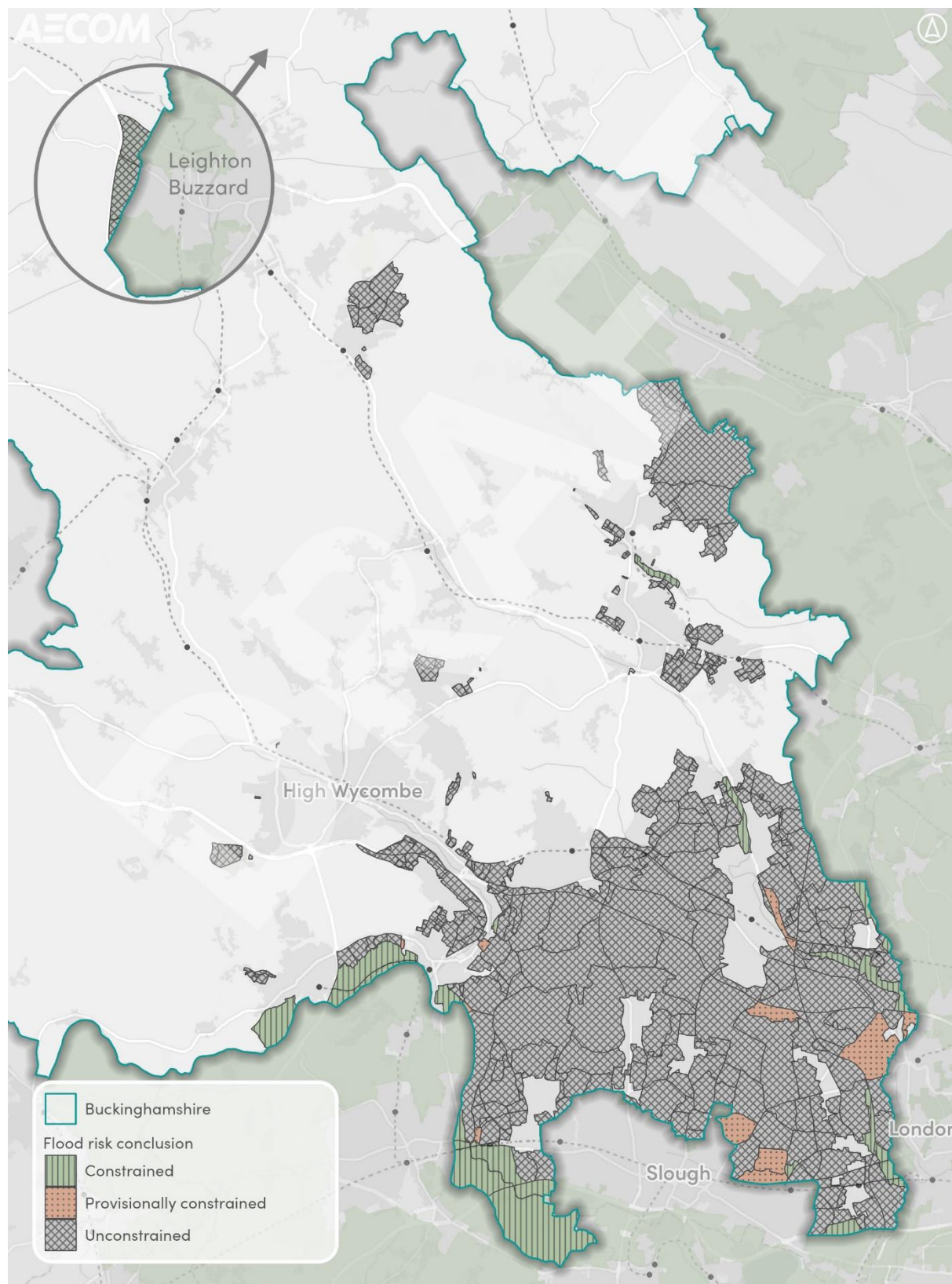
- 27 AAs are **constrained** and so are ruled out at this stage of the footnote 7 assessment process as not grey belt. The conclusion for 4 of these AAs is flagged as marginal.

- 12 AAs are **provisionally constrained** such that they are taken forward to Stage 4 but can ultimately only be 'provisional grey belt' or 'not grey belt' where a final decision must also factor in the subsequent footnote 7 assessment stages and also the purposes assessment.
- The remaining 387 AAs are **unconstrained** such that they are taken forward to Stage 4 and all three ultimate conclusions (not grey belt, provisional grey belt, grey belt) remain a possibility subject to subsequent footnote 7 assessment stages and also the purposes assessment. The conclusion is flagged as marginal for 4 of these AAs.

A5.14. Detailed assessment findings for each AA are presented in Section 6 of the main report which signposts to assessment proformas in Appendix 10.

Table A5.1: Flood risk constraint assessment findings

Conclusion	Implication for grey belt	Number of AAs
Constrained	Not grey belt	27
Provisionally constrained	Can be provisional grey belt	12
Unconstrained	Can be grey belt	385

Figure A5.1: Flood risk constraint assessment findings

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