



Aire Valley Leeds Area Action Plan

Leeds Local Development Framework

Development Plan Document

**Aire Valley Leeds AAP Flood Risk Sequential and Exception
Test Background Paper**

July 2015

FLOOD RISK SEQUENTIAL TEST & EXCEPTION TEST OF PROPOSED SITE ALLOCATIONS IN AIRE VALLEY LEEDS

1 INTRODUCTION

- 1.1 This report sets out the sequential tests and exception tests relating to the proposed site allocations in the Aire Valley Leeds Area Action Plan (AVLAAP). It follows the steps outlined in the National Planning Policy Framework (NPPF) and accompanying National Planning Policy Guidance (NPPG) document using a methodology devised by the council following earlier discussions with the Environment Agency.
- 1.2 This assessment considers potential development sites in Aire Valley Leeds. Some of the proposed sites lie wholly or partly within higher flood zones 2 or 3 as defined by the Leeds Strategic Flood Risk Assessment (SFRA) (2007) and updated by the latest Environment Agency flood risk maps (September 2013).
- 1.3 The NPPG recommends using the sustainability appraisal process to integrate use of the SFRA and application of the sequential test and exceptions test. The Leeds sustainability appraisal framework contains objective SA14 to 'Improve Leeds' ability to manage extreme weather conditions including flood risk and climate change.' The objective's assessment criteria directly reflect the site's flood risk zone in the SFRA. The exception test uses the other sustainability criteria assessments from the sustainability appraisal objectives, to account for the wider sustainability of a site in the decision making process. Where it is necessary to allocate land in areas of high flood risk, justification is contained within the exception test and the sustainability appraisal.
- 1.4 Section 2 provides the policy context for the tests with section 3 describing information about the sites assessed; Section 4 sets out the sequential test for each assessed site; Section 5 sets out the exception test for sites as required by the NPPF paragraphs 100 to 102. Section 6 sets out the assessment of the risk from other sources of flooding in Aire Valley Leeds.

2. POLICY CONTEXT

2.2 National Policies

NPPF & NPPG

- 2.2.1 The Government's policies and guidance on flood risk are set out in the National Planning Policy Framework (Section 10) and in the 'National Planning Policy Guidance to the National Planning Policy Framework' which provides further guidance on flood risk

The NPPF (Para 100) states:

"inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere... Local Plans should apply a sequential, risk based approach to the location of development to

avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change, by:

- *applying the Sequential Test;*
- *if necessary, applying the Exception Test;*
- *safeguarding land from development that is required for current and future flood management;*
- *using opportunities offered by new development to reduce the causes and impacts of flooding;*
- *where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations.”*

Paragraph 101: The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. The SFRA will provide the basis for providing the test. A sequential approach should be used in areas known to be at risk from any form of flooding.

Paragraph 102: If, following the application of the Sequential Test, it is not possible, consistent with wider sustainability objectives for the development to be located in zones with a lower probability of flooding, the Exception Test can be applied if appropriate. For the Exception Test to be passed:

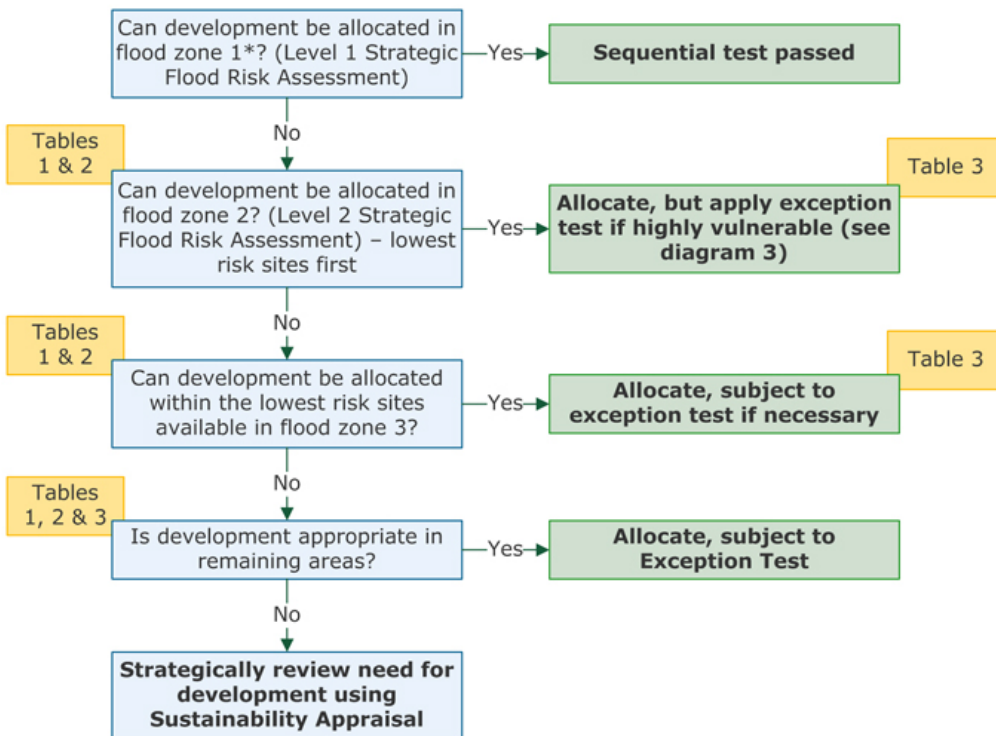
- *it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk;*
- *a site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and , where possible, will reduce flood risk overall.*

Both elements of the test will have to be passed for development to be allocated or permitted.

The NPPG advises on how planning can take account of the risks associated with flooding in plan-making. It contains detailed guidance on the application of paragraphs 100 and 101 of the NPPF.

The advice in relation to plan making and the allocation of sites for specific land uses is usefully summarised in the NPPG by two key diagrams as follows:

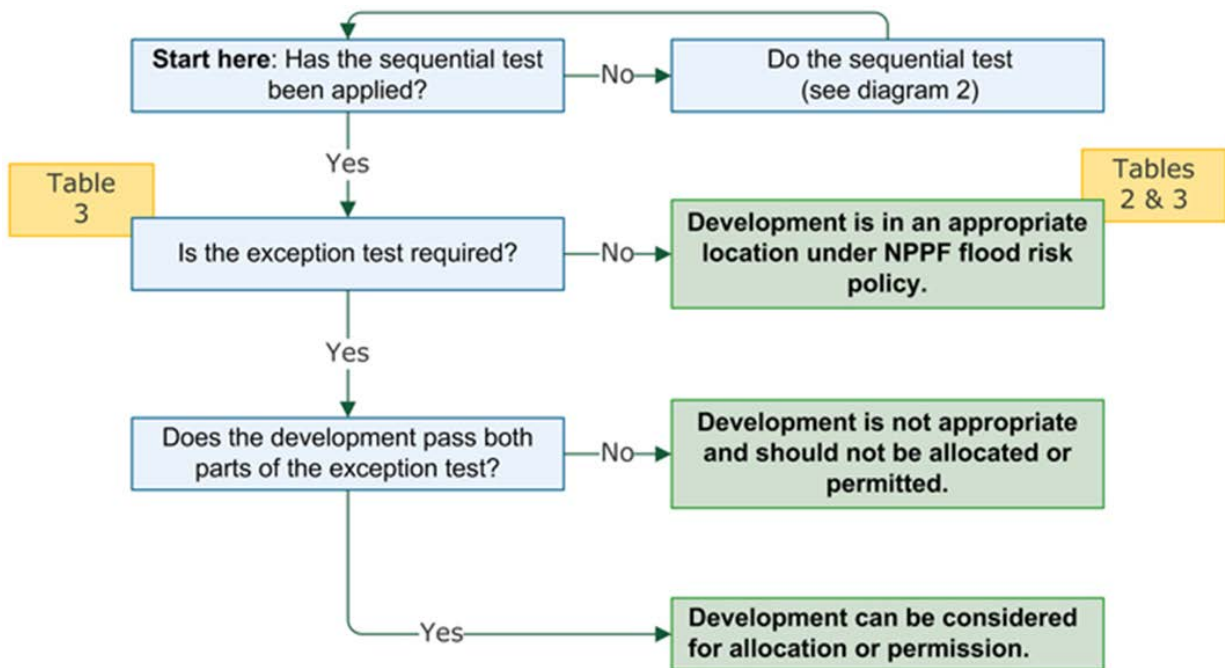
Diagram 1: Application of the Sequential Test for Local Plan Preparation



Notes to Diagram:
 * Other sources of flooding also need to be considered

The tables referred to in the flow charts appear at [Appendix A](#) for ease of reference.

Diagram 2: Application of the Exception Test for Local Plan Preparation



2.3 Local Policies

Leeds Core Strategy

2.3.1 The Leeds Core Strategy approach is guided by the need for a sustainable settlement strategy and the desire to consider a range of economic, social and environmental issues. Consequently, it directs that future growth should be located where it would be most effective in supporting sustainable communities, urban renaissance, regeneration, housing renewal and economic development to support job creation. Central to this approach is the principal to reuse previously developed land within urban areas. Priority is given to urban potential (including infill and particularly brownfield sites); even though within these broad strategic locations there are areas of flood risk. Objective 18 of the Leeds Core strategy states:

“Secure development which has regard to its impact on the local environment and is resilient to the consequences of climate change, including flood risk.”

2.3.2 This approach is reinforced in the following relevant policies; SP3 Role of the City Centre, criterion vi, SP6 The Housing Requirement and the Allocation of Housing Land, criterion vii and EN5 Managing Flood Risk.

2.3.3 Core strategy spatial policy 5 (SP5) identifies the Aire Valley Leeds (Urban Eco Settlement) as a key strategic location, providing at least 6,500 new homes and at least 250 hectares of land for employment uses along with the necessary supporting community infrastructure.

Leeds Strategic Flood Risk Assessment (SFRA)

2.3.4 The Leeds SFRA was adopted in November 2007 and signed off by the Environment Agency in April 2008. The Leeds SFRA provides a comprehensive overview of the river and drainage systems across the district and associated flood risks and as such provides the context for the application of the sequential test. The document subdivides the district into zones of ‘low’ (zone 1), ‘medium’ (zone 2) and ‘high’ (zone 3) and probability of flooding. As a consequence of being located adjacent to the River Aire parts of the City Centre and regeneration areas and are within zone 3a high probability area. There is a need to balance avoiding flood risk, with ensuring the viability and economic development of such areas. However, the Leeds SFRA provides a basis to ensure that detailed flood risk issues are understood and that detailed assessment of individual sites is considered through the preparation of the AAP consistent with the requirements of the NPPF and NPPG.

The Leeds SFRA also provides a Level 2 Flood Risk Assessment because it includes:

- A further refinement of zone 3a into zone 3ai and 3aii, thereby enabling a sequential approach to site allocation to be taken within Flood Zone 3.
- The identification of areas of risk to people behind flood defences as Zones of Rapid Inundation. These are based on areas within which the product of depth and velocity exceeds $0.4\text{m}^2/\text{s}$.
- Definition and mapping of the functional floodplain.
- Information about areas at risk of sewer flooding.

- An account of potential surface water flooding in relation to future development across the district.
- Mapping of local flood incidents across the district.
- Development control recommendations for each of the different flood zones and advice on the preparation of site specific flood risk assessments.

The SFRA is therefore an appropriate assessment to be used to inform the Exception Test (see section 5)

Leeds Flood Alleviation Scheme (FAS)

2.3.5 Leeds City Council, working alongside the Environment Agency, the Canal and River Trust and other partners, are implementing measures to protect Leeds City Centre (between Leeds station and Knostrop weir in the Aire Valley) from a flood event likely to happen once every 75 years taking into account the likely effects of climate change.

The proposed 1 in 75 flood protection scheme will:

- Remove the existing weirs at Crown Point in the city centre and at Knostrop Cut and install moveable weirs that can be lowered when the river is high, causing the water level to drop;
- Construct landscape defences such as low level embankments, terracing and riverside walls; at low points along the riverbank;
- Remove Knostrop Cut to merge the Canal and River Aire which will create additional flood water storage and help to lower water levels in flood conditions;
- Provide flood defences along a length of Holbeck located on Water Lane;
- Provide defences to Woodlesford in the form of low level embankments to achieve a protection against a flood event that is likely to occur every 200 years.

Work on phase 1 of the project is expected to complete in March 2017.

In identifying the city centre as a major source of housing land supply, the Core Strategy highlights the mitigation benefits of the Leeds FAS, which help to protect areas at risk of flooding, particularly in the south of the city centre.

3. SITE AND DEVELOPMENT INFORMATION

3.1 Site Locations

3.1.1 The tests relate to all development sites identified in the Aire Valley Leeds AAP Publication Draft Document and alternative sites submitted by land owners and developers or otherwise considered by the council during the course of plan preparation. The site boundaries in relation to the identified flood risk zone are shown on Map 1.

3.1.2 The development sites assessed have been identified from the following sources:

- Site with planning permission extant at April 2012.
- Existing land use allocations identified in the Leeds Unitary Development Plan (UDP Review 2006) which remain available;
- Sites submitted for consideration as part of the Strategic Housing Land Availability Assessment (reviewed annually), previous consultation stages in preparation of the AVLAAP and 'Call for Sites' exercise in January 2013;
- Other vacant/derelict land.

3.1.3 No further land with development potential was identified in the Aire Valley Leeds area at the time this assessment was undertaken.

3.2 Flood risk source

3.2.1 In Aire Valley Leeds, flood risk is fluvial, from the River Aire, Wyke Beck and Colton Beck. Surface water run-off from the existing and new development contributes to the risk.

3.3 Flood Risk Zones in which proposed allocations are located

3.3.1 Land affected by proposed site allocations lie within the following Flood Risk Zones identified in the Leeds SFRA: 1, 2, 3Ai and 3Aii (see [Appendix B](#) for Leeds SRFA definitions).

3.4 Site Information

3.4.1 Tables 1 to 9 at [Appendix C](#) contain:

- the development sites identified in the AAP Publication Draft and alternative sites suggested through consultation and evidence base, such as Strategic Housing Land Availability Assessment (SHLAA), Call for Sites (CFS), Employment Land Review (ELR) sites. These sites are split by flood risk zone and those proposed sites to be allocated or identified in the AAP (Tables 1-5) and alternative options not proposed in the plan (Tables 6-9);
- Proposed flood defences, particularly the Leeds Flood Alleviation Scheme (see Section 2) for sites within higher flood risk zones. This scheme will provide 1 in 75 year flood event protection for a number of sites in and close to Leeds City Centre;
- the potential uses assessed. This is limited to those uses where a specific allocation would be made, such as housing, general employment and offices

and excludes possible small scale or ancillary uses which may be included within a development

- the Flood Risk Vulnerability Classification of the most vulnerable use proposed on the site

4. THE SEQUENTIAL TEST

4.1 Background

4.1.1 The NPPG advises that the overall aim of the sequential test should be to steer new development to Flood Zone 1. Where there are no reasonably available sites in Flood Zone 1, local planning authorities allocating land in local plans should take into account the flood risk vulnerability of land uses and consider reasonably available sites in Flood Zone 2, applying the Exception Test if required. Only where there are no reasonably available sites in Flood Zones 1 or 2 should decision-makers consider the suitability of sites in Flood Zone 3, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required.

4.1.2 Within each Flood Zone, new development should be first directed to sites at the lowest probability of flooding and the flood vulnerability of the intended use matched to the flood risk of the site e.g. higher vulnerability uses located on parts of the site at lowest probability of flooding.

4.2 Methodology

4.2.1 The AVL AAP will allocate land for a number of primary uses. This includes mixed use development site allocations, with the breakdown of individual uses identified in Local Area Plans. Ancillary uses have also been assessed if they are more vulnerable to flooding than the main use.

4.2.2 The AVL area has requirements for the amount of land or number of units to be developed for residential and general employment uses which can be used as the basis for applying the sequential test.

Assumptions used

- The AVL area will provide a minimum of 6,500 new homes over the plan period as set out in Policy SP5 of the Leeds Core Strategy;
- The AVL area will allocate 250 hectares of land for employment uses as set out in the Core Strategy;
- Where a site satisfies the sequential test it is assumed other less vulnerable uses are also appropriate on the site in flood risk terms and subject to conformity with other plan policies
- Two park & ride sites are shown on the draft Core Strategy key diagram within the AVL area;
- Land with planning permission for the uses being assessed will not fail the sequential or exception test as flood risk matters have already been considered and mitigation measures agreed as part of the site-specific flood risk assessment required as part of the planning application.

SEQUENTIAL TEST RESULTS

The assessment includes development sites in Flood Zones 1, 2 and 3. The following test considers the development sites in sequence:

STEP 1: CAN DEVELOPMENT BE ALLOCATED IN FLOOD ZONE 1?+

PROPOSED DEVELOPMENT IN FLOOD ZONE 1 – ‘LOW PROBABILITY’ OF FLOOD RISK

The Aire Valley Leeds AAP includes the following identified sites with planning permission in Flood Zone 1:

AV19 – Marsh Lane / Saxton Lane
AV21 – The Parade & The Drive
AV24 – Presbytery, St Marys Church
AV27 – Former Leeds College of Technology, East Street
AV30 – Ellerby Lane
AV31 – Cross Green Lane / Echo Phase 3
AV35 – Cross Green Grove
AV36 – St Hildas Church, Knowsthorpe Crescent
AV42 – Riverside Place, Bridgewater Road
AV44 – Unit 5 Nelson House, Quayside Business Park, George Mann Road
AV57 – Plot 2A, Thornes Farm
AV58 – Plot 2B, Thornes Farm
AV59 – Plot 5, Thornes Farm
AV60 – Plot 6, Thornes Farm
AV69 – Symingtons, Thornes Farm
AV70 – 2 Pontefract Lane
AV71 – Thwaite Gate / Sussex Avenue
AV75 – Pontefract Road, North of M1
AV81 – Leeds Valley Park
AV91 – Temple Green Park & Ride
AV92 – William Cooke Castings, Cross Green Approach
AV93 – Unit 4 Queen Street, Stourton
AV112 – Rocheford Court, Pepper Road
AV113 – Former Leeds College of Building, Intermezzo Drive, Stourton

The Aire Valley Leeds AAP includes the following proposed allocations and identified UDP sites in Flood Risk Zone 1:

AV18 – Marsh Lane
AV20 – Ambulance Station, Saxton Lane / Flax Place
AV22 – Former Richmond Inn, Upper Accommodation Road
AV23 – Former Butterfield Manor & Richmond Court, Walter Crescent
AV28 – Bow Street / East Street
AV29 – Bow Street / Ellerby Road
AV38 – Copperfields
AV48 – Church Street / Balm Road
AV50 – Snake Lane / Cross Green Approach
AV51 – Knowsthorpe Way
AV52 – Newmarket Lane

AV54 – Belfry Road / Cross Green Approach
AV55 – Pontefract Lane / Newmarket Approach
AV56 – Land off Knowsthorpe Road
AV65 – Pontefract Road / Newmarket Approach
AV66 – Former Pittards site, Knowsthorpe Gate
AV79 – Land north of Valley Farm Road
AV82 – Stourton North

These proposed allocations satisfy the flood risk sequential test and are appropriate, subject to consideration of risk from other sources of flooding (see section 6).

PROPOSED DEVELOPMENT IN FLOOD ZONE 1 – ‘LOW PROBABILITY’ OF FLOOD RISK (WITH SMALL AREAS OF SITE WITHIN FLOOD ZONES 2 & 3)

The Aire Valley Leeds AAP includes the following identified sites with planning permission in Flood Zone 1 (with smaller areas of the total site area in Zones 2 or 3¹):

AV25 – Richmond Street / Flax Place
AV63 – Logic Leeds (Skelton Moor Farm)
AV64 – Temple Green
AV67 – Skelton Grange

The above sites have extant planning permissions which have addressed detailed site specific flood risk matters.

The Aire Valley Leeds AAP includes the following proposed allocations and identified UDP sites in Flood Zone 1 (with less than 25% of the total site area in Zones 2 or 3):

AV111 – Skelton Gate

This proposed allocation satisfies the flood risk sequential test (where proposed development on the site is located in Flood Zone 1) and is appropriate, subject to consideration of risk from other sources of flooding (see section 6).

¹ All flood risk zones applying to the site are identified with the percentage stated in the Appendix tables where the site is within more than one zone. The flood risk zone used for the sequential test will be the highest flood risk zone required to develop the site to its maximum realistic potential, but excludes smaller areas of land (less than 10% of the total site area for site up to 2 ha. and less than 25% for sites greater than 2 ha.) as it is assumed that these can be incorporated into undeveloped parts of a scheme, such as landscaped areas, green infrastructure etc

STEP 2: CAN DEVELOPMENT BE ALLOCATED IN FLOOD ZONE 2?

PROPOSED DEVELOPMENT IN ZONE 2 'MEDIUM PROBABILITY' OF FLOOD RISK
<p>The Aire Valley Leeds AAP includes the following identified UDP sites in Flood Zone 2 (with more than 25% of the total site area in Zone 2):</p> <p>AV68 – Land south of Knowsthorpe Lane</p> <p>The Aire Valley Leeds AAP includes the following proposed allocations in Flood Zone 2 (with more than 25% of the total site area in Zone 2 and less than 25% of the total site area in Zone 3):</p> <p>AV7 – Former Yorkshire Chemicals site, Black Bull Street AV32 – Rose Wharf Car Park, East Street AV33 – Low Fold, East Street AV40 – Bridgewater Road (North)</p>
Proposed uses in the 'Water Compatible', 'Less Vulnerable', 'More Vulnerable' or 'Essential Infrastructure' classifications ²
<p><u>Less vulnerable</u></p> <ul style="list-style-type: none"> • General employment – (AV68) • Mixed use (office) – (AV7) <p><u>More vulnerable</u></p> <ul style="list-style-type: none"> • Housing – (AV32, AV33, AV40) • Mixed use (housing) – (AV7) <p>These proposed allocations satisfy the flood risk sequential test (where proposed development is located in Flood Zone 1 or 2) and are appropriate, subject to consideration of risk from other sources of flooding (see section 6).</p> <p>As a result, parts of site AV111 that lie within Zone 2 may also satisfy the sequential test but this is subject to paragraph 103 of the NPPF which requires that, within the site, the most vulnerable development is located in areas of the lowest flood risk unless there are overriding reasons to prefer a different location.</p>
Proposed uses in the 'Highly Vulnerable' classifications:
<ul style="list-style-type: none"> • None

² From Table 2 Flood Risk Vulnerability Classification of the NPPG (Flood Risk & Coastal Change, Table 2 Para 65)

STEP 3: CAN DEVELOPMENT BE ALLOCATED WITHIN THE LOWEST RISK SITES AVAILABLE IN FLOOD ZONE 3?

PROPOSED DEVELOPMENT IN ZONE 3Ai 'HIGH PROBABILITY' OF FLOOD RISK
<p>The Aire Valley Leeds AAP includes the following identified sites with planning permission in Flood Zone 3Ai (with more than 25% of the total site area in Zone 3Ai):</p> <p>AV5 – Indigo Blu, Crown Point Road AV47 – South Point, South Accommodation Road</p> <p>The above sites have extant planning permissions which have addressed detailed site specific flood risk matters.</p> <p>The Aire Valley Leeds AAP includes the following proposed allocations and identified UDP sites in Flood Zone 3Ai (with more than 25% of the total site area in Zone 3Ai):</p> <p>AV17 – Braime Pressings, Hunslet Road AV77 – Pontefract Road / Nijinsky Way AV80 – Stocks Bros, Pontefract Road</p> <p>The Aire Valley Leeds AAP includes the following proposed allocations and identified UDP sites in Flood Zone 3Ai (with more than 25% of the total site area in Zone 3Ai and less than 25% of the site in Zone 3Aii):</p> <p>AV34 – South Accommodation Road AV76 – South of Haigh Park Road AV78 – Haigh Park Road / Pontefract Road AV94 – South Bank Planning Statement Area</p>
Proposed uses in the 'Water Compatible' or 'Less Vulnerable' classifications:
<p><u>Less Vulnerable</u></p> <ul style="list-style-type: none"> • General Employment – (AV76, AV77, AV78, AV80) • Mixed use (offices) – (AV94) <p>These proposed allocations satisfy the flood risk sequential test (where proposed development is located in Flood Zone 1, 2 or 3Ai) and are appropriate, subject to consideration of risk from other sources of flooding (see section 6).</p>
Proposed uses in the 'More Vulnerable' or 'Essential Infrastructure' classifications
<p><u>More Vulnerable</u></p> <ul style="list-style-type: none"> • Housing – (AV34) • Mixed use (housing) – (AV17, AV94) <p>These proposed allocations satisfy the flood risk sequential test (where proposed development is located in Flood Zone 1, 2 or 3Ai) and are</p>

<p>appropriate, subject to consideration of risk from other sources of flooding (see section 6).</p> <p>As a result, parts of sites AV7, AV32, AV33, AV40 & AV111 that lie within Zone 3Ai may also satisfy the sequential test, but this is subject to paragraph 103 of the NPPF which requires that, within the site, the most vulnerable development is located in areas of the lowest flood risk, unless there are overriding reasons to prefer a different location.</p> <p>The exception test set out in the NPPF and NPPG needs to be applied for land proposed within Flood Zone 3.</p>
<p>Proposed uses in the ‘Highly Vulnerable’ classification</p>
<ul style="list-style-type: none"> • None

STEP 4: IS THE DEVELOPMENT APPROPRIATE IN REMAINING AREAS?

<p>PROPOSED DEVELOPMENT IN ZONE 3AII ‘HIGH PROBABILITY’ OF FLOOD RISK</p>
<p>The Aire Valley Leeds AAP includes the following identified sites with planning permission in Flood Zone 3Aii (with more than 25% of the total site area in Zone 3Aii):</p> <p>AV10 – Armouries Drive, Leeds Dock AV11 – Former Alea Casino, The Boulevard, Leeds Dock AV26 – The Gateway, Marsh Lane AV41 – Hunslet Mills, Goodman Street (housing use) AV43 – Yarn Street AV45 – Gibraltar Island Road AV61 – North site, Thornes Farm Way AV73 – Former Post Office building, Skelton Grange Road AV96 – Airedale Mills, Clarence Road</p> <p>The above sites have extant planning permissions which have addressed detailed site specific flood risk matters.</p> <p>The Aire Valley Leeds AAP includes the following proposed allocations and identified UDP sites in Flood Zone 3Aii (with more than 25% of the total site area in Zone 3Aii):</p> <p>AV9 – Evans Halshaw, Hunslet Lane AV12 – Armouries Drive / Carlisle Road AV13 – Carlisle Road / Clarence Road AV14 – Former Hydro Site, Clarence Road AV15 – Clarence Road / Sayner Lane AV16 – Carlisle Road / Sayner Lane AV41 – Hunslet Mills, Goodman Street (other proposed uses) AV46 – Tetley Motors, Goodman Street AV62 – Land east of Thornes Farm Way (south site) AV72 – North of Haigh Park Road</p>

<p>AV74 – South of Skelton Grange Road (west site) AV83 – South of Skelton Grange Road (east site) AV98 – Atkinson Street</p>
<p>Proposed uses in the ‘Water Compatible’ or ‘Less Vulnerable’ classifications:</p>
<p><u>Less Vulnerable</u></p> <ul style="list-style-type: none"> • General Employment (AV62, AV72, AV74 & AV83) • Mixed use (offices) – (AV12, AV13, AV14, AV15 & AV16) • Mixed use (retail & leisure) – (AV41) <p>These proposed allocations satisfy the flood risk sequential test and are appropriate, subject to consideration of risk from other sources of flooding (see section 6).</p>
<p>Proposed uses in the ‘More Vulnerable’ or ‘Essential Infrastructure’ classifications</p>
<p><u>More Vulnerable</u></p> <ul style="list-style-type: none"> • Mixed use (housing) – (AV9, AV12, AV13, AV14, AV15, AV16, AV98) • Housing – (AV46) • Mixed use (education uses, hotel, pubs and bars) – (AV41) <p>As set out in Appendix D, the housing and mixed use sites individually pass the sequential test because further land in Flood Risk Zone 3Aii is required to meet the housing requirement for Aire Valley Leeds set out in Core Strategy Spatial Policy 5. All the sites are brownfield within a defined regeneration area and are sustainably located within or very close to the city centre. There would be no clear rationale for preferring one site over another in these circumstances, subject to each site satisfying the requirements of the flood risk exception test. The sites are therefore appropriate, subject to consideration of risk from other sources of flooding (see section 6).</p> <p>On site AV41, education, hotel and pubs and bar uses are one of a number of potential uses which the AAP identifies as being acceptable if the existing planning permission for a housing scheme is not pursued. These uses are in the same ‘more vulnerable’ classification of flood risk as housing and therefore would not increase vulnerability to flood risk, subject to detailed design consideration. This sequential test is therefore considered to have been passed.</p> <p>The exception test set out in the NPPF and NPPG needs to be applied to all sites.</p>
<p>Proposed uses in the ‘Highly Vulnerable’ classification</p>
<ul style="list-style-type: none"> • None

Could the development proposals for the allocated sites in Zone 2, 3Ai and 3Aii alternatively be located in lower risk flood zones?

a) identify alternative sites that were considered and explain why they were dismissed:

Alternative sites have been assessed for their potential to contribute towards the housing requirement. None of the assessed sites present viable and deliverable alternatives. The assessment of alternative sites is included in Appendices D and E.

b) explain why the proposals cannot be redirected to lower risk flood zones:

- All the development sites identified in lower risk flood zones have already been allocated for one or more of the principle uses.
- Rejecting potential development sites in Zones 2 & 3 would prejudice delivery of the Core Strategy housing requirement of 6,500 dwellings for Aire Valley Leeds.
- The sites are needed to satisfy the Core Strategy employment land requirement (250 hectares) for Aire Valley Leeds.
- Rejecting developable brownfield sites could result in sterilising their development potential, with the consequence that they remain derelict. This would present a negative impression in prominent locations and blighting their future use for built development would significantly hinder regeneration of the area, which is one of the most important economic drivers for the city and its region.

5. THE EXCEPTION TEST

5.1 Introduction

5.1.1 The NPPF requires the exception test to be applied when, following the application of the sequential test, it is not possible for the development to be located in zones of lower probability of flooding.

5.1.2 The exception test is appropriate when there are large areas in flood zones 2 and 3, where the sequential test alone cannot deliver acceptable sites, but where some continued development is necessary for wider sustainable development reasons, taking into account the need to avoid social or economic blight.

5.1.3 Many of the potential development sites are entirely or partially located within Flood Risk Zones 2 or 3. These include many developable, previously-developed sites in accessible sustainable locations. The area is an economic development and regeneration opportunity of regional significance and located in close proximity to some of the most deprived communities in Leeds.

5.1.4 NPPF (Paragraph 102) sets out the two criteria which make up the Exception Test, which are:

- A. Does the development provide wider sustainability benefits to the community that outweigh flood risk?
- B. Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?

5.1.5 These criteria have been applied in the tables set out following paragraph 5.2.7.

5.2 Results

5.2.1 This section looks at the housing allocations proposed in Flood Zone 3, noting that some sites have parts in zones 1 and/or 2, and gives further detailed information, including key findings from the Strategic Flood Risk Assessment Level 1 & 2, to ensure that the remainder of the requirements of the Exceptions Test are satisfied.

5.2.2 Sites which passed the Sequential Test, but require an Exception Test for housing uses in accordance with paragraph 102 of the NPPF are as follows:

Site	Proposed uses
AV7 - Former Yorkshire Chemicals (north west site) (part)	Housing
AV9 - Evans Halshaw, Hunslet Lane	Housing
AV12- Armouries Drive / Carlisle Road	Housing
AV13 - Carlisle Road / Clarence Road	Housing
AV14 - Former Hydro Site, Clarence Road	Housing
AV15 – Clarence Road / Sayner Lane	Housing
AV16 – Carlisle Road / Sayner Road	Housing

AV17 - Braime Pressings, Hunslet Road	Housing
AV32 – Rose Wharf car park, East Street	Housing
AV33 - Low Fold, East Street	Housing
AV34 - South Accommodation Road	Housing
AV41 – Hunslet Mills	Mixed Use
AV46 - Tetley Motors	Housing
AV94 – South Bank Planning Statement Area	Housing
AV98 – Atkinson Street	Housing

- 5.2.3 In addition, a site specific flood risk assessment is required as part of a planning application which will have to demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall. This could take the form of a sequential approach to layout of the site to ensure that the parts that flood to the deepest depths with the quickest inundation rates are avoided, or set aside for less vulnerable uses such as open space.
- 5.2.4 As well as the strategic framework and capital works, Leeds City Council has worked with partners to ensure that in major flood situations, the Council can provide an effective response during and after flood events, in order to care for those affected. These arrangements are made in partnership with other response organisations such as the emergency services, Environment Agency, health organisations and other partners.
- 5.2.5 To support these arrangements, multi-agency plans are prepared by Leeds City Council and are in place, at a community and strategic level. The emergency plans describe the flood risk profile for different parts of the city, and set out the response activities which will be co-ordinated by each organisation. Leeds City Council continues to work with partners to ensure that flood risk and the impacts of flooding are properly understood and planned for. This work includes coordination of the Strategic Leeds Flood Risk Forum to identify potential problem areas and take action to rectify them or reduce the risk.
- 5.2.6 Softer measures are also taken to raise awareness and thereby reduce flood risk, for example, flood risk awareness and response campaigns informed by the Environment Agency’s Local Flood Warning Plan. Developments in high flood risk areas will be included in generic emergency response plans, including the multi-agency flood plan and community emergency plans.
- 5.2.7 The notes and observation in the Exception Test should be read alongside the flood maps which have been generated as part of the Leeds Flood Alleviation Scheme. These are included after the table.

Exception Test for Site AV7 - Former Yorkshire Chemicals site (North West site)	
Flood Risk Zone: 2 & 3Ai	
Proposed uses subject of Exception Test: Housing (estimated 261 units)	
A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?	
Yes	<p>Explain how:</p> <p>This brown field development site is located within the city centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities.</p> <p>The site has been cleared of former buildings. A number of similar former industrial premises in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Clarence Dock.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, sustainable location and access to the highway network.</p>
B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that the site is located within Flood Zone 3A(ii). However, the latest flood modelling carried out as part of the Leeds FAS indicates that <u>none of the site currently floods during the 1 in 100 yr event.</u> The site should, therefore, be considered as located in FZ 2. • Parts of the site are at risk of flooding from the 1 in 1,000yr event and the measures below describe how the flood risk associated with such an extreme event can be reduced. • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found less than 500m from the centre of the site. • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. 	

<ul style="list-style-type: none"> • Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk will be reduced by setting finished floor levels above adjacent ground levels. • The existing site is almost entirely impermeable, so any redevelopment which incorporates SuDS will provide betterment. • In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with Council's surface water discharge (30% reduction) policy. This will ensure that the development helps to reduce flood risk elsewhere.
<p>Conclusion</p> <p>Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on site AV7 is considered to have passed the Exception Test.</p>

Exception Test for Site: AV9 Evans Halshaw, Hunslet Lane	
Flood Risk Zone: 3Aii	
Proposed uses subject of Exception Test: Housing (estimated 191 units)	
A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?	
Yes	<p>Explain how:</p> <p>This brown field development site is located within the City Centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.</p> <p>The site has existing industrial buildings. A number of similar former industrial premises in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Clarence Dock.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and four significant positive scores for the sustainable location and access to the highway network, facilities and services.</p>
B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that the site is located within Flood Zone 3A(ii). However, the latest flood modelling carried out as part of the Leeds FAS indicates that none of the site currently floods during the 1 in 75 yr event. Even without the benefit of the new moveable weirs, the site will benefit from the 	

Knostrop Cut and as such, is not expected to flood in the 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site will effectively be located in FZ 2 post Leeds FAS.

- Although the site will be defended by the Leeds FAS, there is a residual risk of flooding, should the weirs fail to operate or else be subjected to an exceedance event. The measures below describe how the remaining flood risk will be further reduced
- The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events.
- Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found less than 500m from the centre of the site.
- Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site.
- The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings.
- Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level.
- Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards.
- There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk will be reduced by setting finished floor levels above adjacent ground levels.
- The existing site is almost entirely impermeable, so any redevelopment which incorporates SuDS will provide betterment.
- In terms of drainage, the site is classed as a 'brownfield'. Any redevelopment would have to comply with Council's surface water discharge (30% reduction) policy. This will ensure that the development helps to reduce flood risk elsewhere.

Conclusion

Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on site AV9 is considered to have passed the Exception Test.

Exception Test for Sites AV12 and AV13 Armouries Drive, South of Clarence Dock, Carlisle Road

Flood Risk Zone: 3Aii

Proposed uses subject of Exception Test: Housing (estimated 129 units)

A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?

<p>Yes</p>	<p>Explain how:</p> <p>Brown field development sites located within the city centre and close to high frequency bus routes. Accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which provides significant accessible job opportunities which will be added to as development proceeds in the area.</p> <p>The site has existing industrial buildings. A number of similar former industrial premises in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Leeds Dock.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and four significant positive scores for the sustainable location and access to the highway network, facilities and services.</p>
<p>B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?</p>	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that the site is located within Flood Zone 3A(ii). Even without the benefit of the new moveable weirs, the site will benefit from removal of the Knostrop Cut and as such, is not expected to flood in the 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site will therefore effectively be located in FZ 2 post Leeds FAS. • Although the site will be defended by the Leeds FAS, there is a residual risk of flooding, should the weirs fail to operate or else be subjected to an exceedance event. The measures below describe how the remaining flood risk will be further reduced • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found less than 500m from the centre of the site. • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. • Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail 	

<p>design. It is expected that flood risk will be reduced by setting finished floor levels above adjacent ground levels.</p> <ul style="list-style-type: none"> • The existing site is almost entirely impermeable, so any redevelopment which incorporates SuDS will provide betterment. • In terms of drainage, the site is classed as a 'brownfield'. Any redevelopment would have to comply with Council's surface water discharge (30% reduction) policy. This will ensure that the development helps to reduce flood risk elsewhere.
<p>Conclusion</p> <p>Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on site AV12 and AV13 are considered to have passed the Exception Test.</p>

Exception Test for Site AV14 Former Hydro Site	
Flood Risk Zone: 3Aii	
Proposed uses subject of Exception Test: Housing (estimated 105 units)	
A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?	
Yes	<p>Explain how:</p> <p>Brown field development site located on the edge of the city centre and close to high frequency bus routes. Accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. Located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.</p> <p>Cleared of former buildings. Part of site has previously benefitted from planning permission for a residential led redevelopment scheme, but this has now lapsed. A number of similar former industrial premises in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Leeds Dock.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and three significant positive scores for the sustainable location and access to the highway network, facilities and services. Significant negative impact on biodiversity which will require mitigation.</p>
B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that the site is located within Flood Zone 3A(ii). However, the latest flood modelling carried out as part of the Leeds FAS indicates that even without the moveable weirs the site will benefit from the Knostrop Cut and is not expected to flood in the 1 in 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site will effectively be located in FZ 2 post Leeds FAS. 	

<ul style="list-style-type: none"> • Although the site will be defended by the Leeds FAS, there is a residual risk of flooding during an exceedance event. The measures below describe how flood risk will be reduced in order to make the site safe for its users. • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. • Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk from these sources will be reduced by setting finished floor levels above adjacent ground levels. • In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with current SuDS policy which requires run-off from brownfield sites to revert back to greenfield rates.
<ul style="list-style-type: none"> • Conclusion
<ul style="list-style-type: none"> • Subject to a FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on site AV14 is considered to have passed the Exception Test.

Exception Test for Sites 15 & 16 Clarence Road/Carlise Road/Sayner Lane/Sayner Road	
Flood Risk Zone: 3Aii	
Proposed uses subject of Exception Test: Housing (estimated 184 units)	
A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?	
Yes	Explain how: Brown field development sites located on the edge of the city centre and close to high frequency bus routes. Accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. Located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.

	<p>A number of similar former industrial premises in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Leeds Dock.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and three significant positive scores for the sustainable location and access to the highway network, facilities and services.</p>
<p>B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?</p>	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that these sites are located within Flood Zone 3A(ii). However, the latest flood modelling carried out as part of the Leeds FAS indicates that the sites are more likely to be located within Flood Zone 2. • Only 'Highly Vulnerable' uses within FZ2 are required to pass the Exception Test and 'More Vulnerable' uses, such as dwelling houses are 'Appropriate' for siting within this zone, subject to a Flood Risk Assessment, which should include the following measures: • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. • Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk from these sources will be reduced by setting finished floor levels above adjacent ground levels. • In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with current SuDS policy which requires run-off from brownfield sites to revert back to greenfield rates. 	

Conclusion
Subject to a FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on sites 15 and 16 is considered to have passed the Exception Test.

Exception Test for Site 17 - Braime Pressings, Hunslet Road
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Flood Risk Zone: 3Ai

Proposed uses subject of Exception Test: Housing (estimated 121 units)

A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?

Yes	<p>Explain how:</p> <p>This brown field development site is located within the city centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.</p> <p>The site has existing industrial buildings. A number of similar former industrial premises in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Clarence Dock.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and four significant positive scores for the sustainable location and access to the highway network, facilities and services.</p>
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B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?

<ul style="list-style-type: none"> • The SFRA Flood Map indicates that the site is located within Flood Zone 3A(i). However, the latest flood modelling carried out as part of the Leeds FAS indicates that none of the site currently floods during the 1 in 75 yr event. Even without the benefit of the new moveable weirs the site will benefit from removal of the Knostrop Cut and as such, is not expected to flood in the 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site should, therefore, be considered as located in FZ 2 post FAS. • Although the site will be defended by the Leeds FAS, there is a residual risk of flooding, should the weirs fail to operate or else be subjected to an exceedance event. The measures below describe how the remaining flood risk will be further reduced. • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground
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	<p>can be found less than 500m from the centre of the site.</p> <ul style="list-style-type: none"> • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. • Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk will be reduced by setting finished floor levels above adjacent ground levels. • The existing site is almost entirely impermeable, so any redevelopment which incorporates SuDS will provide betterment. • In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with Council's surface water discharge (30% reduction) policy. This will ensure that the development helps to reduce flood risk elsewhere.
Conclusion	
Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on Site AV17 is considered to have passed the Exception Test.	

Exception Test for Site AV33 – Low Fold, East Street	
Flood Risk Zone: 3Ai (8%) and 3Aii (14%)	
Proposed uses subject of Exception Test: Housing	
A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?	
Yes	<p>Explain how:</p> <p>This brown field development site is located on the edge of the city centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.</p> <p>The site currently derelict and is located in a high profile gateway located next to the Inner Ring Road. A number of similar former brownfield in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Echo.</p>

	<p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and two significant positive scores for the sustainable location and access to the highway network, facilities and services. Significant negative impact on biodiversity which will require mitigation.</p>
<p>B: Has an FRA demonstrated that the development will be safe, without increasing flood risk elsewhere, and where possible, reduce flood risk overall?</p>	
<ul style="list-style-type: none"> • The majority of the site is located within SFRA Flood Zone 1. However, the Western boundary, adjacent to the river Aire is indicated as a mixture of FZ 2, 3A(i) and 3B. However, the latest flood modelling carried out as part of the Leeds FAS indicates that only FZ 3B is subject to flooding. Even without the benefit of the new moveable weirs the site will benefit from removal of the Knostrop Cut and as such, is not expected to flood in the 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site will therefore effectively be located in FZ 2 post Leeds FAS. • Although the site will be defended by the Leeds FAS, there is a residual risk of flooding, should the weirs fail to operate or else be subjected to an exceedance event. The measures below describe how the remaining flood risk will be further reduced • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found less than 500m from the centre of the site. • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. • Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk will be reduced by setting finished floor levels above adjacent ground levels. • The existing site is almost entirely impermeable, so any redevelopment which incorporates SuDS will provide betterment. • In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with Council's surface water discharge (30% reduction) policy. This will ensure that the development helps to reduce flood risk 	

elsewhere.
Conclusion
Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on site AV33 is considered to have passed the Exception Test. For the avoidance of doubt this excludes any part of the site identified within Zone 3B functional floodplain within the SFRA (12% of site area).

Exception Test for Site AV34 - South Accommodation Road	
Flood Risk Zone: 3Ai	
Proposed uses subject of Exception Test: Housing (estimated 27 units)	
A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?	
Yes	<p>Explain how:</p> <p>This brown field development site is located on the edge of the city centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.</p> <p>The site currently derelict and is located in a high profile gateway located next to the Inner Ring Road. A number of similar former brownfield in the vicinity have been redeveloped for housing-led mixed use schemes e.g. Echo.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and two significant positive scores for the sustainable location and access to the highway network, facilities and services. Significant negative impact on biodiversity which will require mitigation.</p>
B: Has an FRA demonstrated that the development will be safe, without increasing flood risk elsewhere, and where possible, reduce flood risk overall?	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that parts of the site are located within Flood Zones 3A(i) and 2. However, the latest flood modelling carried out as part of the Leeds FAS indicates that even without the moveable weirs operational the site will benefit from the Knostrop Cut which will effectively lift the entire site out of the 1 in 100yr flood plain. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. • Although the site will be defended by the Leeds FAS, part of the site will remain in Flood Zone 2 and therefore continue to be at risk of flooding during more extreme events. The measures below describe how the flood risk will be reduced in order to make it safe for its users. • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning 	

Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found immediately adjacent to the site.

- Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site.
- The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings.
- Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level.
- Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards.
- There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk from these sources will be reduced by setting finished floor levels above adjacent ground levels.
- In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with current SuDS policy which requires run-off from brownfield sites to revert back to greenfield rates.

Conclusion

Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on site AV34 is considered to have passed the Exception Test. For the avoidance of doubt this excludes any part of the site identified within Zone 3B functional floodplain within the SFRA (3% of site area).

Exception Test for Site AV41 – Hunslet Mills

Flood Risk Zone: 3Aii

Proposed uses subject of Exception Test: Mixed Use (estimated 699 units)

A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?

Yes

Explain how:

This brown field development site is located on the edge of the city centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.

The site is currently derelict and is located in a high profile gateway located next to the elevated Inner Ring Road. The site already benefits from planning permission for housing. The AAP is promoting the site for a wider range of uses to facilitate the redevelopment of the site and the

	<p>listed grade 2* building. The listed building appears on the Buildings at Risk Register.</p>
<p>B: Has an FRA demonstrated that the development will be safe, without increasing flood risk elsewhere, and where possible, reduce flood risk overall?</p>	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that the site is located within Flood Zone 3A(ii). However, the latest flood modelling carried out as part of the Leeds FAS indicates that even without the moveable weirs operational the site will benefit from removal of the Knostrop Cut and is not expected to flood in the 1 in 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site will therefore effectively be located in FZ 2 post Leeds FAS. • Although the site will be defended by the Leeds FAS, there is a residual risk of flooding during an exceedance event. The measures below describe how the flood risk will be reduced in order to make it safe for its users. • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA’s Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found on Hunslet Road, approximately 250m from the centre of the site. • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. • Floor levels should be raised above adjacent ground level as per LCC’s Minimum Development Control Standards. Where this is not possible, uses at ground floor levels should be the least vulnerable uses, with the most vulnerable uses located above ground floor. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk from these sources will be reduced by setting finished floor levels above adjacent ground levels. • In terms of drainage, the site is classed as ‘brown-field’. Any redevelopment would have to comply with current SuDS policy which requires run-off from brownfield sites to revert back to greenfield rates. 	

Conclusion
Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on Site AV41 is considered to have passed the Exception Test.

Exception Test for Site AV46 - Tetleys Motors, Goodman Street
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Flood Risk Zone: 3A

Proposed uses subject of Exception Test: Housing (estimated 36 units)
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A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?

Yes	<p>Explain how:</p> <p>This brown field development site is located close to the city centre and within walking distance of Hunslet Town Centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.</p> <p>The site is still in use for commercial purposes. The site is immediately adjacent to the Yarn Street development and would form a logical extension of this existing development. Development of the site would require similar flood defence and mitigation measures as implemented in the Yarn Street development.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and one significant positive scores for the sustainable location.</p>
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B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?

<ul style="list-style-type: none"> • The SFRA Flood Map indicates that the site is located within Flood Zone 3A(ii). Even without the benefit of the new moveable weirs, the site will benefit from the Knostrop Cut and as such, is not expected to flood in the 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site will therefore effectively be located in FZ 2 post Leeds FAS as shown on Map 2. • Although the site will be defended by the Leeds FAS, there is a residual risk of flooding, should the weirs fail to operate or else be subjected to an exceedance event. The measures below describe how the remaining flood risk will be further reduced. • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found less than 500m from the centre of the site.

- Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site.
- The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings.
- Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level.
- Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards.
- There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk will be reduced by setting finished floor levels above adjacent ground levels.
- The existing site is almost entirely impermeable, so any redevelopment which incorporates SuDS will provide betterment.
- In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with Council's surface water discharge (30% reduction) policy. This will ensure that the development helps to reduce flood risk elsewhere.

Conclusion

Subject to a FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on Site AV46 is considered to have passed the Exception Test.

EXCEPTION TEST FOR SITE AV94: SOUTH BANK PLANNING STATEMENT AREA

Flood Risk Zone: 3Ai & 3Aii (73% of total site area)

Proposed uses subject of Exception Test: Housing (estimated 875 units)

A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?

Yes, the sustainability appraisal of the AVL AAP demonstrates that the development of the site for housing uses (within a mix of uses) would have brought forward a number of sustainability benefits, including strong benefits against the following 4 SA objectives (SA6: Culture, leisure & recreation; SA11: Greenhouse gas emissions; SA15: Transport network; and SA16: Local needs met locally) and minor benefits against a further 5 objectives.

The site has been assessed as having potential minor negative effects against 5 SA objectives, including flood risk. This includes two negative scores relating to potential loss of employment although this would only occur if existing uses were to be redeveloped and part of the site is already cleared. The site is also allocated for mixed use development which would include potential employment uses. Other negative scores relate to heritage issues (which can be mitigated by site requirements) and air quality can be mitigated.

This site includes brownfield development land located within the City Centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. They are also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.

The site is part of a wider regeneration proposal in the South Bank which are linked to the delivery of a city park, a potential HS2 station, stops on the proposed NGT trolleybus scheme and a growing education hub.

Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings, and four significant positive scores for the sustainable location and access to the highway network, facilities and services.

B: Has a FRA demonstrated that the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall?

- The SFRA Flood Map indicates that the site is located within Flood Zone 3A(i). However, the latest flood modelling carried out as part of the Leeds FAS indicates that only a small part of the site floods during the 1 in 100 yr event. Even without the benefit of the new moveable weirs the site will benefit from the Knostrop Cut and as such, is not expected to flood in the 100yr event. See Map 3: Weirs up + Cut Only 2020_100yr Flood Depths. The site will therefore effectively be located in FZ 2 post Leeds FAS.
- There is a residual risk of flooding, should the Leeds FAS be subjected to an exceedance event. The measures below describe how the remaining flood risk will be further reduced.
- The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events.

- Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found less than 500m from the centre of the site.
- Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site.
- The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings.
- Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level.
- Floor levels should be raised above the 1 in 100 year flood level as per LCC's Minimum Development Control Standards.
- There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk will be reduced by setting finished floor levels above adjacent ground levels.
- The existing site is almost entirely impermeable, so any redevelopment which incorporates SuDS will provide betterment.
- In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with Council's surface water discharge (30% reduction) policy. This will ensure that the development helps to reduce flood risk elsewhere.

Conclusion

Subject to a FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on Site 94 is considered to have passed the Exception Test.

Exception Test for Site AV98 – Atkinson Street

Flood Risk Zone: 3Aii

Proposed uses subject of Exception Test: Housing (estimated 35 units)

A: Does the development provide wider sustainability benefits to the community that outweigh flood risk?

Yes

Explain how:

This brown field development site is located on the edge of the city centre and close to high frequency bus routes. It is accessible by a number of sustainable transport modes to a wide range of employment, shopping and leisure opportunities. It is also located within the Aire Valley Leeds employment area which also provides significant accessible job opportunities which will be added to as development proceeds in the area.

The site's development would facilitate the wider development of the

	<p>Hunslet Mills riverside area which has sustainability benefits in reusing derelict brownfield sites and retaining a listed grade 2* building.</p> <p>Sustainability appraisal site assessment: Generally positive scores for housing provision, reusing brown field land and buildings. Significant negative impact on biodiversity which will require mitigation.</p>
<p>B: Has an FRA demonstrated that the development will be safe, without increasing flood risk elsewhere, and where possible, reduce flood risk overall?</p>	
<ul style="list-style-type: none"> • The SFRA Flood Map indicates that this site is located within Flood Zone 3A(ii). However, the latest flood modelling carried out as part of the Leeds FAS indicates that the majority of the site is located within Flood Zone 1. • Taking a conservative approach and assuming that the site is located within Flood Zone 2, only 'Highly Vulnerable' uses are required to pass the Exception Test and 'More Vulnerable' uses, such as dwelling houses are 'Appropriate' for siting within this zone, subject to a Flood Risk Assessment, which should include the following measures: • The EA have a flood warning service which covers this area. In the event of flooding it will be possible to provide at least 2 hours advance warning, probably much longer for extreme events. • Occupants of the site will be encouraged to sign up to the EA's Flood Warning Service. This will provide sufficient advance warning to enable the site to be evacuated, if necessary, for very extreme events. Higher ground can be found on Hunslet Road, approximately 250m from the centre of the site. • Any flooding is likely to be of short duration, (less than 12 hours), hence it is likely that people could remain inside their houses, if they are unable to evacuate the site. • The depth and velocity of flooding at the site during extreme events (> 1 in 100yrs return period) is unlikely to present a risk of structural damage to buildings. • Flood resilient construction should be utilised, where appropriate. For example, concrete ground floors should be used in preference to timber. Electrical sockets, fuse boxes, control equipment and wiring should be located at least 1.5 metres above floor level. Electrical cables should come down the wall to raised sockets rather than be located below ground level. • Floor levels should be raised above adjacent ground level as per LCC's Minimum Development Control Standards. • There is also a risk of flooding from other sources, such as sewers, water mains and surface water run-off. This needs to be considered during detail design. It is expected that flood risk from these sources will be reduced by setting finished floor levels above adjacent ground levels. • In terms of drainage, the site is classed as a 'brown-field'. Any redevelopment would have to comply with current SuDS policy which requires run-off from brownfield sites to revert back to greenfield rates. 	

Conclusion

Subject to an FRA being submitted alongside detailed development proposals and demonstrating that the development will be safe and will not increase flood risk elsewhere, the proposed housing use on site AV98 is considered to have passed the Exception Test.

6. Surface water and other sources of flooding

- 6.1 The city council maintains an up-to-date record of incidents of flooding that are non-fluvial, such as flash floods from high rainfall incidents and infrastructure breakdown. The SFRA 2007 includes a map of localised flood problems (Fig B – Local Flood Incident Overview). This information was utilised as part of the individual site assessments for all of the sites being proposed for allocation in the Aire Valley Leeds Area Action Plan.
- 6.2 The council's Flood Risk Management Service have reviewed all the proposed sites in Aire Valley Leeds and confirmed that none are at significant risk of surface water flooding. This does not mean there is no risk, and as such it would be expected that finished floor levels are raised up above adjacent ground level by an appropriate amount in order to mitigate the risk. The amount by which the floor levels should be raised is expected to be between 150mm and 300mm, and the actual amount will be determined as part of the FRA for each site, as this will depend upon the proposed site layout.
- 6.3 The Natural Resources and Waste DPD has a suite of policies to ensure that development is appropriately laid out and designed to deal with flood risk.

APPENDIX A: Flood Zone and Flood Risk Tables referred to in NPPG Sequential Test Flow Chart
 Extract from NPPG

Table 1: Flood Zones

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency’s [Flood Map for Planning \(Rivers and Sea\)](#), available on the Environment Agency’s web site, as indicated in the table below.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as ‘clear’ on the EA’s Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the EA’s Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the EA’s Flood Map)

Note: The Flood Zones shown on the Environment Agency’s Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the [Strategic Flood Risk Assessment](#) when considering location and potential future flood risks to developments and land uses.

Table 2: Flood Risk Vulnerability Classification

<p>Essential Infrastructure</p> <ul style="list-style-type: none"> • Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. • Wind turbines.
<p>Highly Vulnerable</p> <ul style="list-style-type: none"> • Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').
<p>More Vulnerable</p> <ul style="list-style-type: none"> • Hospitals • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non-residential uses for health services, nurseries and educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
<p>Less Vulnerable</p> <ul style="list-style-type: none"> • Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'More Vulnerable' class; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill* and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.

Water-Compatible Development

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

* Landfill is as defined in [Schedule 10](#) to the Environmental Permitting (England and Wales) Regulations 2010.

Table 3: Flood risk vulnerability and flood zone ‘compatibility’

<u>Flood Zones</u>	<u>Flood Risk Vulnerability Classification</u>				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Key:

- ✓ Development is appropriate
- ✗ Development should not be permitted.

Notes to table 3:

- This table does not show the application of the Sequential Test which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and Exception Tests do not need to be applied to minor developments and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

* In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
 - result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

APPENDIX B: Leeds SFRA Flood Risk Zone Definitions

The spatial variation in flood risk across the district has been delineated in the following manner:

Zone 3b (Functional Floodplain)

Zone 3b Functional Floodplain is land:

- where water flows or has to be stored in times of flood;
- that is subject to flooding with a 1 in 20 year (5%) probability (or more frequently); and
- that is reserved by Leeds City Council for this purpose

Where the council has identified that undeveloped land already has an existing planning permission or a brownfield allocation that has been protected through the 'Saved Policies' review of the Leeds Unitary Development Plan, then a decision has been made not to include it in the functional floodplain. The functional floodplain therefore primarily consists of the broad open spaces adjoining the waterway corridors of the River Wharfe and River Aire. It is essential that these floodplain areas are protected from future development.

Zone 3a High Probability

Areas subject to flooding up to (and including) a 1 in 100 year (1%) annual probability of flooding have been identified. Within Leeds there is a considerable variation in the depth, duration and frequency (and hence the consequence) of flooding to properties situated within Zone 3a. As a result, a further sub-delineation of flood risk has been carried out to assist the council planning team to guide future development to areas of lowest risk within Zone 3a, when it is not possible to find reasonable alternatives in a lower risk zone.

Existing developed areas (or areas with existing planning permission or an allocation that has been protected through the 'Saved Policies' review of the Leeds UDP) that are subject to flooding up to (and including) the 1 in 20 year (5%) annual probability have been highlighted as Zone 3a(ii) High Probability. This primarily includes areas of existing development situated adjacent to the River Aire and the River Wharfe (including parts of Leeds City Centre). Existing Sewage Treatment Works have also been incorporated into Zone 3a(ii) for planning purposes. This is to allow them to upgrade if necessary so that they can continue to effectively treat the sewage arising from existing and future development. If and when these Sewage Treatment Works become redundant they will revert to areas of 3b functional floodplain.

Areas situated within the 1% (100 year) flood envelope, but outside of the 5% (20 year) flood envelope, have been delineated as Zone 3a(i) High Probability. Housing should be avoided in both zone 3a(ii) and 3a(i) wherever possible and where the LPA considers that housing is appropriate it must apply the Exceptions Test to show that there are wider sustainability benefits resulting from the development.

Zone 2 Medium Probability

Areas subject to flooding events exceeding the 1% (100 year) event, and up to (and including) the 0.1% (1,000 year) event (i.e. Zone 2 Medium Probability) have been identified. Future development may only be considered within Zone 2 Medium

Probability if it can be demonstrated that there are no suitable sites available within Zone 1 Low Probability.

Zone 1 Low Probability

The NPPF does not constrain the type of development taken forward within Zone 1 Low Probability (i.e. all remaining areas of the District), defined as having less than 0.1% (1 in 1,000 year) annual probability of flooding. It is important to remember however that development within these areas, if not carefully managed, may exacerbate existing flooding and/or drainage problems downhill. It is necessary therefore to ensure that developers carry out a Flood Risk Assessment which concentrates on surface water. This should demonstrate that the proposed drainage system design will mitigate any possible increase in runoff that may occur from the site as a result of the proposed development.

APPENDIX C**Schedule of Proposed Sites In Aire Valley Leeds AAP by Flood Zone Risk**

All flood risk zones applying to the site are identified with the percentage stated where the site is within more than one zone. The flood risk zone used for the sequential test will be the highest flood risk zone required to develop the site to its maximum realistic potential, but excludes smaller areas of land (less than 10% of the total site area for site up to 2 ha. and less than 25% for site greater than 2 ha.) as it is assumed that these can be incorporated into undeveloped parts of a scheme such as landscaped areas, green infrastructure etc

Table 1: Proposed development sites in Aire Valley Leeds (Zone 1 sites)³

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
18	Marsh Lane			Mixed use (housing, offices)	More vulnerable
19	Marsh Lane / Saxton Lane			Housing	More vulnerable
20	Yorkshire Ambulance Station, Saxton Lane / Flax Place			Housing	More vulnerable
21	The Parade & The Drive			Housing (identified planning permission)	More vulnerable
22	Former Richmond Inn, Upper Accommodation Road			Housing	More vulnerable
23	Former Richmond Court & Butterfield Manor, Walter Crescent			Housing	More vulnerable
24	Presbytery, St Marys Church			Housing (identified planning permission)	More vulnerable
27	Former Leeds College of Technology, East Street	3 (0.01%)		Housing (identified planning permission)	
28	Bow Street / East Street			Housing	More vulnerable

³ Includes all sites with less than 2% of the total site area in higher risk flood zones (2 or 3).

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
29	Bow Street / Ellerby Road			Housing	More vulnerable
30	Ellerby Lane			Housing (identified planning permission)	More vulnerable
31	Cross Green Lane / Echo Phase 3			Mixed use (offices - identified planning permission)	Less vulnerable
35	Cross Green Grove			Housing (identified planning permission)	More vulnerable
36	St Hilda Church, Knowsthorpe Crescent			Housing (identified planning permission)	More vulnerable
38	Copperfields			Housing (school, retail)	More vulnerable
39	East Street Mills			Housing (identified planning permission)	More vulnerable
42	Riverside Place, Bridgewater Road			General employment (identified planning permission)	Less vulnerable
44	Unit 5 Nelson House, Quayside Business Park, George Mann Road			Offices (identified planning permission)	Less vulnerable
48	Church Street/Balm Road, Hunslet	2 (0.32%) 3 (0.03%)	2 (0.3%) 3Ai (0.03%)	Mixed use (housing, offices, retail)	More vulnerable
50	Snake Lane			General employment	Less vulnerable
51	Knowsthorpe Way			General employment	Less vulnerable
52	Newmarket Lane			General employment (identified UDP)	Less vulnerable
54	Belfry Road / Cross Green Approach			General employment	Less vulnerable
55	Pontefract Lane / Newmarket Lane			General employment (identified UDP)	Less vulnerable
56	Knowsthorpe Road			General employment (identified UDP)	Less vulnerable

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
57	Plot 2A, Thornes Farm Business Park			General employment (identified planning permission)	Less vulnerable
58	Plots 2B, Thornes Farm Business Park			General employment (identified planning permission)	Less vulnerable
59	Plot 5, Thornes Farm Business Park	2 (0.05%)	2 (0.05%)	General employment (identified planning permission)	Less vulnerable
60	Plot 6, Thornes Farm Business Park			General employment (identified planning permission)	Less vulnerable
65	Pontefract Road / Newmarket Approach			General employment	Less vulnerable
66	Former Pittards site, Knowsthorpe Gate			General employment	Less vulnerable
69	Symingtons Plot, Far Lane, Thornes Farm Business Park			General employment (identified planning permission)	Less vulnerable
70	2 Pontefract Lane			General employment (identified planning permission)	Less vulnerable
71	Thwaite Gate / Sussex Avenue			General employment (identified planning permission)	Less vulnerable
75	Pontefract Road, North of M1 J44			General employment (identified planning permission)	Less vulnerable
79	Land north of Valley Farm Road			General employment (identified UDP)	Less vulnerable
81	Leeds Valley Park			Offices (identified planning permission)	Less vulnerable
82	Stourton North			Transport infrastructure (employment)	Less vulnerable
91	Temple Green Park and Ride			Transport infrastructure (identified planning permission)	Less vulnerable
92	William Cooke Castings, Cross Green Approach			General employment (identified planning permission)	Less vulnerable
93	Unit 4 Queen Street, Stourton			General employment (identified planning permission)	Less vulnerable

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
112	Rocheford Court, Pepper Road			Housing (identified planning permission)	More vulnerable
113	Former Leeds College of Building, Intermezzo Drive, Stourton			General employment (identified planning permission)	Less vulnerable

Table 2: Proposed development sites in Aire Valley Leeds (Flood Zone 1 with smaller areas in Flood Zones 2 & 3)

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
25	Richmond Street / Flax Place	2 (0.69%) 3 (2.31%)		Housing (identified planning permission)	More vulnerable
63	Logic Leeds (Skelton Moor Farm)	2 (1.69%) 3 (21.79%)	2 (1.69%) 3Ai (5.32%) 3Aii (16.47%)	General employment identified planning permission)	Less vulnerable
64	Temple Green	2 (7.97%) 3 (2.64%)	2 (7.96%) 3Ai (0.15%) 3Aii (2.49%)	General employment identified planning permission)	Less vulnerable
67	Skelton Grange	2 (23.18%)	2 (22.84%)	General employment (identified planning permission)	Less vulnerable
111	Skelton Gate	2 (2.06%) 3 (4.07%)	2 (2.12%) 3Ai (3.94%)	Housing (school, health services retail, offices)	More vulnerable

Table 3: Proposed development sites in Aire Valley Leeds (Flood Zone 2 sites)⁴

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Revised Flood Risk Zones (after construction of FAS) ⁵	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
7	Former Yorkshire Chemicals site (north west site), Black Bull Street	2 (94.23%) 3 (5.77%)	2 (93.11%) 3Ai (6.89%)	FAS (1:75 year)	2 (87.68%)	Mixed use (housing, offices)	More vulnerable
32	Rose Wharf Car Park, East Street	2 (25.47%) 3 (9.98%)	2 (26.02%) 3Ai (1.39%) 3Aii (7.26%)	FAS (1:75 year)	2 (11.56%) 3 (6.61%)	Housing	More vulnerable
33	Low Fold, East Street	2 (18.45%) 3 (22.78%)	2 (18.29%) 3Ai (8.2%) 3Aii (13.92%)	FAS (1:75 year)	2 (18.78%) 3 (9.02%)	Housing	More vulnerable
40	Bridgewater Road North	2 (26.06%) 3 (1.98%)	2 (26.1%) 3Ai (0.71%) 3Aii (1.2%)	FAS (1:75 year)	2 (0.81%) 3 (0.2%)	Housing	More vulnerable
68	Land south of Knowsthorpe Lane	2 (93.79%)	2 (93.83%)	None		General employment (identified UDP)	Less vulnerable

⁵ From flood risk modelling undertaken to assess the effects of Phase 1 of the Leeds Flood Alleviation Scheme. These zones are based on the removal of Knostrop Cut and with the moveable weirs raised but no other defences proposed under the scheme.

Table 4: Proposed development sites in Aire Valley Leeds (Flood Zone 3Ai sites)

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Revised Flood Risk Zones (after construction of FAS) ⁶	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
5	Indigo Blu, Crown Point Road	3	3Ai	FAS (1:75 year)		Mixed housing & offices (identified planning permission)	
17	Braime Pressings, Hunslet Lane	3	3Ai	FAS (1:75 year)	2 (99.88%)	Mixed use (housing)	More vulnerable
34	South Accommodation Road	2 (26.32%) 3 (27.75%)	2 (26.89%) 3Ai (23.89%) 3Aii (3.01%)	FAS (1:75 year)	2 (3.73%) 3 (6.95%)	Housing	More vulnerable
47	South Point, South Accommodation Road	3	3Ai			General employment (identified planning permission)	
77	Pontefract Road / Nijinsky Way	3	3Ai	None		General employment (identified UDP)	Less vulnerable
80	Stocks Bros. Pontefract Road	2 (0.17%) 3 (44.51%)	3Ai (45%)	None		General employment	Less vulnerable
94	South Bank Planning Statement Area	2 (27.19%) 3 (72.81%)	2 (26.31%) 3Ai (59.14%) 3Aii (13.71%)	FAS (1:75 year)		Mixed use (housing, offices)	More vulnerable

Table 5: Proposed development sites in Aire Valley Leeds (Zone 3Aii sites)

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Revised Flood Risk Zones (after construction of FAS)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
9	Evans Halshaw, Hunslet Road	3	3Aii	FAS (1:75 year)	2 (100%)	Mixed use (housing)	More vulnerable
10	Armouries Drive, Leeds Dock	3	3Aii	FAS (1:75 year)		Offices (identified planning permission)	Less vulnerable
11	Former Alea Casino, The Boulevard, Leeds Dock	3	3Aii	FAS (1:75 year)		Offices (identified planning permission)	Less vulnerable
12	Armouries Drive / Carlisle Road	3	3Aii	FAS (1:75 year)	2 (100%)	Mixed use (housing, offices)	More vulnerable
13	Carlisle Road / Clarence Road	3	3Aii	FAS (1:75 year)	2 (100%)	Mixed use (housing, offices)	More vulnerable
14	Former Hydro Site, Clarence Road	3	3Aii	FAS (1:75 year)	2 (92.03%) 3 (7.97%)	Mixed use (housing, offices)	More vulnerable
15	Clarence Road / Sayner Lane	3	3Aii	FAS (1:75 year)	2 (95.27%)	Mixed use (housing, offices)	More vulnerable
16	Carlisle Road / Sayner Lane	3	3Aii	FAS (1:75 year)	2 (83%)	Mixed use (housing, offices)	More vulnerable

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Revised Flood Risk Zones (after construction of FAS)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
26	The Gateway, Marsh Lane	3	2 (28.38%) 3Ai (17.63%) 3Aii (17.72%)			Housing (identified planning permission)	More vulnerable
41	Hunslet Mills, Goodman Street	3	3Aii	FAS (1:75 year)	2 (95.98%) 3 (3.89%)	Mixed use (housing - identified planning permission) & (allocated - education, offices, retail, leisure, hotel)	More vulnerable
43	Yarn Street	3	3Aii (99.91%) 3B (0.09%)			Housing (identified planning permission)	More vulnerable
45	Gibraltar Island Road	3	3Aii			General employment (identified planning permission)	
46	Tetley Motor Services, Goodman Street	3	3Aii	FAS (1:75 year)	2 (99.99%)	Housing	More vulnerable
61	North site, Thornes Farm Way	2 (22.18%) 3 (58.2%)	2 (22.17%) 3Ai (7.32%) 3Aii (50.88%)			General employment (identified planning permission)	

AVL Site Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Revised Flood Risk Zones (after construction of FAS)	Proposed use (specific uses in policy)	Highest Flood Vulnerability Classification Proposed
62	Land east of Thornes Farm Way (south site), Thornes Farm	2 (53.52%) 3 (44.48%)	2 (53.52%) 3Ai (12.11%) 3Aii (32.37%)	None		General employment (identified UDP)	Less vulnerable
72	Land north of Haigh Park Road	2 (12.42%) 3 (87.58%)	3Aii	None		General employment	Less vulnerable
73	Former Post Office building, Skelton Grange Road	3	3Aii				
74	Land south of Skelton Grange Road (west site)	3	3Aii	None		General employment	Less vulnerable
76	Land south of Haigh Park Road	2 (0.23%) 3 (99.77%)	2 (7.01%) 3Ai (82.15%) 3Aii (10.84%)	None		General employment	Less vulnerable
78	Haigh Park Road / Pontefract Road	3	3Ai (89.15%) 3Aii (10.85%)	None		General employment (identified UDP)	Less vulnerable
83	Land south of Skelton Grange Road (east site)	3	3Aii	None		General employment	Less vulnerable
96	Airedale Mills, Clarence Road	3	3Aii			General employment (identified planning permission)	
98	Atkinson Street	2 (0.66%) 3 (99.34%)	2 (0.46%) 3Aii (99.54%)	FAS (1:75 year)		Mixed use (housing, offices)	More vulnerable

SCHEDULE OF ALTERNATIVE SITES CONSIDERED BUT NOT CARRIED FORWARD AS ALLOCATIONS IN THE AIRE VALLEY LEEDS AAP

Table 6: Alternative sites (Flood Zone 1)

AVL Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Alternative Options	Highest Flood Vulnerability Classification Proposed
53	Land south of Neville Hill Sidings			None	General employment	Less vulnerable
81	Leeds Valley Park			None	Housing	More vulnerable
95	New Hope Church, Saxton Lane			None	Housing	More vulnerable
	Cross Green Industrial Estate (various sites)			None	Retail Offices	Less Vulnerable
	Newmarket Approach (various sites)			None	Retail Offices	Less Vulnerable

Table 7: Alternative sites (Flood Zone 1 with smaller areas in Flood Zones 2 & 3)

AVL Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Alternative Options	Highest Flood Vulnerability Classification Proposed
97	Dransfield House, Mill Street	2 (0.47%) 3 (2.36%)		None	Housing	More vulnerable
101	Temple Green (wider site)	2 (4.94%) 3 (1.3%)	2 (4.93%) 3Ai (0.07%) 3Aii (1.24%)	None	Housing	More Vulnerable
114	Skelton Gate Skelton Gate (west site only)			None	Motorway Service Area	
	Cross Green Industrial Estate (various sites)			None	Retail Offices	Less Vulnerable
	Newmarket Approach (various sites)			None	Retail Offices	Less Vulnerable

Table 8: Alternative sites (Flood Zone 2)

AVL Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Alternative Options	Highest Flood Vulnerability Classification Proposed
99	Former power station, Skelton Grange (wider site)	2 (24.67%) 3 (2.14%)	2 (25.5%) 3Aii (1.26%)	None	Housing	More vulnerable
114	Skelton Gate Skelton Gate (west site only)			None	Motorway Service Area	

Table 9: Alternative sites (Flood Zone 3Aii)

AVL Ref	Site Name	Flood Risk Zones (EA maps)	Flood Risk Zones (SFRA)	Proposed flood defences and protection afforded	Alternative Options	Highest Flood Vulnerability Classification Proposed
8	Former Yorkshire Chemicals site (east site), Black Bull Street	3	3Ai (2.63%) 3Aii (97.37%)	FAS (1:75 year)	Housing	More vulnerable
96	Airedale Mills, Clarence Road	3	3Aii	FAS (1:75 year)	Housing	More vulnerable
100	Haigh Park Road, Stourton	2 (17.21%) 3 (81.83%)	2 (1.41%) 3Ai (20.26%) 3Aii (77.07%)	None	Housing Retail Offices	More vulnerable
101	Temple Green (wider site)	2 (4.94%) 3 (1.3%)	2 (4.93%) 3Ai (0.07%) 3Aii (1.24%)	None	Housing	More Vulnerable

APPENDIX D, E and F: DETAILED FLOOD RISK SEQUENTIAL TEST FOR THE USES IDENTIFIED IN THE AIRE VALLEY LEEDS AAP PUBLICATION DRAFT

The assessment details the process used to undertake the sequential test for the Aire Valley Leeds AAP. The assessment focuses on the following principal uses which formed the basis of the proposed allocations:

- Housing
- Employment uses (offices, research & development / industry / storage & distribution)
- Transport infrastructure (park & ride sites)
- Other uses proposed/acceptable on specific sites (retail, leisure, education uses, hotel)

The process adopts the principle set out in the NPPF (para 100 to 101) which advises that LPAs should use the sequential test to “*steer new development to areas with the lowest probability of flooding.*” It takes account of specific requirements set out for the area in the Leeds Core Strategy over the plan period as follows:

- 6,500 new homes (Spatial Policy 5)
- 250 hectares of employment land (Spatial Policy 5)
- Two park and ride sites (shown on the key diagram)

Other uses have no specific area requirement, but reference is made to the need for retail and community uses to support new development in the area under Core Strategy Spatial Policy 5.

The sequential test for each land use is set out as a series of steps undertaken in accordance with Diagram 2 of the NPPG Flood Risk Guidance. Sites are discounted in order of their risk of flooding (lowest flood zone 1 sites first) until the assumed requirement is met.

Following this process, any uses identified in the higher risk flood zones are assessed against Table 3 in the NPPG Flood Risk Guidance (para 66). Uses in the higher risk flood zones which are not deemed appropriate by Table 3 and which are not needed to meet the requirement for that use fail the sequential test. Sites which may be needed to meet a requirement for a particular use, but are not deemed to be appropriate by Table 3, either require an Exception Test to be undertaken or are deemed inappropriate depending on the Flood Risk Zone the site is located within and the level of vulnerability of the proposed use.

APPENDIX D. HOUSING

Flood Vulnerability Classification	More Vulnerable
Leeds Core Strategy minimum requirement (from Spatial Policy 5)	6,500 dwellings

STEP 1: CAN DEVELOPMENT BE ALLOCATED IN FLOOD ZONE 1?

1a. Identified sites and proposed housing (and mixed use) allocations located in flood zone 1.

A number of the housing or mixed use (which include housing) sites allocated in the AAP are located in flood zone 1, having a less than 0.1% annual probability of flooding. As such, these sites are sequentially preferred in the NPPF. These sites are the first sites to be deducted from the AAP requirement. The results are set out in the table below:

Aire Valley Leeds AAP identified sites and proposed housing/mixed use allocations in Flood Zone 1				
Site No.	Location	Dwellings	% site area in Flood Zone 2	% site area in Flood Zone 3
Dwelling requirement		6,500		
Sites in Flood Zone 1				
AV18	Marsh Lane	289		
AV19*	Marsh Lane / Saxton Lane	80		
AV20	Yorkshire Ambulance Station, Saxton Lane / Flax Place	95		
AV21*	The Parade & The Drive	75		
AV22	Former Richmond Inn, Upper Accommodation Road	26		
AV23	Former Butterfield Manor & Richmond Court, Walter Crescent	48		
AV24*	Presbytery, St Marys Church	171		
AV25*	Richmond Street / Flax Place	195		
AV27*	Former Leeds College of Technology, East Street	39		
AV28	Bow Street / East Street	23		
AV29	Bow Street / Ellerby Road	79		
AV30*	Ellerby Lane	147		
AV35*	Cross Green Grove	21		
AV36*	St Hildas Church, Knowsthorpe Crescent	86		
AV38	Copperfields	273		
AV39*	East Street Mills	7		
AV48	Balm Road / Church Street	23	0.32%	0.03%
AV111	Skelton Gate	2,619	2.06%	4.07%
AV112	Rocheford Court, Pepper Road	11		
Balance to find		2,193		

* Identified sites with planning permission.

The potential housing sites in flood zone 1 can provide **4,307** dwellings. When these sites are discounted from the total requirement, there remains a shortfall **2,193** dwellings. Further sites will be needed to accommodate the housing requirement.

1b. - Other development sites from SHLAA and Call for Sites located in flood zone 1 which have been considered for their potential for housing development

The AAP area contains potential development sites within flood zone 1 which have been considered for their potential residential development. For the purposes of this exercise, sites allocated with a primary use of offices or leisure, considered suitable for residential development, are the next to be discounted. The results are set out in the table below:

Other sites considered for potential housing use in Flood Zone 1			
Ref	Location	Potential Capacity	Deliverability assessment
AV81	Leeds Valley Park	118	Site is preferred for employment uses based on existing allocation and planning permission. Given the site is separated from existing residential communities by motorway infrastructure, it is considered to be more appropriate to retain the employment allocation.
AV82	Stourton North	360	Site required for a park and ride facility associated with the NGT trolleybus network which terminates at this site. Uncertain at this stage whether any residual land would be available for development of other uses including housing.
AV95	Living Hope Church, Saxton Lane	73	Site is in active use and is not available.
AV96	Airedale Mills, Clarence Road	67	Site is in active industrial use and has recently been granted planning permission to expand existing activities within the site. Site proposed to be identified for general employment uses.
AV97	Dransfield House, Mill Street	241	Site is in active use and is not available.
AV101	Temple Green (wider site)	2000	Majority of site within the Leeds City Region Enterprise Zone with permission for employment development. Early phases of development have begun, including proposal for a park & ride facility. Part of site is allocated for a strategic waste facility within the NRWLP so this land cannot be allocated for housing. Presence of adjoining Knostrop WWTW and strategic waste allocations and impact on residential amenity and costs of remediation part of the site mean that large parts of the site are unsuitable and/or undeliverable for housing. Preferred for employment uses on basis of existing planning permission.

** Small area of site in Flood Zone 3

STEP 2: CAN DEVELOPMENT BE ALLOCATED IN FLOOD ZONE 2?

2a. – Identified sites and proposed housing (and mixed use) allocations located in Flood Zone 2

A number of housing or mixed use allocations (incorporating housing uses) proposed in the AAP lie within or partly within Flood Zone 2, having between a 0.1% and 1% annual probability of flooding. The NPPF and NPPG advise that such sites should be the next to be considered in sequential terms where insufficient land has been identified on site entirely within Flood Zone 1. It should be noted that some sites within this category include land within Flood Zone 1 (the percentage is indicated in the table below) but are included within Flood Zone 2 for the purposes of this assessment because it is assumed some Zone 2 land will need to be developed to achieve the dwelling capacity assumed for the site. Results are set out in the table below:

Aire Valley Leeds AAP proposed housing/mixed use allocations in Flood Zone 2				
Site No.	Location	Dwellings	% site area within Flood Zone 1	% site area within Flood Zone 3
Balance carried forward		2,193		
AV7*	Former Yorkshire Chemicals site (north west site)	53	-	5.77%
AV32*	Rose Wharf Car Park, East Street	72	64.55%	9.98%
AV33*	Low Fold, East Street	312	58.77%	22.78%
AV40*	Bridgewater Road	425	71.96%	1.98%
Balance to find		1,331		

The potential housing / mixed use allocations in Flood Zone 2 can provide a further estimated capacity of 862 dwellings. When these sites are discounted from the total requirement there remains a shortfall of 1,331 dwellings. There is a need to identify further sites to accommodate the assumed housing requirement.

2b. - Other development sites from SHLAA and Call for Sites located in flood zone 2 which have been considered for their potential for housing development

The AAP area contains one additional development site within flood zone 2 which has been considered for their potential residential development. The results are set out in the table below:

Other sites considered for potential housing use in Flood Zone 2			
Ref	Location	Potential Capacity	Deliverability assessment
AV99	Former Power Station, Skelton Grange	880	Western part of site is allocated as a strategic waste site in the Natural Resources & Waste Local Plan. Eastern part of site is not suitable for housing uses as these would potential be immediately adjacent to a major waste uses. Also suitability issues relating to ground conditions, access, accessibility to local services. Site appropriate for employment uses.

STEP 3: CAN THE DEVELOPMENT BE ALLOCATED WITHIN THE LOWEST RISK SITES AVAILABLE IN FLOOD ZONE 3?

3a. – Identified sites and proposed housing (and mixed use) allocations located in flood zone 3Ai

A number of the housing or mixed use allocations (incorporating housing uses) proposed in the AAP are located in flood zone 3Ai according the Leeds SFRA, having between a 1% and 5% annual probability of flooding. The NPPF and NPPG advise that such sites should be the next to be considered in sequential terms where insufficient land has been identified on sites entirely within flood zone 1 or 2. It should be noted that some sites within this category include land within flood zone 1 or 2 (the percentage is indicated in the table below) but are included within flood zone 3Ai for the purposes of this assessment because it is assumed some flood zone 3Ai land will need to be developed to achieve the dwelling capacity assumed for the site. Results are set out in the table below:

Aire Valley Leeds AAP identified sites and proposed housing and mixed use allocations in Flood Zone 3Ai			
Site No.	Location	Dwellings	% site area within flood zone 1 or 2
Balance carried forward		1,331	
AV5*	Indigo Blu, Crown Point Road	26	
AV17	Braime Pressings, Hunslet Lane	121	-
AV34	South Accommodation Road	27	72.25%
AV94	South Bank Planning Statement Area	825	27.19%
Balance to find		332	

* Identified sites with planning permission.

The potential housing / mixed use allocations in flood zone 3Ai can provide a further estimated capacity of 999 dwellings. When these sites are discounted from the total requirement there remains a shortfall of 332 dwellings. No other sites in flood zone 3Ai have been suggested for potential housing development.

STEP 4: IS THE DEVELOPMENT APPROPRIATE IN REMAINING AREAS?

Step 4a – Identified housing sites and proposed housing and mixed use allocations located in Flood Zone 3Aii

A number of the housing or mixed use allocations (incorporating housing uses) proposed in the AAP are located in Flood Zone 3Aii, subject to a greater than and 1 in 20 year (5%) annual probability of flooding. Such sites can be considered in sequential terms where insufficient land has been identified on sites entirely within Flood Zone 1, 2 or 3Ai. Results are set out in the table below:

Aire Valley Leeds identified sites and proposed housing allocations with significant areas in Flood Zone 3Aii			
Site No.	Location	Dwellings	% site area within Flood Zone 1 or 2 or 3Ai
Balance carried forward		332	
AV9	Evans Halshaw, Hunslet Lane	191	-
AV12	Armouries Drive / Carlisle Road	114	-
AV13	Carlisle Road / Clarence Road	15	-
AV14	Former Hydro Site, Clarence Road	105	-
AV15	Sayner Lane / Clarence Road	94	-
AV16	Sayner Lane / Carlisle Road	90	-
AV26*	The Gateway, Marsh Lane	110	
AV41*	Hunslet Mills	699	-
AV43*	Yarn Street	173	-
AV46	Tetley Motors, Goodman Street	36	-
AV98	Atkinson Street	35	0.46%
Balance to find		-1,330	

* Identified sites with planning permission.

After a further 1,652 dwellings on Zone 3Aii sites are taken into account 7,830 dwellings have been identified on suitable sites in Flood Zones 1, 2 and 3A. This is a surplus of 1,330 dwellings when compared to the housing requirement. However, each of these sites individually pass the sequential test because land in Flood Risk Zone 3Aii is required to meet the housing requirement for Aire Valley Leeds set out in Core Strategy Spatial Policy 5. It should also be noted that the requirement for the area is a minimum target. All the sites are brownfield within a defined regeneration area and are sustainably located within or very close to the city centre. There no planning or sustainability justification for preferring one site over another in these circumstances subject to each site satisfying the requirements of the flood risk exception test.

4b. - Other development sites from SHLAA and Call for Sites located in flood zone 3Aii which have been considered for their potential for housing development

The AAP area contains **one additional development site within flood zone 2** which has been considered for **their** potential residential development. The results are set out in the table below:

Other sites considered for potential housing use in Flood Zone 3Aii			
Ref	Location	Potential Capacity	Deliverability assessment
AV8	Former Yorkshire Chemicals (east site), Black Bull Street	138	Planning application submitted for a secondary free school at the site. School is funded and scheduled to open in 2016. Site assumed to be unavailable.
AV100	Haigh Park Road, Stourton	1144	Two areas of the site are proposed for canal wharf allocations / safeguarded sites in the NRWLP. The Stourton area is also proposed as an area of search for an intermodal freight area in

Other sites considered for potential housing use in Flood Zone 3Aii			
Ref	Location	Potential Capacity	Deliverability assessment
			<p>the NRWLP.</p> <p>With respect to the site’s suitability for housing, the following are also identified as significant constraints:</p> <ul style="list-style-type: none"> • Location within an existing established industrial area surrounded by heavy industrial uses. • Contaminated land and costs of remediation for housing end use. • Potential odour nuisance from Knostrop waste water treatment works. • Poor accessibility to access schools, shopping and health facilities. <p>The site is within the highest risk flood zone (the same as the proposed allocations identified above) but scores negatively overall in the sustainability appraisal of sites which accompanies the draft AAP, unlike the proposed allocations.</p>

APPENDIX E. EMPLOYMENT USES

Flood Vulnerability Classification	Less Vulnerable
Leeds Core Strategy minimum requirement (from Spatial Policy 5)	<p>250 hectares</p> <p>LESS 41.3 hectares allocated or proposed to be allocated for waste or rail/canal freight uses in the Natural Resources and Waste Local Plan.</p> <p>LESS 4.3 hectares of land expected to be developed for the New Generation Transport (NGT) depot subject to approval of the scheme under the Transport and Works Act following a public inquiry. This proposal forms part of site AV82 at Stourton North.</p> <p>Residual employment land residual to find 204.4 hectares</p>

STEP 1: CAN DEVELOPMENT BE ALLOCATED IN FLOOD ZONE 1?

1a – Identified sites and proposed employment (and mixed use) allocations located in Flood Zone 1

A number of the proposed employment or mixed use allocations (incorporating employment uses) in the AAP are located in Flood Zone 1, having a less than 0.1% annual probability of flooding. As such, sites are sequentially preferred in the NPPF and NPPG they can be deducted from the overall AAP employment land requirement. The results are set out in the table below:

AVL AAP: Proposed employment sites in Flood Zone 1					
Site No.	Location	Proposed Allocation	Area (ha) (employment uses)	% site area within Flood Zone 2	% site area within Flood Zone 3
Balance carried forward			204.4		
AV18	Marsh Lane	Mixed use (offices)	1.84		
AV31	Cross Green Lane	Mixed use (offices)	0.18		
AV42*	Riverside Place, Bridgewater Road	General employment (identified planning permission)	0.45		
AV44*	Unit 5 Nelson House, Quayside Business Park, George Mann Road	Offices (identified planning permission)	0.37		
AV50	Snake Lane	General employment	0.80		
AV51	Knowsthorpe Way	General employment	0.85		
AV52	Newmarket Lane	General employment	2.04		
AV54	Belfry Road / Cross Green Approach	General employment	1.98		

AVL AAP: Proposed employment sites in Flood Zone 1					
Site No.	Location	Proposed Allocation	Area (ha) (employment uses)	% site area within Flood Zone 2	% site area within Flood Zone 3
AV55	Pontefract Lane / Newmarket Lane	General employment	0.49		
AV56	Knowsthorpe Road	General employment	2.97		
AV57*	Plot 2A, Thornes Farm	General employment (identified planning permission)	0.99		
AV58*	Plot 2B, Thornes Farm	General employment (identified planning permission)	1.20		
AV59*	Plot 5, Thornes Farm	General employment (identified planning permission)	2.70	0.05%	
AV60*	Plot 6, Thornes Farm	General employment (identified planning permission)	2.40		
AV63*	Logic Leeds (Skelton Moor Farm)	General employment (identified planning permission)	46.4		
AV64*	Temple Green	General employment (identified planning permission)	69.56		
AV65	Pontefract Road / Newmarket Approach	General employment	0.41		
AV66	Former Pittards site, Knowsthorpe Gate	General employment	5.22		
AV67*	Skelton Grange	General employment (identified planning permission)	11.81	23.18%	
AV69*	Symingtons, Far Lane, Thornes Farm	General employment (identified planning permission)	1.01		
AV70*	2 Pontefract Lane	General employment (identified planning permission)	0.37		
AV71*	Thwaite Gate / Sussex Avenue	General employment (identified planning permission)	0.43		
AV75*	Pontefract Road, North of M1 J44	General employment (identified planning permission)	5.58		
AV79	North of Valley Farm Road	General employment	1.16		
AV81*	Leeds Valley Park	Offices (identified planning permission)	11.69		
AV92*	William Cooke Castings, Cross Green Approach	General employment (identified planning permission)	0.43		
AV93*	Unit 4 Queen Street,	General employment	0.22		

AVL AAP: Proposed employment sites in Flood Zone 1					
Site No.	Location	Proposed Allocation	Area (ha) (employment uses)	% site area within Flood Zone 2	% site area within Flood Zone 3
	Stourton	(identified planning permission)			
AV113*	Former Leeds College of Building, Intermezzo Drive	General employment (identified planning permission)	1.62		
Balance to find			29.23		

* Identified sites with planning permission.

The proposed sites predominantly in Flood Zone 1 can provide **175.17 hectares** of land for employment uses (including mixed use sites). When these sites are deducted from the total, the residual requirement is reduced to **29.23 hectares**. There is a need to identify further sites to accommodate the assumed employment land requirement.

1b. - Other sites located in flood zone 1 which have been considered for their potential for employment development

Other sites considered for potential employment use in Flood Zone 1			
Ref	Location	Site size (ha)	Deliverability assessment
AV53	Neville Hill sidings	6.17	Not suitable. Site considered as a potential rail freight site through the Natural Resource & Waste Plan but was rejected because of the difficulty of achieving a suitable highway access given the HGV ban, which applies along Halton Moor Avenue, and the need to cross the City Centre – Garforth cycle path, which runs along the south of the site. This is also a further issue about protecting the amenity of residents living in the Nevilles housing area to the east of the site. There is insufficient certainty about delivery prospects to underpin an employment allocation through the AAP given the potential costs of overcoming highway access and amenity constraints.
AV102	Sites at Cross Green / Knowsthorpe Way / Cross Green Way / Cross Green Approach / Knowsthorpe Road	32.48	Not available. Site already is existing employment use.
AV105	Sludge Lagoons, south of Knowsthorpe Lane	25.84	Not suitable / deliverable. Site of former sludge lagoon for Knostrop WWTW now capped and naturally re-vegetating. Remediation costs are too high, making site unviable for employment use.
AV106	National Grid Site adj ex Skelton Grange Power Station	7.29	Not available. Site occupied by a large electricity sub-station.
AV108	Land north of	3.59	Not deliverable. Feasibility study identified

Other sites considered for potential employment use in Flood Zone 1			
Ref	Location	Site size (ha)	Deliverability assessment
	Pontefract Road, Bell Hill		substantial highway constraints. It is estimated that necessary highway works will cost >£5million
AV109	Land opposite Thornes Farm Approach	4.62	Not available. The landowner, Yorkshire Water, have indicated they require site for operational use at the earlier consultation stages.
AV110	South of Knowsthorpe Lane (East Site)	13.52	Not suitable / deliverable. Issues with access. Remediation costs will make site unviable for employment use without significant public investment.

STEP 2: CAN DEVELOPMENT BE ALLOCATED IN FLOOD ZONE 2?

2a. – Proposed employment sites located in Flood Zone 2

Two sites proposed in the AAP are located in Flood Zone 2, having between a 0.1% and 1% annual probability of flooding. The NPPF technical guidance advises that such sites are next to be considered in sequential terms. The results are set out in the table below:

AVL AAP: Proposed employment sites in Flood Zone 2					
Site No.	Location	Proposed Allocation	Area (ha) (employment uses)	% site area within Flood Zone 1	% site area within Flood Zone 3
Balance to find carried forward			29.23		
AV7	Former Yorkshire Chemicals site (North West), Black Bull Street	Mixed use (offices)	0.15	-	5.77%
AV68	Land south of Knowsthorpe Lane	General employment	7.33	6.21%	-
Balance to find			21.75		

The sites in Flood Zone 2 provide a further **7.48 hectares** of land for employment uses. When this site is discounted from the total requirement, the residual requirement is reduced to **21.75 hectares**. As all Flood Zone 1 & 2 sites have now been taken into account there is a need to consider potential sites in Flood Zone 3Ai to meet the assumed requirement.

STEP 3: CAN THE DEVELOPMENT BE ALLOCATED WITHIN THE LOWEST RISK SITES AVAILABLE IN FLOOD ZONE 3?

3a. Proposed employment sites located in Flood Zone 3Ai

A number of the employment sites allocated in the AAP are located in Flood Zone 3Ai, subject to flooding up to (and including) a 1 in 100 year (1%) annual probability of flooding. The NPPG advises that such sites should be the next to be considered in sequential terms. The table below shows the sites identified in the AAP.

AVL AAP : Proposed employment sites in Flood Zone 3Ai				
Site No.	Location	Proposed Allocation	Area (ha) (employment uses)	% site area within Flood Zone 1 or 2
Balance carried forward			21.75	
AV5*	Indigo Blu, Crown Point Road	Offices (identified planning permission)	0.05	
AV47*	South Point, South Accommodation Road	General employment (identified planning permission)	0.51	
AV77	Pontefract Road / Nijinsky Way	General Employment	0.83	
AV80	Stocks Bros, Pontefract Road	General Employment	1.62	
AV94	South Bank Planning Statement Area	Mixed Use	4.90	
Balance to find			13.84	

* Identified sites with planning permission.

The proposed sites in Flood Zone 3Ai provide a further **7.91 hectares** of land for employment uses. When this site is discounted from the total requirement, the residual requirement is reduced to **13.84 hectares**. As all sites in Flood Zones 1, 2 & 3Ai have now been taken into account there is a need to consider potential sites in Flood Zone 3Aii to meet the assumed requirement.

STEP 4: IS THE DEVELOPMENT APPROPRIATE IN REMAINING AREAS?

Step 4a - Identified and proposed employment and mixed use allocations located in Flood Zone 3Aii

A number of proposed employment sites are located in Flood Zone 3Aii, subject to a greater than 1 in 20 year (5%) annual probability of flooding. Such sites can be considered in sequential terms where insufficient land has been identified on sites entirely within Flood Zone 1, 2 or 3Ai. Results are set out in the table below.

AVL AAP: Proposed employment sites in Flood Zone 3Aii			
Site No.	Location	Proposed Allocation	Area (ha) (employment uses)
Balance carried forward			13.84
AV10*	Evans Halshaw, Hunslet Road	Mixed use (offices identified planning permission)	0.9
AV11*	Former Alea Casino, The Boulevard, Leeds Dock	Mixed use (offices – identified planning permission)	0.17
AV12	Armouries Drive / Carlisle Road	Mixed use (offices)	0.73
AV13	Clarence Road / Carlisle Road	Mixed use (offices)	0.09
AV14	Hydro Works, Clarence Road	Mixed use (offices)	0.8
AV15	Sayner Lane / Clarence Road	Mixed use (offices)	0.72
AV16	Sayner Lane / Carlisle Road	Mixed use (offices)	0.69

AV45*	Gibraltar Island Road	General employment (identified planning permission)	0.7
AV61*	North site, Thornes Farm Way	General employment (identified planning permission)	1.83
AV62	Thornes Farm Way	General employment	0.87
AV72	North of Haigh Park Road	General employment	1.26
AV73*	Former Post Office building, Skelton Grange Road	General employment (identified planning permission)	3.35
AV74	Former Playing fields, Skelton Grange Road	General employment	1.01
AV76	South of Haigh Park Road	General employment	2.91
AV78	Haigh Park Road / Pontefract Road	General employment	1.17
AV83	Off Skelton Grange Road, East site	General employment	1.62
AV96*	Airedale Mills, Clarence Road	General employment (identified planning permission)	0.6
AV98	Atkinson Street	Mixed use (offices)	0.59
Balance to find			-6.17

* Identified sites with planning permission.

The employment sites in Flood Zone 3Ai provide a further 7.35 hectares of land for non-office employment uses. When these sites are discounted from the total requirement, the residual requirement has been met.

The employment sites in Flood Zone 3Ai provide a further **20.01 hectares** of land for non-office employment uses. When the inclusion of sites located in Flood Zone 3Aii are discounted from the total requirement, the residual requirement has been met.

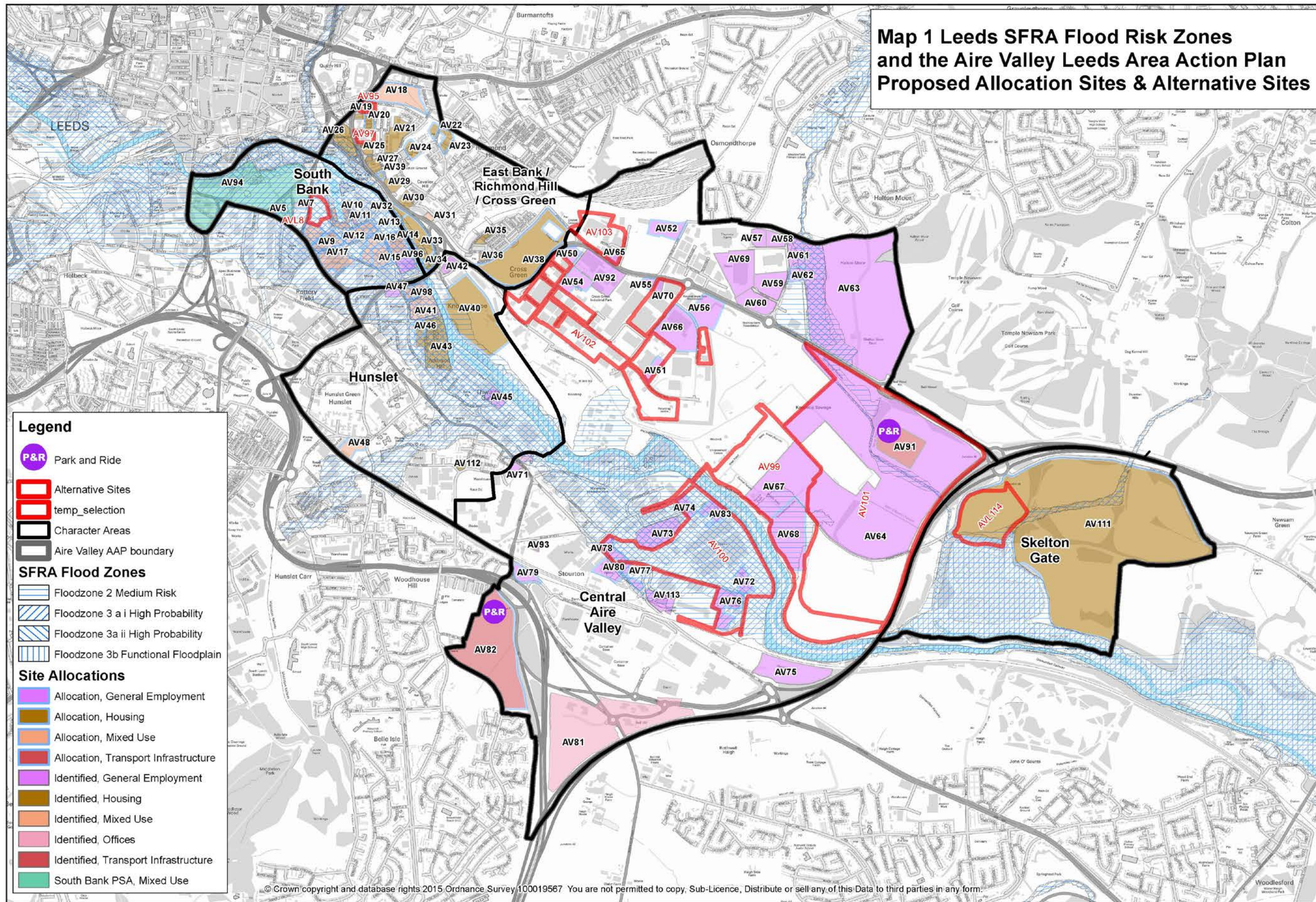
APPENDIX E. PARK & RIDE SITES

STEP 1: CAN DEVELOPMENT BE ALLOCATED IN FLOOD ZONE 1?

1a –Proposed park and ride allocations located in Flood Zone 1

Two proposed park and ride allocations in the AAP at Stourton and Temple Green are located in Flood Zone 1, having a less than 0.1% annual probability of flooding. As such, both sites are sequentially preferred in the NPPF and NPPG.

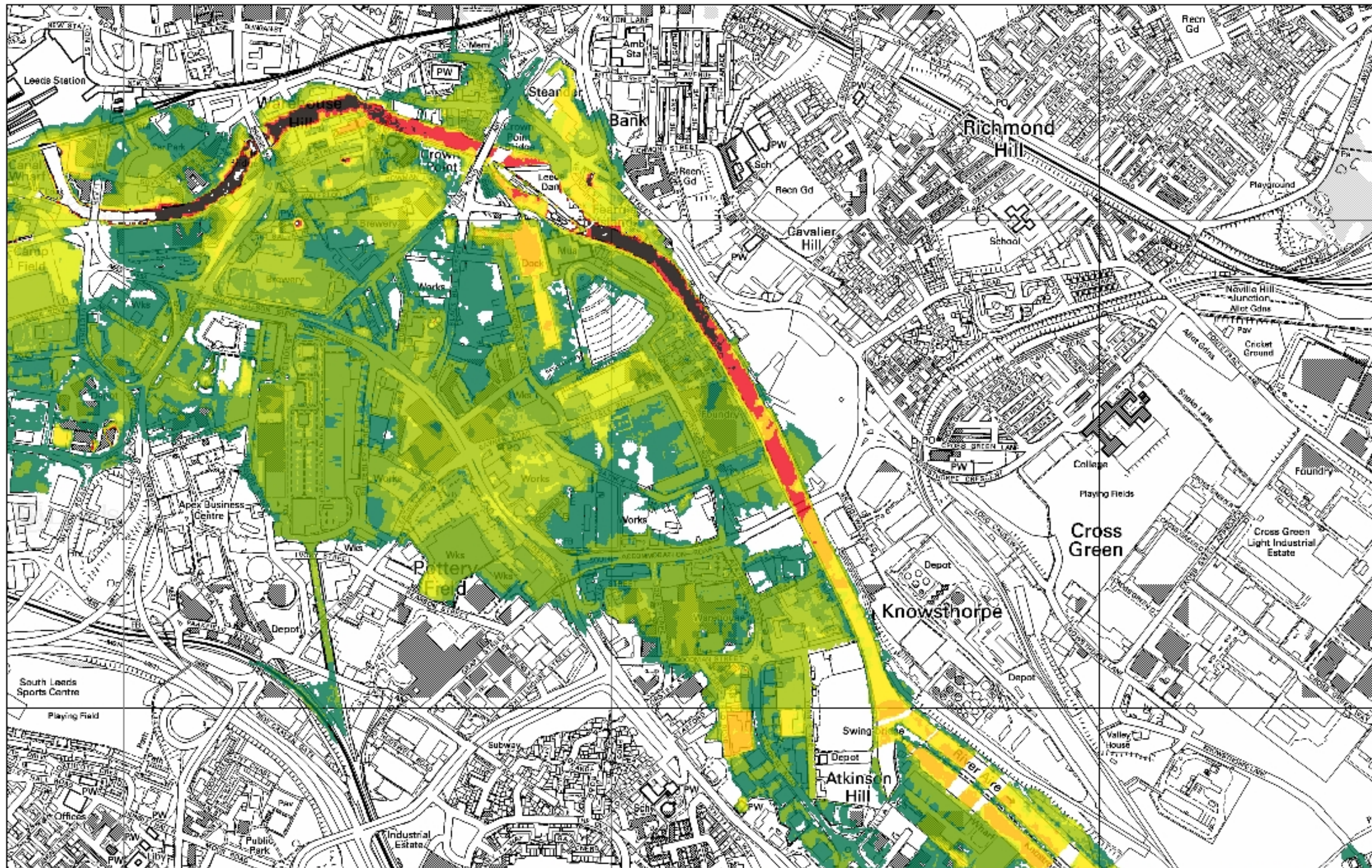
Map 1 Leeds SFRA Flood Risk Zones and the Aire Valley Leeds Area Action Plan Proposed Allocation Sites & Alternative Sites



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MODELLLED FLOOD RISK ZONES FOLLOWING CONSTRUCTION OF LEEDS FLOOD ALLEVIATION SCHEME
Map 2: Flood Zone 2 area (1:1000 year flood risk) following construction of Leeds Flood Alleviation Scheme Phase 1 (removal of Knostrop Cut and moveable weirs)

Weirs Up + Cut Only 2020_1000 yr Flood Depths



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Map 3: Flood Zone 3 area (1:100 year flood risk) following construction of Leeds Flood Alleviation Scheme Phase 1 (Removal of Knostrop Cut and moveable weirs)

Weirs Up + Cut Only 2020_100yr Flood Depths



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