

Three Rivers District Council

Local Development Framework

Site Allocations Sequential Test Report

November 2012

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1 Introduction

- 1.1 This report sets out the Sequential Test supporting the Proposed Submission Site Allocations Document (November 2012). The methodology is based on guidance and requirements set out in the National Planning Policy Framework (NPPF) and Technical Guidance to the NPPF.
- 1.2 This Sequential Test builds on the Outline Sequential Test and Outline Sequential Test Addendum reports completed in 2009 to accompany consultation on the Core Strategy Preferred Options and Further Preferred Options.

2 National Policy Context

- 2.1 The National Planning Policy Framework (NPPF) sets out that 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; and
 - 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.
- 2.2 Areas at risk of flooding means land within Flood Zones 2 and 3; or land within Flood Zone 1 which has critical drainage problems and which has been notified to the local planning authority by the Environment Agency. (Within Three Rivers, there are no areas that have been notified to the local planning authority by the Environment Agency as having critical drainage problems).
- 2.3 Flood risk means risk from all sources of flooding – including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources.
- 2.4 Table 1 shows flood risk vulnerability and Flood Zone ‘compatibility’ as identified in the Technical Guidance to the NPPF (it does not show the application of the Sequential Test).

Table 1: Flood Risk Vulnerability and Flood Zone 'Compatibility'

Flood risk vulnerability classification		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood Zone	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	x	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	x	x	x

Key: ✓ Development is appropriate
x Development should not be permitted.

3 The Sequential Test

- 3.1 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.
- 3.2 The Sequential Test uses the information contained in the Council's Strategic Flood Risk Assessment (SFRA) to ensure that unless there are good planning reasons, development should take place in those areas of the District which are at least/low risk from flooding (Flood Zone 1). If there is a lack of suitable alternative sites in those areas at least/low risk from flooding, then the Sequential Test allows the local planning authority to assess and if necessary identify land for development in those areas of moderate risk from flooding (Flood Zone 2). If having assessed all sites in low and moderate flood risk areas, the local planning authority cannot identify sufficient land for its development needs, then it may still be able to identify land for development in areas at high risk from flooding (Flood Zone 3a). However, before the local planning authority can allocate this higher flood risk land a further test referred to as an Exceptions test must be passed.

4 The Exception Test

- 4.1 If, following 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 NPPF sets out that 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, informed by a Strategic Flood Risk Assessment where one has been prepared; and
 - 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.

5 Assessment of Flood Risk in Three Rivers

- 5.1 Strategic Flood Risk Assessments (SFRAs) refine information on the probability of flooding, taking other sources of flooding and the impacts of climate change into account. They provide the basis for applying the Sequential Test. Where there is a need to apply the Exception Test, the scope of a Strategic Flood Risk Assessment will be widened to consider the impact of flood risk management infrastructure on frequency, impact, speed of onset, depth and velocity of flooding within flood zones considering a range of flood risk management maintenance scenarios.

In 2007, Three Rivers District Council along with Dacorum Borough Council, St Albans City and District Council and Watford Borough Council commissioned consultants Halcrow to complete a Level 1 SFRA for the Districts. This study identified areas at risk of flooding and their Flood Zone classification. Specific recommendations for Three Rivers included protection of functional floodplains, appropriate stakeholder engagement to manage surface water flood risk and to implement policies for development behind defences to ensure residual risk of flooding is managed.

- 5.2 An addendum to the Level 1 SFRA was published in 2012 taking account of updated information to review the extent of Flood Zones in Three Rivers.
- 5.3 As land in Flood Zone 1 could not accommodate necessary development in Three Rivers, a more detailed increased scope SFRA was completed in 2012. This report also took account of updated modelling information for fluvial, surface water and groundwater flood risk and updated information, for example from site specific Flood Risk Assessments and Catchment Flood Management Plans.

6 Three Rivers Planning Policy

- 6.1 The Three Rivers Core Strategy was adopted by the Council in October 2011. It sets out that the main emphasis for future development is to continue to focus development within the existing urban area through development of previously developed land and appropriate infilling, recognising potential for mixed use development to contribute to the development of sustainable communities. This will be followed by development at the most sustainable locations on the edge of existing settlements. All development sites will be identified having regard to a criteria-based approach taking into account whether development on the site:
- Will be accessible to public transport, services and facilities
 - Will not have a significant impact on the environment including in terms of impacts on the Green Belt, visual amenity, heritage assets, transport and environmental quality including wildlife, flood-risk and water pollution
 - Is likely to come forward over the plan period.
- 6.2 The Core Strategy identifies that to meet the District's development needs, there is a requirement for Three Rivers to provide 4,500 new dwellings 2001-2026. At April 2012, provision has been made for 2,898 dwellings, excluding the outline planning permission granted at Leavesden Aerodrome and including a windfall allowance of 38 dwellings per year between 2021 and 2026. The Site Allocations document therefore needs to make provision for the remaining 1,602 dwellings to meet the Core Strategy requirement.
- 6.3 The Core Strategy also identifies that there will be a need for approximately 3.5ha of land for industrial and warehousing space, and one or possibly two new secondary schools. The County

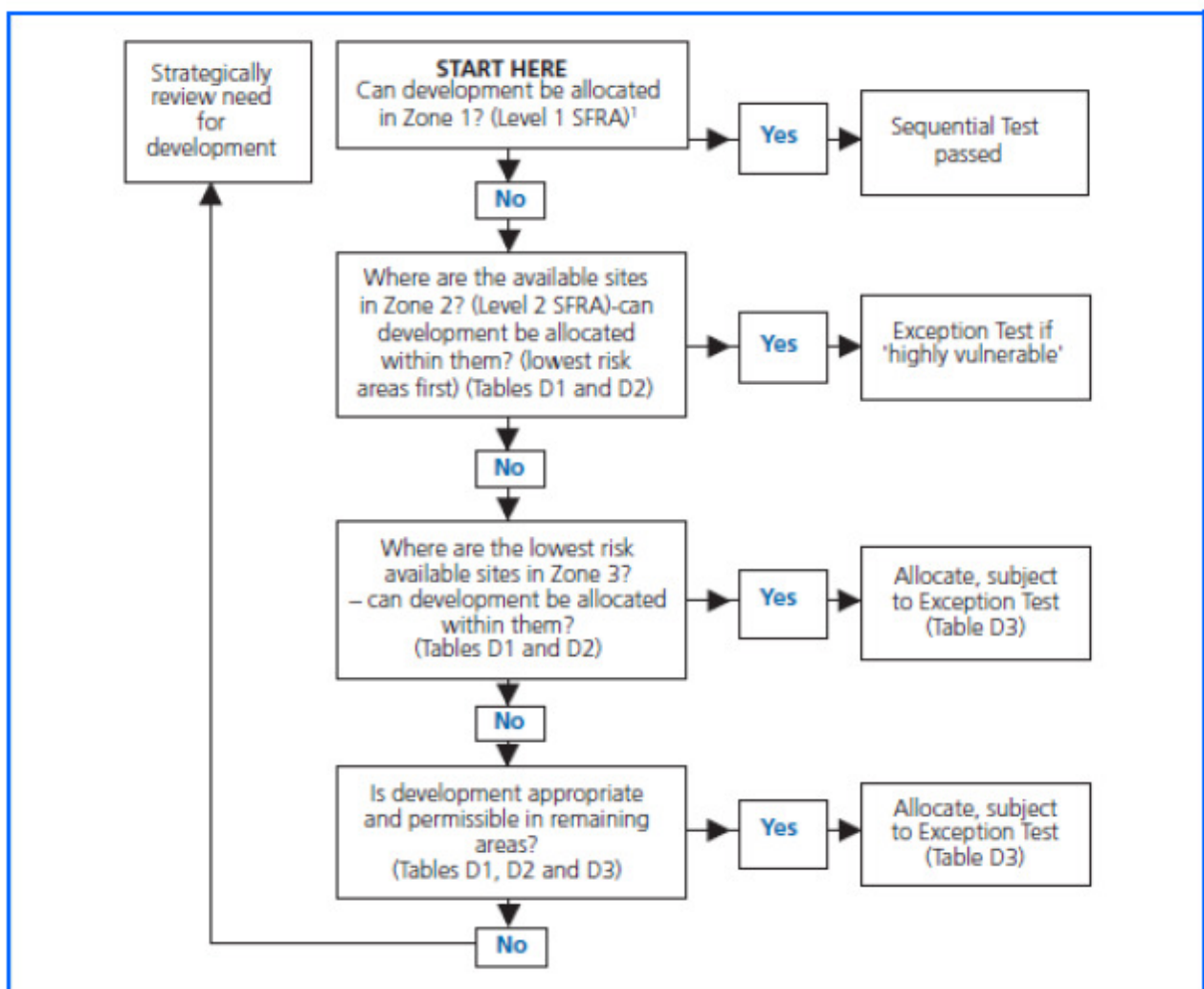
Council who are responsible for secondary school provision have since advised that they are seeking the allocation of two preferred secondary school sites and two reserve secondary school sites to ensure that provision can be delivered.

- 6.4 The Site Allocations Proposed Submission document (November 2012) identifies sites that the Council considers should meet identified needs for development. 12 allocated sites lie partly within Flood Zones 2 and 3. Chapter 8 of this report sets out the Sequential Test for each allocated site, and chapter 9 sets out the Exception Test where this is required in accordance with Table 1.

7 Methodology

- 7.1 The methodology to apply the Sequential Test follows the steps outlined in Planning Policy Statement 25 Practice Guide, shown in Figure 1.

Figure 1: Application of the Sequential Test at the Local Level (Source:PPS25 Practice Guide Figure 4.1)



Note

¹ Other sources of flooding need to be considered in Flood Zone 1

- 7.2 The area of search is the Three Rivers District Council area for housing and employment uses and South West Hertfordshire for secondary schools.

- 7.3 The Sequential Test has been applied to sites included in the Site Allocations Proposed Submission document and housing sites being promoted by landowners/developers that include areas which are identified as Flood Zone. Detailed site and development information is set out in Tables 2 and 3, which also include Flood Zone, flood defence information and existing and proposed uses. The flood vulnerability classification is based on guidance in Table 2 of Technical Guidance to the NPPF. Plans showing the study sites and flood zone information are set out in Appendix 1.
- 7.4 Sites to be consulted on as part of the Site Allocations Proposed Submission document which are completely within Flood Zone 1 are deemed to have passed the Sequential Test and are not included further within the rest of this assessment.
- 7.5 The Sequential Test requires an examination of alternative (competing) sites that are at less or equal risk of flooding to the study sites. The Outline Sequential Tests used 20 competing sites identified in the Strategic Housing Land Availability Assessment (SHLAA) (2008). The SHLAA assessment was updated in March 2010 and the Site Allocations document now proposes allocations for employment and secondary school uses. The competing sites have therefore been reviewed.
- 7.6 Competing sites for housing and employment have been identified from sites received through the 'call for sites' for the SHLAA and submitted as part of the local plan process that have not already been granted planning permission. All sites submitted to the SHLAA and local plan have undergone a multi-criteria assessment to identify their suitability including the environmental and economic impacts of development. The remaining SHLAA sites that have not been submitted by landowners/developers to the local plan process are assumed to have no current intention to develop. Sites that are proposed for allocation are not included as competing sites.
- 7.7 Competing sites for secondary school have been identified from the County Council's 'South West Hertfordshire: Delivering Secondary School Expansion' report which identified 30 sites for delivery of a secondary school and carried out an appraisal of their potential. Sites that are proposed for allocation are not included as competing sites.
- 7.8 Tables 4 and 5 set out details of the competing sites and the main reasons they are not considered to be preferable alternatives to the Study Sites.

Table 2: Site Allocations Housing and Employment- Flood Risk Data

Site	Site Address	Site Size (ha)	Flood Zone (approx percentage)	Existing Flood Defences	Existing Uses	Proposed Uses (indicative capacity)	Flood Vulnerability Classification
1	Home Park, Kings Langley	3.55	SFRA2 (5%) SFRA3a (0%) SFRA3b (0%)	Culverted channel (the Mill Stream) crosses the site. Asset gives a standard of protection of 25 years. No concerns are currently expressed over this defence, however it is reliant on continued maintenance in the future.	Business use	Approximately 50 residential dwellings and business use	More vulnerable
2	South Tolpits Lane, Rickmansworth	5.91	SFRA2 (10%) SFRA3a (0%) SFRA3b (0%)	No flood defences.	Open land	50 residential dwellings	More vulnerable
3	Delta Gain, Carpenders Park	0.84	SFRA2 (60%) SFRA3a (0%) SFRA3b (0%)	FSA about 1km upstream which serves to attenuate flows through the Hartsbourne. 1000year standard of protection. Hartsbourne stream FSA embankment and culvert, upstream channel lined with concrete and 339m culvert crosses beneath site. No current concerns over condition of these defences.	Business use	Business use	Less vulnerable

Site	Site Address	Site Size (ha)	Flood Zone (approx percentage)	Existing Flood Defences	Existing Uses	Proposed Uses (indicative capacity)	Flood Vulnerability Classification
4	Fairways Farm and Penfold Golf Course, Garston	8.18	SFRA2 (8%) SFRA3a (7%) SFRA3b (7% assumed)	No flood defences.	Golf course and agricultural land	Promoted for 300 residential dwellings	More vulnerable
5	The Barn, Solesbridge Lane, Chorleywood	0.39	SFRA2 (26%) SFRA3a (26%) SFRA3b (26% assumed)	1.5m high and 6m wide rectangular culvert of River Chess crossing beneath M25 with an indicative standard of 1000 years. Can only indirectly affect the site, but without this large capacity culvert backing up of flood water could worsen flooding at site.	Open land	Promoted for residential	More vulnerable
6	Gas Works, Salters Close, Rickmansworth	0.45	SFRA2 (90%) SFRA3a (0%) SFRA3b (0%)	Chess Wall raised defence (man made) has a design standard of 100 years. No concerns currently expressed over defence.	Gas works	20 residential dwellings	More vulnerable
7	Langwood House, High Street, Rickmansworth	0.21	SFRA2 (10%) SFRA3a (0%) SFRA3b (0%)	Twin culvert downstream from site along Town Ditch. No concerns currently expressed over this defence.	Offices and car parking	15 residential dwellings	More vulnerable

Site	Site Address	Site Size (ha)	Flood Zone (approx percentage)	Existing Flood Defences	Existing Uses	Proposed Uses (indicative capacity)	Flood Vulnerability Classification
8	Bridge Motors, Church Street, Rickmansworth	0.12	SFRA2 (70%) SFRA3a (0%) SFRA3b (0%)	Site dependent on main defences north of Church Street for safe access along Church Street, no current concerns. 2m wide and 1.5m culvert running beneath A404 to south. No current concerns expressed over this defence.	Car/petrol sales	10 residential dwellings	More vulnerable
9	Depot, Harefield Road, Rickmansworth	0.44	SFRA2 (50%) SFRA3a (0%) SFRA3b (0%)	Small height defence alongside northern boundary offering 1 in 20 year standard of protection. Concerns over condition of flap gates.	Waste depot	25 residential dwellings	More vulnerable
10	Depot, Stockers Farm Road, Rickmansworth	0.80	SFRA2 (10%) SFRA3a (0%) SFRA3b (0%)	Raised defence along Grand Union Canal offers 1 in 5 year standard of protection.	Water depot hardstanding, storage, staff accommodation	60 residential dwellings	More vulnerable
11	Maple Lodge, Maple Cross	3.10	SFRA2 (8%) SFRA3a (0%) SFRA3b (0%)	Raised defence along bank of River Colne to east. Defences made of brick walls and further downstream earth embankments. Defences give a general standard of protection of 100 years.	Open land	Business use	Less vulnerable

Table 3: Site Allocations Secondary School- Flood Risk Data

Site	Site Address	Site Size (ha)	Flood Zone (approx percentage)	Existing Flood Defences	Existing Uses	Proposed Uses (indicative capacity)	Flood Vulnerability Classification
SS1	Froghall Farm, Maple Cross	22.3	SFRA2 (11%) SFRA3a (8%) SFRA3b (6%)	Raised defence along bank of River Colne adjacent to site. Defences made of brick walls and further downstream earth embankments. Defences give a general standard of protection of 100 years.	Open land/agricultural	Secondary school	More vulnerable

Table 4: Competing Sites – Housing and Employment

Site Ref	Site	Existing Use	Planning Status	Capacity	Site Size (ha)	Flood Zone	Comments
A1	Abbots Langley Men's Club, Trowley Rise, Abbots Langley	Men's Club	Unallocated but considered as a Site Allocation.	10 dwellings	0.14	1 (100%)	Site has good access to local shops and services but site is in use and will not be available for development. Site not suitable for allocation.
A2	Rear of 233 High Street, Rickmansworth	Garden	Unallocated but put forward for consideration as a Site Allocation.	1 dwelling	0.03	1 (100%)	Site has good access to local shops and services but is in a conservation area and not suitable for development for residential. Site not suitable for allocation.
A3	Amenity Space Northwick Road/Moortown Road, South Oxhey	Amenity space	Unallocated but considered as a Site Allocation.	5 dwellings	0.14	1 (100%)	Site has good access to local shops and services but site is in use as amenity space and existing properties surrounding space limited development potential so site is not suitable for allocation.
A4	Woodside Road, Abbots Langley	Open space/grazing land	Unallocated but put forward for consideration as a Site Allocation.	130 dwellings	4.32	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A5	Sycamore Road, Croxley Green	Amenity space	Unallocated but put forward for consideration as a Site Allocation.	10 dwellings	0.24	1 (100%)	Site is amenity space for flats and would need to be replaced. Site not suitable for allocation.
A6	Former British Rail Station, Croxley Green	Former rail station	Unallocated but put forward for consideration as a Site Allocation.	35 dwellings	0.70	1 (100%)	Site is required to provide mitigation against Croxley Rail Link so is not available or suitable for allocation.

Site Ref	Site	Existing Use	Planning Status	Capacity	Site Size (ha)	Flood Zone	Comments
A7	East of Jacketts Field, Abbots Langley	Agricultural	Unallocated but put forward for consideration as a Site Allocation.	15 dwellings	0.44	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A8	East of Summerhouse Way, Abbots Langley	Agricultural	Unallocated but put forward for consideration as a Site Allocation.	50 dwellings	1.72	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A9	Land at Love Lane Reservoir, Abbots Langley	Open land	Unallocated but put forward for consideration as a Site Allocation.	40 dwellings	1.34	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A10	Mansion House Farm, Love Lane, Abbots Langley	Agricultural	Unallocated but put forward for consideration as a Site Allocation.	95 dwellings	3.12	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A11	Land South of St Josephs, South Oxhey	Open space	Unallocated but considered as a Site Allocation.	40 dwellings	1.52	1 (100%)	Site is Green Belt and is required for education needs so is not available or suitable for allocation.
A12	East Lane, Bedmond	Agricultural, pet cemetery, open land	Unallocated but put forward for consideration as a Site Allocation.	350 dwellings	11.72	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A13	Garston Manor, High Elms Lane, Garston	Woodland and open space	Unallocated but put forward for consideration as a Site Allocation.	100 dwellings	3.33	1 (100%)	Site is Green Belt and would have a significant impact. Site is partially woodland and partly wildlife site. Site not suitable for allocation.

Site Ref	Site	Existing Use	Planning Status	Capacity	Site Size (ha)	Flood Zone	Comments
A14	24 Denham Way, Maple Cross	Open land	Unallocated but put forward for consideration as a Site Allocation.	30 dwellings	0.96	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A15	South of Little Oxhey Lane, Carpenders Park	Agricultural	Unallocated but put forward for consideration as a Site Allocation.	220 dwellings	7.43	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A16	Land South of Stud Cottage, Bedmond Road, Bedmond	Open land	Unallocated but put forward for consideration as a Site Allocation.	35 dwellings	1.15	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A17	West Hyde Residential Centre, Maple Cross	Residential centre	Unallocated but put forward for consideration as a Site Allocation.	5 dwellings	0.16	1 (100%)	Site is Green Belt and would have a significant impact. Site has poor access to services. Site not suitable for allocation.
A18	Land North of Stud Cottage, Bedmond Road	Open land	Unallocated but put forward for consideration as a Site Allocation.	50 dwellings	1.57	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A19	Little Green Playing Fields, Croxley Green	Open land	Unallocated but put forward for consideration as a Site Allocation.	135 dwellings	4.52	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.

Site Ref	Site	Existing Use	Planning Status	Capacity	Site Size (ha)	Flood Zone	Comments
A20	Waterdell, Bricket Wood	Open land	Unallocated but put forward for consideration as a Site Allocation.	50 dwellings	1.62	1 (100%)	Site is Green Belt and would have a significant impact. Access to site is not possible. Site not suitable for allocation.
A21	Egg Farm Lane, Kings Langley	Open land	Unallocated but put forward for consideration as a Site Allocation.	20 dwellings	0.61	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A22	Land Between Oxhey Lane and Little Oxhey Lane, Carpenders Park	Open land	Unallocated but considered as a Site Allocation.	150 dwellings	5.18	1 (100%)	Site is required for cemetery use and is therefore not available for development. Site not suitable for allocation.
A23	The Retreat, Abbots Langley	Open land	Unallocated but put forward for consideration as a Site Allocation.	80 dwellings	2.70	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A24	The Roughts, Eastbury	Woodland	Unallocated but put forward for consideration as a Site Allocation.	100 dwellings	3.28	1 (100%)	Site is Green Belt and would have a significant impact. Site is covered by protected trees. Site not suitable for allocation.
A25	Killingdown Farm, Croxley Green	Agricultural	Unallocated but put forward for consideration as a Site Allocation.	230 dwellings	7.43	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A26	Twychells Farm, St Albans Lane, Bedmond	Agricultural	Unallocated but put forward for consideration as a Site Allocation.	185 dwellings	6.19	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.

Site Ref	Site	Existing Use	Planning Status	Capacity	Site Size (ha)	Flood Zone	Comments
A27	Bluebell Drive, Bedmond	Open land	Unallocated but put forward for consideration as a Site Allocation.	170 dwellings	5.71	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A28	114-118 Toms Lane, Kings Langley	Open land	Unallocated but put forward for consideration as a Site Allocation.	20 dwellings	0.61	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A29	Croxley Business Park, Croxley Green	Employment use.	Unallocated but considered as a Site Allocation.	40 dwellings	1.31	1 (100%)	Site is in existing use for employment and is not available. Site not suitable for allocation.
A30	Wearings Field, Stag Lane, Chorleywood	Open land	Unallocated but put forward for consideration as a Site Allocation.	70 dwellings	2.28	1 (100%)	Site is Green Belt and would have a significant impact. Site is wildlife site and open space and would need to be reprovided. Site not suitable for allocation.
A31	Hall Farm, Berry Lane, Chorleywood	Agricultural	Unallocated but put forward for consideration as a Site Allocation.	50 dwellings	1.71	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A32	Junction of Hampermill Lane and Sandy Lodge Lane	Open land	Unallocated but put forward for consideration as a Site Allocation.	75 dwellings	2.52	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A33	East of Green Street, Chorleywood	Open land	Unallocated but put forward for consideration as a Site Allocation.	680 dwellings	22.58	1 (100%)	Site is Green Belt and AONB and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.

Site Ref	Site	Existing Use	Planning Status	Capacity	Site Size (ha)	Flood Zone	Comments
A34	Griggs Field, London Road, Batchworth	Golf course	Unallocated but put forward for consideration as a Site Allocation.	340 dwellings	11.44	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.
A35	West of 10 Toms Lane, Kings Langley	Open land	Unallocated but considered as a Site Allocation.	20 dwellings	1.24	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A36	Land Opposite Alpine Press, Kings Langley	Car park and open land	Unallocated but considered as a Site Allocation.	5 dwellings	0.19	1 (100%)	Site is Green Belt and would have a significant impact. Site not suitable for allocation.
A37	Lad at Hilltop Road, Kings Langley	Open land	Unallocated but put forward for consideration as a Site Allocation.	20 dwellings	0.43	1 (100%)	Site is Green Belt and would have a significant impact. Site has limited access to shops and services. Site not suitable for allocation.

Table 5: Competing Sites – Secondary School

Site Ref	Site	Existing Use	Planning Status	Proposed Development	Site Size (ha)	Flood Zone	Comments
SSA1	Land west of A405 (North Orbital)/north of A412, Mill End, Rickmansworth	Agriculture	Unallocated, identified in School Study	Secondary school	19.8	1 (100%)	Site would impact on Green Belt and Colne Valley Park and would have unacceptable impact on open countryside. Vehicular access unlikely to be achievable.
SSA2	Land adjoining M25, Mill End, Rickmansworth	Agriculture	Unallocated, identified in School Study	Secondary school	21.1	1 (100%)	Site is Green Belt and would require significant terracing. Would have significant visual impact. Site very close to M25 so noise and air quality implications. Vehicular access unlikely to be acceptable due to impact on local highway network.
SSA3	Mill End Recreation Ground, Mill End	Open space and parking	Unallocated, identified in School Study	Secondary school	5.5	1 (100%)	Site too small to provide playing fields which would need to be located off site. Would lead to loss of open space in area.
SSA4	Land off Berry Lane, Rickmansworth	Open space	Unallocated, identified in School Study	Secondary school	4.2	1 (100%)	Site too small to provide playing fields which would need to be located off site. Site bisected by roads so buildings would have to be divided. Would lead to loss of open space in area and likely to be unacceptable impacts on adjoining residential properties.
SSA5	Sports Ground, adjacent areas and Yorke Mead Primary School, Croxley Green	School, open space	Unallocated, identified in School Study	Secondary school	8.3	1 (100%)	Existing school on site would have to be retained or relocated elsewhere. North west of site identified wildlife site. Would lead to loss of open

Site Ref	Site	Existing Use	Planning Status	Proposed Development	Site Size (ha)	Flood Zone	Comments
							space/recreation in area. Partly in conservation area.
SSA6	Baldwins Lane Recreation Ground, Croxley Green	Open space	Unallocated, identified in School Study	Secondary school	3.9	1 (100%)	Would lead to loss of open space/recreation in area. Site not large enough for school buildings and would require detached playing fields.
SSA7	Former Durrants School playing Field and Killingdown Farm, Croxley Green	Open space, horse grazing, agricultural	Unallocated, identified in School Study	Secondary school	12.2	1 (100%)	Green Belt site with poor access. Vehicular access unlikely to be achievable.
SSA8	Barton Way Recreation Ground, Croxley Green	Open space, play area	Unallocated, identified in School Study	Secondary school	3.2	1 (100%)	Site not large enough for school buildings and would require detached playing fields. Would lead to loss of open space/recreation in area. Identified wildlife site.
SSA9	Grounds of Durrants, Croxley Green	Under development for residential	Unallocated, identified in School Study	Secondary school	6.2	1 (100%)	Would require detached playing fields. Under construction for residential so not available.
SSA10	Land North of Little Green Lane, Croxley Green	Agriculture	Unallocated, identified in School Study	Secondary school	17.5	1 (100%)	Site would have significant impact on Green Belt and landscape and would lead to loss of grade 2 agricultural land. Access to the site is poor.
SSA11	Land to the West of Rousebarn Lane, Croxley Green	Agriculture	Unallocated, identified in School Study	Secondary school	4.4	1 (100%)	Impact on Green Belt and landscape. Site not large enough and detached playing fields would have to be located some distance away.
SSA12	Land North of Loudwater Lane, Croxley Green	Agriculture	Unallocated, identified in School Study	Secondary school	24.0	1 (100%)	Site would have significant impact on Green Belt and landscape. Very poor access to site and overhead power cables.

Site Ref	Site	Existing Use	Planning Status	Proposed Development	Site Size (ha)	Flood Zone	Comments
SSA13	Land South of Loudwater Lane, Croxley Green	Agriculture	Unallocated, identified in School Study	Secondary school	15.4	1 (100%)	Site is sloping and would have significant impact on Green Belt and landscape. Very poor access to site.
SSA14	Rickmansworth Park, Rickmansworth	Open Space	Unallocated, identified in School Study	Secondary school	3.8	1 (100%)	Green Belt and historic park/garden. Ecological constraints. Vehicular access to site would be unachievable. Site not large enough for school buildings and would require detached playing fields.
SSA15	Land to the North of Killingdown Farm and Little Green Lane, Croxley Green	Agriculture	Unallocated, identified in School Study	Secondary school	7.6	1 (100%)	Site would have significant visual impact and impact on Green Belt. Vehicular access unlikely to be achievable.
SSA16	Land to the North of Cassiobury Infant and Nursery Schools, Watford	Recreation	Unallocated, identified in School Study	Secondary school	15.0	1 (100%)	Green Belt. Would lead to loss of open space/recreation in area. Poor access to site.
SSA17	Land to the East of A41, Hunton Bridge	Agriculture	Unallocated, identified in School Study	Secondary school	20.2	1 (100%)	Green Belt. Noise from M25 and A41. Access to site likely to be unachievable.
SSA18	Royal Masonic School for Girls, Rickmansworth	School buildings and playing fields	Unallocated, identified in School Study	Secondary school	73.6	1 (100%)	Green Belt and significant visual impact. Ecological constraints. Site already in use by private secondary school.
SSA19	Land Around Langleybury and St Paul's Schools, Langleybury	Agriculture, open land and recreation	Unallocated, identified in School Study	Secondary school	45.1	1 (84%), 2 (16%), 3a (14%)	Green Belt and visual impact. Site not adjacent to any urban area and has very poor access to transport/services.
SSA20	Land East of Woodside Road, Watford	Open land	Unallocated, identified in School Study	Secondary school	13.6	1 (100%)	Green Belt site. Close proximity to three other secondary schools so not a sustainable location to meet education needs of south west

Site Ref	Site	Existing Use	Planning Status	Proposed Development	Site Size (ha)	Flood Zone	Comments
							Hertfordshire and traffic problems of another school in this area.
SSA21	Land at South Oxhey Playing Fields, South Oxhey	Open space	Unallocated, identified in School Study	Secondary school	19.8	1 (100%)	Impact on Green Belt and would lead to loss of open space/recreation in area. Access to the site difficult.
SSA22	Land at Little Oxhey Lane, Carpenders Park	Open land	Unallocated, identified in School Study	Secondary school	15.6	1 (100%)	Green Belt and visual impact. Noise from railway line. Narrow railway bridge means traffic impacts would be problematic.
SSA23	Land at Chaffinch Lane, Watford	Open space/ community centre, agriculture	Unallocated, identified in School Study	Secondary school	34.1	1 (100%)	Green Belt and would lead to loss of open space/recreation in area. Access to the site may be difficult.
SSA24	Land at Little Bushey Lane, Bushey	Agriculture	Unallocated, identified in School Study	Secondary school	30.1	1 (100%)	Significant impact on Green Belt and visual impact.
SSA25	Land between Merry Hill Road and Oxhey Lane, South Oxhey	Pasture/ woodland	Unallocated, identified in School Study	Secondary school	17.1	1 (100%)	Green Belt, wildlife site and loss of woodland. Site would require reprofiling and have significant visual impact. Access unlikely to be achievable.
SSA26	Land North of South Way, Abbots Langley	Open space	Unallocated, identified in School Study	Secondary school	28.9	1 (100%)	Significant impact on Green Belt would lead to coalescence of Watford and Abbots Langley. Would lead to loss of open space/recreation in area.
SSA27	Land at Leavesden Aerodrome, Abbots Langley	Open land, and development for film studios	Unallocated, identified in School Study	Secondary school	47.3	1 (100%)	Has permission for residential development and film studios and under construction so would not be available.

8 Report of the Sequential Test

Housing and Employment

8.1 The following questions and answers summarise the sequential testing process.

Question 1: Are the proposed locations for development in Flood Zone 1 (low probability of flooding)?

YES

Study Sites

- 1 Home Park Kings Langley (about 95% of area)
- 2 South Tolpits Lane, Rickmansworth (about 90% of area)
- 3 Delta Gain, Carpenders Park (about 40% of area)
- 4 Fairways Farm and Penfold Golf Course, Garston (about 92% of area)
- 5 The Barn, Solesbridge Lane, Chorleywood (about 74% of area)
- 6 Gas Works, Salters Close, Rickmansworth (about 10% of area)
- 7 Langwood House, High Street, Rickmansworth (about 90% of area)
- 8 Bridge Motors, Church Street, Rickmansworth (about 30% of area)
- 9 Depot, Harefield Road, Rickmansworth (about 50% of area)
- 10 Depot, Stockers Farm Road, Rickmansworth (about 90% of area)
- 11 Maple Lodge, Maple Cross (about 92% of area)

Competing Sites

- A1 Abbots Langley Men's Club, Trowley Rise, Abbots Langley
- A2 Rear of 233 High Street, Rickmansworth
- A3 Amenity Space Northwock Road/Moortown Road, South Oxhey
- A4 Woodside Road, Abbots Langley
- A5 Sycamore Road, Croxley Green
- A6 Furze Close, South Oxhey
- A7 East of Jacketts Field, Abbots Langley
- A8 East of Summerhouse Way, Abbots Langley
- A9 Land at Love Lane Reservoir, Abbots Langley
- A10 Mansion House Farm, Love Lane, Abbots Langley
- A11 Playing Fields at Sir James Altham, South Oxhey
- A12 East Lane, Bedmond
- A13 Garston Manor, High Elms Lane, Garston
- A14 24 Denham Way, Maple Cross
- A15 South of Little Oxhey Lane, Carpenders Park
- A16 Land South of Stud Cottage, Bedmond Road, Bedmond
- A17 West Hyde Residential Centre, Maple Cross
- A18 Land North of Stud Cottage, Bedmond Road
- A19 Little Green Playing Fields, Croxley Green
- A20 Waterdell, Bricket Wood
- A21 Egg Farm Lane, Kings Langley
- A22 Land Between Oxhey Lane and Little Oxhey Lane, Carpenders Park
- A23 The Retreat, Abbots Langley
- A24 The Roughs, Eastbury
- A25 Killingdown Farm, Croxley Green
- A26 Twychells Farm, St Albans Lane, Bedmond
- A27 Bluebell Drive, Bedmond

A28 114-118 Toms Lane, Kings Langley
A29 Croxley Business Park, Croxley Green
A30 Wearings Field, Stag Lane, Chorleywood
A31 Hall Farm, Berry Lane, Chorleywood
A32 Junction of Hampermill Lane and Sandy Lodge Lane
A33 East of Green Street, Chorleywood
A34 Griggs Field, London Road, Batchworth
A35 West of 10 Toms Lane, Kings Langley
A36 Land Opposite Alpine Press, Kings Langley
A37 Land at Hilltop Road, Kings Langley

NO

Study Sites

1 Home Park Kings Langley (part)	Flood Zone 2
2 South Tolpits Lane, Rickmansworth (part)	Flood Zone 2
3 Delta Gain, Carpenders Park (part)	Flood Zone 2
4 Fairways Farm and Penfold Golf Course, Garston (part)	Flood Zones 2, 3a and 3b
5 The Barn, Solesbridge Lane, Chorleywood (part)	Flood Zones 2, 3a and 3b
6 Gas Works, Salters Close, Rickmansworth (part)	Flood Zone 2
7 Langwood House, High Street, Rickmansworth (part)	Flood Zone 2
8 Bridge Motors, Church Street, Rickmansworth (part)	Flood Zone 2
9 Depot, Harefield Road, Rickmansworth (part)	Flood Zone 2
10 Depot, Stockers Farm Road, Rickmansworth (part)	Flood Zone 2
11 Maple Lodge, Maple Cross (part)	Flood Zone 2

Competing Sites

n/a

Question 2: Could the proposed locations for development in Flood Zone 2 (medium probability of flooding) and Flood Zone 3 (high probability of flooding) be located in Flood Zone 1 (low probability of flooding)?

Site 9 The Barn, Solesbridge Lane, Chorleywood does not pass the sequential test as the site is in the Green Belt and would have a significant impact and has limited access to shops and services so would not be suitable for allocation.

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

Competing sites are identified in Table 4. Based on a multi-criteria assessment they were not taken forward for the reasons set out in Table 4 and because:

- The multi-criteria assessment results indicate that these locations are less sustainable because they may have adverse impacts on Green Belt, accessibility, infrastructure, open spaces, Conservation Areas and community facilities.

- The NPPF seeks to promote sustainable development and recommend that priority is given to the use of brownfield sites in sustainable locations.

b) Explain why the proposals cannot be directed to Flood Zone 1

Competing sites are in less sustainable locations with development constraints and there are limited opportunities for development in sustainable locations.

Question 3: How do the proposed uses relate to the Essential Infrastructure, Highly Vulnerable, More Vulnerable, Less Vulnerable and Water Compatible Development Flood Risk Vulnerability Classifications set out in Technical Guidance to the NPPF Table 2?

Study Sites

More Vulnerable uses at the following sites as they are proposed for residential:

- 1 Home Park Kings Langley
- 2 South Tolpits Lane, Rickmansworth
- 4 Fairways Farm and Penfold Golf Course, Garston
- 5 The Barn, Solesbridge Lane, Chorleywood
- 6 Gas Works, Salters Close, Rickmansworth
- 7 Langwood House, High Street, Rickmansworth
- 8 Bridge Motors, Church Street, Rickmansworth
- 9 Depot, Harefield Road, Rickmansworth
- 10 Depot, Stockers Farm Road, Rickmansworth

Less Vulnerable uses at the following sites as they are proposed for employment:

- 3 Delta Gain, Carpenders Park
- 11 Maple Lodge, Maple Cross

Question 4: Can the proposed locations for development in Flood Zone 3 be redirected to Flood Zone 2?

No

Explain why the development cannot be redirected

Alternative sites are likely to have an impact on the Green Belt, on existing infrastructure, open spaces and community facilities and have poor access to local shops and services and therefore are not considered sustainable.

As only parts of the following sites are in flood zone 3, the development layout may be organised to accommodate development to reduce vulnerability to flooding:

- 4 Fairways Farm and Penfold Golf Course, Garston
- 5 The Barn, Solesbridge Lane, Chorleywood

Is the development Highly Vulnerable?

No

Question 5: Will the proposed development type be acceptable in Flood Zone 3a?

Subject to Exception Test results, More Vulnerable development may be acceptable in Flood Zone 3a.

Secondary Schools

8.2 The following questions and answers summarise the sequential testing process.

Question 1: Are the proposed locations for development in Flood Zone 1 (low probability of flooding)?

YES

Study Sites

SS1 Froghall Farm, Maple Cross (about 89% of site)

Competing Sites

SSA1 Land west of A405 (North Orbital)/north of A412, Mill End, Rickmansworth
SSA2 Land adjoining M25, Mill End, Rickmansworth
SSA3 Mill End Recreation Ground, Mill End
SSA4 Land off Berry Lane, Rickmansworth
SSA5 Sports Ground, adjacent areas and Yorke Mead Primary School, Croxley Green
SSA6 Baldwins Lane Recreation Ground, Croxley Green
SSA7 Former Durrants School playing Field and Killingdown Farm, Croxley Green
SSA8 Barton Way Recreation Ground, Croxley Green
SSA9 Grounds of Durrants, Croxley Green
SSA10 Land North of Little Green Lane, Croxley Green
SSA11 Land to the West of Rousebarn Lane, Croxley Green
SSA12 Land North of Loudwater Lane, Croxley Green
SSA13 Land South of Loudwater Lane, Croxley Green
SSA14 Rickmansworth Park, Rickmansworth
SSA15 Land to the North of Killingdown Farm and Little Green Lane, Croxley Green
SSA16 Land to the North of Cassiobury Infant and Nursery Schools, Watford
SSA17 Land to the East of A41, Hunton Bridge
SSA20 Land East of Woodside Road, Watford
SSA21 Land at South Oxhey Playing Fields, South Oxhey
SSA22 Land at Little Oxhey Lane, Carpenders Park
SSA23 Land at Chaffinch Lane, Watford
SSA24 Land at Little Bushey Lane, Bushey
SSA25 Land between Merry Hill Road and Oxhey Lane, South Oxhey
SSA26 Land North of South Way, Abbots Langley
SSA27 Land at Leavesden Aerodrome, Abbots Langley

SSA18 Royal Masonic School for Girls, Rickmansworth
SSA19 Land Around Langleybury and St Paul's Schools, Langleybury (part- about 84% of site)

NO

Study Sites

SS1 Froghall Farm, Maple Cross (part)- Flood Zones 2, 3a and 3b

Competing Sites

SSA19 Land Around Langleybury and St Paul's Schools, Langleybury (part)- Flood Zones 2, 3a and 3b

Question 2: Could the proposed locations for development in Flood Zone 2 (medium probability of flooding) and Flood Zone 3 (high probability of flooding) be located in Flood Zone 1 (low probability of flooding)?

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

Competing sites are identified in Table 5 above. Based on a multi-criteria assessment (see South West Hertfordshire: Delivering Secondary School Expansion report) these sites were not taken forward for the following reasons:

- These locations are less sustainable as they have more impact on the Green Belt and visual impacts, they have poorer access and would lead to loss of open space and recreation facilities. Refer to Table 5 for individual competing site information.

b) Explain why the proposals cannot be directed to Flood Zone 1

Competing sites are in less sustainable locations with access or other development constraints. Some sites are under development for alternative uses and therefore not available.

Question 3: How do the proposed uses relate to the Essential Infrastructure, Highly Vulnerable, More Vulnerable, Less Vulnerable and Water Compatible Development Flood Risk Vulnerability Classifications set out in Technical Guidance to the NPPF Table 2?

More vulnerable use is proposed on the following sites as they are proposed for educational use:

- SS1 Froghall Farm, Maple Cross

Question 4: Can the proposed locations for development in Flood Zone 3 be redirected to Flood Zone 2?

Alternative sites are likely to have an impact on Green Belt, landscape and traffic and therefore are not considered sustainable.

As only part of SS1 Froghall Farm, Maple Cross sites includes Flood Zones 2 and 3, the development layout design may be organised to accommodate development to reduce vulnerability of the proposed development to flooding. The building zone indicated as part of the allocation for the site does not include areas of Flood Zone 3.

Question 5: Will the proposed development type be acceptable in Flood Zone 3a?

Subject to Exceptions Test, more vulnerable development may be acceptable in Flood Zone 3a. However allocation does not include areas of more vulnerable development within Flood Zone 3a.

Sequential Test Conclusions

- 8.3 In order to meet the development needs of the District, a thorough search of suitable sites has been carried out.
- 8.4 The Sequential Test results indicate that with the exception of The Barn, Solesbridge Lane, the study sites are sequentially preferable sites in flood risk terms and may have a role to play in meeting the District's requirements for development.
- 8.6 Specific recommendations for the individual sites are set out in Table 6.

Table 6: Further Steps Following the Sequential Test on the Study Sites

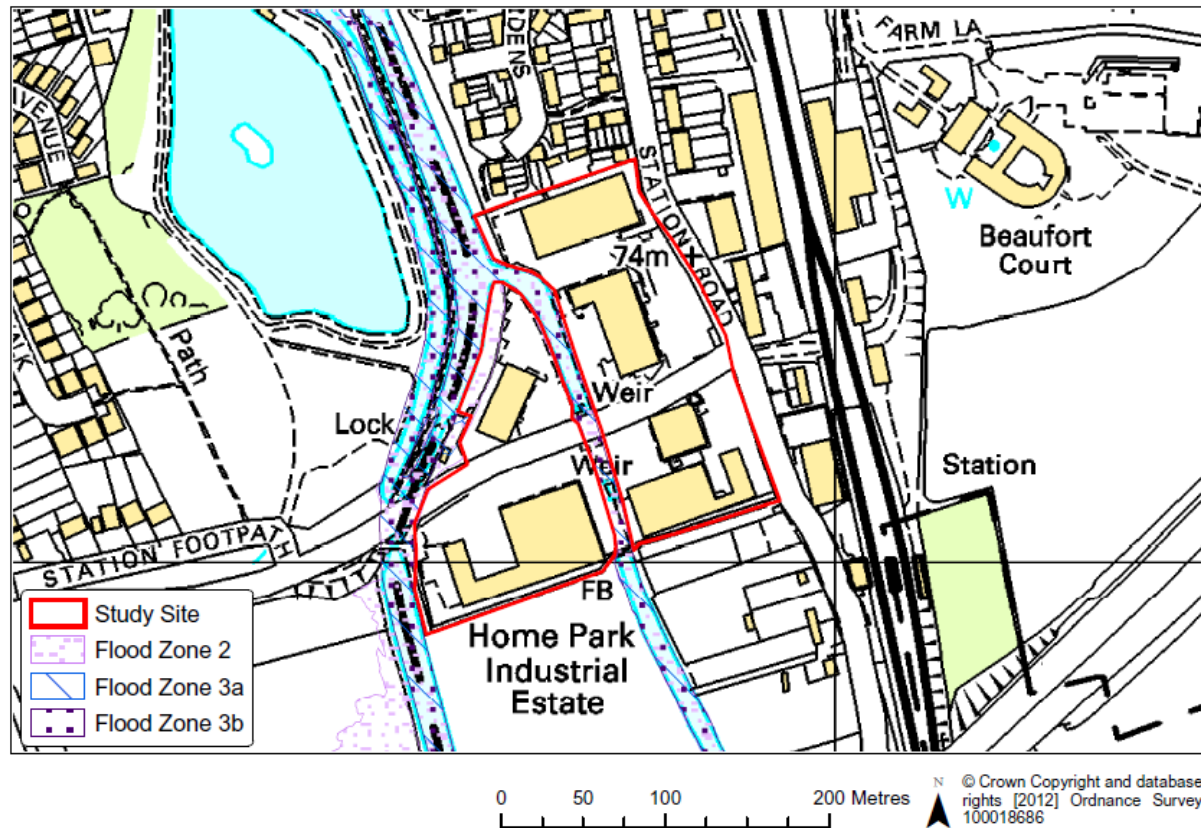
Site Ref	Site	Comment on Next Steps
1	Home Park, Kings Langley	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zone 2. More vulnerable uses in Flood Zone 1.
2	South Tolpits Lane, Rickmansworth	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zone 2. More vulnerable uses in Flood Zone 1.
3	Delta Gain, Carpenders Park	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zone 2. More vulnerable uses in Flood Zone 1.
4	Fairways Farm and Penfold Golf Course, Garston	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2 and 3. More vulnerable uses in Flood Zone 1.

		Exception test required.
5	The Barn, Solesbridge Lane, Chorleywood	Does not pass sequential test. Not suitable for allocation.
6	Gas Works, Salters Close, Rickmansworth	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2. More vulnerable uses in Flood Zone 1.
7	Langwood House, High Street, Rickmansworth	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2. More vulnerable uses in Flood Zone 1.
8	Bridge Motors, Church Street, Rickmansworth	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2. More vulnerable uses in Flood Zone 1.
9	Depot, Harefield Road, Rickmansworth	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2. More vulnerable uses in Flood Zone 1.
10	Depot, Stockers Farm Road, Rickmansworth	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2. More vulnerable uses in Flood Zone 1.
11	Maple Lodge, Maple Cross	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2. More vulnerable uses in Flood Zone 1.
SS1	Froghall Farm, Maple Cross	A sequential approach should be adopted for the master planning of the site- less vulnerable uses in Flood Zones 2. More vulnerable uses in Flood Zone 1.

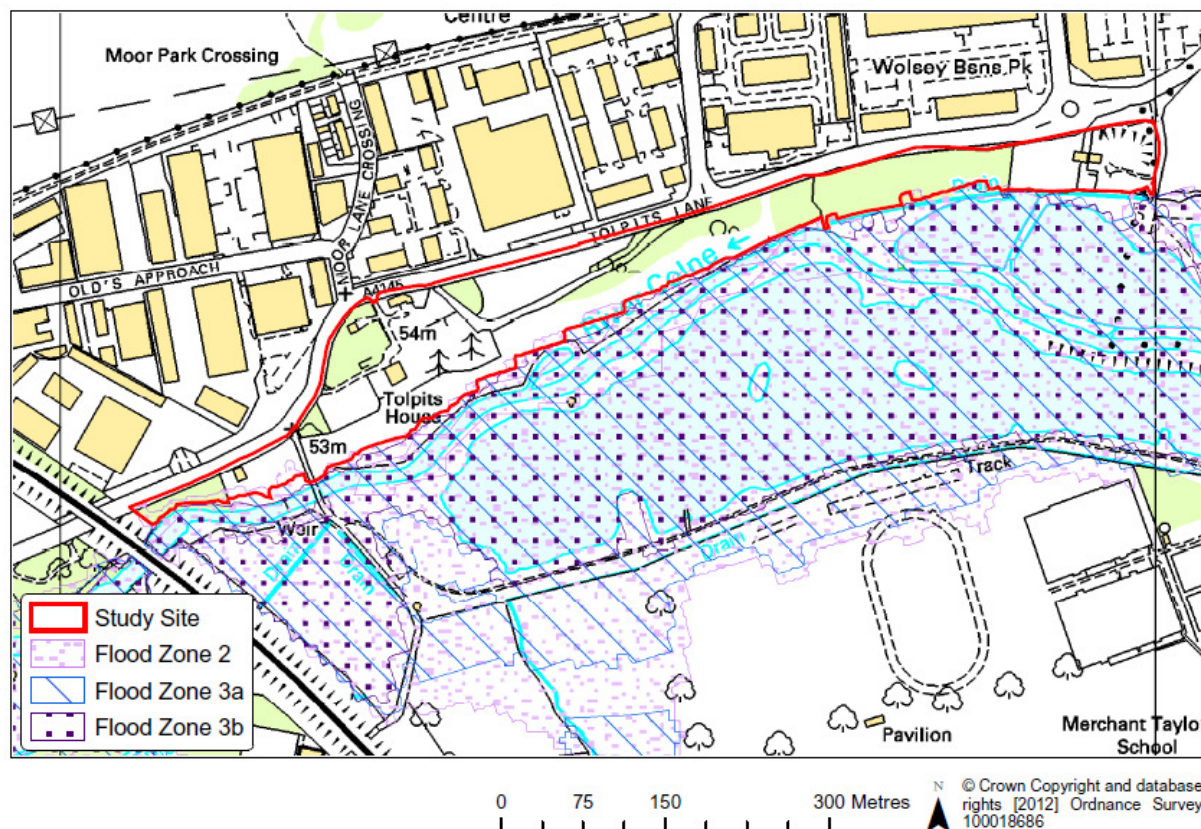
- 8.7 Apart from site 5 which does not pass the Sequential Test, the study sites are sequentially preferable in flood risk terms. Site 4 (Fairways Farm and Penfold Golf Course, Garston) should undergo an Exception Test, however following consultation and the consideration of responses received, the Council no longer propose to allocate site 4, and therefore the Exception Test has not been applied to this site.

APPENDIX 1: STUDY SITES AND FLOOD ZONES

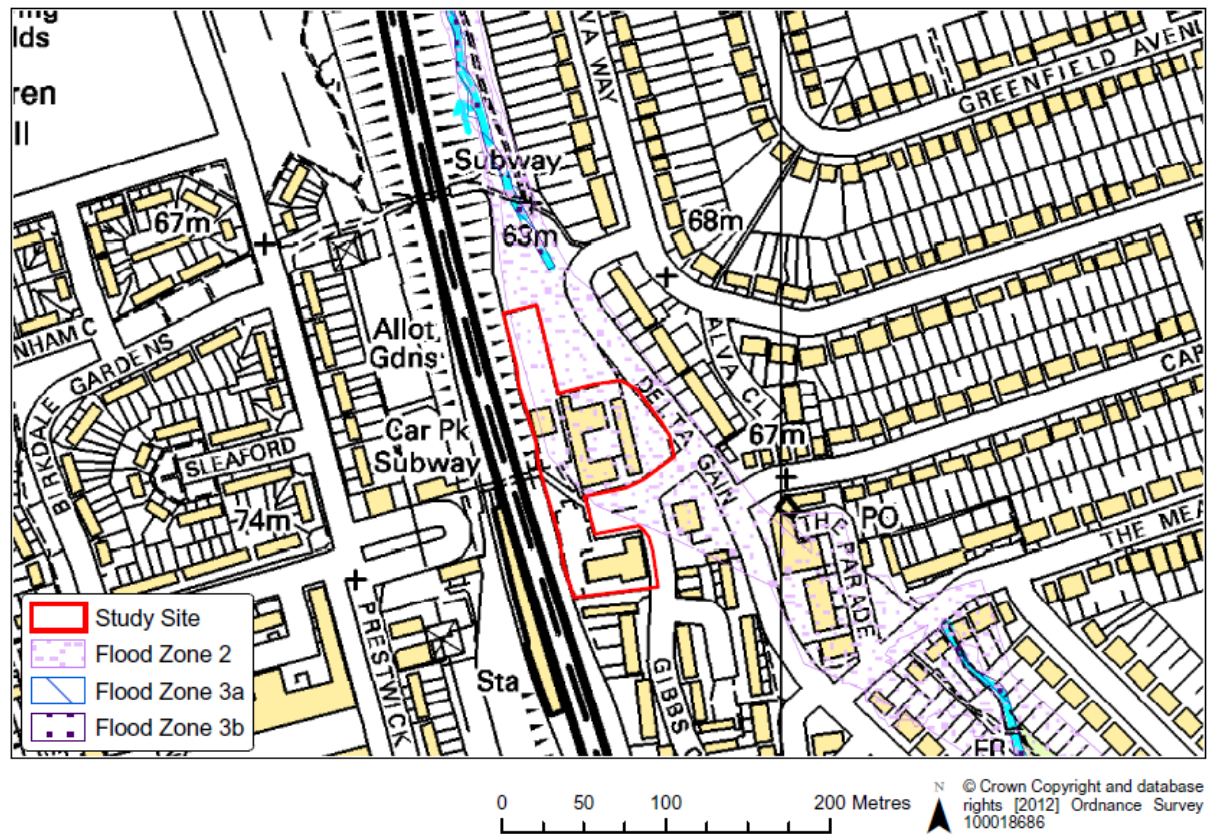
1 Home Park, Kings Langley



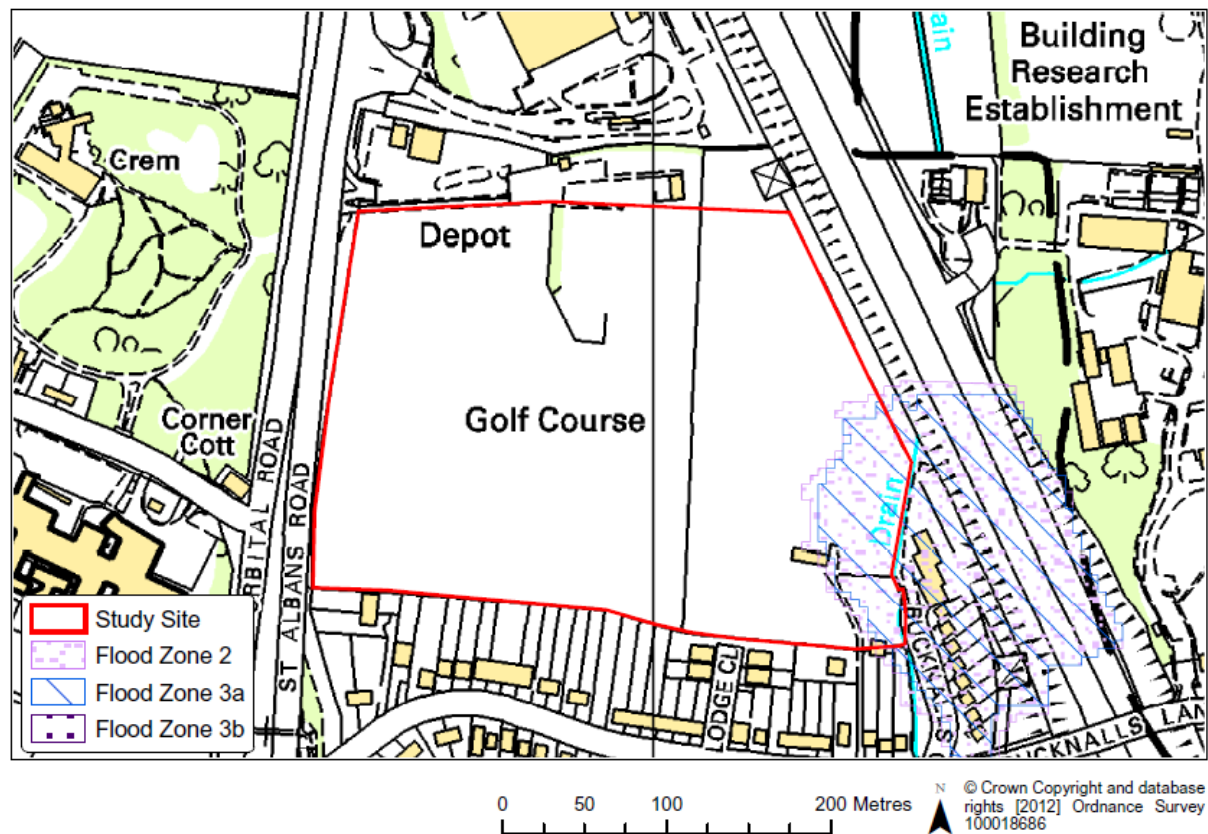
2 South Tolpits Lane, Rickmansworth



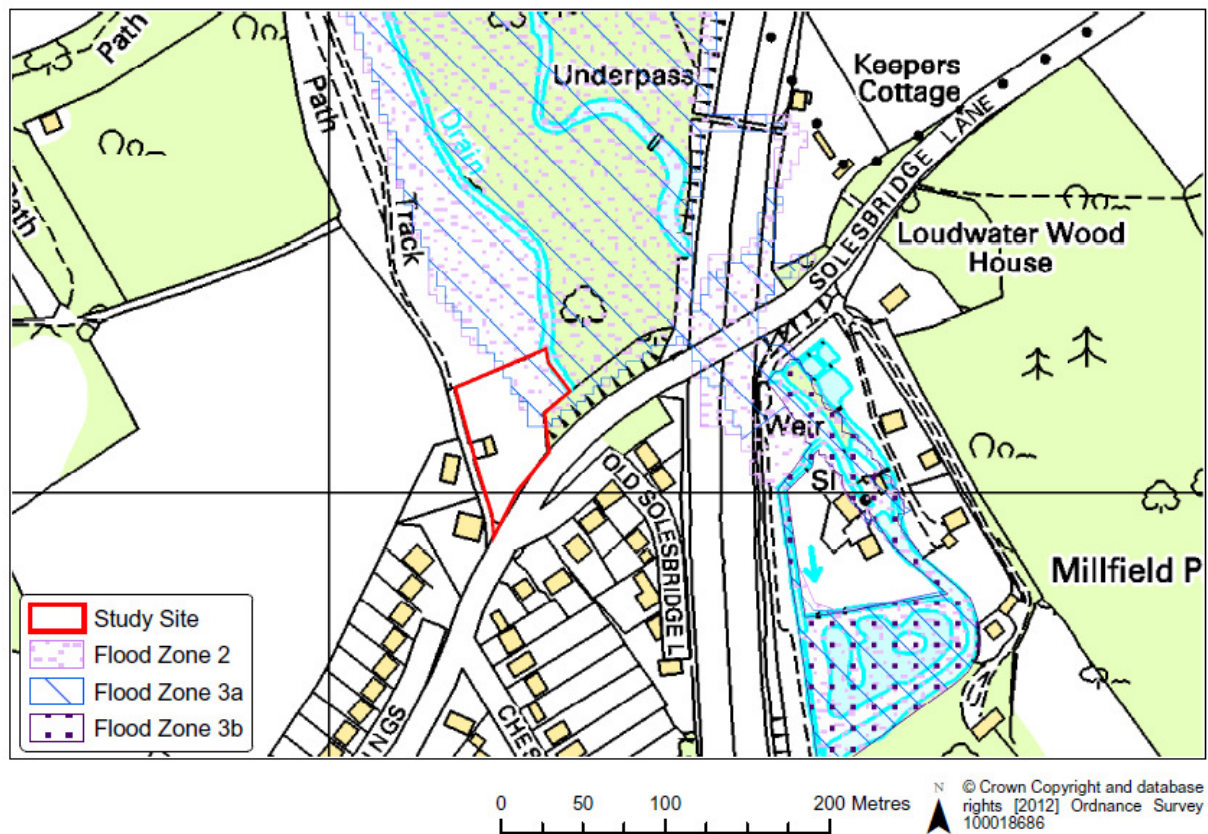
3 Delta Gain, Carpenders Park



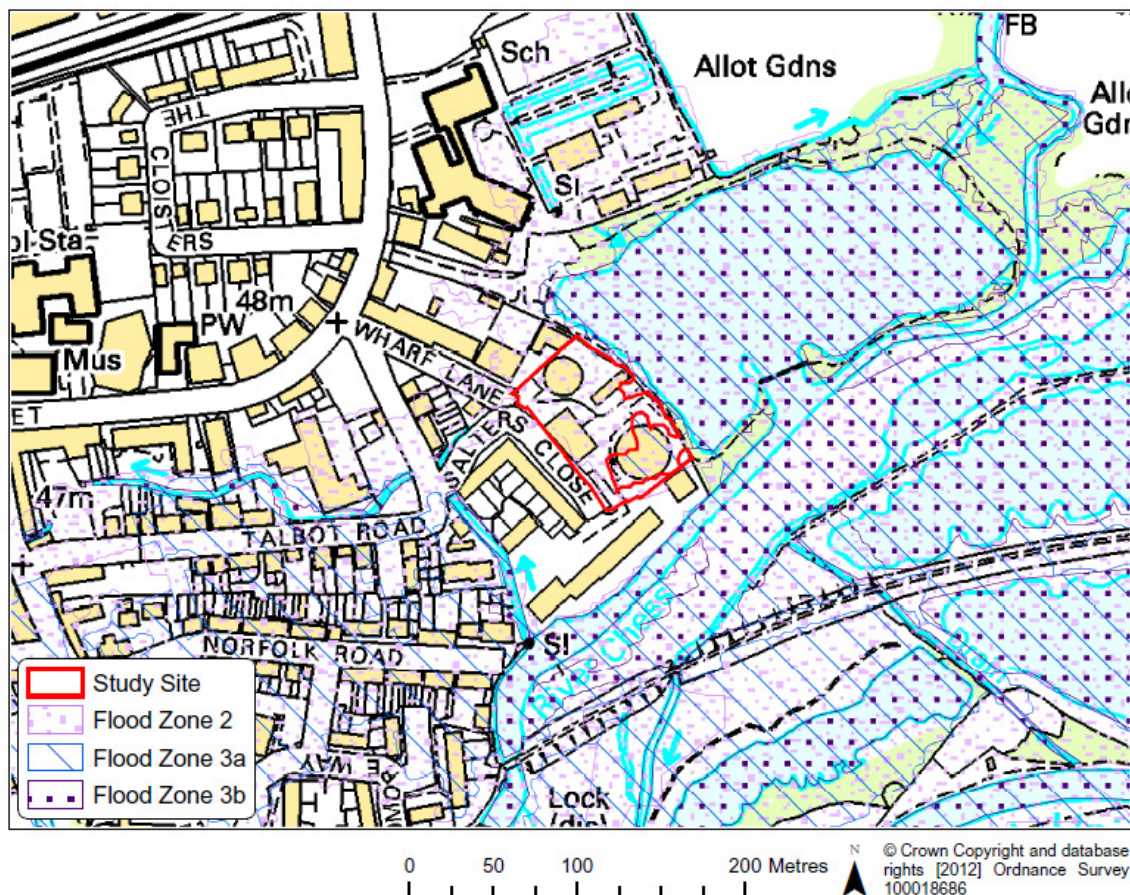
4 Fairways Farm and Penfold Golf Course, Garston



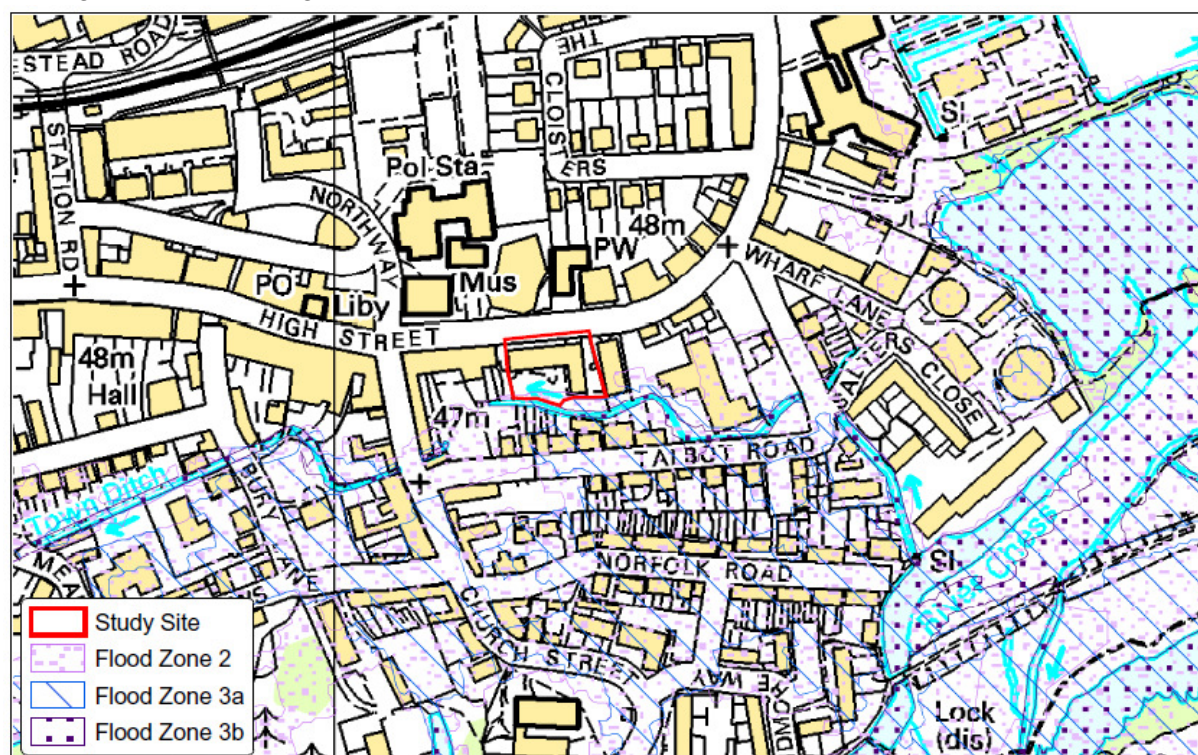
5 The Barn, Solesbridge Lane, Chorleywood



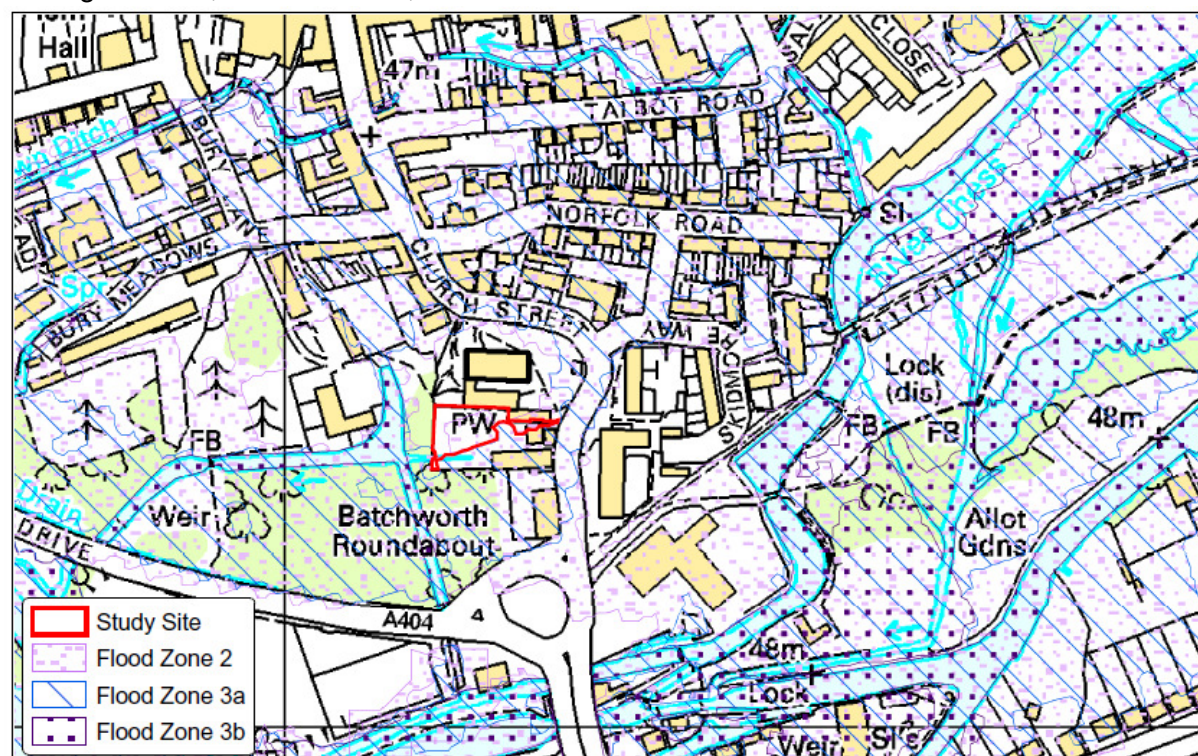
6 Gas Works, Salters Close, Rickmansworth



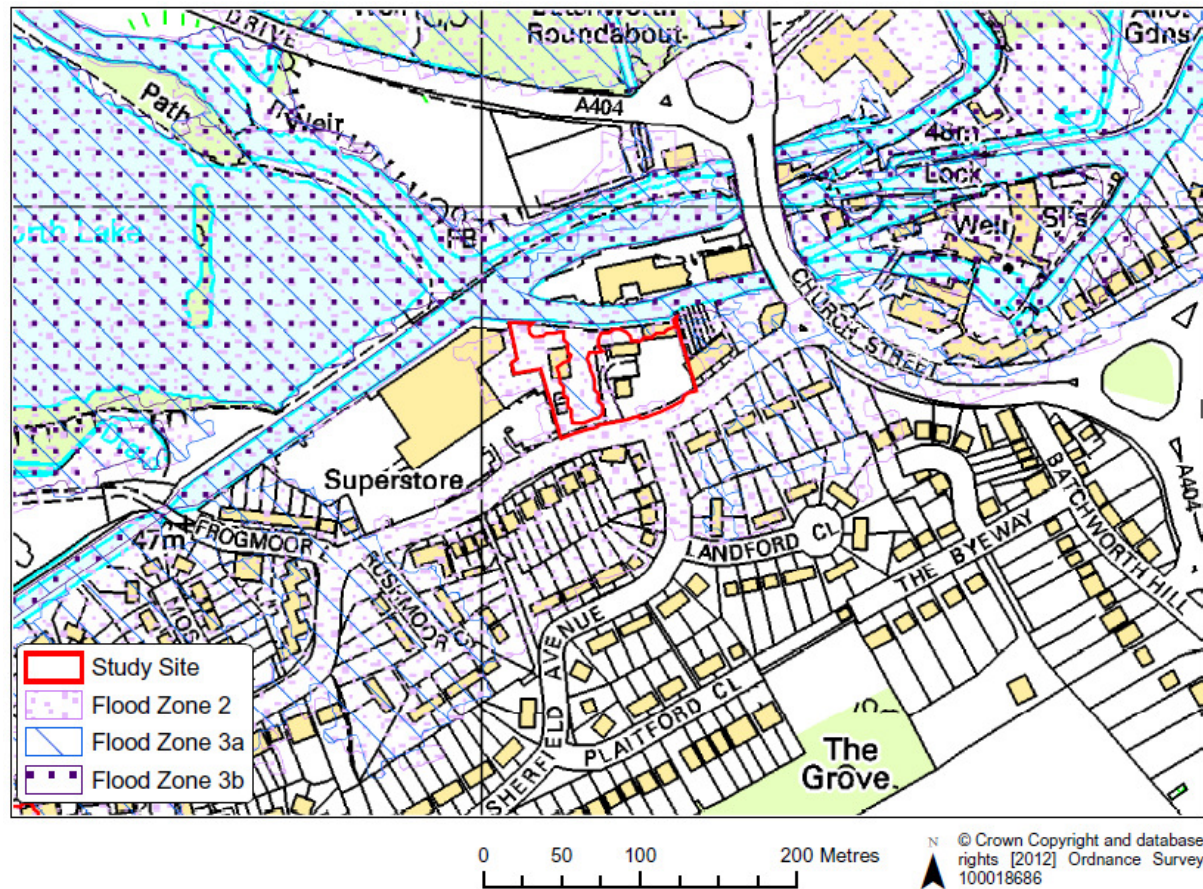
7 Langwood House, High Street, Rickmansworth



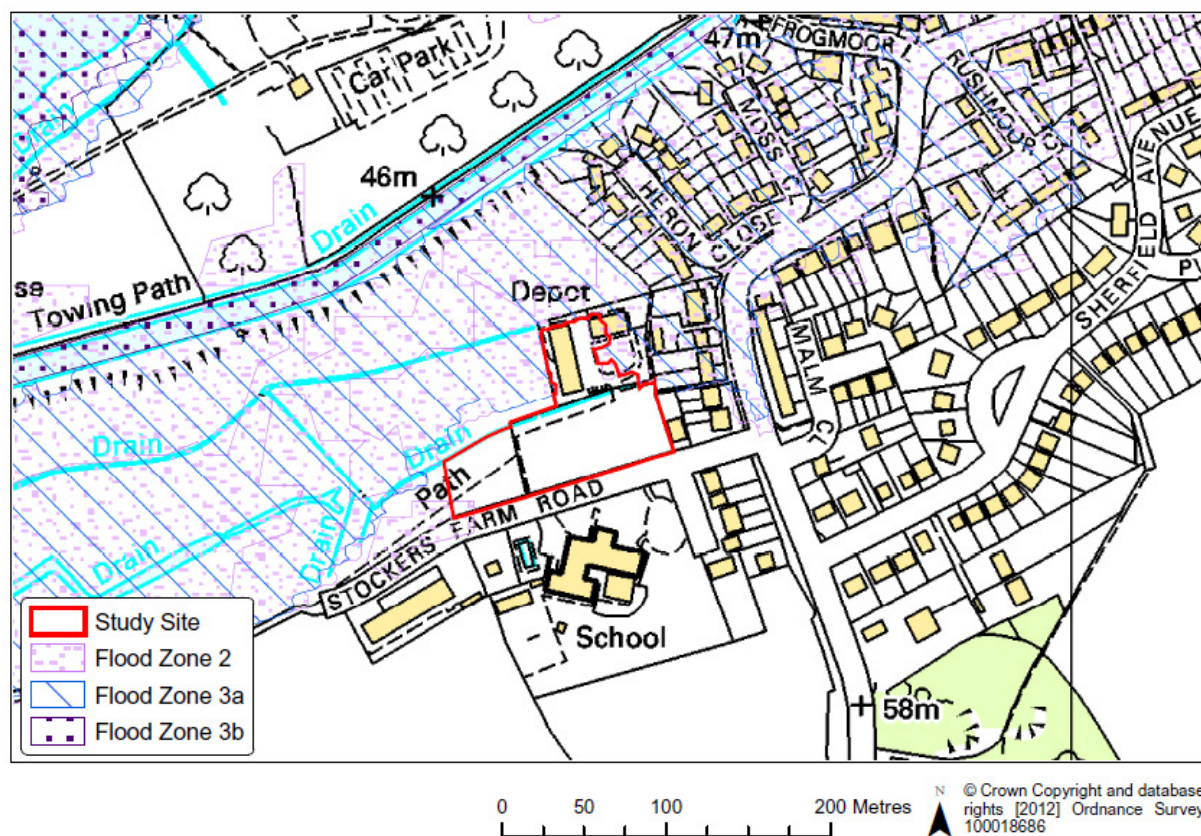
8 Bridge Motors, Church Street, Rickmansworth



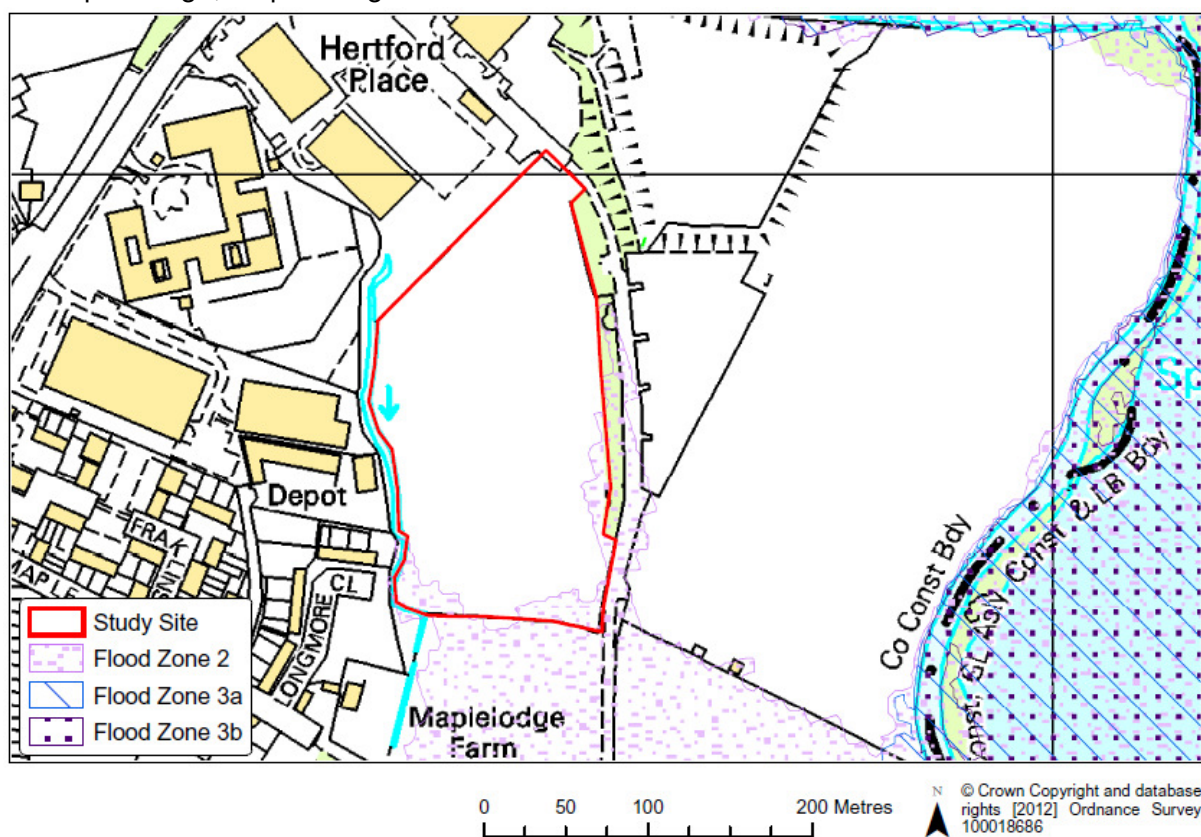
9 Depot, Harefield Road, Rickmansworth



10 Depot, Stockers Farm Road, Rickmansworth



11 Maple Lodge, Maple Lodge Close



SS1 Froghall Farm, Maple Cross

