

Level 2 SFRA Site Assessment
Potential Sites along Hurley Brook Tributary

<u>Site ID/Ref</u>	<u>SHLAA Site/ ABD Number</u>	<u>SHLAA Name/ Full Ref</u>	<u>SHLAA LOCAL/ Site Name</u>	<u>Site Description</u>	<u>Flood Depth Assessment</u>	<u>Flood Velocity Assessment</u>	<u>Flood Hazard Assessment</u>	<u>Blockage Scenario</u>	<u>Recommendations</u>
16	Bratton Farm	B5063	Wellington	Site is approximately 65% in Flood Zone 1. Affected on the south western and western side by Flood Zones 2, 3a and 3b.	Depths are generally quite shallow for most of the affected areas (<30cm) though in some localised points the depths range up to 80cm. For each return period depth increases by around 10cm and there are minor differences between the 100 year and climate change events.	Velocities are generally in the order of up to 50m/s for the 20 year event and for each return period this increases by around 10m/s. The difference in velocity is not significant between the 100 year and 100 year plus climate change events. The localised deep areas generally coincide with areas of higher velocity, >1.5m/s.	The flood hazard is generally around the 'danger for most category', though produces a larger 'danger for all' area for 1000 year event. The hazard is not significantly different between the 100 year and 100 year plus climate change scenarios.	n/a	The extent and nature of Flood Zones 3b, 3a and 2 is very similar and the site is generally not susceptible to a major change in flood risk for the climate change event. This site is suitable for development provided that Flood Zones 3b, 3a and 2 remain as undeveloped open space, and if it can be demonstrated that there are no available sites fully in Flood Zone 1. The uniform nature of flood risk between zones 3b, 3a and 2 and the general 'danger for most' flood hazard largely inhibits development within any one of these zones. The recommendations for development in Flood Zone 1 should be followed, with the most vulnerable parts of the development directed towards the eastern side of the site.
68	Land at	Crowdale Road	Bratton	Site is affected almost entirely by Flood Zone 3b. Flood Zones 3a and 2 affect almost the rest of the site.	Depths are typically in excess of 1m, particularly to the north and east of the site, typically increasing by around 10cm for each event. Centre part of site is relatively shallower but still deep (up to 90cm for 20 year).	The velocity of water is relatively slow, generally around 0.2m/s for the 20 year event and increasing to around 50m/s for the 1000 year event. At the southern end of the site there is a significant rise in depth from the 100 year (0.2m/s) to 100 year plus climate change (1.5m/s) event.	For all events the prevalent hazard classification is 'danger for most'.	n/a	The flood hazard, for all return periods, is too high to enable reasonable and adequate mitigation measures. This site should not be developed and alternative sites in lower risk areas should be developed in preference.
81	Land off	Wrockwardine Road	Wellington	Site lies mainly in Flood Zone 1 but is affected on the south eastern tip by Flood Zones 3a, 3a plus climate change and 2. The western side of the access road, Wrockwardine Road, is flooded from all modelled return periods.	The range of depths across all return periods is shallow.	Velocities are very slow; <0.1m/s	The flood hazard is generally 'danger for some' though at the far eastern side the hazard is greater.	n/a	Depths of flooding on the road are up to 1m (but the hazard is low), therefore access/exit will be difficult for some vehicles here (but access/exit to the east is clear). The site is suitable for development provided the flood affected areas remain as open space.
179	Land west, adj. railway	Wellington Road	Admaston	Site lies fully in Flood Zone 1. The railway line to the south of the site is acting as a retaining structure for flood flows from the Hurley Brook Tributary. Drain exist to south of site.	n/a	n/a	n/a	n/a	This assessment has assumed that there are no gaps in the railway line which would allow the passage of flood water on to the site. This should be investigated prior to the identification of this site for development. The FRA for this site will need to investigate the ability of the railway line to hold back water (see para 7.16 of the PPS25 Practice Guide (2006)) and may require breach analysis.
181	Land east, rear	Wellington Road. Donnerville Gardens	Admaston	Site lies fully in Flood Zone 1	n/a	n/a	n/a	n/a	Follow requirements for development in Flood Zone 1.
182	Land west, opposite	Wellington Road, Donnerville Gardens	Admaston	Site lies fully in Flood Zone 1. Drain exists along northern boundary.	n/a	n/a	n/a	n/a	A development easement from the top of the banks of the drain and the Hurley Brook Tributary should be negotiated with the EA (typically 8m). Follow requirements for development in Flood Zone 1.
183	Land south/east	Shawbirch Road/Admaston Spa	Shawbirch	Site is almost entirely in Flood Zone 1, affected marginally by Flood Zones 3b, 3a and 2 from Hurley Trib (the extent of these events is almost the same in this area). For the 1000 year event, flood water from Hurley Brook finds its way to the drain on the eastern side of the site and encroaches a small area.	Negligible impact on site from Hurley Tributary. Depth of 1000 year event along drain is very shallow, 10-20cm	Negligible impact on site from Hurley Tributary. The maximum depth of 1000 year event along drain is 1.5m/s but generally the water is quite slow.	Negligible hazard on site from Hurley Tributary. Hazard along drain for 1000 year event is low, 'danger for some'.	Part of this site is affected along the eastern edge by flooding from the Hurley Brook when a blockage scenario is run. The extent of flooding is slightly less than the 1000 year event confirming the recommendation to leave the affected part of the site as open space. The depth of flooding within the affected area is shallow (<30cm) and velocities are slow, typically <0.5m/s. The flood hazard is low, with 'danger for some.'	A development easement from the top of the banks of the drain and the Hurley Brook Tributary should be negotiated with the EA (typically 8m). The north eastern corner of the site (affected during the 1000 year event) should ideally be left as open space. This area could be developed for housing if it can be demonstrated that there are no other sites fully in Flood Zone 1, given the low probability and flood hazard, though the housing in this area would need appropriate raised floors (see recommendations for development in Flood Zone 2). Follow requirements for development in Flood Zone 1.

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184	Land east/south	Wellington Road/Spa Crescent	Admaston	Site lies almost entirely in Flood Zone 1, with negligible parts of the eastern edge of site falling in Flood Zones 2, 3a and 3b (the extent of these events is almost the same in this area). Drain exists along southern boundary.	Negligible impact on site	Negligible impact on site	Negligible hazard on site	n/a	A development easement from the top of the banks of the drain and the Hurley Brook Tributary should be negotiated with the EA (typically 8m). Follow requirements for development in Flood Zone 1.
380	Land west/north	Brandon Avenue/Shwbirch Road	Shawbirch	Site lies fully in Flood Zone 1	N/A	N/A	N/A	n/a	Follow requirements for development in Flood Zone 1.
381	Land east	Brandon Avenue	Shawbirch	Over 50% of site is affected by Flood Zone 3b. Flood Zones 3a and 2 affect most of site, with only the part of the site which protrudes to the west falling in Flood Zone 1.	Significant depths occur at the north eastern end of the site (>2m) which generally increase by around 10cm for each event. Depths are generally shallower at the centre of the site (up to 30cm).	The north eastern part of the site is slow, only with general velocities of up to 0.1m/s for all events. The southern half of the site has comparatively very fast water for each return period.	The prevalent hazard category affecting this site is 'danger for some' although for the higher return periods the hazard at the north of the site and along the eastern side is 'danger for all'. There is minimal difference between the 100 and 100 plus climate change events.	n/a	The hazard within Flood Zones 3b, 3a and 2 is generally high and the nature of the site means there are only small 'slithers' in Flood Zone 1 which could be developed. It is recommended that alternative sites are considered in preference to this one. The protruding part at the centre of the site could be developed as it lies in Flood Zone 1 (follow requirements for development in Zone 1), though the most vulnerable parts of the development should be located to the west.
395	Land west of Tee Lake	Donnerville Close	Wellington	Site lies mainly in Flood Zone 1 but is affected by flooding from Hurley Brook for the 1000 year event, along the eastern side of the site where the drain exists.	Flooding from the Hurley Brook 1000 year is generally shallow (10-20cm) but at the northern tip of the site is rather deeper (~90cm).	The velocity is generally 0.3-0.7m/s and only exceeds 1m/s in a few small areas.	The flood hazard is generally low, 'danger for some'.	Part of this site is affected along the eastern edge by flooding from the Hurley Brook when a blockage scenario is run. The extent of flooding is slightly less than the 1000 year event confirming the recommendation to leave the affected part of the site as open space. The depth of flooding within the affected area is shallow (<30cm) and velocities are slow, typically <0.5m/s. The flood hazard is low, with 'danger for some.'	The site is suitable for development provided the flood affected areas can be left as open space, which should be achievable given the size. Follow requirements for development in Flood Zone 1.
424	Land off	Admaston Road/Donnerville Gardens	Wellington	Site lies approximately 90% in Flood Zone 1, with Flood Zones 3b, 3a and 2 affecting site through the centre where the Hurley Tributary flows. There is very little difference between each return period.	There is very little difference between the depths for each return period and generally they are very shallow (<30cm). On the left bank, as the watercourse flows out of the site, the depths are rather deeper, up to 90cm.	There is very little difference in velocities between each return period. Velocities are closest near the channel (~0.4-0.9m/s) with peripheral areas up to 0.2m/s.	The flood hazard is generally low, 'danger for some', though for the 1000 year event the hazard is higher to the north of the watercourse as it leaves the site.	n/a	The site is suitable for development provided the flood affected areas can be left as open space, which should be achievable given the size. Follow requirements for development in Flood Zone 1.
656	St Patricks Primary School	North Road	Wellington	Site lies mainly in Flood Zone 1 but is affected on the south western corner by flooding from the 100 year plus climate change and 1000 year events from Hurley Brook.	Depths from the 1000 year are minimal, generally (10-20cm).	The south western corner has the fastest velocities; around 1m/s for the 100 year plus climate change event and 1.5m/s for the 1000 year event.	The hazard for both the 100 year plus climate change and 1000 year events is low, 'danger for some'.	The site is affected on the south western corner by the 100 year event when a blockage is applied to the culvert on the Hurley Brook. This reinforces the recommendation to leave the parts of the site affected by flooding as open space. The depth of flooding is shallow (<30cm) and velocities are generally <1.0m/s. The flood hazard is low, with 'danger for some.'	The south western corner of the site should ideally be left as open space. This area could be developed for housing if it can be demonstrated that there are no other sites fully in Flood Zone 1, given the low probability and flood hazard, though the housing in this area would need appropriate raised floors (see recommendations for development in Flood Zone 2). Follow requirements for development in Flood Zone 1.

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Cemetery Site 3	(Also part of site 395)		Land at Donnerville Close, Wellington	Site lies mainly in Flood Zone 1. The Hurley Tributary flows along the western boundary of the site and as such, is marginally affected by Flood Zones 2, 3a and 3b. The difference between the extent of the modelled Flood Zones, particularly between the 100 year and 100 year plus climate change events, are minimal.	Depths for all return periods are generally shallow.	Velocities for all return periods are quite fast, especially with close proximity to the channel.	The flood hazard for all return periods is generally low, meaning 'danger for some'.	n/a	The use of the site as a cemetery would only be appropriate if the flood-affected areas remain free of burials. Further, it is recommended that a suitable grave should: <ul style="list-style-type: none"> • be located more than 10m from the edge of Flood Zone 2 and more than 50m from a well, borehole or spring supplying potable water for human consumption; • have no standing water at the bottom when it is first dug • not be dug in very sandy soil; • be deep enough to prevent foraging animals from disturbing the body.