EH10 - SAWB3, Sawbridgeworth: South of West Road					
OSNGR: 547617,215113	Area: 9.792997		Greenfield		
Flood Zone Coverage:	**FZ3b** 0.36%	**FZ3a** 0.09%	**FZ2** 1.76%	**FZ1** 97.79%	

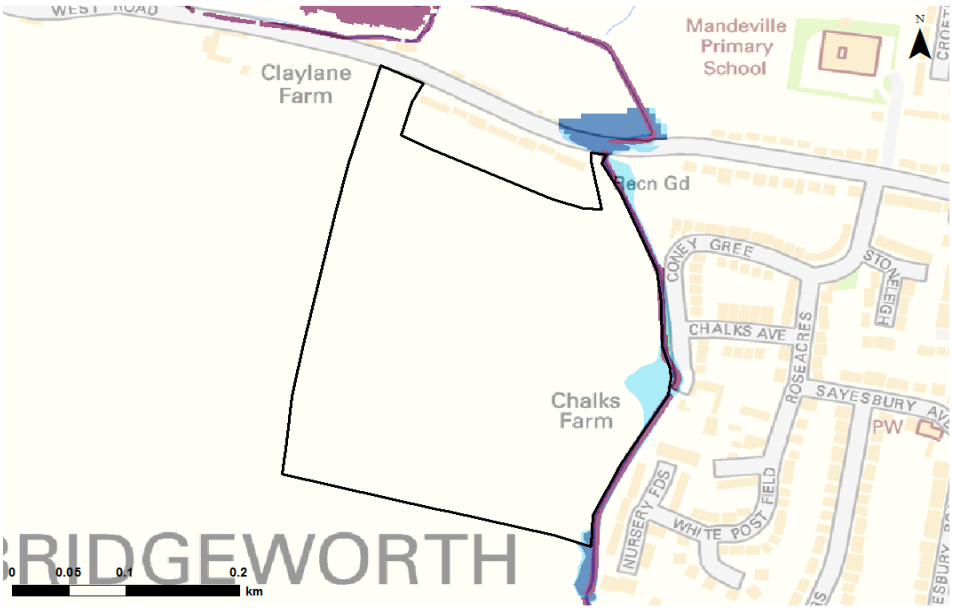
Proposed Development Details:
175 homes and green space.

Exception Test Required?
Unlikely, as the majority of the site is located in Flood Zone 1.

NPPF Guidance:
• For development proposals on sites comprising one hectare or above in Flood Zone 1 the vulnerability of flooding from other sources as well as from river flooding should be incorporated into a FRA.
• The potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new developmenton surface water run-off should be considered.
• Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development and through appropriate sustainable drainage techniques.

Sources of Flood Risk:
A very small area of the site is at risk of fluvial flooding from an unnamed watercourses located just outside of the eastern site boundary. The vast majority of the site is on higher ground located in Flood Zone 1 and therefore is at little risk of fluvial flooding. The site is at limited risk of surface water flooding adjacent to the unnamed watercourse along the western site boundary.

Flood Zone Map



The Flood Zones in this map are derived from from existing model results from the Stort Tributaries modelling (Sawbridgeworth Brook). They use the 20-year extent as FZ3b, the 100-year extent as FZ3a, and the 1,000-year extent as FZ2.

Potential Site Allocations
Council boundary
Flood Zone 3b
Flood Zone 3a
Flood Zone 2

Climate Change Map

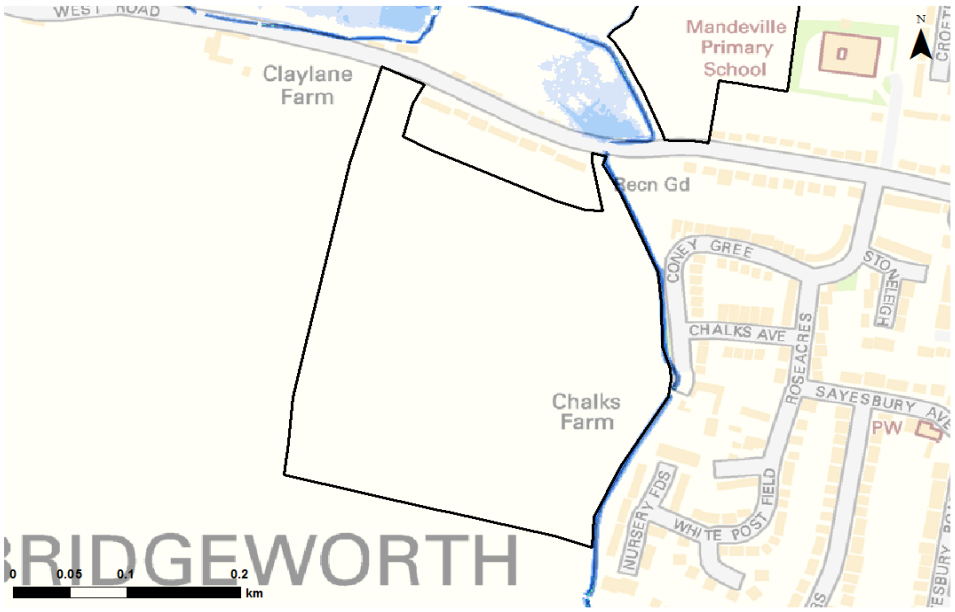
Climate change was modelled for the 2080s epoch, applying the following climate change factors to the 100-year flow: 25%, 35% and 70%.
The map above shows the 100-year + 70% climate change scenario, therefore representing a 'worst case'.

Potential Site Allocations
Flood Zone 3 with Climate Change
Council boundary

Surface Water Map

Potential Site Allocations
Council boundary
uFMfSW* 30-year Extent
uFMfSW* 100-year Extent
uFMfSW* 1,000-year Extent

Depth Map



This velocity map is derived from the existing Environment Agency Stort Tributaries modelling (Sawbridgeworth Brook)and represents the 100-year event

Potential Site Allocations
Council boundary

Depth (m)

0 - 0.10	0.50 - 1.00	2.00 - 2.50	3.50 - 4.00
0.10 - 0.50	1.00 - 1.50	2.50 - 3.00	>4.00
	1.50 - 2.00	3.00 - 3.50	

Velocity Map

This velocity map is derived from the existing Environment Agency Stort Tributaries modelling (Sawbridgeworth Brook) and represents the 100-year event

Potential Site Allocations
Council boundary

Velocity (m/s)

0 - 0.2	0.2 - 0.5	1.0 - 2.0
	0.5 - 1.0	> 2.0

Hazard Map

This hazard map is derived from the existing Environment Agency Stort Tributaries modelling (Sawbridgeworth Brook) and represents the 100-year event

Potential Site Allocations
Council boundary

Hazard Rating

Very low hazard - caution
Danger for some
Danger for most
Danger for all

SuDS & the development site:		
SuDS Type	Suitability	Comments
Source Control		Most forms of source control are likely to be suitable.
Infiltration		Mapping suggests low permeability at the site with infiltration likely to be suitable. A site investigations should be carried out to assess potential for drainage by infiltration.
Detention		Mapping suggests that the site slopes are suitable for all forms of detention.
Filtration		All filtration techniques are likely to be suitable. If the site has contamination issues, a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows. If the site has contamination issues, a liner will be required.

The site is not designated by the Environment Agency as previously being a landfill site.

The site is located with a Source Protection Zone. As such infiltration techniques should only be used where there are suitable levels of treatment although it is possible that infiltration may not be permitted. Proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints

Drainage strategies should demonstrate that an appropriate number of treatment stages have been delivered. This depends on the factors such as the type of development, primary source of runoff and likelihood of contamination. Guidance should be sought from LLFA and other guidance documents such as the CIRIA SuDS Manual (C753).

Flood Defences:

There are no flood defences at this site.

Flood Warning:

This site is is not currently covered by a Flood Warning Area at the moment but is partly covered by 'The River Stort, Stansted Brook and their tributaries from Clavering to Hoddesdon including Stanstead Mountfitchet, Bishops Stortford, Sawbridgeworth and Harlow ' Flood Alert Area (062WAF51Stort).

Access & Egress:

Access and egress to the site is possible via West Road and Coney Green. Both of these roads are impacted by surface water flooding according to uFMfSW. Given that the site is shown to be significantly impacted by fluvial flooding to the south, consideration is needed as to how safe access and egress can be achieved to the whole site in times of flood.

Climate Change:

Climate change mapping indicates the following impacts for the future:

• Increased storm intensities.

• The increase in Flood Zone 3a outline with differing climate change allowances is minimal within the site boundary.

• The floodplain of the unnamed drain appears to be fairly constrained within this area; with 70% climate change allowance the flood outline is similar to Flood Zone 2. It may, however, increase the depth, velocity and hazard of flooding in the area affected.

• Climate change may also increase the extent, depth and frequency of surface water flooding.

Implications for Development:

•Use of the Sequential approach to development means, given the size of the site, development can be placed away from the Flood Zones, with the area affected by the Flood Zones left undeveloped.

• Access and egress routes are at risk from surface water flooding; in order to pass the Exception Test, development will need to ensure that safe access and agress can be provided for the lifetime of the development.

• Broadscale assessment of suitable SuDS has indicated a number of different types may be possible.

• Development should also ensure that there is no increase in flood risk that may exacerbate flooding to access/ egress routes

• The site is not covered by the Environment Agency's Flood Warning Service. However, if development is placed outside of the Flood Zones, then access to a Flood Warning would not be required.

• The site is not known to benefit from any flood defences. Given the location of the watercourse against the site, it is unlikely the site could be used to implement strategic solutions to alleviate flood risk elsewhere in the catchment. This could be investigated further at site-specific level.

Guidance for Developers:

• At the planning application stage, a site-specific Flood Risk Assessment will be required if any development is located within Flood Zones 2 or 3 or greater than 1ha in size. Other sources of flooding should also be considered.
• Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage, to determine requirements for a FRA and to establish an approach to consider climate change in line with latest guidance.
• Safe access and egress will need to be demonstrated; currently some access and egress routes are affected by surface water flooding and fluvial flooding from the 1000year event .
• The peak flows of the unnamed watercourse should be considered when considering drainage.
• Resilience measures will be required if buildings are situated in the flood risk area.
• Assessment for runoff should include allowance for climate change effects.
• New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
• New development must seek opportunities to reduce overall level of flood risk at the site, for example by:
    o Reducing volume and rate of runoff
    o Relocating development to zones with lower flood risk
    o Creating space for flooding.
    o Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
• Onsite attenuation schemes would need to be tested against the hydrographs for any unnamed watercourses to ensure flows are not exacerbated downstream within the catchment.