

4. Technical Assessment of Flood Risk

Assessment Methodology

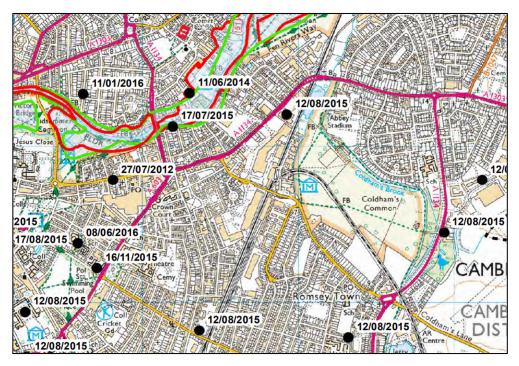
- 4.1. This report has also been prepared in accordance with the advice and requirements prescribed in current best practice documents relating to management of flood risk in development set out in BS8533^{vi} and the EA's National Standing Advice on Development and Flood Risk.
- 4.2. BS8533 and PPG guidance sets out that FRAs should consider climate change effects upon non-residential development proposals over a 75 year lifetime of development.

Fluvial & Tidal Flooding

Historic Flooding

4.3. Based upon published records, there is no history of fluvial flooding incidents at or immediately adjacent to the Site. Appendix D7 of the Level 1 SFRA only indicates one incident of flooding several hundred metres to the north of the Site. Refer to mapping extract in Figure 4.

Figure 4: SFRA Historic Flooding Map Extract







Climate Change Effects

4.4. Appendix D4 of the Level 1 SFRA confirms that the risk of fluvial flooding remains very low at the Site even taking into account the 1 in 100 annual probability event with an overly onerous 65% uplift in peak flood flows to represent future climate change effects. Refer to mapping extract in Figure 5.

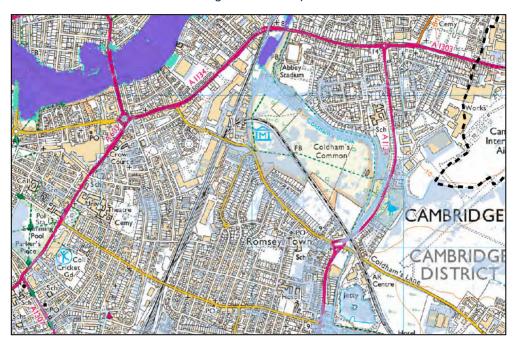
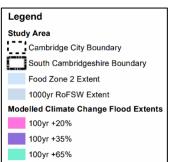


Figure 5: SFRA Modelled Climate Change Extents Map Extract



Surface Water Flooding & Overland Flow

- 4.5. SFRA mapping records various incidents of Surface Water Flooding (Pluvial) in Cambridge. However, no incidents of Surface Water Flooding are reported at, or in close proximity to, the Site.
- 4.6. Mapping presented within the Cambridge and Milton Surface Water Management Plan Detailed Assessment and Options Appraisal Report (SWMP) indicates that the Site lies outside (to the south west of) the designated boundary of the 'Cherry Hinton Wetspot', an area shown to be at elated risk of surface water flooding. SWMP mapping largely mimics the EA and SFRA mapping.
- 4.7. Surface water modelling has been undertaken by the EA in order to seek to establish areas at risk of surface water flooding based upon latest hydrological techniques and surface terrain data.



Extracts from the Long Term Flood Risk Information (LTFRI) Surface Water Flood Maps are presented in Figure 6 - 10 which confirms that the majority of the Site is designated as being at a 'very low' risk of surface water flooding.

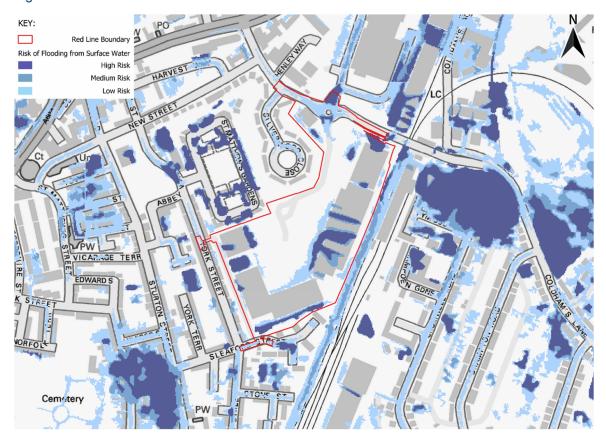


Figure 6: Surface Water Flood Extents

High Risk – Chance of flooding greater than 1 in 30

Medium Risk – Chance of flooding between 1 in 30 and 1 in 100

Low Risk – Chance of flooding between 1 in 100 and 1 in 1000

Very Low Risk – Chance of flooding less than 1 in 1000

- 4.8. For surface water events with a chance of occurrence of between 1 in 30 and 1 in 100, flood depths across localised lowest lying car park areas and along lowered walkways between retail units are predicted to remain below 300mm and can be classed as shallow surface 'ponding'. Refer to Figure 7 and Figure 8.
- 4.9. Even for the most significant surface water events with a chance of occurrence of between 1 in 100 and 1 in 1000, flood depths across a narrow strip of the lowest lying car park areas and along lowered walkways between retail units are predicted to remain below 300mm. Only very localised external areas at the very north eastern corner of the Site and within the south eastern extent of the car park are predicted to flood depths just exceeding 300mm. Refer to Figure 9 and Figure 10.



- 4.10. No significant overland flood flow pathways across the Site are evident from published mapping or consideration of local topography. Movement and velocity of flood flows in a north easterly direction across the Site surface are predicted to be minor as they are interrupted and managed by the presence of topographical valleys comprising channel drainage. Any residual overland flood flows are naturally conveyed northwards away from the Site following the natural topography. Refer to Figures 7 10.
- 4.11. Track levels along the railway are generally at a slightly lower elevation than the Site and therefore naturally provide a preferential flow pathway for runoff generated from off-site areas to the east.
- 4.12. Highway levels bounding the southern and north-eastern extents of the Site are all at a higher elevation than the Site itself, however, road surfaces are generally cambered away from the Site and intermediate footpath levels are elevated thus providing resistance to off-site overland flood flows entering the Site.
- 4.13. Based upon the above, it is considered that the risk of surface water flooding is low at the present day and remaining low over the anticipated lifetime of the Proposed Development incorporating allowances for climate change. This is validated by Appendix D4 of the Level 1 SFRA mapping (refer to Figure 5) which only identifies localised south eastern and north eastern portions of the Site as being at risk of surface water flooding for the 1 in 1,000 year event used as conservative way of representing future climate change effects upon the 1 in 100 year storm event.