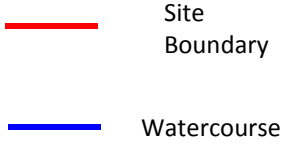
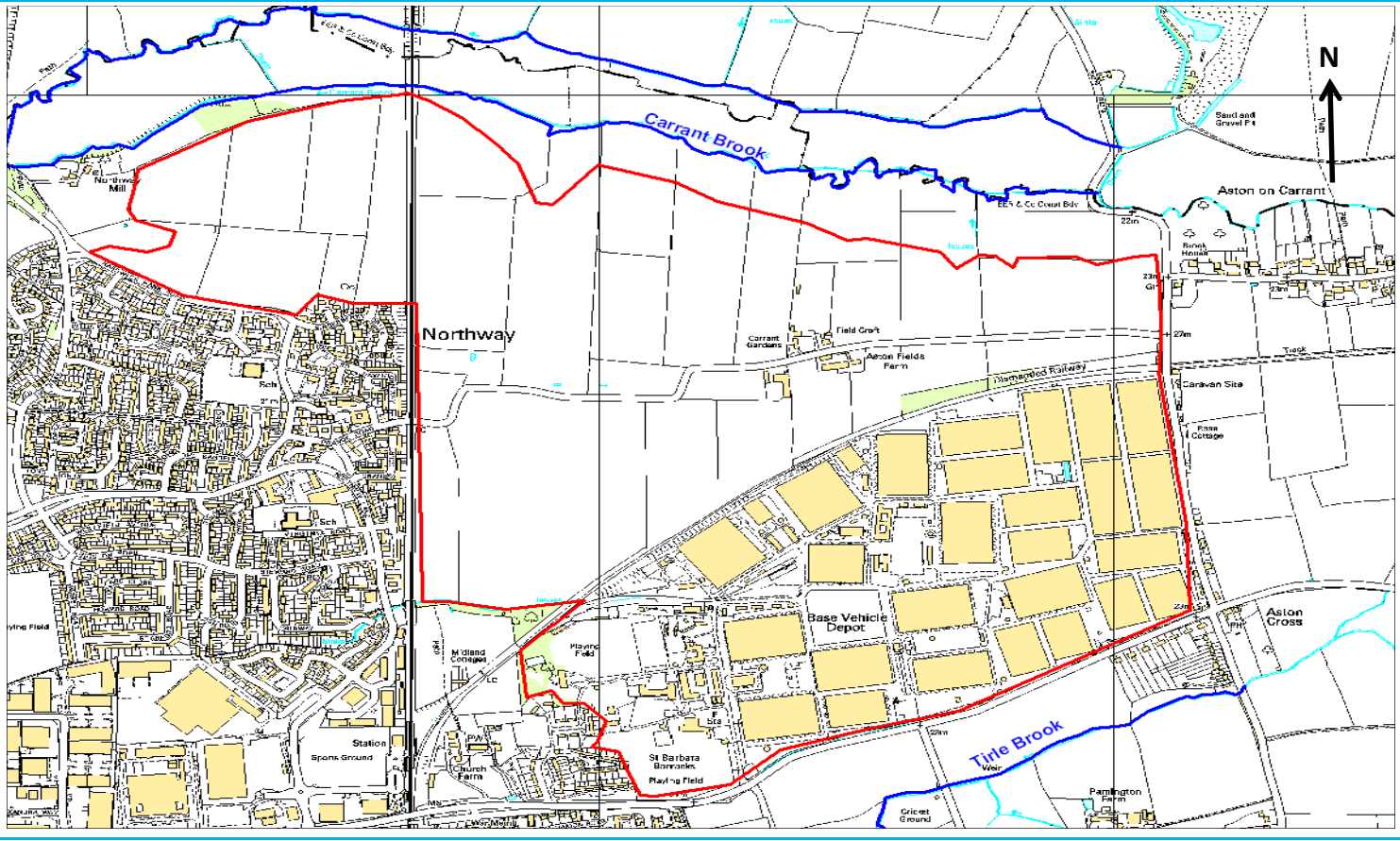


Site Number	T2
Site Name	Land at Ashchurch
Grid Reference	393160 234190
Location Plan 	
Size of site (ha)	212ha
Description of Existing Flood Management Infrastructure (and condition)	NFCDD data not received. No defences identified on site visits.
Existing Land use	The site area is made up of approximately 50% farm land and 50% industrial/military installation. The West Coast mainline railway cuts through the north of the site forming the western boundary in the southern area. The Carrant Brook flows in an easterly direction immediately north of the site. The Tirlle Brook flows south of the site. There is a culverted watercourse a tributary of the Tirlle Brook which flows under the buildings on the site, it leaves the development area in the west. It is assumed that the watercourse then flows along the A46 before changing direction to flow across adjacent development site T3. Its exact location is not known and should be determined prior to the development of the masterplan.
Topography	<ul style="list-style-type: none"> > Ground levels in the east of the site range from 23-26m AOD > Ground levels north of Hardwick Bank Road are the lowest ground levels on site and range from 18-20m AOD > Ground levels in the centre of the site are approximately 23m AOD






Risk Assessment

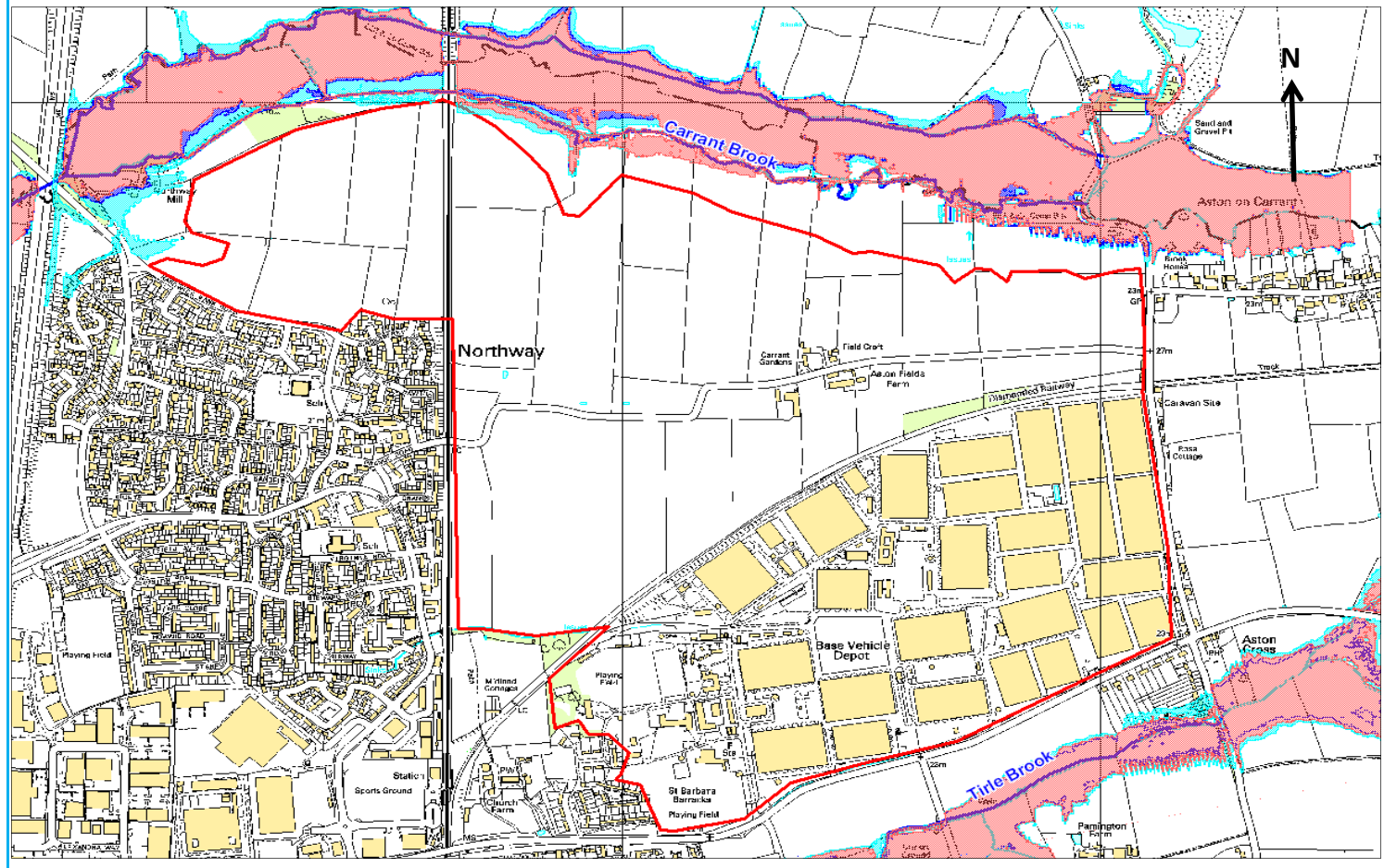
Proportion of the site located in:-
 Flood Zone 1= 0ha
 Flood Zone 2= 0ha
 Flood Zone 3a= 0ha
 Flood Zone 3b=0ha

Flood Risk Suitability Score




5 (Site is fully located in Flood Zone 1)

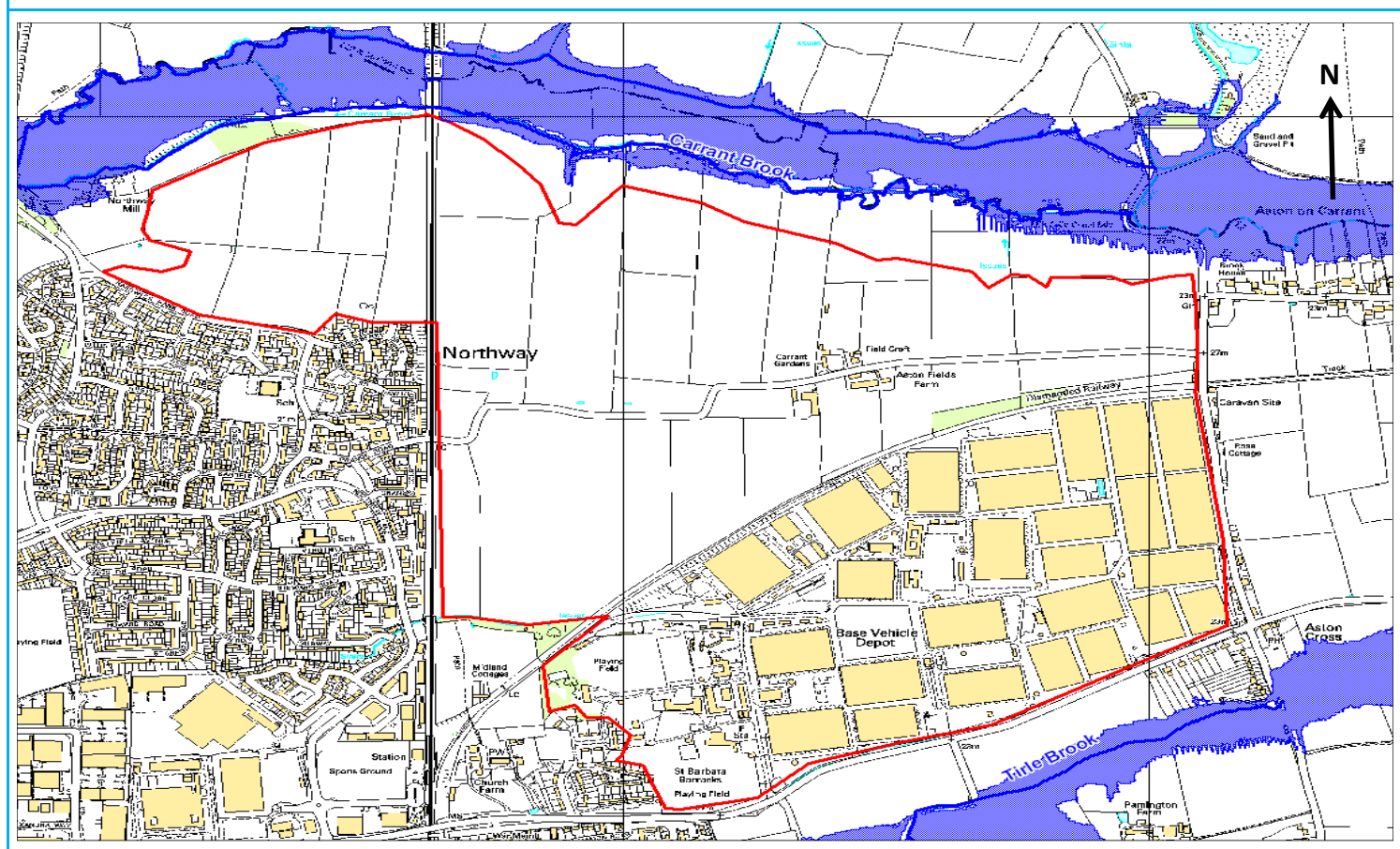
Flood Zones (2012)

-  5% AEP event (3b)
-  1% AEP event (3a)
-  0.1% AEP Event (2)
-  Watercourse
-  Site Boundary

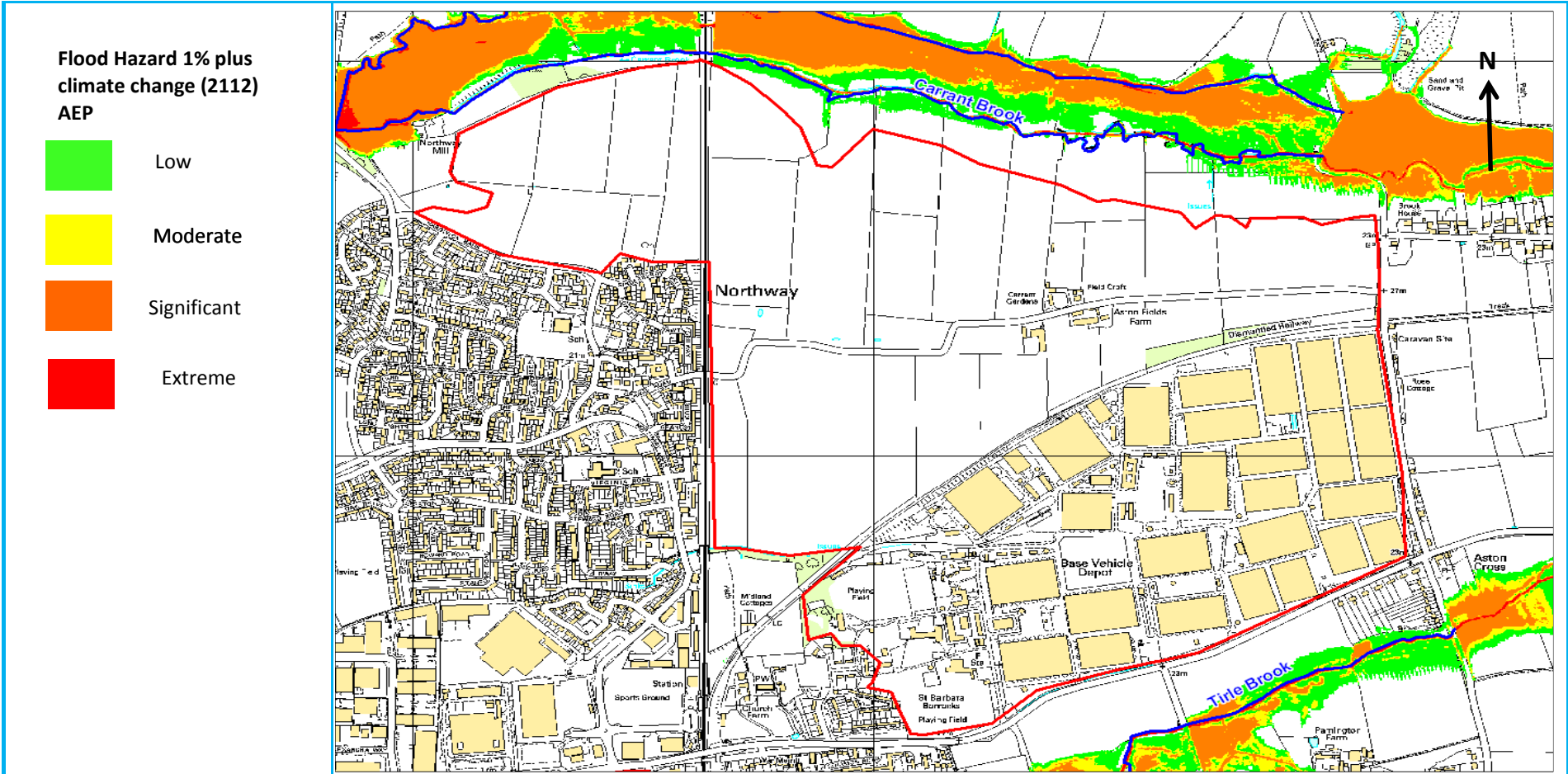


Flood Zones (2112)

-  1% plus climate change AEP
-  Watercourse
-  Site Boundary

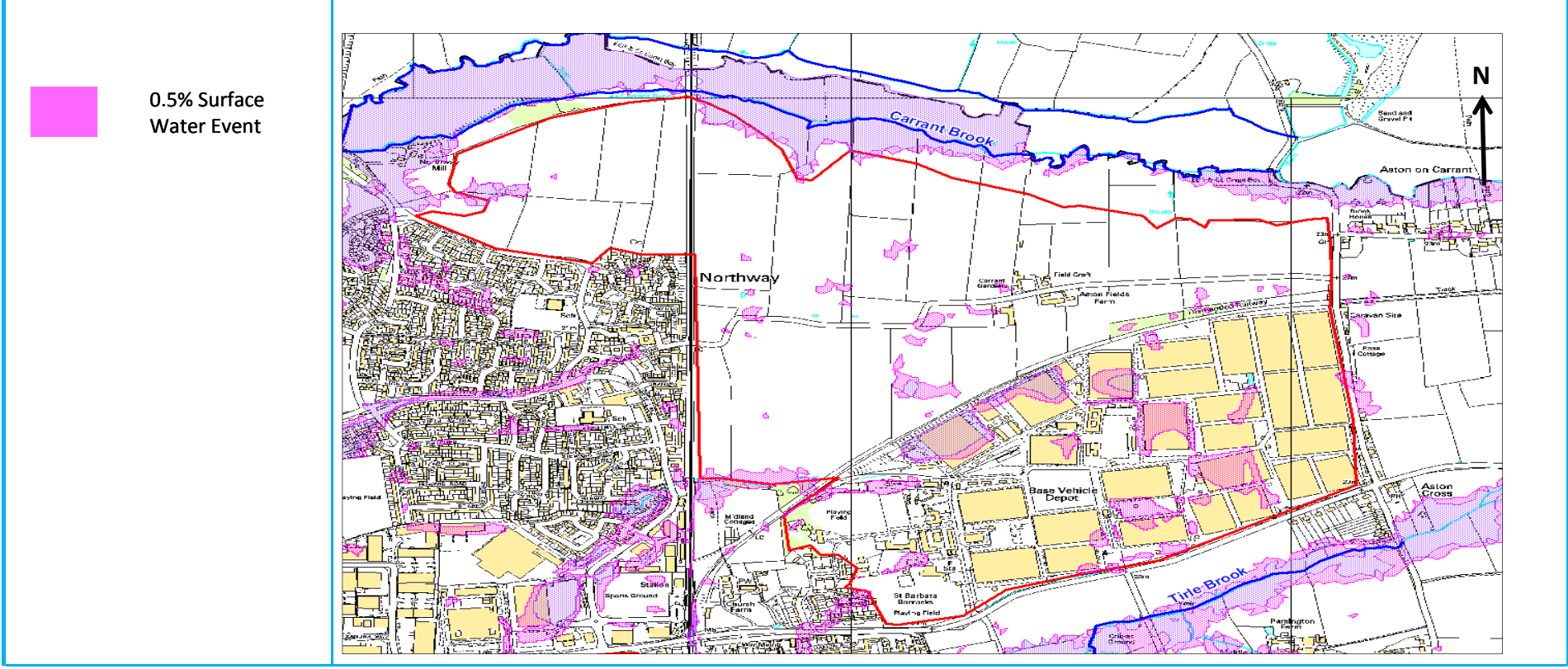



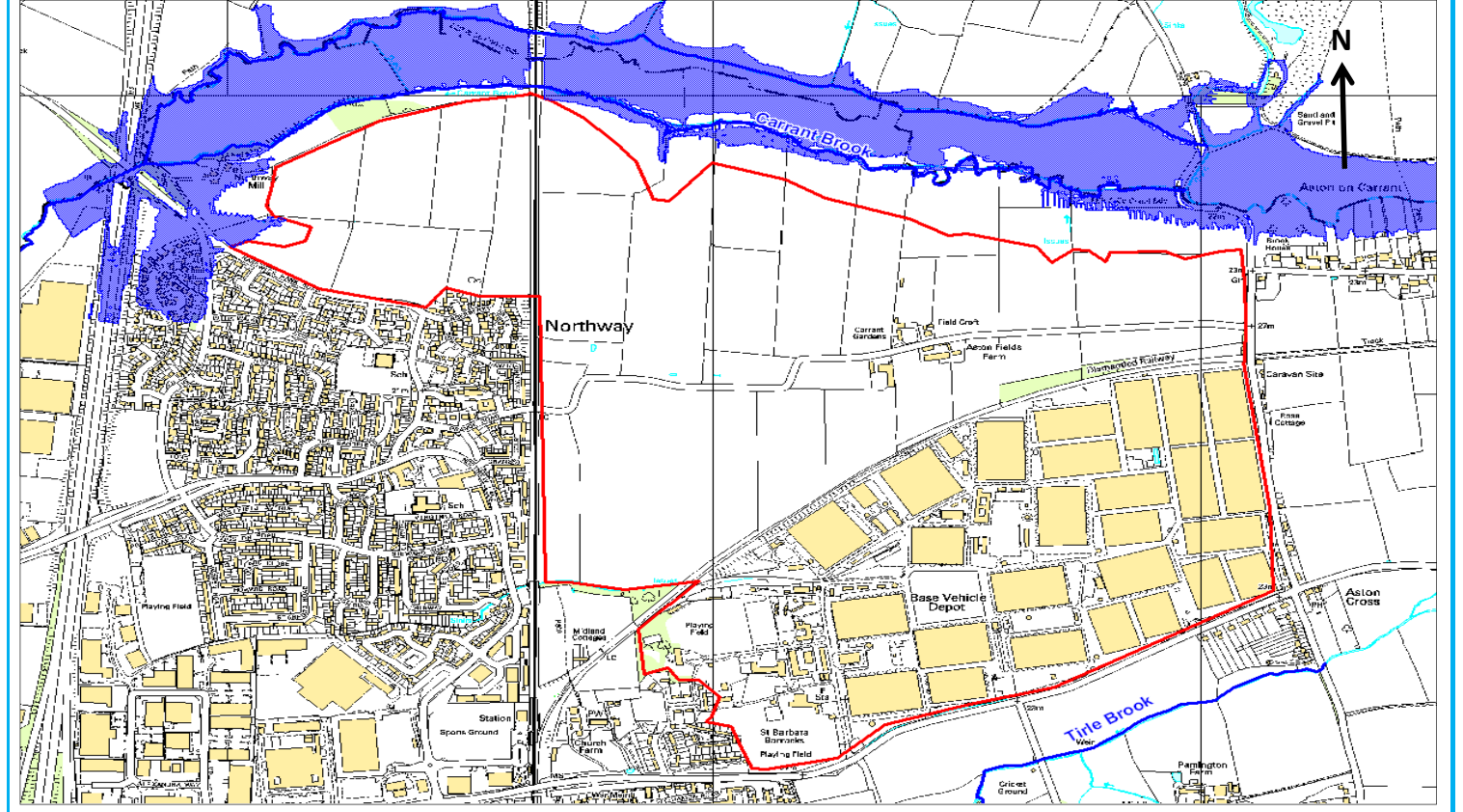

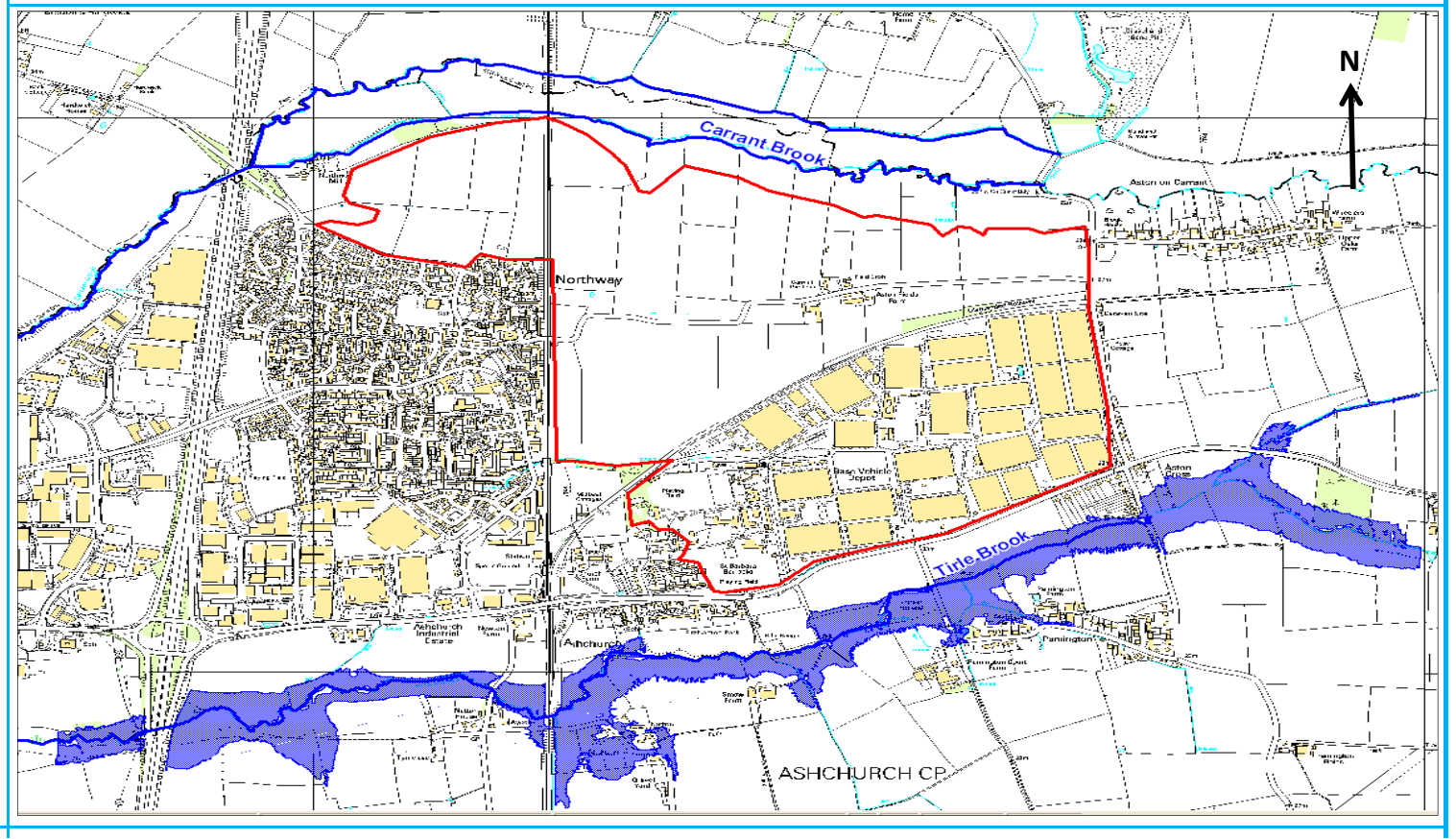
At this site the Actual Risk is the same as the Flood Zone i.e. both are undefended scenarios



Surface Water (Pluvial)

There are pockets of flooding shown across the existing military installation site, and in the centre of the site however depths are predicted to be less than 300mm in most locations. Surface water flows are conveyed by the Carrant and the Tittle Brook.



Groundwater	The site is shown to be susceptible to groundwater flooding, this is likely to be attributed to the presence of River Terrace Deposits in the northern portion of the site (sand and gravel).
Artificial Sources	The site is not shown to be at risk from reservoir flooding
Residual Risk	Blockage on the Carrant Brook in the M5 Culvert (5mx2.5m). The scenario decreased the width of the culvert by 50%.
<p data-bbox="157 341 525 385">Culvert Blockage</p> <div data-bbox="199 445 493 563">  1% plus climate change (2112) culvert blockage </div>	<div data-bbox="525 341 1942 1127">  </div> <p data-bbox="525 1127 1942 1172">Blockage on the Tirlle Brook in the M5 Culvert (5mx4m). The scenario decreased the width of the culvert by 50%</p> <div data-bbox="199 1231 493 1350">  1% plus climate change (2112) culvert blockage </div> <div data-bbox="525 1187 1942 2003">  </div>

Summary of Risk	<p>Detailed modelling has shown that the site is located in Flood Zone 1, the site is not at risk of flooding from either the Carrant Brook or the Tirlle Brook up to the 0.1% AEP event. The site is not shown to be at risk of flooding should a blockage occur in either of the M5 culverts.</p> <ul style="list-style-type: none"> > The site is not at risk from reservoir flooding. There is a risk of surface water flooding in some locations, though these are limited to low lying areas and areas around existing buildings. However, the site is susceptible to groundwater flooding. > In light of the above, a flood risk assessment will be required to support the planning application and it would focus on the management of surface water. There would be no requirement for the site to pass the Sequential or Exception Test as it is located in Flood Zone 1 (lowest risk of flooding). > T2 and T3 are both directly upstream of Tewkesbury town – there is an opportunity to control overall runoff volumes from these sites to benefit downstream properties. T2 and T3 could be developed in parallel and share flood risk management measures. T2 has substantially more development area available and could facilitate a high density of development in T3 if a higher proportion of T2 was used for flood mitigation measures.
Risk Management	
Flood risk management recommendations	<ul style="list-style-type: none"> > The design and layout of the proposed development should seek as much as possible to avoid impacting overland flow routes within the site, which may increase flood risk elsewhere. It may be feasible to undertake land profiling in some areas to manage ponding in low lying areas from surface water flooding. > Opportunities to de-culvert the watercourse on site should be explored and are strongly encouraged. Connected to this is the opportunity to reduce flood risk further downstream at Ashchurch. This should be looked at in detail at the masterplanning stage. > Ground floor levels should be above surrounding ground levels to prevent ingress of surface water runoff.
SUDS Options appraisal	<ul style="list-style-type: none"> > The site is approximately 50% greenfield and any development is likely to result in an increase in surface water runoff, however this can be appropriately managed through the development of a SUDS treatment train for the site. > The site is underlain by Charmouth mudstone which is overlain in the northern part of the site by River Terrace Deposits (sand and gravel). There may be opportunities for some infiltration based SUDS in the river terrace deposits in the north of the site, however Mudstone does not have a high level of permeability. > All SUDS measures are suitable depending on the final layout and results of permeability testing of the insitu soils. It is recommended that infiltration testing is undertaken to determine the suitability of infiltration devices within the site.
Reasonable prospect of compliance with the Exception Test?	<ul style="list-style-type: none"> > The site is fully located in Flood Zone 1 and therefore there is no need to apply the Exception Test.