



Bootle Area Action Plan: Site Sequential and Exception Test Assessment (flood risk)

July 2024

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May 2024: This Sequential Test and Exception Test Assessment was prepared by senior members of Sefton’s planning policy team, including a senior planner (MRTPI) experienced in environmental matters and others also involved in all aspects of the preparation of Bootle Area Action Plan; supported by specialist GIS officers. There was significant input too from Sefton’s Flood and Coastal Erosion Risk Management Team, who support the Lead Local Flood Authority functions of the Council.

The Environment Agency, United Utilities and Sefton Council as Lead Local Flood Authority and Coast Protection Authority were given the opportunity to comment informally on both the draft Strategic Flood Risk Assessment and the draft Sequential Test and Exception Test Assessment.

July 2024: Sequential Test and Exception Test Assessment; finalised by senior members of Sefton’s planning policy team, including a senior planner (MRTPI) experienced in environmental matters and others also involved in all aspects of the preparation of Bootle Area Action Plan. Supported by specialist GIS officers.

The document complements and informs the SFRA Overview Update for Bootle Area Action Plan.

Executive Summary

- ES1 The document is a Sequential Test and Exception Test Assessment of sites in Bootle Area Action Plan. This is the sequential, risk-based approach to the location of development (taking into account all sources of flood risk and the current and future impacts of climate change), as required by paragraph 167 of the National Planning Policy Framework (December 2023). It has been carried out in line with the guidance in the National Planning Policy Framework and national planning practice guidance, also having regard to the SFRAs of the Sefton Local Plan and emerging Liverpool City Region Spatial Development Strategy.
- ES2 There are some data gaps in this SFRA Overview Update for Bootle Area Action Plan, for example indicative susceptibility to groundwater emergence, and a site-specific assessment of the interplay of site-specific issues such as ground conditions and SuDS suitability. However, it is considered that the Sequential Test and Exception Test Assessment is fit for purpose.
- ES3 While this Sequential Test and Exception Test Assessment is for Bootle Area Action Plan, it must be recognised that most of the 58 policies in the 2017 Sefton Local Plan will remain in force within the Bootle Area Action Plan area. This includes Local Plan policy EQ8 'Flood risk and surface water', which will remain the main flood risk policy against which planning applications will be assessed.
- ES4 Bootle Area Action Plan sets a sustainable regeneration context for the plan area, focussing only a small part of the Borough of Sefton. The plan area reflects Bootle's industrial past, which includes a legacy of including contaminated, under-used and derelict sites, land and/or buildings in areas that have low land values.
- ES5 The plan identifies 22 (re)development sites; housing and employment sites and Regeneration Opportunity Areas and other areas. Policies set out the framework for development in these areas. The plan also identifies other areas such as green spaces, local centres and primarily residential areas. Other policies set out the approach to best use of resources, affordable housing and housing mix and environmental improvements for example. Part 9 of policy BAAP1 'Design' refers to the need to help mitigate and adapt to the impact of climate change, including reductions to surface water run-off rates and volumes and other sources of flood risk.
- ES6 This focus on sites which are part of Bootle's industrial legacy, many of which are means that, in practice, these sites do not have sequentially preferable alternative. Most simplistically, instead the choice is between promoting regeneration opportunities for that site, or leaving it in its current (poor) condition; arguably a time sequence not a location sequence. This was recognised by United Utilities in their comments on the Preferred Options draft Bootle Area Action Plan. This informs the Sequential Test and Exception Test Assessment is for Bootle Area Action Plan.
- ES7 All of the 22 development sites in Bootle Area Action Plan are in Flood Zone 1 for river and tidal flooding, and so in these terms alone the sequential test is passed for all sites and the exception test is not relevant. Looking more widely at all sources of flood risk and set firmly within the regeneration context of the area, all of these sites also pass the sequential test

and exception tests. Many of the sites are brownfield (previously developed) sites, including those which have been derelict, vacant or underused for varying periods of time. As such there are no reasonably available alternative sites within the plan area at a lower risk of flooding.

- ES8 In relation to part a of the exception test, the regeneration context of the plan means that, overall, there are substantive wider sustainability benefits of (re)development of previously developed, vacant, derelict and/ or underused development sites. These include environmental, social and economic benefits.
- ES9 In terms of part b of the exception test, it is assumed that this is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage. This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
- ES10 There are a number of recommendations in the Sequential Test and Exception Test Assessment. The first is that the Sequential Test and Exception Test Assessment should inform the SFRA Overview Update for Bootle Area Action Plan and the identification of development sites in Bootle Area Action Plan.
- ES11 Also it is recommended that for all of the 22 development sites in the Bootle Area Action Plan, careful assessment and consideration of flood risk issues should be made at the detailed design, masterplanning and drainage details stages. This includes surface water flood risk, sewer, groundwater, and, where relevant canal flood risks; currently and taking account of climate change and 'urban creep'. Developers must recognise that these considerations and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
- ES12 Developers should be reflected these other recommendations in their submitted SuDS/ Drainage Pro Forms and Site-specific Flood Risk Assessments. These must be submitted for development on all 22 sites. Development proposals on these sites must be able to show that the surface water and other provisions of Local Plan policy EQ8 'Flood Risk and Surface Water' have been met, including, where reasonably practicable, securing a 20% reduction in surface water run-off rates and volumes. Bootle Area Action Plan policy BAAP1 Design and its explanation reflect this.

1. Introduction

The purpose of this Sequential and Exception Test Assessment

- 1.1 The National Planning Policy Framework¹ is clear that development should be directed development away from areas at highest risk (whether existing or future) of flooding (paragraph 165). It sets out specific requirements which must be followed during the development plan preparation process. These relate to the Sequential Test and, where appropriate, the Exception Test. The National Planning Policy Framework says:

“167. All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. They should do this, and manage any residual risk, by:

a) applying the sequential test and then, if necessary, the exception test as set out below”

168. The aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.

169. If it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied. The need for the exception test will depend on the potential vulnerability of the site and of the development proposed, in line with the Flood Risk Vulnerability Classification set out in Annex 3.

170. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. To pass the exception test it should be demonstrated that: a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and b) 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.

171. Both elements of the exception test should be satisfied for development to be allocated or permitted.

¹ National Planning Policy Framework, December 2023 – see https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf

172. Where planning applications come forward on sites allocated in the development plan through the sequential test, applicants need not apply the sequential test again. However, the exception test may need to be reapplied if relevant aspects of the proposal had not been considered when the test was applied at the plan-making stage, or if more recent information about existing or potential flood risk should be taken into account.”

- 1.2 The purpose of this document is to carry out a Sequential Test and Exception Test Assessment (STETA) of sites in Bootle Area Action Plan. This is the sequential, risk-based approach to the location of development (taking into account all sources of flood risk and the current and future impacts of climate change), as required by paragraph 167 of the National Planning Policy Framework. This will make sure that Bootle Area Action Plan will avoid, where possible, flood risk to people and property, also in line with the National Planning Policy Framework.
- 1.3 While this Sequential Test and Exception Test Assessment is for Bootle Area Action Plan, it must be recognised that most of the 58 policies in the 2017 Sefton Local Plan² will remain in force within the Bootle Area Action Plan area. This includes Local Plan policy EQ8 'Flood risk and surface water', which will remain the main flood risk policy against which planning applications will be assessed.
- 1.4 Bootle Area Action Plan area (833.5 ha) covers only 5.38% of the Borough of Sefton (15,480 ha to mean high water), and about 15.9% of Sefton's population (44,000 people). The plan area is entirely urban and almost all development will take place on sites that are previously developed. There is no coastline in the plan area for example, and no surface watercourses other than the canal. The whole of the plan area is in Flood Zone 1 for river and tidal flooding.
- 1.5 The Council considers that quantum of development set out in the Bootle Action Area Plan will not be significantly different from that set out for the area in the Sefton Local Plan, or joint Waste Plan. Many of the allocations and designations set out in the Local Plan are carried forward into the Bootle Area Action Plan. However, the Area Action Plan also identifies new sites and priorities, and does not carry forward one housing site allocation. Bootle Area Action Plan has a regeneration focus, reflected in an increased number of Regeneration Opportunity Sites compared to the Local Plan, and greater encouragement for housing-led regeneration in the longer term. Appendix A of Bootle Area Action Plan sets out the Local Plan policies to be replaced, partially replaced or amended by the Bootle Area Action Plan.
- 1.6 Bootle Area Action Plan includes 22 sites, Regeneration Opportunity Areas and other areas which may be termed '(re)development sites'. They include individual employment sites listed in policy BAAP12 Provision of employment land, individual housing sites listed in policy BAAP16 Provision of Housing Land, areas within Bootle Central Area, and Regeneration Opportunity Areas. The Hawthorne Road/ Canal Corridor Regeneration Opportunity Area include a number of housing, employment and regeneration and other sites; these are listed separately. Other Regeneration Opportunity Areas include a single site, one of which is also

² See <https://www.sefton.gov.uk/planning-building-control/planning-policy-including-local-plan-and-neighbourhood-planning/local-plan/>

a housing site listed in policy BAAP16. Bootle Office Quarter is within Bootle Central Area and is also an employment site listed under policy BAAP12. They are listed in Figure 1.1 below. A plan showing these (re) development sites is shown in Appendix 1.

1.7 This Sequential Test and Exception Test Assessment assesses these 22 sites.

Figure 1.1 (Re)development sites in Bootle Area Action Plan area (showing policy/ sites references)
BAAP3 Bootle Central Area:
BAAP4 Bootle Town Centre
BAAP5 Bootle Office Quarter / <i>policy BAAP12, site BE7 Bootle Office Quarter</i>
BAAP6 Civic and Education Quarter
BAAP12 Provision of employment land:
BE1 Canal St/ Berry St
BE2 Maritime Enterprise Park
BE3 Hawthorne Rd/Aintree Rd
BE4 Kingfisher/Orell Mount
BE5 Land between Regent Road and A565
BE6 Bridle Road
BE8 Atlantic Park
BE9 Senate Business Park
BAAP16 Provision of Housing Land:
BH1 People’s Site, Linacre Lane (<i>within BAAP20 Hawthorne Road/Canal Corridor</i>)
BH3 Site of the former Bootle Gas Works (<i>within BAAP20 Hawthorne Road/Canal Corridor</i>)
BH4 Site of Litherland House, Litherland Rd (<i>within BAAP20 Hawthorne Road/Canal Corridor</i>)
BH5 Site of the former Johnsons Cleaners
BH6 503-509 Hawthorne Rd (<i>within BAAP20 Hawthorne Road/Canal Corridor</i>)
BAAP20 Hawthorne Road/Canal Corridor Opportunity Area – other sites:
BR1 Land to Northwest of Linacre Lane and Hawthorne Road Junction
BR2 Land South of Linacre Lane between Hawthorne Road and Canal
BR3 Land between Hawthorne Road and Vaux Crescent/Place
BAAP21 Bootle Village Opportunity Area
BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area
BAAP23 Coffee House Bridge (also site BH2 Coffee House Bridge in policy BAAP16)

1.8 The sequential approach to site selection within the Bootle AAP area must be set within the sustainable regeneration context of the plan, the legacy of Bootle’s industrial past including contaminated, under-used and derelict sites, land and/or buildings in areas that have low land values, the fact that it is an Area Action Plan and the focus on a small part of the Borough of Sefton, and the over-arching role of the Sefton Local Plan within Bootle Area Action Plan area. The fact that surface water flood risk is more extensive across the whole of Sefton than in many other local authority areas, and that this includes areas of low, medium and high surface water flood risk is also relevant.

- 1.9 For example, there is a greater emphasis on identification of Regeneration Opportunity Areas in the plan, compared to many other development plans within the Liverpool City Region or nationally. This focus on sites which are part of this industrial legacy, many of which are derelict, under-used or have no active uses means that, in practice, these sites do not have sequentially preferable alternative. Most simplistically, instead the choice is between promoting regeneration opportunities for that site, or leaving it in its current (poor) condition; arguably a time sequence not a location sequence. This was recognised by United Utilities in their comments on the Preferred Options draft Bootle Area Action Plan, who noted that *“Whilst the strong preference of UUW is for development to take place outside of any identified flood risk in accordance with the sequential approach, we recognise the need to regenerate these sites”*. United Utilities’ comments are reproduced at Appendix 2.
- 1.10 Also, it is useful to understand that the Area Action Plan does not set out a housing or employment land requirement in the same way as the existing Sefton Local Plan does, or a future Borough-wide Local Plan would do. This also affects the sequential assessment. However, whilst the Bootle AAP does not have a housing requirement in the same way a Local Plan does, there is still a need to identify land for housing given that Bootle is Sefton’s second largest town and the AAP will cover the period to 2040. The housing and employment requirements set out in policy MN1 of the Local Plan reflect its plan period, to 2030.
- 1.11 The Area Action Plan sets out that the plan area contains 15.9% of Sefton’s population. As Sefton’s annual housing requirement is now 578 per annum (2024 standard methodology³) this would equate to Bootle expecting to provide 92 homes per annum based on applying a simple split based on population. On this basis, as the plan period is 2024-2040 (i.e. 16 years), the Bootle Area Action Plan area should contribute 1,472 homes over this period. Policy BAAP16 (Housing Land Provision) identifies just 777 homes within housing allocation sites and estimates with other permissions/windfalls is that new provision could reach 1,500.

Application of the Sequential Test and Exception Test for plan preparation

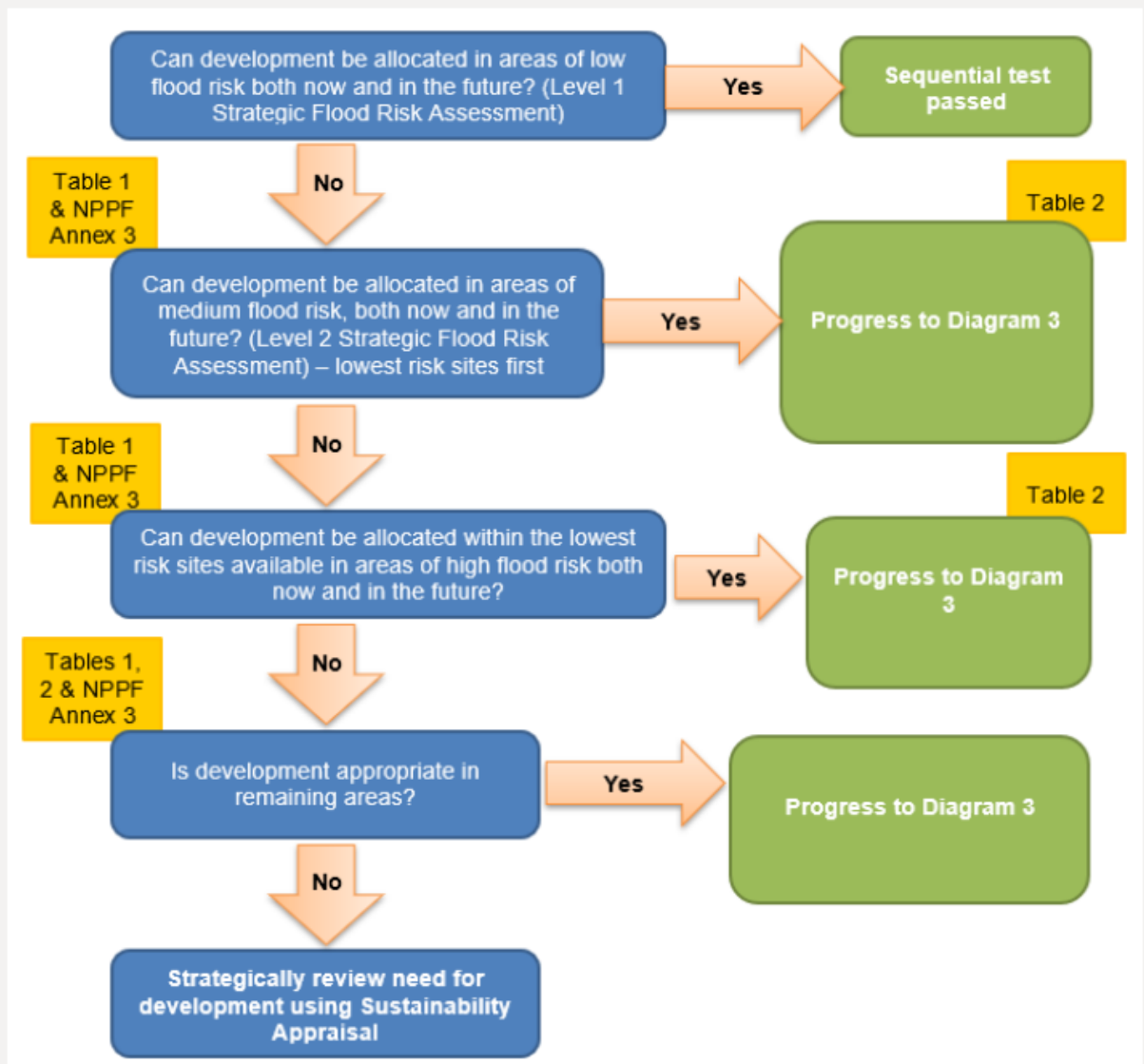
- 1.12 Planning Practice Guidance sets out more detailed information about the sequential test and exceptions test in support of the National Planning Policy Framework⁴. Figure 1.2 below is a diagram which sets out the application of the sequential test for plan preparation. Figure 1.3 is a diagram which sets out the application of the Exception Test to plan preparation. Both are taken from Planning Practice Guidance⁵. This is the basis for the Sequential Test and Exception Test Assessment of Bootle Area Action Plan.

³ Based on the December 2023 National Planning Policy Framework and accompanying documents

⁴ National Planning Policy Framework, December 2023 – see https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf

⁵ See <https://www.gov.uk/guidance/flood-risk-and-coastal-change#the-sequential-approach-to-the-location-of-development>

Figure 1.2 Application of the Sequential Test for plan preparation



Accessible version:

1. Can development be allocated in areas of low flood risk both now and in the future? (Level 1 Strategic Flood Risk Assessment). **If Yes:** Sequential test passed

If No:

2. Can development be allocated in areas of medium flood risk, both now and in the future? (Level 2 Strategic Flood Risk Assessment) – lowest risk sites first. (Table 1 and NPPF Annex 3). **If Yes:** Progress to Diagram 3 (Table 2)

If No:

3. Can development be allocated within the lowest risk sites available in areas of high flood risk both now and in the future? (Table 1 and NPPF Annex 3). **If Yes:** Progress to Diagram 3 (Table 2)

If No:

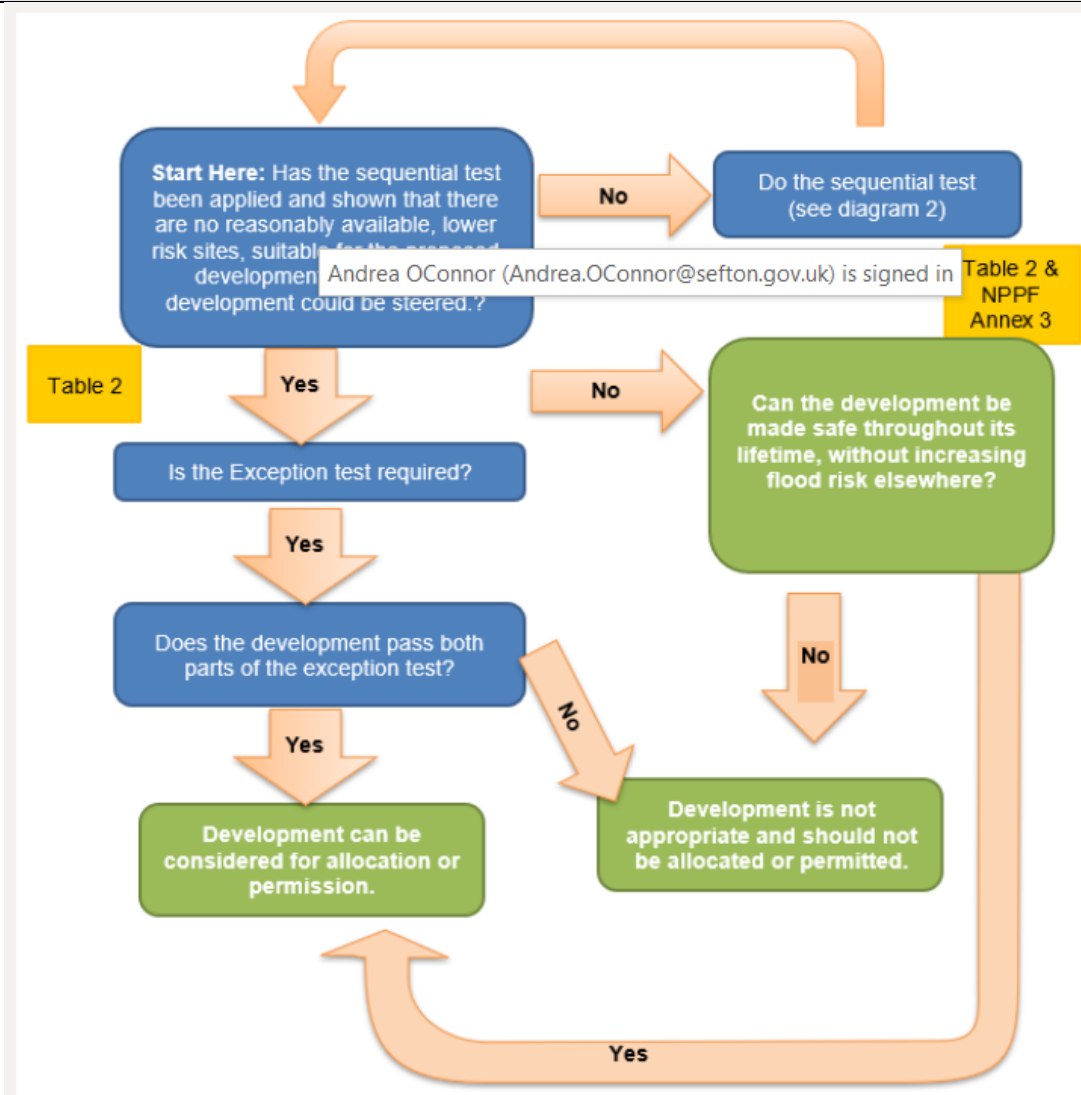
4. Is development appropriate in remaining areas? (Tables 1, 2 and NPPF Annex 3). **If Yes:** Progress to Diagram 3

If No:

5. Strategically review need for development using Sustainability Appraisal

Source: Planning Practice Guidance – see <https://www.gov.uk/guidance/flood-risk-and-coastal-change#the-sequential-approach-to-the-location-of-development>

Figure 1.2 Application of the Exception Test for plan preparation



Accessible version

1. **Start Here:** Has the sequential test been applied and shown that there are no reasonably available, lower risk sites, suitable for the proposed development, to which the development could be steered? **If No:** Do the sequential test (see diagram 2)

If Yes:

2. Is the Exception test required (Table 2)? **If Yes:**

Does the development pass both parts of the exception test?

If Yes: Development can be considered for allocation or permission.

If No: Development is not appropriate and should not be considered.

2. Is the Exception test required (Table 2)? **If No:**

Can the development be made safe throughout its lifetime, without increasing flood risk elsewhere (NPPF Annex 3 and Table 2)?

If Yes: Development can be considered for allocation or permission.

If No: Development is not appropriate and should not be considered.

5. Strategically review need for development using Sustainability Appraisal

Source: Planning Practice Guidance – see <https://www.gov.uk/guidance/flood-risk-and-coastal-change#the-sequential-approach-to-the-location-of-development>

2. Flood risk for sites in the Bootle Area Action Plan area

2.1 Figure 2.1 provides a summary of flood risk from all sources for the 22 (re)development sites and areas in the plan area, which are listed in Figure 1.1 in the previous chapter. Figure 2.1 below also summarises most of the more detailed information about flood risk from all sources set out for each site in Appendix 3. Figure 2.2 sets out more detailed information about surface water flood depths.

2.2 Figures 2.1, 2.2 and indeed Appendix 3, are based on the following information /assessment:

River and tidal flood zone:	Environment Agency Flood Map for Planning
Surface water extents and %s:	Environment Agency Risk of Flooding from Surface Water*
Surface water depths:	Sefton Surface Water Management Plan 2011
Sewer flood risk:	United Utilities information provided in their response to the Bootle Area Action Plan Preferred Options consultation draft, *
Canal Flood risk:	Assessment of canal flood risk information in 2013 SFRA of the Local Plan, *
Groundwater flood risk:	Assessment of groundwater emergence zone information in 2013 SFRA of the Local Plan, *
SuDS requirements:	Assessment of Suitability for SuDS data in 2013 SFRA of the Local Plan, *

** Where the site (or most of it) was included in the 2015 Site Screening Report prepared by JBA, some of this information has also been used.*

2.3 All of the plan area is Flood Zone 1 for river and tidal flooding. Environment Agency surface water extents data indicates that 15.68% of the plan area is at high risk of surface water flooding, 6.59% is at medium risk and 1.62% is low risk; overall, 23.89% - nearly a quarter - of the plan area is at some risk of surface water flooding. Figure 2.1 illustrates that all 22 sites include some areas at high risk of surface water flooding. The sites with the highest % of land at high risk of surface water flooding are the housing sites BH4 Site of Litherland House, Litherland Rd (74.38% at high risk), BH3 Site of the former Bootle Gas Works (52.96% at high risk) and BH6 503-509 Hawthorne Rd (52.96% high risk). All of these sites are in within BAAP20 Hawthorne Road/Canal Corridor Regeneration Opportunity Area. By contrast the employment site BE5 Land between Regent Road and A565 has only 3.51% at high risk of

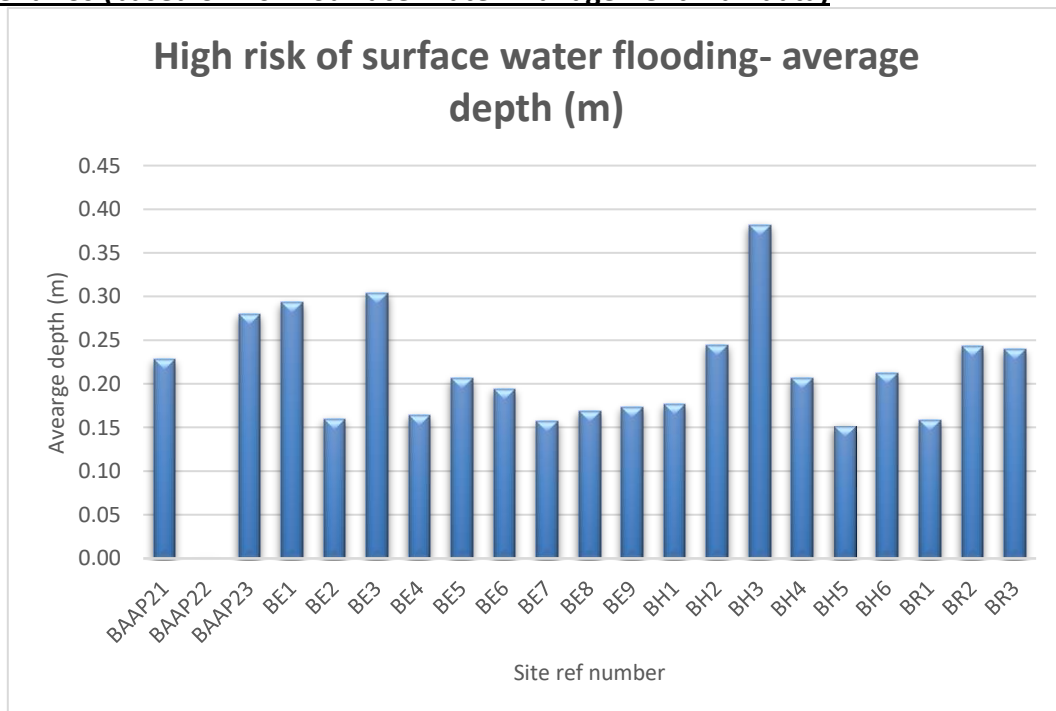
Figure 2.1 Overview of flood risk on sites in Bootle Area Action Plan									
(The basis for assumptions in this table is set out elsewhere in this chapter)									
Site ref	River & Tidal FZ	Surface water risk (% of site)				Sewer	Canal	Groundwater	Reservoir
		High	Medium	Low	All (total)				
BAAP3 Bootle Central Area:									
BAAP4 Bootle Town Centre	1	29.21%	13.08%	10.53%	52.83%	√	√	√	-
BAAP5 Bootle Office Quarter / <i>policy BAAP12, site BE7 Bootle Office Quarter</i>	1	12.36%	7.57%	12.86%	32.79%	√	-	-	-
BAAP6 Civic and Education Quarter	1	11.62%	5.21%	9.37%	26.20%	√	-	-	-
BAAP12 Provision of employment land:									
<i>BE1 Canal St/ Berry St</i>	1	14.49%	6.17%	16.89%	37.54%	-	-	-	-
<i>BE2 Maritime Enterprise Park</i>	1	13.82%	8.69%	13.98%	36.49%	-	-	-	-
<i>BE3 Hawthorne Rd/Aintree Rd</i>	1	27.68%	15.40%	19.72%	62.80%	-	-	-	-
<i>BE4 Kingfisher/Orell Mount</i>	1	14.60%	5.01%	10.35%	29.96%	-	-	-	-
<i>BE5 Land between Regent Road and A565</i>	1	3.51%	3.32%	7.69%	14.52%	-	-	-	-
<i>BE6 Bridle Road</i>	1	15.06%	7.27%	13.46%	35.78%	-	-	-	-
<i>BE8 Atlantic Park</i>	1	20.17%	8.52%	19.80%	48.49%	-	-	-	-
<i>BE9 Senate Business Park</i>	1	14.29%	7.85%	18.51%	40.64%	-	-	-	-
BAAP16 Provision of Housing Land:									
<i>BH1 People's Site, Linacre Lane (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)</i>	1	20.85%	3.63%	12.08%	36.56%	√	-	-	-
<i>BH3 Site of the former Bootle Gas Works (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)</i>	1	52.96%	13.92%	22.08%	88.96%	-	√	√	-
<i>BH4 Site of Litherland House, Litherland Rd (within BAAP20</i>	1	74.38%	8.13%	15.63%	98.13%	-	√	√	-

Figure 2.1 Overview of flood risk on sites in Bootle Area Action Plan									
<i>(The basis for assumptions in this table is set out elsewhere in this chapter)</i>									
Site ref	River & Tidal FZ	Surface water risk (% of site)				Sewer	Canal	Groundwater	Reservoir
		High	Medium	Low	All (total)				
<i>Hawthorne Road/Canal Corridor Opportunity Area)</i>									
<i>BH5 Site of the former Johnsons Cleaners</i>	1	9.36%	17.54%	41.52%	68.42%	-	√	√	-
<i>BH6 503-509 Hawthorne Rd (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)</i>	1	50.7%	9.44%	17.83%	77.97%	√	-	√	-
BAAP20 Hawthorne Road/Canal Corridor Opportunity Area – other sites:									-
<i>BR1 Land to Northwest of Linacre Lane and Hawthorne Road Junction</i>	1	19.00%	12.22%	24.89%	56.11%	-	-	√	-
<i>BR2 Land South of Linacre Lane between Hawthorne Road and Canal</i>	1	33.92%	15.96%	12.72%	62.59%	-	-	√	-
<i>BR3 Land between Hawthorne Road and Vaux Crescent/Place</i>	1	17.97%	7.34%	22.53%	47.85%	-	-	-	-
BAAP20 as a whole	1	38.51%	11.38%	18.28%	68.17%	√	√	√	-
BAAP21 Bootle Village Opportunity Area	1	44.44%	7.41%	13.58%	65.42%	√	-	-	-
BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area	1	15.15%	30.13%	42.42%	87.88%				-
BAAP23 Coffee House Bridge (also site BH2 Coffee House Bridge in policy BAAP16)	1	11.72%	5.47%	17.97%	35.16%	-	√	-	--

surface water flooding. All 22 sites include areas at medium and low risk of surface water flooding.

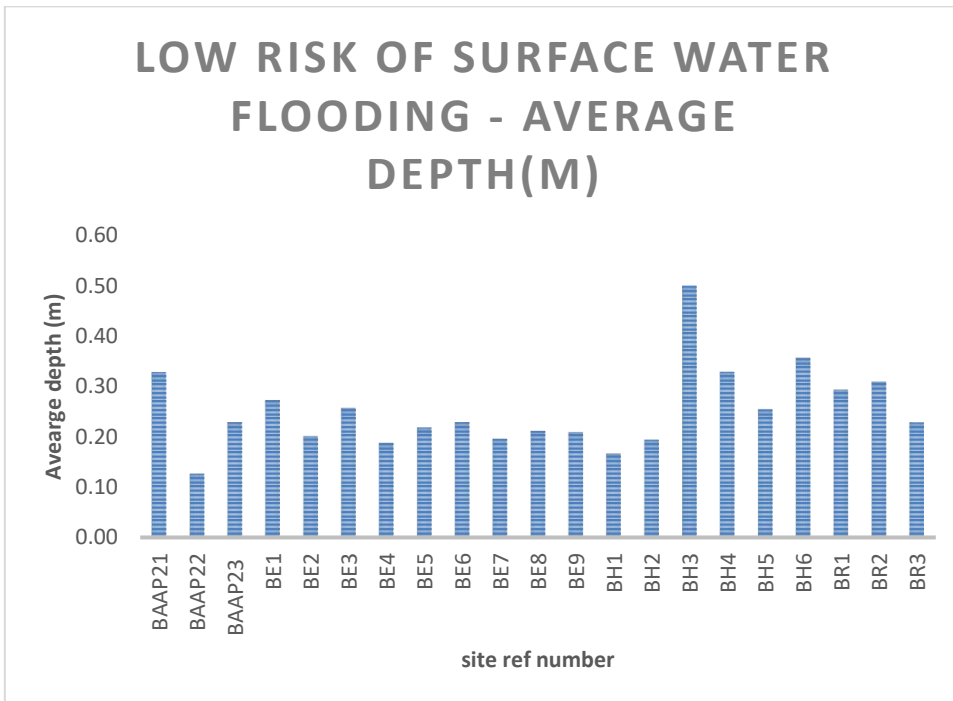
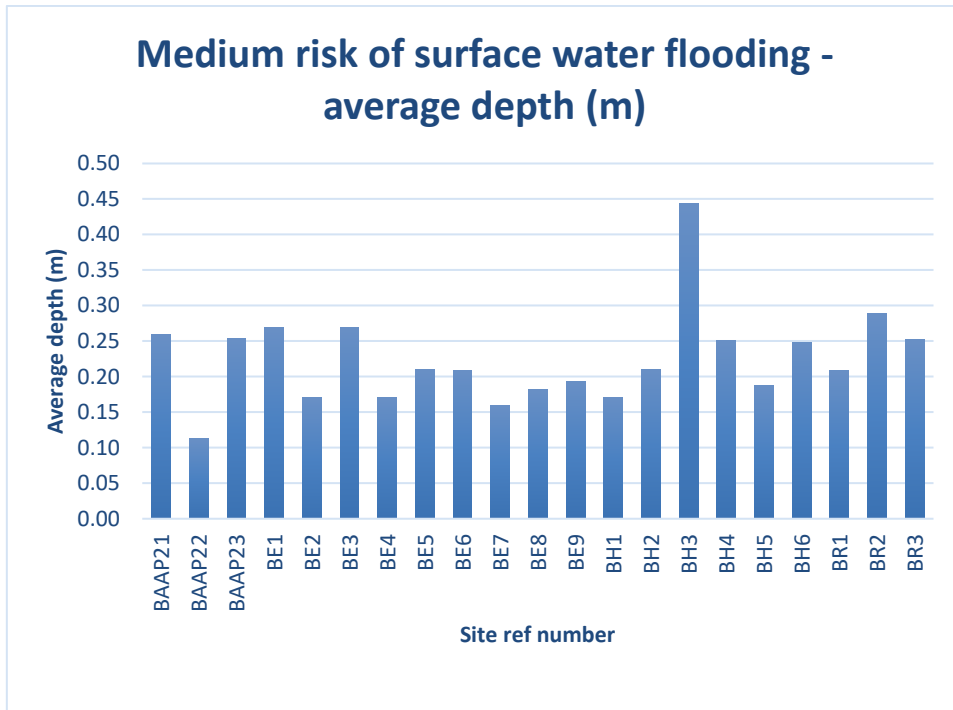
- 2.4 Figure 2.1 also indicates the range in percentage of the site at some risk of surface water flooding – that is, at high, medium or low risk. The sites with the highest % of land at some (any) risk of surface water flooding are the housing sites BH4 Site of Litherland House, Litherland Rd (98.13%), BH3 Site of the former Bootle Gas Works (88.96%) and BH6 503-509 Hawthorne Rd (52.96% high risk) and BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area (87.88%). 10 of the 22 sites have a surface water flood risk extent of over 50%. By contrast only 14.52% of the employment site BE5 Land between Regent Road and A565 has some risk of surface water flooding, 26.20% for site BAAP6 Civic and Education Quarter.
- 2.5 The graphs in Figure 2.2 below indicate the average surface water depths for the high, medium and low risk surface water scenarios (based on 2011 Surface Water Management Plan (SWMP) data⁶). It is considered that there is a close relationship between predicted flood depths and detailed site topography, including the presence of dips, underpasses, holes in the ground, former or existing railway cuttings and tunnels, for example. At the extreme. this is illustrated by employment site BE3 Hawthorne Road/Aintree Road, where Sefton’s 2011 Surface Water Management Plan (SWMP)⁷ data for the ‘low risk’ scenario indicates a maximum depth of 6.25 m. This is assumed to be for the part of the site which slopes down towards a former railway tunnel under the neighbouring road, Marsh Lane. By contrast, the minimum depth for this site is indicated to be 0.03 m; the average (mean) depth being 0.26 m.

Figure 2.2 Average surface water depths for the high, medium and low risk surface water scenarios (based on 2011 Surface Water Management Plan data)



⁶ See https://www.sefton.gov.uk/media/1442/sefton_swmp.pdf

⁷ See https://www.sefton.gov.uk/media/1442/sefton_swmp.pdf



2.6 However, figure 2.2 indicates that for most sites, the average flood depth is less than 30 cm in all of the three scenarios, with a few outliers, notably site BH3, Site of the former Bootle Gas Works. More detailed depth information is shown for each site in Appendix 3.

2.7 It should be borne in mind the extent of all surface water flood risk in Sefton appears considerably greater than the extent of such risks elsewhere in the Liverpool City Region and North West. The fact that nearly a quarter of the plan area is at some risk of surface water flooding, and Figure 2.1 illustrate this.

- 2.8 6 of the 22 (re)development sites, plus part of the wider BAAP20 Hawthorne Road/Canal Corridor Opportunity Area (detailed site to be confirmed) have been initially identified by United Utilities as having on-site modelled sewer flood risk or a record of sewer flooding on the site/ in the vicinity.
- 2.9 United Utilities carried out initial sites assessments at Preferred Options stage (detailed modelling awaited)⁸. While this indicated “on-site modelled sewer flood risk” at the following sites, more detailed modelling and an indication of the relevant parts of the site(s) most affected is awaited:
- BH1 People’s site
 - BAAP4 Bootle Town Centre “(particularly affecting Strand Shopping Centre)”
 - BAAP5 / BE7 Bootle Office Quarter
 - BAAP20 Hawthorne Road /Canal Corridor Regeneration Opportunity Area
 - BAAP21 Bootle Village Regeneration Opportunity Area

However, United Utilities note that:

“Whilst the strong preference of U UW is for development to take place outside of any identified flood risk in accordance with the sequential approach, we recognise the need to regenerate these sites and therefore we request that you include a site-specific policy for each [of these sites, to say] “..... Existing public sewers pass through and near to this site which modelling data (and / or flooding incident data) identifies as being at risk of sewer flooding. This will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. The risk of sewer flooding could affect the developable area of the site and the detail of the design”.

- 2.10 This United Utilities modelling also identified BAAP6 Bootle Civic and Education Quarter to be a site “with a record of sewer flooding on the site/ in the vicinity”, where United Utilities recommend policy wording to say that “... Applicants must engage with United Utilities to consider the detailed design of the site and drainage details. The risk of sewer flooding could affect the developable area of the site and the detail of the design.’
- 2.11 There are a number of sites which have a residual risk of canal flooding, being on or close to identified potential canal flow paths in event of canal failure. However, the 2013 SFRA for the Local Plan⁹ is clear that the risk of flooding from the canal should not determine whether development should take place on a site or not.
- 2.12 There are also a number of sites which are in the groundwater emergence zone identified in the 2013 SFRA. While the SFRA notes that risk of surface water or other flooding may be increased in areas at risk of groundwater emergence or flooding, and that development should not take place in areas of such combined risk; it is considered the brownfield focus of Bootle Area Action Plan means that (re)development may be necessary on previously developed sites in such areas.

⁸ United Utilities comments are reproduced in Appendix 2.

⁹ See <https://www.sefton.gov.uk/media/2389/flood-risk-assessment-capitasymonds-2013.pdf>

3. Site sequential and exception testing

Sequential Test using Local Plan approach

3.1 The SFRA and sequential assessment of the Sefton Local Plan focusses mainly on river and tidal flood zones, and the SuDS and Flood Risk Information Note reflects this. As the Local Plan flood risk and many other policies remain in force for the Bootle Area Action Plan area, an initial sequential test using this approach has been carried out and the results are shown in Figure 3.1. All of the sites are in Flood Zone 1 for river and tidal flooding, and as the sequential test is passed for all sites and the exception test is not relevant.

Figure 3.1 Initial sequential test based on river and tidal flood zones				
Site ref	Main use	Main use -FR vulnerability	River & Tidal Flood Zone (FZ)	Sequential test passed?
BAAP3 Bootle Central Area includes 3 areas:				
BAAP4 Bootle Town Centre	Retail and compatible uses, e.g. community, education, health; limited residential.	Less vulnerable	FZ1	Yes.
BAAP5 Bootle Office Quarter, site <i>BE7 Bootle Office Quarter in policy BAAP12</i>	Employment (offices) and compatible uses including leisure	Less vulnerable	FZ1	Yes.
BAAP6 Civic and Education Quarter	Education, civic uses; and compatible uses	More vulnerable	FZ1	Yes.
BAAP12 Provision of employment land:				
<i>BE1 Canal St/ Berry St</i>	Employment	Less vulnerable	FZ1	Yes.
<i>BE2 Maritime Enterprise Park</i>	Employment	Less vulnerable	FZ1	Yes.
<i>BE3 Hawthorne Rd/Aintree Rd</i>	Employment	Less vulnerable	FZ1	Yes.
<i>BE4 Kingfisher/Orrell Mount</i>	Employment	Less vulnerable	FZ1	Yes.
<i>BE5 Land between Regent Road and A565</i>	Employment	Less vulnerable	FZ1	Yes.
<i>BE6 Bridle Road</i>	Employment	Less vulnerable	FZ1	Yes.
<i>BE8 Atlantic Park</i>	Employment	Less vulnerable	FZ1	Yes.
<i>BE9 Senate Business Park</i>	Employment	Less vulnerable	FZ1	Yes.
BAAP16 Provision of Housing Land:				Yes.
<i>BH1 People's Site, Linacre Lane (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)</i>	Housing	More vulnerable	FZ1	Yes.

Figure 3.1 Initial sequential test based on river and tidal flood zones				
Site ref	Main use	Main use -FR vulnerability	River & Tidal Flood Zone (FZ)	Sequential test passed?
BH2 Coffee House Bridge	Housing	More vulnerable	FZ1	Yes.
BH3 Site of the former Bootle Gas Works (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	Housing	More vulnerable	FZ1	Yes.
BH4 Site of Litherland House, Litherland Rd (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	Housing	More vulnerable	FZ1	Yes.
BH5 Site of the former Johnsons Cleaners	Housing	More vulnerable	FZ1	Yes.
BH6 503-509 Hawthorne Rd (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	Housing	More vulnerable	FZ1	Yes.
BAAP20 Hawthorne Road/Canal Corridor Opportunity Area – other sites:				
BR1 Land to Northwest of Linacre Lane and Hawthorne Road Junction	Housing and other uses compatible with the existing uses (including industrial uses) and proposed residential area	Mix, including less vulnerable and more vulnerable		Yes.
BR2 Land South of Linacre Lane between Hawthorne Road and Canal	Housing and other uses compatible with the existing (including existing industrial uses) and proposed residential area	Mix, including less vulnerable and more vulnerable	FZ1	Yes.
BR3 Land between Hawthorne Road and Vaux Crescent/Place	Housing and other uses compatible with the existing and proposed residential area	Mix, including more vulnerable	FZ1	Yes.
BAAP21 Bootle Village Opportunity Area	Mix including housing, employment, community, education	Mix, including more vulnerable, less vulnerable	FZ1	Yes.
BAAP22 Open land between Irlam Road and	Mix including employment,	Less vulnerable,	FZ1	Yes.

Figure 3.1 Initial sequential test based on river and tidal flood zones				
Site ref	Main use	Main use -FR vulnerability	River & Tidal Flood Zone (FZ)	Sequential test passed?
the Asda Store Regeneration Opportunity Area	drinking establishment	more vulnerable		

Wider Sequential Testing and Exception Testing

3.2 Paragraph 168 of the National Planning Policy Framework states that “the sequential approach should be used in areas known to be at risk now or in the future from any form of flooding”. The approach set out in Figure 5-2 of the SFRA for the emerging Liverpool City Region Spatial Development Strategy¹⁰, in summary and in effect, equates differing surface water flood risks to specific river and tidal flood zones, as set out below.

Areas of low flood risk’ include:

- Areas within Flood Zone 1 (river / tidal)
- Areas within the low risk surface water flood vent extent of the Risk of Flooding from Surface Water map

Areas of medium flood risk’ include:

- Areas not at additional risk from climate change
- Areas within Flood Zone 1 (river / tidal)
- Areas within the low risk surface water flood vent extent of the Risk of Flooding from Surface Water map

Areas of high risk include:

- Areas not at additional risk from climate change
- Areas within Flood Zone 3 (river / tidal)
- Areas within the high risk surface water flood event extent of the Risk of Flooding from Surface Water map
- Areas at risk from Flood Zone 3 plus climate change.

3.3 Figure 3.2 is a sequential test and exception test of the 22 sites in Bootle Area Action Plan, taking into account not just surface water flooding risk but also sewer flood risk, groundwater flood risk and canal flood risk. This approach is considered to be in accordance with national guidance and policy.

3.4 Figure 3.2, and indeed figure 2.1 in Chapter 2, shows that all 22 (re)development sites in Bootle Area Action Plan are at some risk of surface water flooding, and that other sources of flood risk are relevant. However, figure 3.2 shows that all 22 sites pass the sequential test. This is set firmly within the regeneration context of the area set out in the previous chapter. Many of the sites are brownfield (previously developed) sites, including those which have been derelict, vacant or underused for varying periods of time. As such there are no reasonably available alternative sites within the plan area at a lower risk of flooding.

¹⁰ See <https://api.liverpoolcityregion-ca.gov.uk/wp-content/uploads/2023/11/LCR-SDS-Strategic-Flood-Risk-Assessment-SFRA-Part-A-Report-Nov-2023.pdf>

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
BAAP3 Bootle Central Area includes 3 areas:					
BAAP4 Bootle Town Centre	Retail and compatible uses, e.g. community, education, health; limited residential.	Less vulnerable	29.21% of site at high risk of surface water flooding; 52.82% of site at some risk of surface water flooding <i>Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area (particularly affecting Strand Shopping Centre)</i>	Yes. The central area is by definition, central. There are no sequential alternatives and it is not proposed to move Bootle's centre <i>As existing public sewers pass through and near to this site which modelling data (and / or flooding incident data) identifies as being at risk of sewer flooding, this will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. It should be noted that the risk of sewer flooding could affect the developable area of the site and the detail of the design.</i>	n/a
BAAP5 Bootle Office Quarter <i>This is also listed in policy BAAP12 as: BE7 Bootle Office Quarter</i>	Employment (offices) and compatible uses including leisure	Less vulnerable	12.36% of site at high risk of surface water flooding; 32.79% of site at some risk of surface water flooding <i>Initial UU modelling at Preferred Options stage identified on-site sewer flood risk in part of the area, and a record of sewer flooding on the site or in the vicinity of the site.</i>	Yes. In Local Plan, Bootle Office Quarter is a Mixed Use Area (EDT4) and within Regeneration Opportunity Area; suitable for office and light industry, health and educational uses, civic and community facilities, and other uses that are compatible with the existing character of the area. BAAP5 allows <ul style="list-style-type: none"> • “E(c)(iii) Appropriate (financial or professional services) in a commercial, business or service locality • E(g)(i) Offices to carry out any operational or administrative functions • 4. E(g)(ii) ‘Research and development of products or processes’ uses will be acceptable if it can be demonstrated 	n/a

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
				<p>that the specific nature of the proposal is more suited to this area rather than a predominantly general industrial area, or if it can be shown that there are no alternative and available sites in a more suitable area (subject to Policy BAAP14)".</p> <p>Insufficient alternative sites in plan area in lower FZ.</p> <p><i>As existing public sewers passing through and near to parts of this area have been identified in modelling data (and / or flooding incident data) as being at risk of sewer flooding, development proposals will need careful assessment and consideration of this in the detailed design, masterplanning and drainage details for the site. It should be noted that the risk of sewer flooding could affect the developable area of the site and the detail of the design. As part of the area also has a record of flooding on-site or in the vicinity, applicants must engage with United Utilities to consider the detailed design of the site and drainage details. The risk of sewer flooding could affect the developable area of the site and the detail of the design.</i></p>	
BAAP6 Civic and Education Quarter	Education, civic uses; and compatible uses	More vulnerable	11.62% of site at high risk of surface water flooding; 26.20% of site at some risk of surface water flooding	<p>Yes. In Local Plan, this is within the Primarily Residential Area. Suitable for educational uses, civic and other uses that are compatible with the existing character of the area.</p> <p><i>As existing public sewers pass through and near to this site which modelling data (and /</i></p>	n/a

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
			<i>Initial UU modelling at Preferred Options stage identified on-site sewer flood risk</i>	<i>or flooding incident data) identifies as being at risk of sewer flooding, this will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. It should be noted that the risk of sewer flooding could affect the developable area of the site and the detail of the design.</i>	
BAAP12 Provision of employment land:					
BE1 Canal St/ Berry St	Employment	Less vulnerable	14.49% of site at high risk of surface water flooding; 37.54% of site at some risk of surface water flooding	Yes. Existing Employment Area (EEA) in Local Plan; EEAs identified in policy MN1 as helping to meet new employment development needs. Insufficient alternative sites in plan area in lower FZ.	n/a
BE2 Maritime Enterprise Park	Employment	Less vulnerable	13.82% of site at high risk of surface water flooding; 36.49% of site at some risk of surface water flooding	Yes. Existing Employment Area (EEA) in Local Plan; EEAs identified in policy MN1 as helping to meet new employment development needs. Insufficient alternative sites in plan area in lower FZ.	n/a
BE3 Hawthorne Rd/Aintree Rd	Employment	Less vulnerable	27.68% of site at high risk of surface water flooding; 62.80% of site at some risk of surface water flooding	Yes. All land west of Fernhill Road Existing Employment Area (EEA) in Local Plan; EEAs identified in policy MN1 as helping to meet new employment development needs. Small area east of Fernhill Road within Primarily Residential Area in Local Plan. Insufficient alternative sites in plan area in lower FZ.	n/a

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
BE4 Kingfisher/Orell Mount	Employment	Less vulnerable	14.60% of site at high risk of surface water flooding; 29.96% of site at some risk of surface water flooding	Yes. Part of site BE4 was allocated for employment development in Local Plan (MN2.53), the rest designated as Existing Employment Area (EEA); EEAs identified in policy MN1 as helping to meet new employment development needs. Insufficient alternative sites in plan area in lower FZ.	n/a
BE5 Land between Regent Road and A565	Employment	Less vulnerable	3.51% of site at high risk of surface water flooding; 14.52% of site at some risk of surface water flooding	Yes. Previously developed site within Port and Maritime Zone in Local Plan. No appropriate alternative uses in this location with the same or lesser flood risk vulnerability.	u
BE6 Bridle Road	Employment	Less vulnerable	15.06% of site at high risk of surface water flooding; 35.78% of site at some risk of surface water flooding	Yes. Part of site BE6 was allocated for employment development in Local Plan (MN2.52), the rest is Existing Employment Area (EEA). EEAs identified in policy MN1 as helping to meet new employment development needs. Insufficient alternative sites in plan area in lower FZ.	n/a
BE7 Bootle Office Quarter	See BAAP5 above.				
BE8 Atlantic Park	Employment	Less vulnerable	20.17% of site at high risk of surface water flooding; 48.49% of site at some risk of surface water flooding	Yes. Site BE8 was allocated for employment development in Local Plan (MN2.48a). Insufficient alternative sites in plan area in lower FZ.	n/a
BE9 Senate Business Park	Employment	Less vulnerable	14.29% of site at high risk of surface water flooding; 40.62% of	Yes. Site BE9 was allocated for employment development in Local Plan (MN2.48b).	n/a

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
			site at some risk of surface water flooding	Insufficient alternative sites in plan area in lower FZ.	
BAAP16 Provision of Housing Land:					
BH1 People's Site, Linacre Lane (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	Housing	More vulnerable	20.85% of site at high risk of surface water flooding; 36.56% of site at some risk of surface water flooding <i>Initial UU modelling at Preferred Options stage identified on-site sewer flood risk</i>	Yes. Site was allocated for housing development in Local Plan (MN2.44) and sequential assessment carried out as part of Local Plan preparation process. In SHLAAs 2016 -2023; policy MN1 identifies SHLAA as part of Sefton's housing land supply, helping to meet identified housing need. <i>As existing public sewers pass through and near to this site which modelling data (and / or flooding incident data) identifies as being at risk of sewer flooding, this will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. It should be noted that the risk of sewer flooding could affect the developable area of the site and the detail of the design.</i>	Yes. Wider sustainability benefits of community-led development of the site, some of which is brownfield. Site was allocated for housing in the Local Plan. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
BH2 Coffee House Bridge	Housing	More vulnerable	11.72% of site at high risk of surface water flooding; 35.16% of site at some risk of surface water flooding	Yes, given that most of site was allocated for housing development in Local Plan (MN2.46); some was Existing Employment Area, some was in Primarily residential Area. Sequential assessment carried out as part of Local Plan preparation process. Site MN2.45 in SHLAAs 2016 -2023; policy MN1 identifies allocations and SHLAA as part of Sefton's housing land supply, helping to meet identified housing need.	Yes. Wider sustainability benefits of community-led development of the site, some of which is brownfield. Most of the site was allocated for housing in the Local Plan. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
					the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
BH3 Site of the former Bootle Gas Works (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	Housing	More vulnerable	52.96% of site at high risk of surface water flooding; 88.96% of site at some risk of surface water flooding	Yes. Site was identified as a Regeneration Opportunity Site in Local Plan (ED6 b ii), for uses compatible with the adjacent residential area. It is identified in the 2022 and 2023 SHLAAs. Local Plan policy MN1 identifies SHLAA as part of Sefton’s housing land supply, helping to meet identified housing need, and so site forms part of Bootle’s housing supply. This is a brownfield site which has had no current active uses for many months. Bootle AAP identifies a number of additional Regeneration Opportunity Areas and regeneration opportunities within Bootle Central Area. As such there are no reasonably available alternative sites within the plan area.	Yes. Substantive wider sustainability benefits of (re)development of this vacant and under-used/derelict site – environmental, social and economic benefits. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
BH4 Site of Litherland House, Litherland Rd (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	Housing	More vulnerable	74.38% of site at high risk of surface water flooding; 98.13% of site at some risk of surface water flooding	Yes. Site was identified as a Regeneration Opportunity Site in Local Plan (ED6 b ii), for uses compatible with the adjacent residential area. It is identified in the 2022 and 2023 SHLAAs. Local Plan policy MN1 identifies SHLAA as part of Sefton’s housing land supply, helping to meet identified housing need, and so site forms part of Bootle’s housing supply. This is a brownfield site which has had no current active uses for many months. Bootle AAP identifies a number of additional Regeneration Opportunity Areas and regeneration	Yes. Substantive wider sustainability benefits of (re)development of this vacant and under-used/derelict site – environmental, social and economic benefits. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
				opportunities within Bootle Central Area. As such there are no reasonably available alternative sites within the plan area.	mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
BH5 Site of the former Johnsons Cleaners	Housing	More vulnerable	9.36% of site at high risk of surface water flooding; 68.42% of site at some risk of surface water flooding	Yes. Site was within Primarily Residential Area (HC3) in Local Plan, where residential uses or those compatible with a residential area are acceptable in principle. In SHLAAs 2016 -2023 (1.8ha); Local Plan policy MN1 identifies SHLAA as part of Sefton’s housing land supply, helping to meet identified housing need, and so site forms part of Bootle’s housing supply. Site has planning permission for 104 homes (DC/2023/01923, granted 12/12/23).	Site has planning permission for 104 homes (DC/2023/01923, granted 12/12/23).
BH6 503-509 Hawthorne Rd (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	Housing	More vulnerable	50.7% of site at high risk of surface water flooding; 77.97% of site at some risk of surface water flooding	Yes. Site was identified as part of a Regeneration Opportunity Site in Local Plan (ED6 b i), for uses compatible with the adjacent residential area. It is identified in the 2016-2023 SHLAAs. Local Plan policy MN1 identifies SHLAA as part of Sefton’s housing land supply, helping to meet identified housing need, and so site forms part of Bootle’s housing supply. This is a brownfield site which has had no current active uses for many months. Bootle AAP identifies a number of additional Regeneration Opportunity Areas and regeneration opportunities within Bootle Central Area. As such there are no reasonably available alternative sites within the plan area.	Yes. Substantive wider sustainability benefits of (re)development of this vacant and under-used/derelict site – environmental, social and economic benefits. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
BAAP20 Hawthorne Road/Canal Corridor Opportunity Area – other sites			<i>Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within BAAP20</i>	<i>As existing public sewers pass through and near to parts of this Regeneration Opportunity Area which modelling data (and / or flooding incident data) identifies as being at risk of sewer flooding, this will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. It should be noted that the risk of sewer flooding could affect the developable area of the site and the detail of the design.</i>	Yes. Substantive wider sustainability benefits of (re)development of this vacant and under-used/derelict site – environmental, social and economic benefits. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
BR1 Land to Northwest of Linacre Lane and Hawthorne Road Junction	Housing and other uses compatible with the existing uses (including industrial uses) and proposed residential area	Mix, including less vulnerable and more vulnerable	19.00% of site at high risk of surface water flooding; 56.11% of site at some risk of surface water flooding	Yes. Site was identified as part of a Regeneration Opportunity Site in Local Plan (ED6 b ii), for uses compatible with the adjacent residential area. This is a brownfield site which is largely unused with just an overflow car parking for the adjacent bus depot on site Bootle AAP identifies a number of additional Regeneration Opportunity Areas and regeneration opportunities within Bootle Central Area. As such there are no reasonably available alternative sites within the plan area.	Exception test not required for less vulnerable uses, only for more vulnerable uses. If an exception test is required: There are substantive wider sustainability benefits of (re)development of this largely vacant and under-used/derelict site – Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
					development and the detailed design of proposals.
BR2 Land South of Linacre Lane between Hawthorne Road and Canal	Housing and other uses compatible with the existing (including existing industrial uses) and proposed residential area	Mix, including less vulnerable and more vulnerable	33.92% of site at high risk of surface water flooding; 62.59% of site at some risk of surface water flooding	Yes. North part of site was identified as Employment site MN2.54 in Local Plan, rest of site was in Existing Employment Area (EEA). EEAs identified in policy MN1 as helping to meet new employment development needs. Policy There are other housing sites around it, and in the longer term the site could transition to residential or other compatible uses.	Exception test not required for less vulnerable uses, only for more vulnerable uses. If an exception test is required: There are substantive wider sustainability benefits of (re)development of this under-used/derelict site – environmental, social and economic benefits. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
BR3 Land between Hawthorne Road and Vaux Crescent/Place	Housing and other uses compatible with the existing and proposed residential area	Mix, including more vulnerable	17.97% of site at high risk of surface water flooding; 47.85% of site at some risk of surface water flooding	Yes. Site was within Existing Employment Area in Local Plan (EEA). EEAs identified in policy MN1 as helping to meet new employment development needs. This site is currently predominantly used for a Council depot, and this is unlikely to change in the near future. The regeneration opportunity designation allows for a range of development options if the wider area evolves with a more residential character.	Yes. The site is highly likely to continue in its current use in the longer term. The regeneration opportunity designation allows for alternative uses if the wider area transitions to a residential area and the current use becomes incompatible with the long term aspirations for the neighbourhood. The designation therefore reflects the site’s proximity to other designations and provides the policy to allow mor suitable uses to be promoted on the site, if needed, to make a more sustainable neighbourhood.

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
					Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
BAAP21 Bootle Village Opportunity Area					
BAAP21 Bootle Village Opportunity Area	Mix including housing, employment, community, education	Mix, including more vulnerable, less vulnerable	44.44% of site at high risk of surface water flooding; 65.42% of site at some risk of surface water flooding <i>Initial UU modelling at Preferred Options stage identified on-site sewer flood risk</i>	This is a brownfield site which has had no current active uses for many months. Bootle AAP identifies a number of additional Regeneration Opportunity Areas and regeneration opportunities within Bootle Central Area. As such there are no reasonably available alternative sites within the plan area. <i>As existing public sewers pass through and near to this site which modelling data (and / or flooding incident data) identifies as being at risk of sewer flooding, this will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. It should be noted that the risk of sewer flooding could affect the developable area of the site and the detail of the design.</i>	Yes. Substantive wider sustainability benefits of (re)development of this under-used site – environmental, social and economic benefits. Assumption is that part b is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.

Figure 3.2: Sequential test and exception test of the 22 sites in Bootle Area Action Plan					
Site ref	Main use	Main use -FR vulnerability	Highest level of surface water flood risk within site	Sequential test passed?	Exception test passed?
BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area					
BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area	Mix including employment, drinking establishment	Less vulnerable, more vulnerable	15.15% of site at high risk of surface water flooding; 87.88% of site at some risk of surface water flooding	Yes. Bootle AAP identifies a number of additional Regeneration Opportunity Areas and regeneration opportunities within Bootle Central Area. As such there are no reasonably available alternative sites within the plan area.	n/a

4. Conclusions and recommendations

Conclusions

- 4.1 The document is a Sequential Test and Exception Test Assessment (STETA) of sites in Bootle Area Action Plan. This is the sequential, risk-based approach to the location of development (taking into account all sources of flood risk and the current and future impacts of climate change), as required by paragraph 167 of the National Planning Policy Framework. It has been carried out in line with the guidance in the National Planning Policy Framework and national planning practice guidance, also having regard to the SFRA of the Sefton Local Plan and emerging Liverpool City Region Spatial Development Strategy.
- 4.2 This Sequential Test and Exception Test Assessment will make sure that Bootle Area Action Plan will avoid, where possible, flood risk to people and property, also in line with the National Planning Policy Framework. It complements and informs the SFRA Overview Update for Bootle Area Action Plan. The Sequential Test and Exception Test Assessment includes, in appendices, site-specific information about flood risk from all sources, which informs the sequential and exception testing carried out in chapter 3.
- 4.3 Bootle Area Action Plan includes 22 sites; sites, Regeneration Opportunity Areas and other areas which may be termed 'development sites'. They include individual employment sites listed in policy BAAP12 Provision of employment land, individual housing sites listed in policy BAAP16 Provision of Housing Land, areas within Bootle Central Area, and Regeneration Opportunity Areas. The Hawthorne Road/ Canal Corridor Regeneration Opportunity Area include a number of housing, employment and regeneration and other sites; these are listed separately. Other Regeneration Opportunity Areas include a single site, one of which is also a housing site listed in policy BAAP16. Bootle Office Quarter is within Bootle Central Area and is also an employment site listed under policy BAAP12. Appendix 1 maps these sites.
- 4.4 While this Sequential Test and Exception Test Assessment is for Bootle Area Action Plan, it must be recognised that most of the 58 policies in the 2017 Sefton Local Plan¹¹ will remain in force within the Bootle Area Action Plan area. This includes Local Plan policy EQ8 'Flood risk and surface water', which will remain the main flood risk policy against which planning applications will be assessed.
- 4.5 Also it must be recognised that the sequential approach to site selection within the Bootle AAP area must be set within the context of:
 - The sustainable regeneration context of the plan
 - the legacy of Bootle's industrial past including contaminated, under-used and derelict sites, land and/or buildings in areas that have low land values
 - the fact that it is an Area Action Plan focussing on only a small part of the Borough of Sefton
 - the over-arching role of the Sefton Local Plan within Bootle Area Action Plan area
 - the fact that Bootle Area Action Plan does not set out a housing or employment land requirement in the same way as the existing Sefton Local Plan does, or a future

¹¹ See <https://www.sefton.gov.uk/planning-building-control/planning-policy-including-local-plan-and-neighbourhood-planning/local-plan/>

Borough-wide Local Plan would do, although there is still a need to identify land for housing given that Bootle is Sefton's second largest town

- the fact that surface water flood risk is more extensive across the whole of Sefton than in many other local authority areas, and that this includes areas of low, medium and high surface water flood risk.

- 4.6 For example, there is a greater emphasis on identification of Regeneration Opportunity Areas in the plan, compared to many other development plans within the Liverpool City Region or nationally. This focus on sites which are part of this industrial legacy, many of which are derelict, under-used or have no active uses means that, in practice, these sites do not have sequentially preferable alternative. Most simplistically, instead the choice is between promoting regeneration opportunities for that site, or leaving it in its current (poor) condition; arguably a time sequence not a location sequence. This was recognised by United Utilities in their comments on the Preferred Options draft Bootle Area Action Plan.
- 4.7 **All of the 22 development sites in Bootle Area Action Plan are in Flood Zone 1 for river and tidal flooding, and so in these terms alone the sequential test is passed for all sites and the exception test is not relevant. Looking more widely at all sources of flood risk, focussing on surface water flood risk and inter-related sewer and groundwater risk, Figure 3.2 indicates that all of these sites also pass the sequential test and exception tests. This is set firmly within the regeneration context of the area set out in the previous chapter. Many of the sites are brownfield (previously developed) sites, including those which have been derelict, vacant or underused for varying periods of time. As such there are no reasonably available alternative sites within the plan area at a lower risk of flooding.**
- 4.8 In relation to part a of the exception test, the regeneration context of the plan means that, overall, there are substantive wider sustainability benefits of (re)development of previously developed, vacant, derelict and/ or underused development sites. These include environmental, social and economic benefits. In terms of part b of the exception test, it is assumed that this is capable of being passed, although detailed and holistic consideration must be given to surface water, flood risk from all sources and foul drainage. This will require careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. This and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.

Data gaps

- 4.9 There are some data gaps in this Sequential Test and Exception Test Assessment and the SFRA Overview Update for Bootle Area Action Plan which it complements and informs, for example indicative % susceptibility to groundwater emergence, and a site-specific assessment of the interplay of site-specific issues such as ground conditions and SuDS suitability. However, it is considered that the Sequential Test and Exception Test Assessment is fit for purpose.

Recommendations

- 4.10 The key recommendations are that:

1. This Sequential Test and Exception Test Assessment informs the SFRA Overview Update for Bootle Area Action Plan and the identification of development sites in Bootle Area Action Plan.
2. For all of the 22 development sites in the Bootle Area Action Plan, developers make a careful assessment and consideration of flood risk issues at the detailed design, masterplanning and drainage details stages. This includes surface water flood risk, sewer, groundwater, and, where relevant canal flood risks; currently and taking account of climate change and 'urban creep'.
3. Developers must recognise that these considerations and mitigation of flood risk could affect the developable area of the site, quantum of development and the detailed design of proposals.
4. These considerations should be reflected in submitted SuDS/ Drainage Pro Forms and Site-specific Flood Risk Assessments. These must be submitted for development on all 22 sites. Development proposals on these sites must be able to show that the surface water and other provisions of Local Plan policy EQ8 'Flood Risk and Surface Water' have been met, including, where reasonably practicable, securing a 20% reduction in surface water run-off rates and volumes. Bootle Area Action Plan policy BAAP1 Design and its explanation reflect this.

5. References

Climate Change Act 2008 – see <https://www.legislation.gov.uk/ukpga/2008/27/contents>

January 2023 Government policy paper ‘Sustainable drainage systems review’ - see <https://www.gov.uk/government/publications/sustainable-drainage-systems-review>

Flood and Water Management Act 2010 – see <https://www.legislation.gov.uk/ukpga/2010/29/contents>

National Planning Policy Framework December 2023 – see <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Environment Agency online guidance: How to prepare a strategic flood risk assessment – see <https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment>

Environment Agency online mapping of flood risk - see <https://www.gov.uk/check-long-term-flood-risk> and <https://flood-map-for-planning.service.gov.uk/>

Government’s 2020 Mid-year population estimates - see [Population estimates for the UK, England and Wales, Scotland and Northern Ireland - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/population-estimates-for-the-uk-england-and-wales-scotland-and-northern-ireland)

Ciria’s SuDS Manual (C753) – see https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C753F

BS 8582:2013 Code of practice for surface water management for development sites – see <https://knowledge.bsigroup.com/products/code-of-practice-for-surface-water-management-for-development-sites?version=standard&tab=preview>

Emerging Liverpool City Region Spatial Development Strategy, Liverpool City Region Combined Authority – see [Spatial Development Strategy | Liverpool City Region Combined Authority \(liverpoolcityregion-ca.gov.uk\)](https://www.liverpoolcityregion-ca.gov.uk/spatial-development-strategy)

Merseyside and Halton Joint Waste Plan (adopted 2013) – see [Waste Local Plan \(sefton.gov.uk\)](https://www.sefton.gov.uk/waste-local-plan)

Sefton Local Development Scheme (2023) – see [local-development-scheme2023_26-june2023.pdf \(sefton.gov.uk\)](https://www.sefton.gov.uk/local-development-scheme2023-26-june2023.pdf)

Bootle Action Area Plan Issues and Options (Nov 2021) – see <https://www.sefton.gov.uk/media/4863/bootle-aap-issues-and-options-main-document.pdf>

Bootle Area Action Plan Preferred Options (July 2023) – see <https://www.sefton.gov.uk/media/7094/bootle-aap-local-plan-document-final.pdf>

Sefton Local Plan 2017 – see www.sefton.gov.uk/localplan

Sefton Surface Water Management Plan (2011) – see https://www.sefton.gov.uk/media/1442/sefton_swmp.pdf

Sefton Strategic Flood Risk Assessment (2013) for Local Plan prepared by Capita Symonds – see <https://www.sefton.gov.uk/media/2389/flood-risk-assessment-capitasymonds-2013.pdf>

Sefton Local Plan Flood Risk Screening Report (2015) prepared by JBA -see <https://www.sefton.gov.uk/media/3829/local-plan-flood-risk-report-oct-2015.pdf> and <https://www.sefton.gov.uk/media/3828/en32b-flood-risk-oct15.pdf>

Sefton Sustainable Drainage Systems (SuDS) and Flood Risk Information Note (2018) - see <https://www.sefton.gov.uk/media/3497/flood-risk-information-note-fulldoc.pdf>

Sefton SuDS Pro Forma - see https://www.sefton.gov.uk/media/7382/final_sefton_suds_pro-forma_1_web.pdf

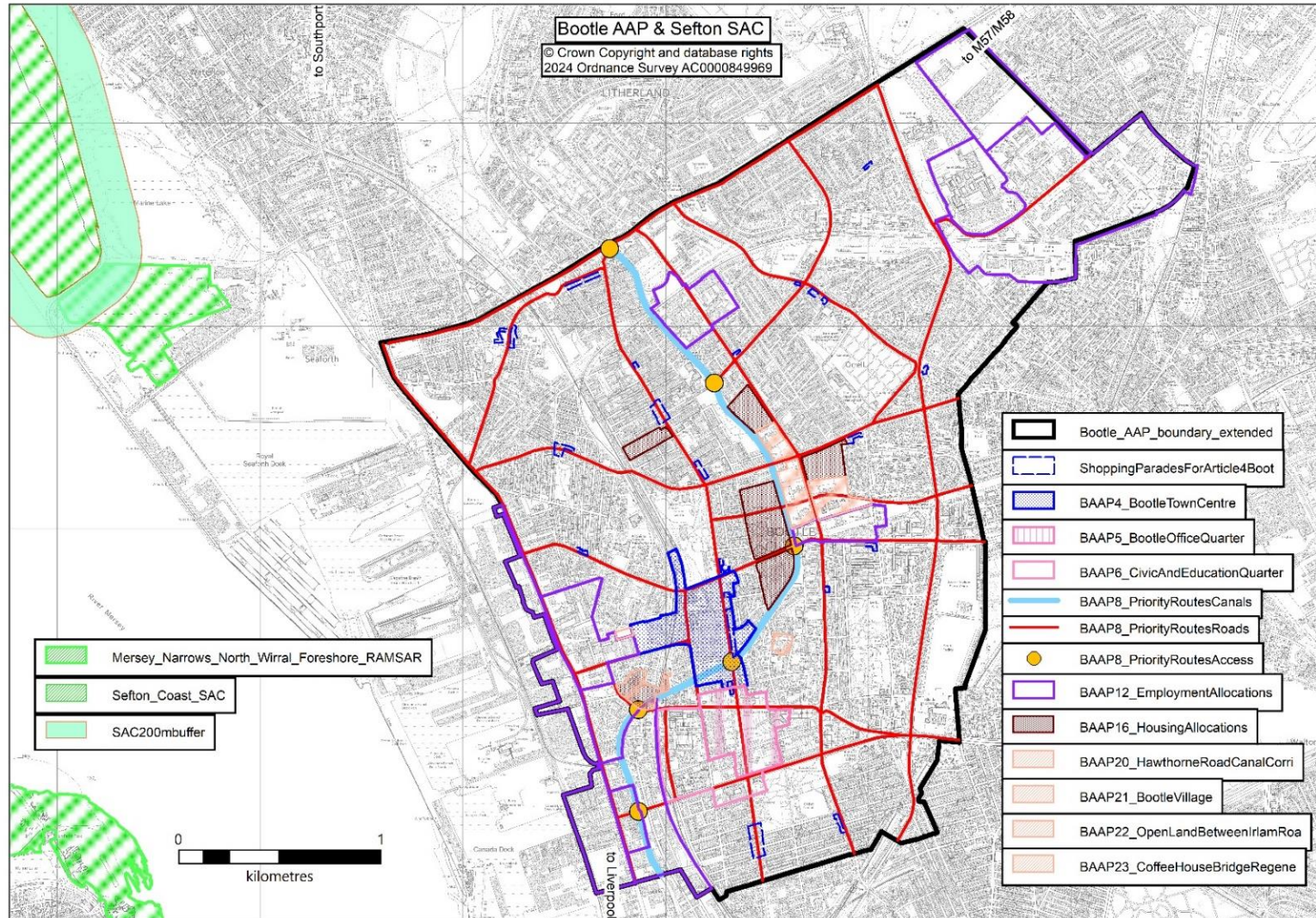
Sefton's guidance note on 'How to fill in the SuDS Pro Forma - see https://www.sefton.gov.uk/media/7381/final_sefton_suds_pro-forma_guidance_web.pdf,

Other Sefton Supplementary Planning Documents, Supplementary Planning Guidance and Information Notes (various) including associated HRA/SEA screening reports – see www.sefton.gov.uk/spd

Sefton's **Validation Checklist for planning applications** – see <https://www.sefton.gov.uk/planning-building-control/apply-for-permission/getting-your-application-right-first-time/>

Sefton SFRA Strategic Overview, for Bootle Area Action Plan (2024) - see web link

Appendix 1: Map showing the location of development and opportunity sites in the Bootle AAP area



Appendix 2: United Utilities comments at Preferred Options consultation stage



United Utilities Water Limited
Grasmere House
Lingley Mere Business Park
Lingley Green Avenue
Great Sankey
Warrington WA5 3LP

unitedutilities.com

Planning.Liaison@uuplc.co.uk

By email only: bootleaap@sefton.gov.uk

Planning Department
Sefton Council
Ground Floor
Magdalen House
Trinity Road
Bootle
L20 3NJ

Your ref:

Our ref:

Date: 06-NOV-23

Dear Sir / Madam

OUR FUTURE, OUR BOOTLE – DRAFT LOCAL PLAN DOCUMENT - BOOTLE AREA ACTION PLAN (JULY 2023)

Thank you for your consultation seeking the views of United Utilities Water Limited (UW) as part of the Draft Bootle Area Action Plan (*'the AAP'*).

UW wishes to build a strong partnership with all local planning authorities (LPAs) to aid sustainable development and growth within its area of operation. We aim to proactively identify future development needs and share our information. This helps:

- ensure a strong connection between development and infrastructure planning;
- deliver sound planning strategies; and
- inform our future infrastructure investment submissions for determination by our regulator.

UW wishes to highlight the benefit of early, constructive communication with the council and site promoters to ensure a co-ordinated approach to the delivery of any future allocations. We will seek to work closely with the council during the local plan process to develop a coordinated approach to delivering sustainable growth in sustainable locations.

When preparing the AAP and future policies, new development should be focused in sustainable locations which are accessible to local services and infrastructure. We can most appropriately manage the impact of development on our infrastructure if development is identified in locations where infrastructure is available with existing capacity.

We note that the AAP includes a number of allocations. We would be grateful if you can provide GIS shp files for these locations so that the allocations can be assessed in more detail including any change in boundaries to the adopted borough wide development plan. In particular we note that the boundaries for the *'available land'* for employment purposes are not confirmed within the consultation document and therefore we have not been able to provide you with specific comments on these sites.

Site-Specific Policies

UUW notes that a number of your proposed allocations are not guided by site-specific policies e.g. the residential allocations listed under Policy BAAP16. UUW strongly encourages the council to include detailed site-specific policy that governs the allocation of any site so that key development considerations can be explicitly referenced in the policy. We believe that clearer requirements help to achieve more sustainable development.

UUW notes that a number of locations are proposed to be the subject of a masterplan. UUW requests the opportunity for early engagement with the council in the preparation of such masterplans.

Our Assets

It is important to outline the need for our assets to be fully considered in any proposals you bring forward. We can advise you on this further when you provide us with the relevant GIS shp files.

UUW will not allow building over or in close proximity to a water main.

UUW will not allow a new building to be erected over or in close proximity to a public sewer or any other wastewater pipeline. This will only be reviewed in exceptional circumstances.

Site promoters should not assume that our assets can be diverted.

On occasion, an asset protection matter within a site can preclude the delivery of development.

As you would expect, there are a range water and wastewater assets through, and within the vicinity of, the proposed allocations. It is critical that site promoters engage with UUW on the detail of their design and the proposed construction works.

All UUW assets will need to be afforded due regard in the masterplanning process for a site. This should include careful consideration of landscaping and biodiversity proposals in the vicinity of our assets and any changes in levels and proposed crossing points (access points and services).

We strongly recommend that the LPA advises future applicants of the importance of fully understanding site constraints as soon as possible, ideally before any land transaction is negotiated, so that the implications of our assets on development can be fully understood and agreed. We ask site promoters to contact UUW to understand any implications by contacting:

Developer Services – Wastewater

Tel: 03456 723 723

Email: WastewaterDeveloperServices@uuplc.co.uk

Developer Services – Water

Tel: 0345 072 6067

Email: DeveloperServicesWater@uuplc.co.uk

Co-ordinated Infrastructure Provision

We wish to note that any growth needs to be carefully planned to ensure new infrastructure provision does not cause any unexpected delays to development delivery. The full detail of the development proposals are not yet known. For example, the detail of the drainage proposals, the points of connection

or the water supply requirements. As a result, it is important that we highlight that in the absence of such detail, we cannot fully conclude the impact on our infrastructure and therefore as more detail becomes available, it may be necessary to co-ordinate the timing for the delivery of development with the timing for delivery of infrastructure.

We recommend that you include a development management policy in your draft AAP to this effect. Our recommended policy is below.

'Once more details are known on development sites, it may be necessary to coordinate the delivery of development with timing for the delivery of infrastructure improvements.'

Sites in Multiple Ownerships

UUW has concerns regarding any site allocations which are in multiple land ownerships. The experience of UUW is that where sites are in multiple ownership, the achievement of sustainable development can be compromised by developers/applicants working independently. We therefore encourage you to make early contact with all landowners/site promoters and challenge those landowners on how they intend to work together, preferably as part of a legally binding delivery framework and / or masterplan. We believe that raising this point at this early stage is in the best interest of achieving challenging delivery targets from allocated sites in the most sustainable and co-ordinated manner.

We recommend that future policy requires applicants to provide drainage strategies for foul and surface water. For larger sites, we recommend that policy requires applicants to prepare an infrastructure phasing and delivery strategy. For strategic sites, we recommend that early consideration is given to the infrastructure strategy as part of the preparation of the local plan and to ensure a co-ordinated approach to the delivery of new development and infrastructure. We would recommend the following policy is considered for inclusion in the AAP:

'Where applications are submitted on land which is part of a wider allocation / development, applicants will be expected to submit allocation/development wide infrastructure strategies to demonstrate how the site will be brought forward in a co-ordinated manner. The strategies shall be prepared in liaison with infrastructure providers and demonstrate how each phase interacts with other phases and ensure coordination between phases of the development over lengthy time periods and by numerous developers. Where necessary, the strategy must be updated to reflect any changing circumstances between phase(s) during the delivery of the development.'

Climate Change

UUW notes the proposed 'Vision' in the AAP. We recommend that this is expanded to reference to the need to respond to the climate emergency.

Also, Objective 13 of the AAP states:

'To set standards in new development that help the Council meet its climate change responsibilities.'

We request that the council strengthens this objective as follows:

'Standards in new development must respond to the climate change emergency declared by the council in July 2019.'

The policies of the AAP should emphasise the importance of designing new development so that it is resilient to the challenges of climate change including the role of green and blue infrastructure, natural flood management techniques, avoiding flood risk locations, multi-functional sustainable drainage, and the incorporation of water supply efficiency measures.

As the LPA will be aware, green infrastructure can help to mitigate the impacts of high temperatures, combat emissions, maintain or enhance biodiversity and reduce flood risk. Green / blue infrastructure and landscape provision play an important role in managing water close to its source. If the necessary link between green/blue infrastructure, surface water management and landscape design is outlined as a strategic requirement, it will help ensure that sustainable surface water management is at the forefront of the design process.

Water Efficiency and Climate Change

UUW is supportive of criterion 2 of Policy BAAP2 Best Use of Resources which relates to water efficiency in new development. A tighter water efficiency standard in new development has multiple benefits including a reduction in water and energy use, as well as helping to reduce customer bills. Water efficiency is a key component of your journey to net zero.

At the current time, Building Regulations includes a requirement for all new dwellings to achieve a water efficiency standard of 125 litres of water per person per day (l/p/d). In 2015 an '*optional*' requirement was introduced which is currently set at 110 l/p/day for new residential development. This can be implemented through local planning policy where there is a clear need based on evidence. We have enclosed evidence to justify this approach. As you will see from the evidence, we believe that the optional standard can be achieved at minimal cost. We therefore recommend the criterion 2 is amended as follows.

'2. All new residential developments must achieve, as a minimum, the optional requirement set through Building Regulations Requirement G2: Water Efficiency or any future updates.'

All major non-residential development shall incorporate water efficiency measures so that predicted per capita consumption does not exceed the levels set out in the applicable BREEAM 'Excellent' / 'Very good' standard.'

This will ensure that the policy is reflective of any future change to the optional standard (which may be reduced below 110 l/h/d in the future. It also ensures that there is a water efficiency requirement for non-residential proposals.

Flood Risk

When considering flood risk policy and the location of development, we believe it is important to highlight that the preparation of the AAP should give sufficient emphasis to all forms of flood risk.

On-site Flood Risk

When considering potential new development sites, it is important to identify where there are existing public sewers within or near to the site, which are predicted to be at risk from flooding and/or sites where there is a record of previous flooding from the public sewer. Proposals could also be affected by overland flows from nearby off-site public sewers. Policy should be clear that existing flood risk must not be displaced and that any flood risk needs to be considered early in the design process. This can be better

understood once more details become available on specific sites, for example, topographic information, which will inform where exceedance paths flow.

Table 1 within the Appendix to this letter sets out sites where an on-site modelled sewer flood risk has been identified. Whilst the strong preference of UUW is for development to take place outside of any identified flood risk in accordance with the sequential approach, we recognise the need to regenerate these sites and therefore we request that you include a site-specific policy for each site within Table 1 using the following wording.

'Modelled Sewer Flood Risk

Existing public sewers pass through and near to this site which modelling data (and / or flooding incident data) identifies as being at risk of sewer flooding. This will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. The risk of sewer flooding could affect the developable area of the site and the detail of the design.'

Table 2 within the Appendix to this letter sets out sites where there is a record of flooding on site / in the vicinity. Where there is a record of flooding on-site, or in the vicinity of the site, we would recommend the following wording:

'Sewer Flooding Incidents

'There are flood incidents from the public sewer on-site / in the wider area. Applicants must engage with United Utilities to consider the detailed design of the site and drainage details. The risk of sewer flooding could affect the developable area of the site and the detail of the design.'

We also recommend the following explanatory text in respect of sewer flood risk matters:

'Explanatory Text

A range of sites have been identified as at risk of sewer flooding or in the wider vicinity of sewer flooding. In respect of these sites, the applicant must engage with United Utilities prior to any masterplanning to assess the flood risk and ensure development is not located in an area at risk of flooding from the public sewer. Applicants should consider site topography and any exceedance flow paths. Resultant layouts and levels should take account of such existing circumstances. Applicants must demonstrate that the proposed development would be safe and not lead to increased flood risk. Applicants should not assume that changes in levels or changes to the public sewer, including diversion, will be acceptable as such proposals could increase / displace flood risk. It may be necessary to apply the sequential approach and incorporate mitigating measures subject to the detail of the development proposal. Careful consideration will need to be given to the approach to drainage including the management of surface water; the point of connection; whether the proposal will be gravity or pumped; the proposed finished floor and ground levels; the management of exceedance paths from existing and proposed drainage systems and any appropriate mitigating measures to manage any risk of sewer surcharge.'

It is important that the above flood risks are referenced in your Strategic Flood Risk Assessment and fully understood as part of any development at the site. We recommend that any flood risk is better understood as soon as possible and prior to allocation so that the principle of development and the impact on any developable area can be confirmed.

Sustainable Drainage - Foul Water and Surface Water

New development should manage foul and surface water in a sustainable way in accordance with national planning policy. We wish to emphasise the importance of any policy, including site-specific policy, setting out the need to follow the hierarchy of drainage options for surface water in national planning practice guidance which clearly identifies the public combined sewer as the least preferable option for the discharge of surface water.

Paragraph 167 of the National Planning Policy Framework (NPPF) outlines that *'When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment'*.

Noting that not all applications are required to submit a flood risk assessment, Uuw wishes to outline that emerging policy should set an expectation that all applications will be required to submit clear evidence that the hierarchy for surface water management has been fully investigated to ensure that flood risk is not increased elsewhere. We wish to recommend that policy requires applicants to submit a foul and surface water drainage strategy that fully investigates the surface water hierarchy to minimise the risk of flooding and ensures that future development sites are drained in the most sustainable way whilst being resilient to the challenges of climate change. Our example drainage policy for local plans is set out below.

'Sustainable Drainage – Foul and Surface Water

All applications must be supported by a strategy for foul and surface water management. Surface water must be discharged in accordance with the surface water hierarchy.

Proposals must be designed to maximise the retention of surface water on-site and minimise the volume, and rate of, surface water discharge off-site. On greenfield sites, any rate of discharge shall be restricted to a greenfield run-off rate. On previously developed land, applicants must also follow the hierarchy for surface water management and target a reduction to a greenfield rate of run-off. Proposals on previously developed land must achieve a minimum reduction in the rate of surface water discharge of 30% rising to a minimum of 50% in any critical drainage area identified by the Strategic Flood Risk Assessment. To demonstrate any reduction, applicants must submit clear evidence of existing operational connections from the site with associated calculations on rates of discharge. Where clear evidence of existing connections is not provided, applicants will be required to discharge at a greenfield rate of run-off.

The design of proposals must assess and respond to the existing hydrological characteristics of a site to ensure a flood resilient design is achieved and water / flooding is not deflected or constricted.

Applications for major development will be required to incorporate sustainable drainage which is multi-functional, in accordance with the four pillars of sustainable drainage, in preference to underground piped and tanked storage systems, unless, there is clear evidence why such techniques are not possible. The sustainable drainage should be integrated with the landscaped environment and the strategy for biodiversity net gain.

For any development proposal which is part of a wider development / allocation, foul and surface water strategies must be part of a holistic site-wide strategy. Pumped drainage systems must be minimised and a proliferation of pumping stations on a phased development will not be acceptable.

Applications must be accompanied by drainage management and maintenance plans including a plan for any watercourse within the application site or an adjacent watercourse where the application site is afforded riparian rights.

Explanatory Text

Application of the hierarchy for managing surface water will be a key requirement for all development sites to reduce flood risk and the impact on the environment. Clear evidence must be submitted to demonstrate why alternative preferable options in the surface water hierarchy are not available. The hierarchy is based on following order of priority:

- i. An adequate soakaway or some other form of infiltration system.*
- ii. An attenuated discharge to a surface water body.*
- iii. An attenuated discharge to public surface water sewer, highway drain or another drainage system.*
- iv. An attenuated discharge to public combined sewer.*

Foul and surface water drainage must be considered early in the design process. Sustainable drainage should be integrated with the landscaped environment and designed in accordance with the four pillars of sustainable drainage (water quantity, water quality, amenity and biodiversity). It should identify SuDS opportunities, including retrofit SuDS opportunities, such as green roofs; permeable surfacing; soakaways; filter drainage; swales; bioretention tree pits; rain gardens; basins; ponds; reedbeds and wetlands. Any drainage should be designed in accordance with 'Ciria C753 The SuDS Manual', sewerage sector guidance, or any subsequent replacement guidance.

The hydrological assessment of the site must consider site topography, naturally occurring flow paths, ephemeral watercourses and any low lying areas where water naturally accumulates. Resultant layouts must take account of such circumstances. Applications will be required to consider exceedance / overland flow paths from existing and proposed drainage features and confirm ground levels, finished floor levels and drainage details. Drainage details, ground levels and finished floor levels are critical to ensure the proposal is resilient to flood risk and climate change. It is good practice to ensure the external levels fall away from the ground floor level of the proposed buildings (following any regrade), to allow for safe overland flow routes within the development and minimise any associated flood risk from overland flows. In addition, where the ground level of the site is below the ground level at the point where the drainage connects to the public sewer, care must be taken to ensure that the proposed development is not at an increased risk of sewer surcharge. It is good practice for the finished floor levels and manhole cover levels (including those that serve private drainage runs) to be higher than the manhole cover level at the point of connection to the receiving sewer.

Holistic site-wide drainage strategies will be required to ensure a coordinated approach to drainage between phases, between developers, and over a number of years of construction. Applicants must demonstrate how the approach to drainage on any phase of development has regard to interconnecting phases within a larger site with infrastructure sized to accommodate interconnecting phases. When necessary, the holistic drainage strategy must be updated to reflect any changing circumstances between each phase(s). The strategy shall demonstrate communication with infrastructure providers and outline how each phase interacts with other phases.

We request that you include site-specific policies regarding the approach to drainage when allocating a site, preferably informed by a flood risk assessment / drainage strategy. We request that your site-specific policy clearly states that applicants must make space available in their proposals for multi-functional sustainable drainage. We recommend the following wording.

'Applicants must identify land at the site that ensures the delivery of multi-functional sustainable drainage in accordance with the four pillars of sustainable drainage which is integrated with the landscaped environment.'

We believe that adding this clarity to site-specific policy helps to remove uncertainty, which in turn helps to contribute to a level playing field during the land acquisition process.

Landscaping

As noted above, we wish to emphasise that the evaluation of surface water management opportunities should be undertaken early in the design process. It is imperative that the approach to design including site analysis is intrinsically linked to making space for water. Sustainable surface water management will be particularly important to consider in the context of the requirement for new streets to be tree lined. It is a national policy requirement that new streets are tree lined as stated in paragraph 131 within the NPPF. It is clear that public realm improvements represent an opportunity to improve surface water management. However, there is currently limited information in the AAP relating to sustainable drainage and how this could be integrated with on-site landscaping.

United Utilities requests that you consider how any proposals for the public realm / landscaping that is to be created on the proposed allocations can be linked to opportunities for surface water management. We request that any landscaping and public realm improvements evaluate opportunities for surface water management to include opportunities for source control and slowing the flow of surface water through the incorporation of blue and green infrastructure. It is preferable that the evaluation of surface water and flood risk management opportunities are undertaken at the outset of the design process. Such an approach has added benefits associated with the quality of the public realm, the enhancement of biodiversity and urban cooling.

As outlined in *'Building for a Healthy Life'*, we request that landscaping proposals are linked to the proposals for surface water management in accordance with the *'four pillars'* of sustainable drainage systems, i.e., water quantity, water quality, amenity, and biodiversity. National policy is clear that priority should be given to multi-functional SuDS over traditional underground, tanked and piped storage systems. Sustainable water management, especially in the form of multi-functional SuDS, helps us adapt and respond to the challenges posed by climate change and the impact of urbanising our environment. SuDS also have wider benefits and represent an opportunity to improve the quality of urban environments by changing *'grey'* to *'green and blue'*. They can help to create more attractive and usable spaces which help with social cohesion by connecting people, improving amenity and wellbeing, and offering opportunities for nature. In our urban environments there are often areas that can be better used to manage rainfall runoff through surface level SuDS which can transform grey and impermeable spaces to greener, more attractive and resilient spaces appreciated by the community.

The design of sites should be intrinsically linked to opportunities for surface water management improvements and that opportunities for source control, slowing the flow and filtration of surface water are considered early. This could be achieved through a variety of features including:

- permeable surfacing;
- bio retention tree pits and bio retention landscaping;
- rain gardens;
- soakaways and filter drainage;
- retrofitted swales; and

- blue/green roofs.

We recommend that you refer to the Susdrain website which includes a range of [case studies](#) that show examples of how SuDS have been implemented in the urban environment. We also request that you also consider the resilience of any planting to drought.

Therefore, UUW wishes to recommend the following wording for inclusion within the AAP:

'Landscaping and public realm proposals, including proposals for tree-lined streets, must be integrated with the strategy for sustainable surface water management. Landscaping and public realm proposals must evaluate and identify opportunities for sustainable surface water management. This could be achieved through a variety of features including:

- *permeable surfacing;*
- *bio retention tree pits and bio retention landscaping;*
- *rain gardens;*
- *soakaways and filter drainage;*
- *retrofitted swales; and*
- *blue/green roofs.'*

We also support encouragement for water re-use opportunities in development proposals such as grey water recycling.

Any approach to planting new trees must give due consideration to the impact on utility services noting the implications that can arise as a result of planting too close to utility services. This can result in root ingress, which in turn increases the risk of drainage system failure and increases flood risk. It will be important that applicants refer to our 'Standard Conditions for Works Adjacent to Pipelines' (a copy of which can be found on our website) and consult with us when implementing the delivery of landscaping proposals. The approach to any planting must have regard to the proximity to existing or proposed utility assets to ensure there is no impact on these assets such as root ingress. Trees should not be planted directly over water and wastewater assets or where excavation onto the asset would require removal of the tree.

BAAP4 Bootle Town Centre (Strand Shopping Centre)

We note that Sefton Council has acquired the Strand Shopping Centre, which will be the subject of future regeneration proposals. We also note that an application has been submitted for partial demolition (see application reference DC/2023/01735). In response to the AAP consultation, we wish to note that our sewer modelling data identifies a risk of flooding at the site that requires further consideration.

Any proposal for the site needs to be underpinned by a sustainable foul and surface water management strategy. In this regard, the opportunity to discharge to an alternative body to the public combined sewer must be considered early in the design process. In particular, the option presented by the adjacent Leeds Liverpool Canal should be explored. We recommend that the sustainable drainage strategy for the site is given early consideration as part of the development of any masterplan for the site. Early engagement with the Canals and Rivers Trust is required. As noted above, new landscaping will have a critical role to play in the management of surface water at the site as a result of any development proposals.

There are some significant assets that pass through the Strand Shopping Centre. You / Applicants must not assume that these can be diverted or built over. Early engagement with United Utilities on these assets must occur so that the implications for development and construction can be understood.

BAAP20 Hawthorne Road/Canal Corridor

We request that any proposals for this area are underpinned by a sustainable foul and surface water management strategy. The opportunity to discharge to an alternative body to the public combined sewer must be considered early in the design process. In particular, the option presented by the adjacent Leeds Liverpool Canal should be explored. We recommend that the sustainable drainage strategy for the site is given early consideration as part of the development of any masterplan for the site. Early engagement with the Canals and Rivers Trust is required. New landscaping will have a critical role to play in the management of surface water at the site as a result of any development proposals.

There are some significant assets that pass through the area. You / Applicants must not assume that these can be diverted or built over. Early engagement with United Utilities on these assets must occur so that the implications for development and construction can be understood.

Development near to Wastewater Treatment Works and Pumping Stations

At the current time, we have not identified any issues associated with the proximity to our wastewater assets. That said, we would wish to confirm the position relating to any wastewater assets and any associated proximity concerns once we have had an opportunity to review the allocations based on the aforementioned GIS shp files which we have requested.

1. Wastewater assets such as treatment works and pumping stations are key infrastructure for the borough which may need to expand in the future to meet growth needs or respond to new environmental drivers. Maintaining a space around a treatment works is therefore desirable to respond to any future investment requirements.
2. As a waste management facility, a wastewater pumping station / treatment works is an industrial operation which can result in emissions. These emissions include odour and noise. A wastewater treatment works can also attract flies. A wastewater treatment works is also subject to vehicle movements from large tankers which need to access the site.

The position of Uuw is that when considering a range of sites to meet development needs, it is more appropriate to identify new development sites, especially sensitive uses, which are not close to a wastewater treatment works / pumping station. This position is in line with the '*agent of change*' principle set out at paragraph 187 of the NPPF.

Investment in Future Infrastructure

It is worth noting that the Environment Act 2021 places an obligation on sewerage undertakers in England to secure a progressive reduction in the adverse impacts of discharges from storm overflows to reduce the impacts on the environment and public health. This obligation has triggered the need for significant future investment in our wastewater assets (treatment and network). This investment will often be constrained by engineering circumstances to determine the most appropriate location for additional storage to reduce spills. This may necessitate investment away from existing treatment facilities such as in the green belt, the open countryside and green areas in or adjacent to existing settlements.

Consistent with meeting its obligations, U UW requests support for water and wastewater infrastructure investment that is ultimately beneficial to the environment, biodiversity, watercourses and growth so that our investment can be delivered in the most timely and effective manner. The following policy wording is recommended:

'The Council will support water and wastewater infrastructure investment which facilitates the delivery of wider sustainable development and the meeting of environmental objectives of water and sewerage undertakers.'

This policy would enable us to ensure we can continue to meet the growth and development aspirations of the region, by ensuring that fundamental infrastructure requirements are met and that we are able to respond to the need for investment in our assets to protect the environment and reduce flood risk.

U UW Property Interests

On receipt of the aforementioned GIS shp files, we would wish to confirm any allocations where we have land interests such as easements and rights of access which are in addition to our statutory rights for inspection, maintenance and repair. These land interest may have restrictions that must be adhered to. It is the responsibility of the developer to obtain a copy of the associated legal document, available from United Utilities' Legal Services or Land Registry and to comply with the provisions stated within the document.

We recommend that landowners/developers contacts our Property Services team at PropertyGeneralEnquiries@uuplc.co.uk to discuss how any proposals may interact with our land interests. Our easements, pipe structures and access rights should not be affected by the design and construction of new development.

Summary

Moving forward, we respectfully request that the council continues to consult with U UW for all future planning documents. We are keen to continue working in partnership with Sefton Council to ensure that all new growth can be delivered sustainably. In the meantime, if you have any queries or would like to discuss this representation, please do not hesitate to contact me.

Yours faithfully

Andrew Leyssens
Planning, Landscape and Ecology
United Utilities Water Limited

Enc. Optional Standard for Water Efficiency Evidence

Appendix 3: Site specific information

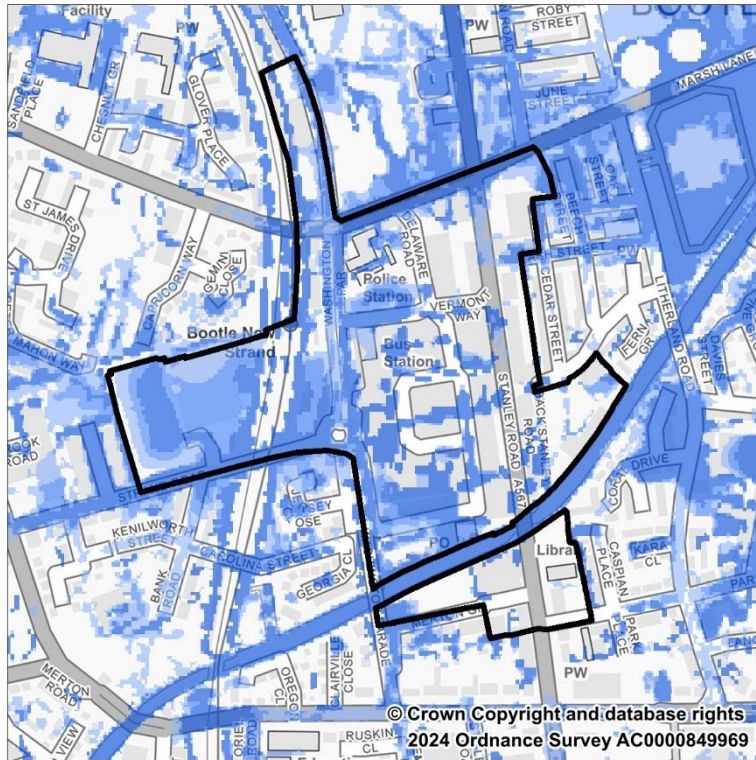
A3.1 This appendix sets out a pro forma for each of the plan's 22 development sites, which brings together a range of flood risk information and/or assessment. The sites are listed in Figure 1.1 in the main document.

A3.2 This Appendix is based on the following information /assessment:

River and tidal flood zone:	Environment Agency Flood Map for Planning
Surface water extents and %s:	Environment Agency Risk of Flooding from Surface Water *
Surface water depths:	Sefton Surface Water Management Plan 2011
Sewer flood risk:	United Utilities information provided in their response to the Bootle Area Action Plan Preferred Options consultation draft, *
Canal Flood risk:	Assessment of canal flood risk information in 2013 SFRA of the Local Plan, *
Groundwater flood risk:	Assessment of groundwater emergence zone information in 2013 SFRA of the Local Plan, *
SuDS requirements:	Assessment of Suitability for SuDS data in 2013 SFRA of the Local Plan, *

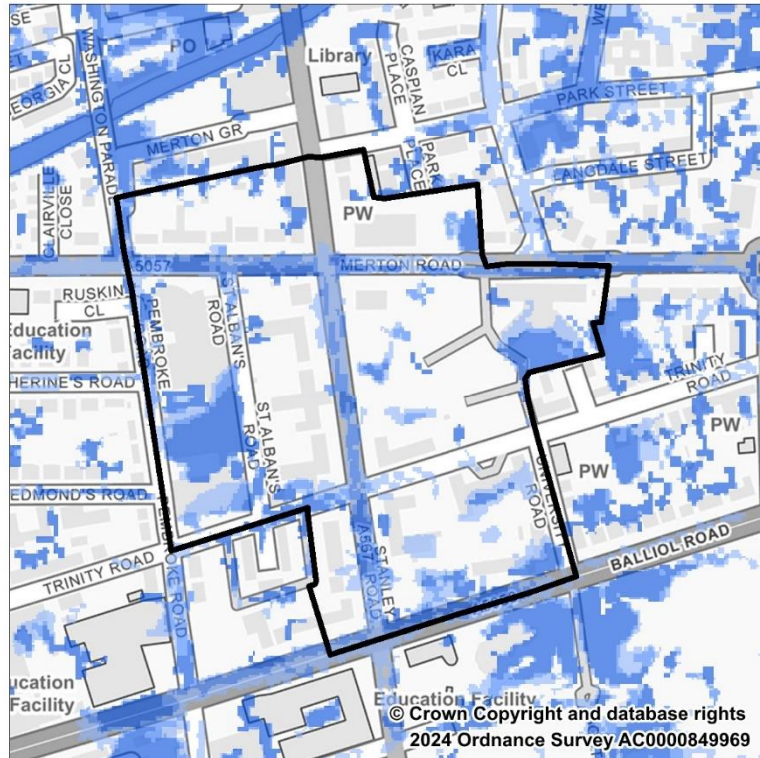
** Where the site (or most of it) was included in the 2015 Site Screening Report prepared by JBA, some of this information may be used also.*

BAAP policies: BAAP3 Bootle Central Area, BAAP4 Bootle Town Centre
Proposed Use(s): Retail and compatible uses, e.g. community, education, health; limited residential.
Surface water flood risk



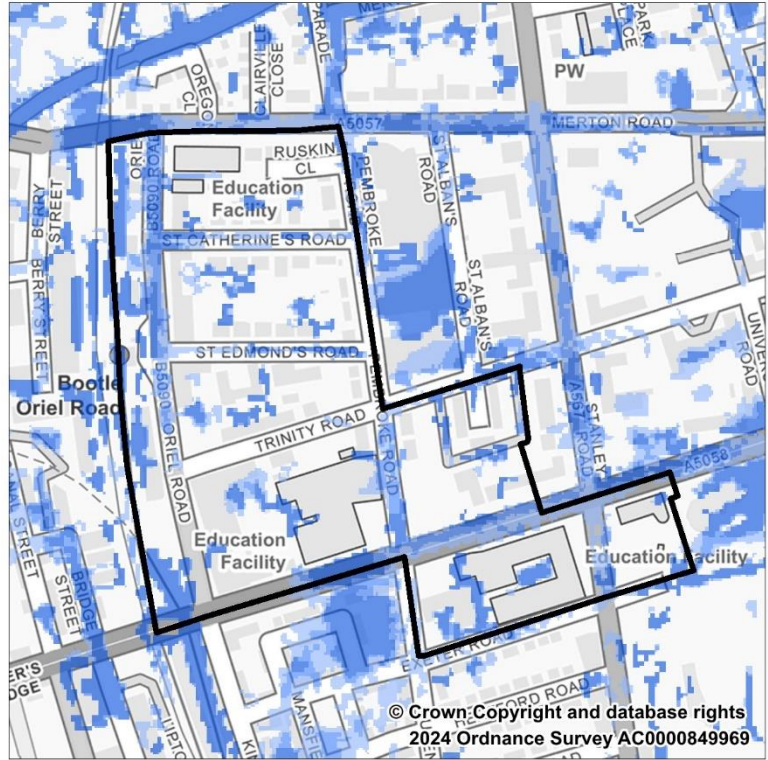
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	29.21%	13.08%	10.53%
Surface water Max depth (SWMP)			
Surface water Average depth (SWMP)			
Sewer flood risk	Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area (particularly affecting Strand Shopping Centre), where development proposals will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. Part of the area also has a record of flooding on-site or in the vicinity, and so applicants must engage with United Utilities to consider the detailed design of the site and drainage details. In both cases, the risk of sewer flooding could affect the developable area of the site and the detail of the design.		
Canal flood risk	Risk. Northern and western parts of the site on or close to identified potential canal flow paths in event of canal failure		
Groundwater flood risk	The land north of Marsh Lane is in a groundwater emergence zone.		
SuDS requirements	Parts of the are very high and low suitability for infiltration SuDS, respectively.		

Site: BAAP5 and BE7; Bootle Office Quarter
BAAP policies: BAAP3 Bootle Central Area, BAAP5 Bootle Office Quarter; site BE7 in BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment led, although other uses may be acceptable also
Surface water flood risk



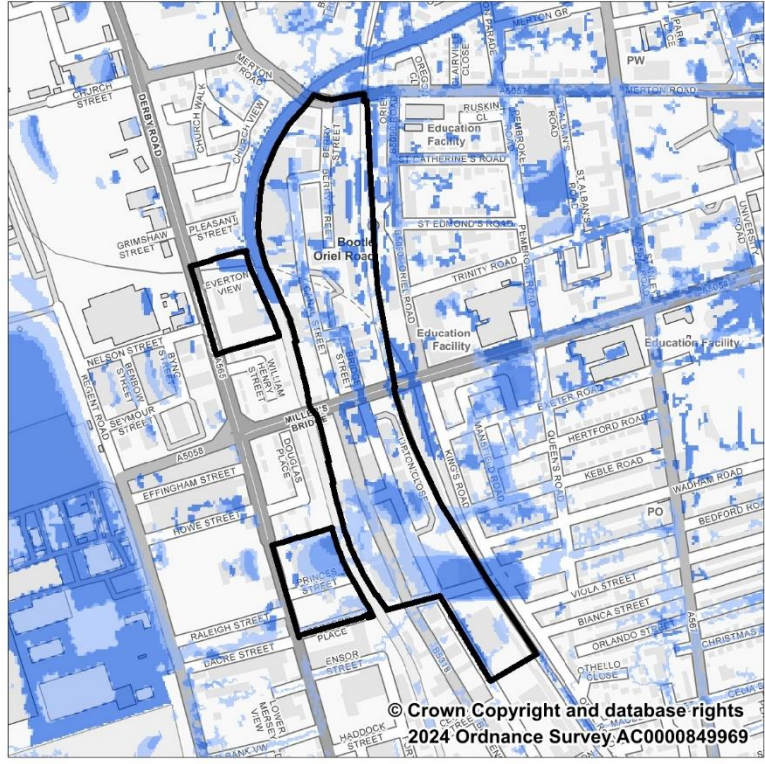
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	12.36%	7.57%	12.86%
Surface water Max depth (SWMP)	1.42 m	1.90 m	2.69%
Surface water Average depth (SWMP)	0.16 m	0.16 m	0.20 m
Sewer flood risk	Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area, where development proposals will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. The risk of sewer flooding could affect the developable area of the site and the detail of the design.		
Canal flood risk	Low risk. Not on identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Parts of the site are considered of very high suitability and low suitability for infiltration SuDS respectively.		

Site: BAAP6 Civic and Education Quarter
BAAP policies: BAAP3 Bootle Central Area, BAAP6 Civic and Education Quarter
Proposed Use(s): Mostly various employment related uses
Surface water flood risk



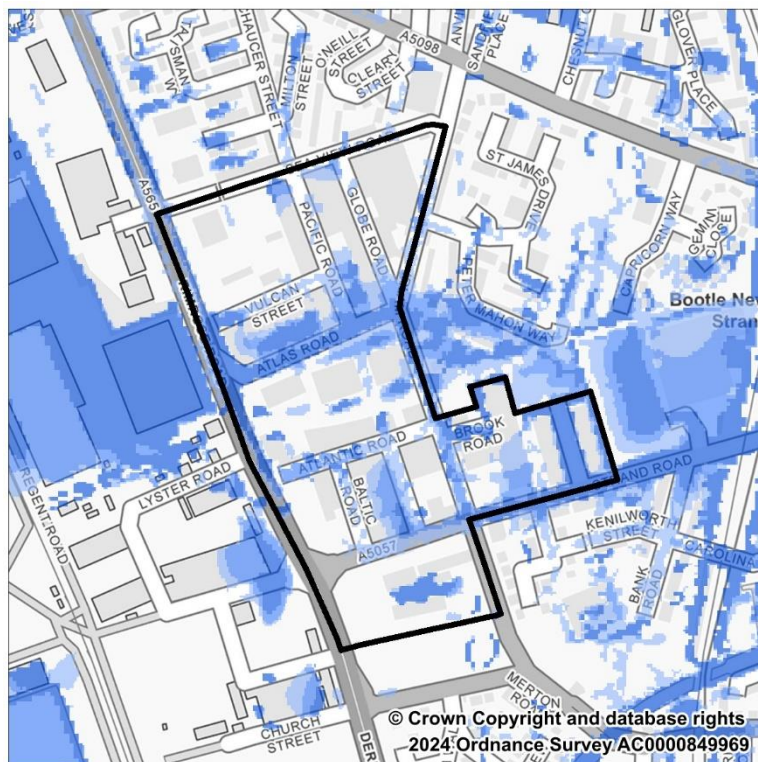
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	11.62%	5.21%	9.37%
Surface water Max depth (SWMP)			
Surface water Average depth (SWMP)			
Sewer flood risk	Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area, where development proposals will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. The risk of sewer flooding could affect the developable area of the site and the detail of the design.		
Canal flood risk	Low risk. Not on identified potential canal flow path in event of canal failure		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Parts of the site are considered of very high suitability and low suitability for infiltration SuDS respectively.		

Site: BE1 Canal St/ Berry St
BAAP policy: BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment
Surface water flood risk



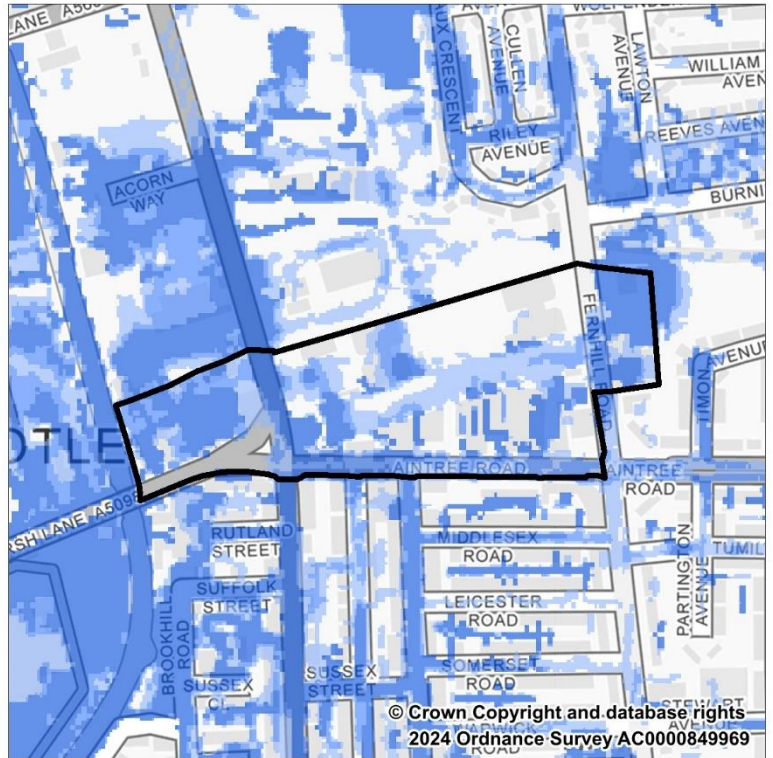
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	14.49%	6.17%	16.89%
Surface water Max depth (SWMP)	3.29 m	3.29 m	3.34 m
Surface water Average depth (SWMP)	0.29 m	0.27 m	0.27 m
Sewer flood risk	Low risk.		
Canal flood risk	Low risk. Near to raised section of canal, but not on identified potential canal flow path in event of canal failure		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	This site is considered of very high suitability for infiltration SuDS.		

Site: BE2 Maritime Enterprise Park
BAAP policy: BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment
Surface water flood risk



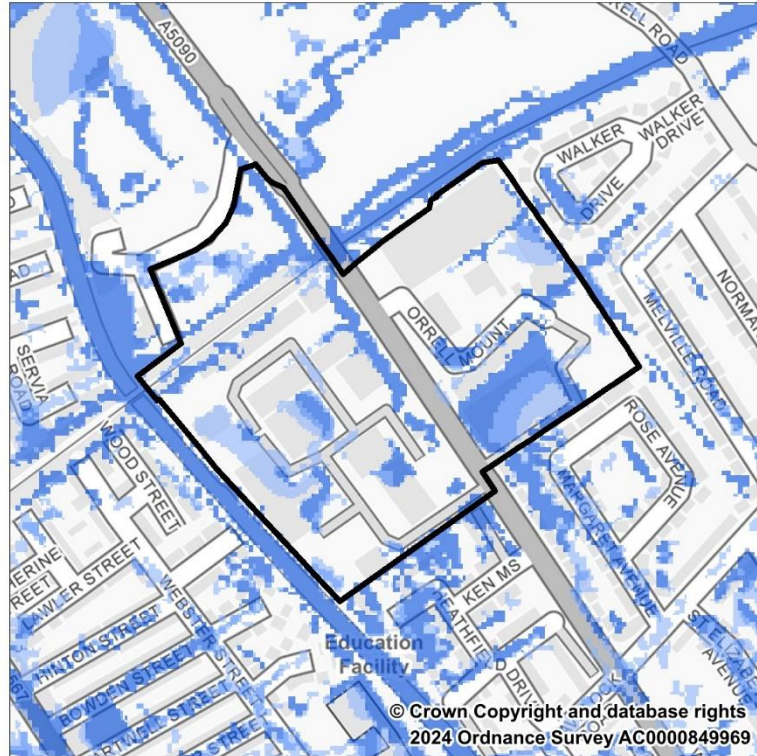
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	13.82%	8.69%	13.98%
Surface water Max depth (SWMP)	0.45 m	0.49 m	0.56 m
Surface water Average depth (SWMP)	0.16 m	0.17 m	0.22 m
Sewer flood risk	Low risk.		
Canal flood risk	Low risk.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	This site is considered of very high suitability for infiltration SuDS.		

Site: BE3 Hawthorne Rd/Aintree Rd
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
BAAP policy: BAAP12 Employment Land Provision Sites
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Employment and other uses
Surface water flood risk



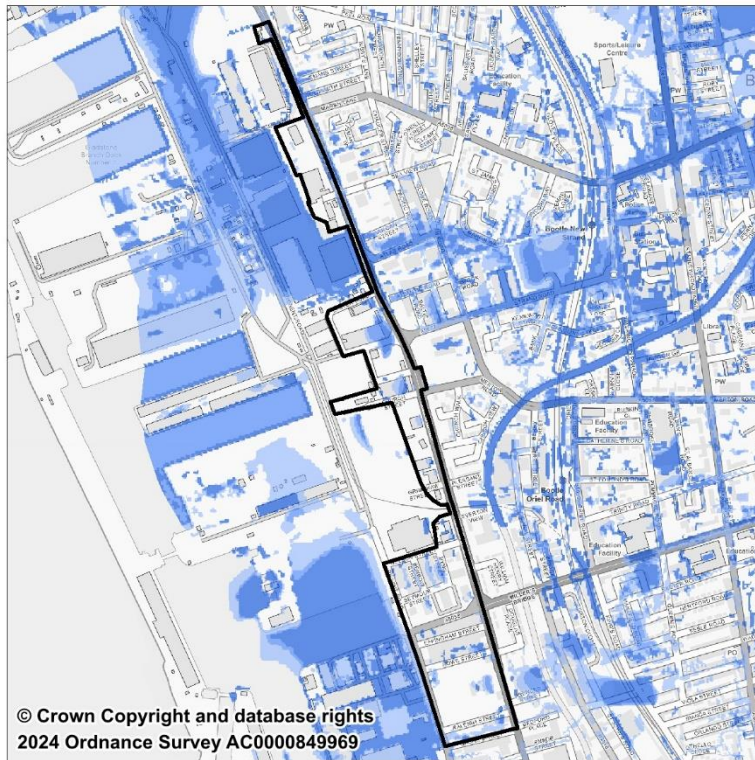
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	27.68%	15.40%	19.72%
Surface water Max depth (SWMP)	5.88 m	6.25 m	6.42 m
Surface water Average depth (SWMP)	0.30 m	0.27 m	0.25 m
Sewer flood risk	Low risk		
Canal flood risk	Low risk. Not on identified potential canal flow path in event of canal failure		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	This site is considered of very high suitability for infiltration SuDS.		

Site: BE4 Kingfisher/Orrell Mount
BAAP policy: BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment
Surface water flood risk



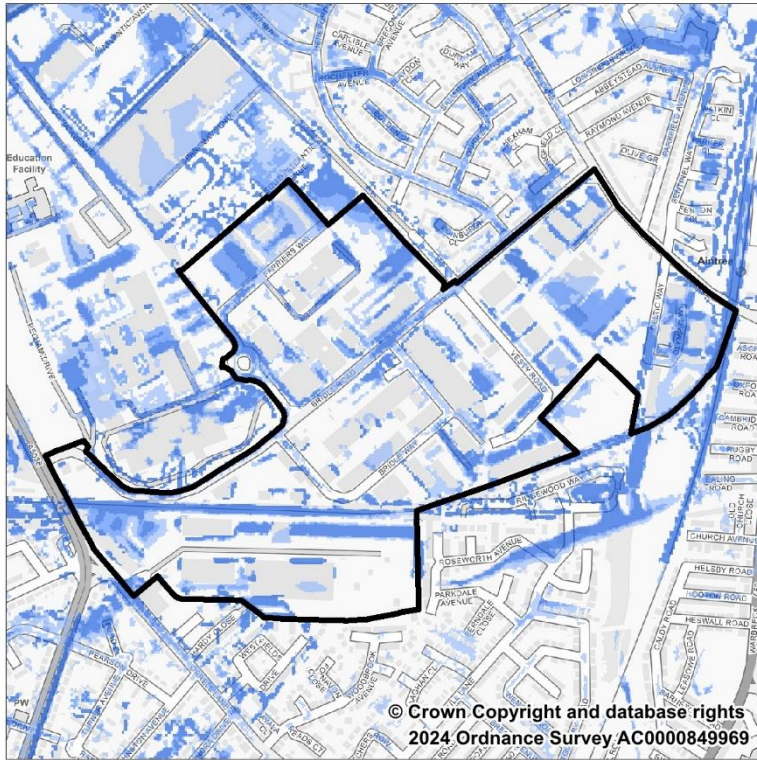
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	14.60%	5.01%	10.35%
Surface water Max depth (SWMP)	0.83 m	0.88 m	0.93 m
Surface water Average depth (SWMP)	0.16 m	0.17 m	0.19 m
Sewer flood risk	Low risk.		
Canal flood risk	Low risk. Not on identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Almost all of this site is considered of low suitability for infiltration SuDS.		

Site: BE5 Land between Regent Road and A565
BAAP policy: BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment
Surface water flood risk



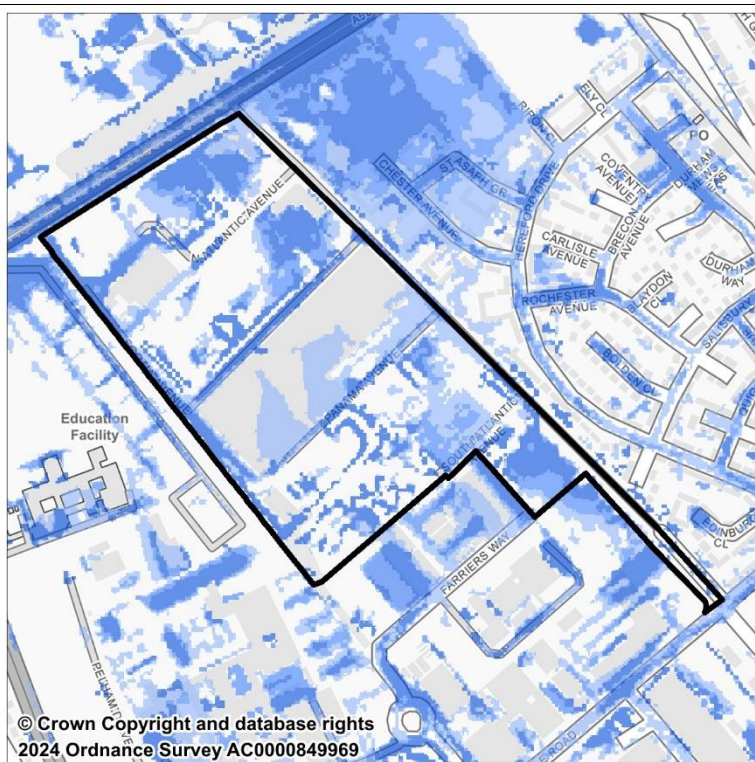
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	3.51%	3.32%	7.69%
Surface water Max depth (SWMP)	1.67 m	1.67 m	1.68 m
Surface water Average depth (SWMP)	0.21 m	0.21 m	0.22 m
Sewer flood risk	Low risk.		
Canal flood risk	Low risk, although northern edge of site is close to identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Most of the site is considered of very high suitability for infiltration SuDS; western part of the site is low suitability.		

Site: BE6 Bridle Road
BAAP policy: BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment
Surface water flood risk



River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	15.06%	7.27%	13.46%
Surface water Max depth (SWMP)	1.27 m	1.31 m	1.66 m
Surface water Average depth (SWMP)	0.19 m	0.21 m	0.23 m
Sewer flood risk	Low risk		
Canal flood risk	No risk		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Most of the site is considered of very high suitability for infiltration SuDS; parts of the southern part of the site is low suitability.		

Site: BE8 Atlantic Park
BAAP policy: BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment
Surface water flood risk



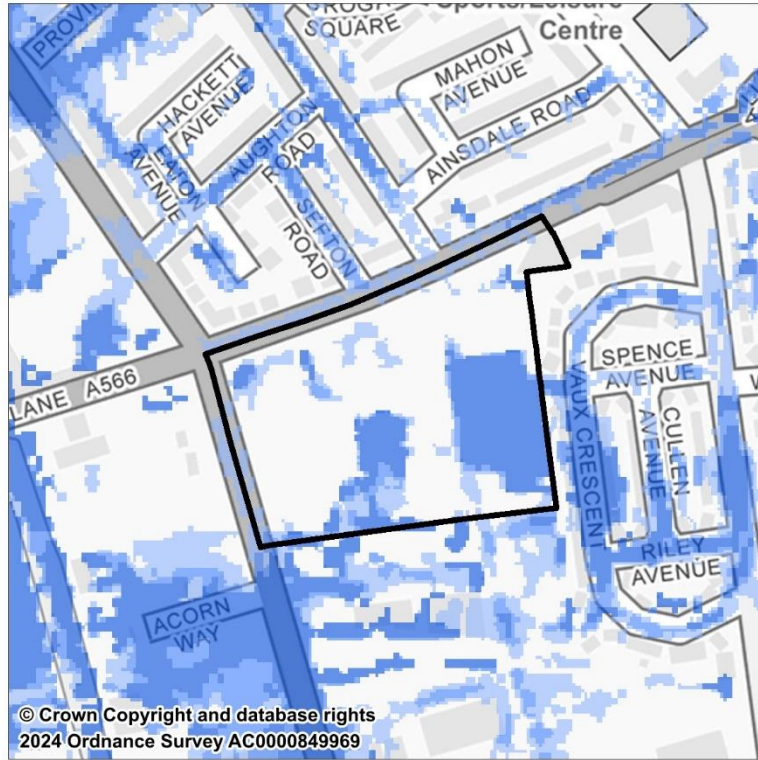
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	20.17%	8.52%	19.80%
Surface water Max depth (SWMP)	0.57 m	0.59 m	0.62 m
Surface water Average depth (SWMP)	0.17 m	0.18 m	0.21 m
Sewer flood risk	Low risk		
Canal flood risk	No risk		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	This site may be considered of very high suitability for infiltration SuDS. Therefore, permeable paving, soakaways, swales, filter strips and filter drains could be used. Green roofs are also an option		

Site: BE9 Senate Business Park
BAAP policy: BAAP12 Employment Land Provision Sites
Proposed Use(s): Employment
Surface water flood risk



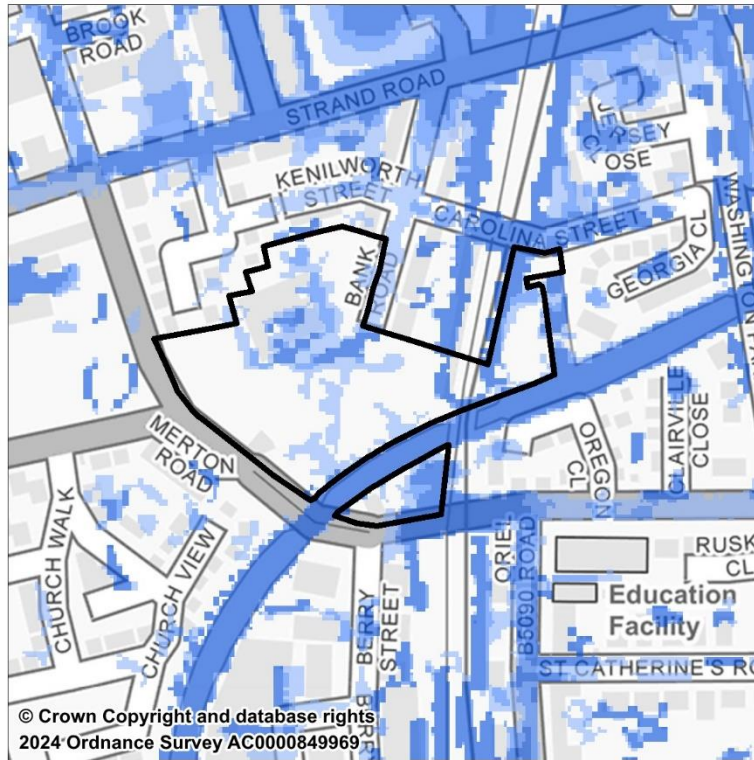
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	14.29%	7.85%	18.51%
Surface water Max depth (SWMP)	0.52 m	0.55 m	0.58 m
Surface water Average depth (SWMP)	0.17 m	0.19 m	0.21 m
Sewer flood risk	Low risk.		
Canal flood risk	No risk		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	This site is considered of very high suitability for infiltration SuDS. Therefore, permeable paving, soakaways, swales, filter strips and filter drains.		

Site: BH1 People's Site, Linacre Lane
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
BAAP policy: BAAP16 Housing Land Provision
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Housing and other uses
Surface water flood risk



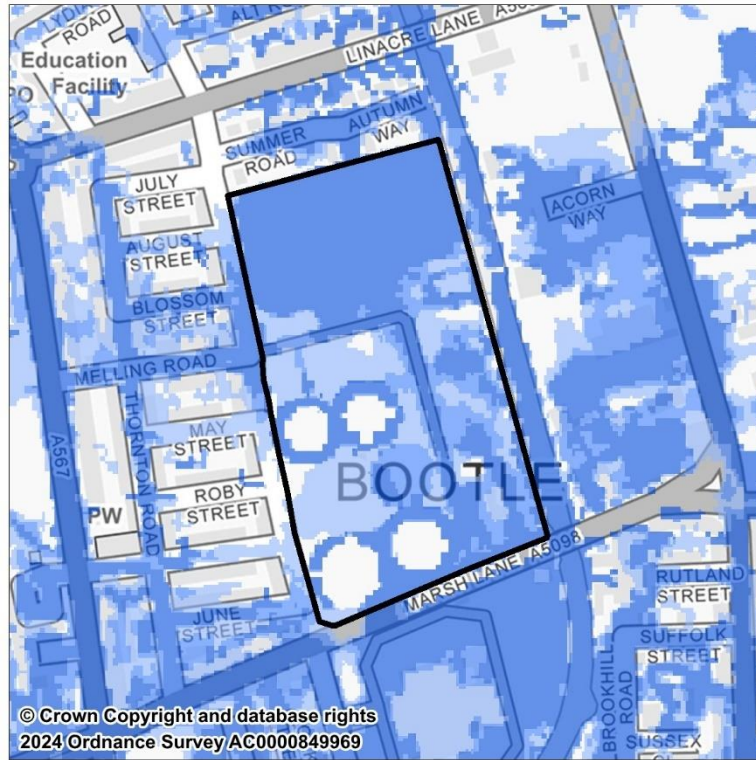
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	20.85%	3.63%	12.08%
Surface water Max depth (SWMP)	0.58 m	0.62 m	0.66 m
Surface water Average depth (SWMP)	0.18 m	0.17 m	0.17 m
Sewer flood risk	Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area, where development proposals will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. The risk of sewer flooding could affect the developable area of the site and the detail of the design.		
Canal flood risk	No risk		
Groundwater flood risk	Susceptibility to groundwater emergence <25%		
SuDS requirements	This site is considered of very high suitability for infiltration SuDS. Therefore, permeable paving, soakaways, swales, filter strips and filter drains		

Site: BH2 Coffee House Bridge housing site; also shown as BAAP23 Coffee House Bridge Opportunity Area
BAAP policies: BAAP16: Housing Land Provision BAAP23 Coffee House Bridge Opportunity Area
Proposed Use(s): Housing, and other uses
Surface water flood risk



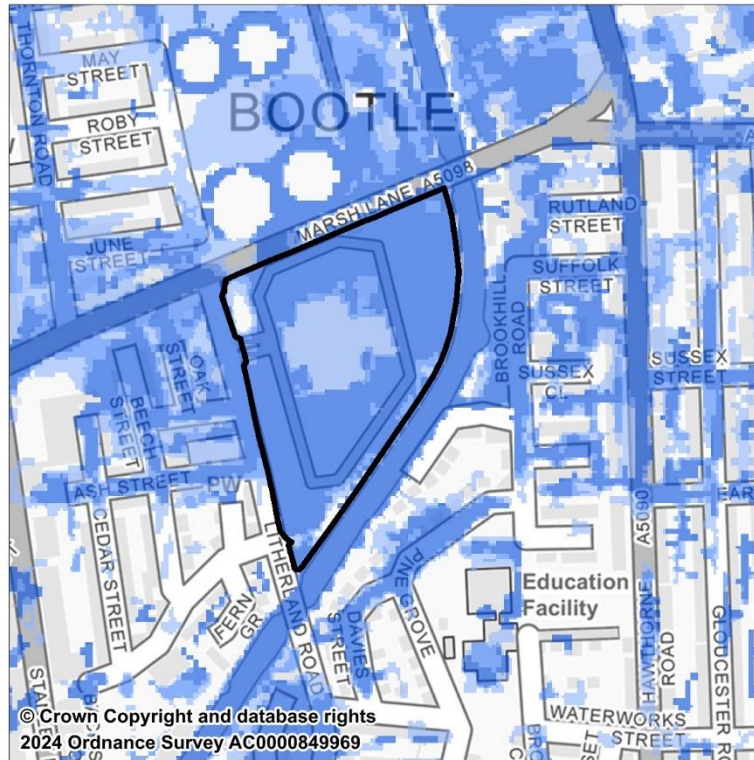
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	11.72%	5.47%	17.97%
Surface water Max depth (SWMP)	1.67 m	1.67 m	1.72 m
Surface water Average depth (SWMP)	0.24 m	0.21 m	0.19 m
Sewer flood risk	Low risk.		
Canal flood risk	High risk. On or close to identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Site is considered to be mostly of very high suitability for infiltration SuDS.		

Site: BH3 Site of the former Bootle Gas Works
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
BAAP policy: BAAP16 Housing Land Provision
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Housing, and other uses
Surface water flood risk



River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	52.96%	13.92%	22.08%
Surface water Max depth (SWMP)	2.35 m	2.36 m	2.43 m
Surface water Average depth (SWMP)	0.38 m	0.44 m	0.50 m
Sewer flood risk	Low risk.		
Canal flood risk	Medium-high risk. At or close to identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Within groundwater emergence zone		
SuDS requirements	Site is considered to be of very low suitability for infiltration SuDS.		

Site: BH4 Site of Litherland House, Litherland Rd
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
BAAP policy: BAAP16 Housing Land Provision
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Housing and other uses
Surface water flood risk



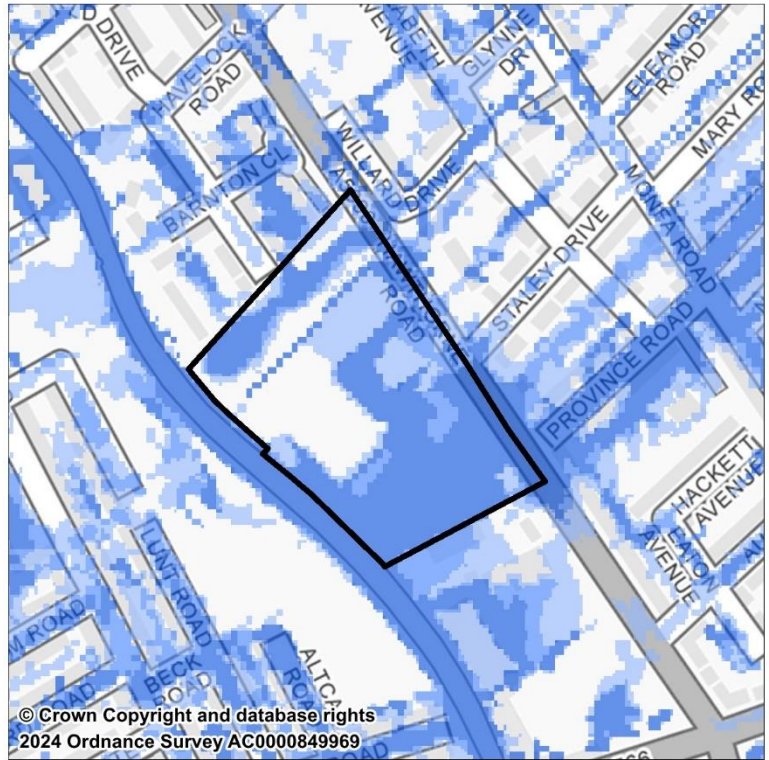
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	74.38%	8.13%	15.63%
Surface water Max depth (SWMP)	1.01 m	1.19 m	1.32 m
Surface water Average depth (SWMP)	0.21 m	0.25 m	0.33 m
Sewer flood risk	Low risk.		
Canal flood risk	High risk. Identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Within groundwater emergence zone		
SuDS requirements	Site is considered to be mostly low suitability for infiltration SuDS respectively.		

Site: BH5 Site of the former Johnsons Cleaners
BAAP policy: BAAP16 Housing Land Provision
Proposed Use(s): Housing and other uses
Surface water flood risk



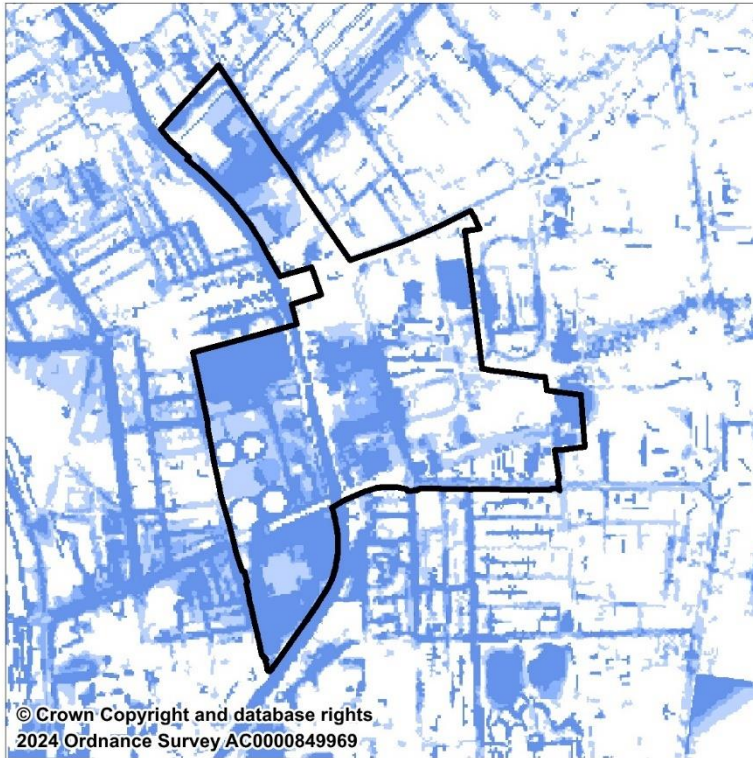
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	9.36%	17.54%	41.52%
Surface water Max depth (SWMP)	0.30 m	0.52 m	0.98 m
Surface water Average depth (SWMP)	0.15 m	0.19 m	0.25 m
Sewer flood risk	Low risk		
Canal flood risk	High risk. Identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Within groundwater emergence zone		
SuDS requirements	Site is considered to be mostly very low suitability for infiltration SuDS.		

Site: BH6 503-509 Hawthorne Rd, Bootle
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
BAAP policy: BAAP16 Housing Land Provision
Also within BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Housing and other uses
Surface water flood risk



River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	50.70%	9.44%	17.83%
Surface water Max depth (SWMP)	0.55 m	0.69 m	0.94 m
Surface water Average depth (SWMP)	0.21 m	0.25 m	0.36 m
Sewer flood risk	Initial UU modelling at Preferred Options stage identified on-site sewer flood risk. Sewer flood risk on the site will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. It should be noted that the risk of sewer flooding could affect the developable area of the site and the detail of the design.		
Canal flood risk	Low risk. Not an identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Limited part of site may be within groundwater emergence zone		
SuDS requirements	Parts of the site are considered to be at very high and parts are low suitability for infiltration SuDS respectively.		

Site: BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
BAAP policy: BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Some sites are also housing and employment sites – see these sites individually, above
Proposed Use(s): Housing, employment and other uses
Surface water flood risk



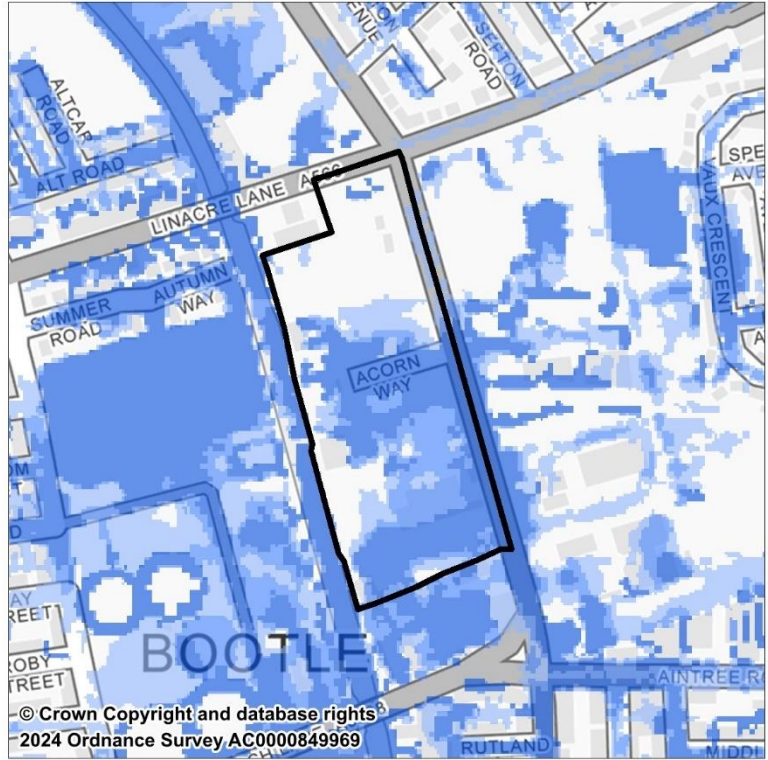
River and Tidal flood risk	The Regeneration Opportunity Area is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	38.51%	11.38%	18.28%
Surface water Max depth (SWMP)			
Surface water Average depth (SWMP)			
Sewer flood risk	Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area, where development proposals will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. The risk of sewer flooding could affect the developable area of the site and the detail of the design.		
Canal flood risk	Medium -low risk, although only a small part of the area is on an identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Part of area is within groundwater emergence zone		
SuDS requirements	Area is considered to have varying suitability for infiltration SuDS.		

Site: BR1 Land to Northwest of Linacre Lane and Hawthorne Road Junction
BAAP policy: BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Housing and other uses compatible with the existing and proposed residential area
Surface water flood risk



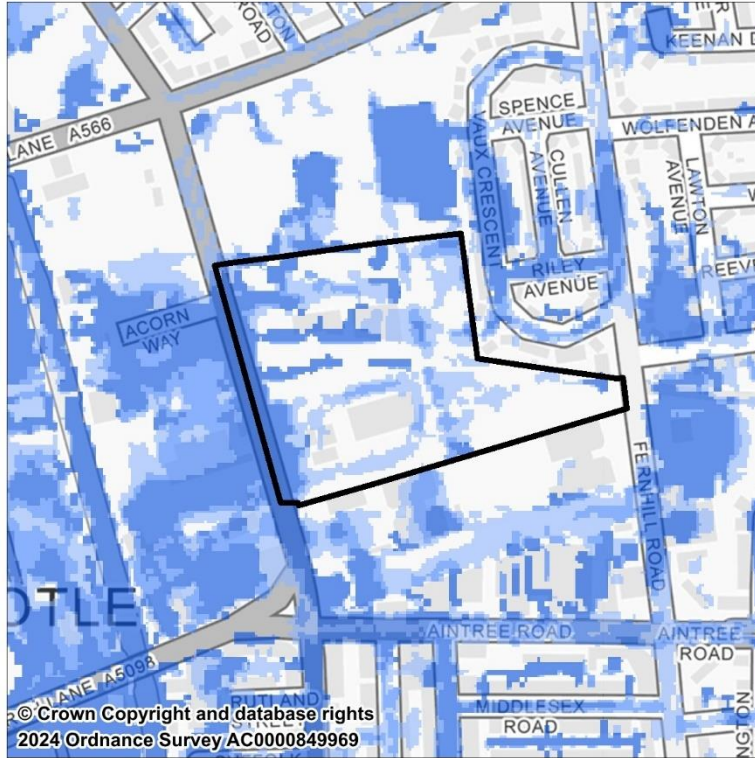
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	19.00%	12.22%	24.89%
Surface water Max depth (SWMP)	0.42 m	0.53 m	0.73 m
Surface water Average depth (SWMP)	0.16 m	0.21 m	0.29 m
Sewer flood risk	Low risk		
Canal flood risk	Low risk. Although site is next to the canal, not on or near an identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Part of site is in groundwater emergence zone		
SuDS requirements	Parts of the site are considered to be at very high and parts are low suitability for infiltration SuDS respectively.		

Site: BR2 Land South of Linacre Lane between Hawthorne Road and Canal
BAAP policy: BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Housing and other uses compatible with the existing and proposed residential area
Surface water flood risk



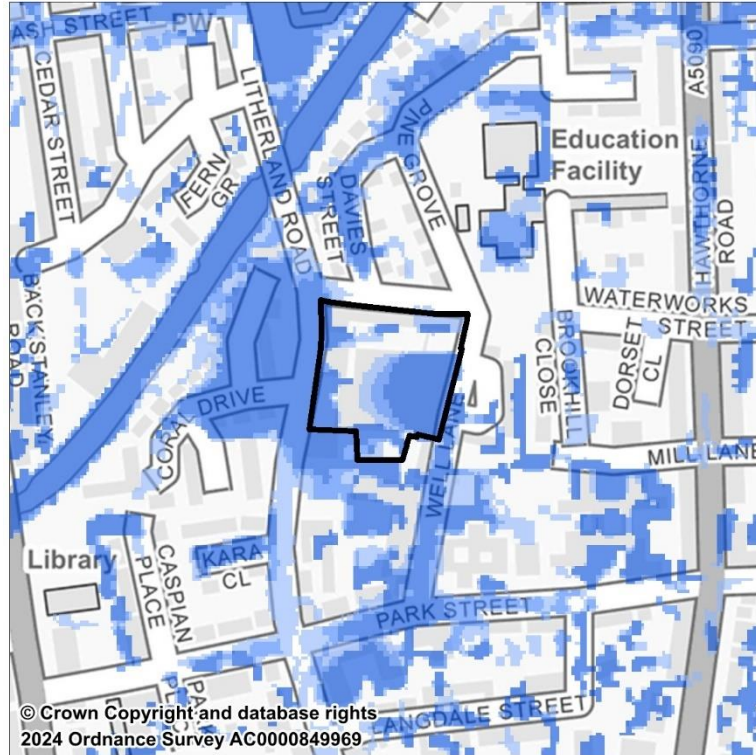
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	33.92%	15.96%	12.72%
Surface water Max depth (SWMP)	0.84 m	0.97 m	1.12 m
Surface water Average depth (SWMP)	0.24 m	0.29 m	0.31 m
Sewer flood risk	Low risk		
Canal flood risk	Low risk. Not an identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Western edge of site is in groundwater emergence zone		
SuDS requirements	Site is considered to be at very high suitability for infiltration SuDS.		

BR3 Land between Hawthorne Road and Vaux Crescent/Place
BAAP policy: BAAP20 Hawthorne Road/ Canal Corridor Opportunity Area
Proposed Use(s): Housing and other uses compatible with the existing and proposed residential area
Surface water flood risk



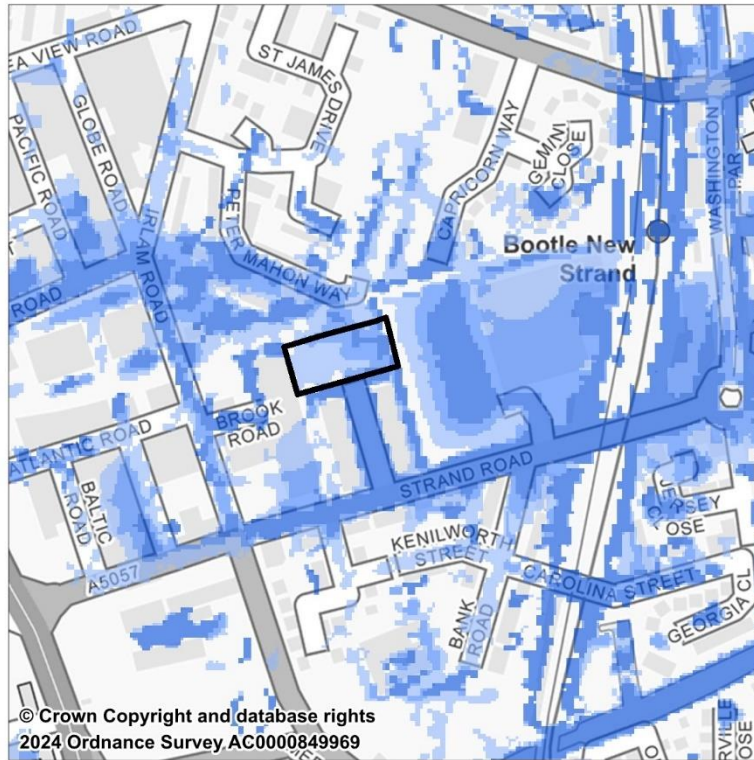
River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	Limited	Limited	Limited
Surface water Max depth (SWMP)	0.94 m	1.03 m	1.15 m
Surface water Average depth (SWMP)	0.24 m	0.25 m	0.23 m
Sewer flood risk	Low risk		
Canal flood risk	Low risk. Not an identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Site is considered to be at very high suitability for infiltration SuDS.		

Site: BAAP21 Bootle Village Opportunity Area
BAAP policy: BAAP21 Bootle Village Opportunity Area
Proposed Use(s): Housing, employment and other uses
Surface water flood risk



River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
	44.44%	7.41%	13.58%
Surface water Max depth (SWMP)	0.66 m	0.77 m	0.89 m
Surface water Average depth (SWMP)	0.23 m	0.26 m	0.33 m
Sewer flood risk	Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area, where development proposals will need careful assessment and consideration in the detailed design, masterplanning and drainage details for the site. The risk of sewer flooding could affect the developable area of the site and the detail of the design.		
Canal flood risk	Low risk. Not on an identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Area is considered to have mostly low suitability for infiltration SuDS.		

Site: BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area
Policy: BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area
Proposed Use(s): Employment. Commercial, drinking establishment
Surface water flood risk



River and tidal flood risk	The site is in Flood Zone 1		
Surface water	High risk	Medium risk	Low risk
% of site (EA, RoFSW)	15.15%	30.30%	42.42%
Surface water Max depth (SWMP)	0 (no areas at high risk)	0.16 m	0.25 m
Surface water Average depth (SWMP)	0 (no areas at high risk]	0.11 m	0.13 m
Sewer flood risk	Low risk		
Canal flood risk	Medium- low risk, although not far from an identified potential canal flow path in event of canal failure.		
Groundwater flood risk	Not within mapped groundwater emergence zone. Low risk.		
SuDS requirements	Area is considered to have mostly high suitability for infiltration SuDS.		

Site: BAAP23 Coffee House Bridge Regeneration Opportunity Area
<i>See BH2 Coffee House Bridge above</i>