Sefton Council

Bootle Area Action Plan:

Strategic Flood Risk Assessment - Overview Update

July 2024

Contents

Notes:

May 2024: The draft Strategic Flood Risk Assessment Overview Update 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: Final Strategic Flood Risk Assessment Overview Update; 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 Strategic Flood Risk Assessment Overview Update document complements and informs the Sequential Test and Exception Test Assessment for Bootle Area Action Plan.

Executive Summary

ES1 This Overview Update Strategic Flood Risk Assessment (SFRA) provides a clear, up-to-date understanding and overview of flood risk from all sources in the Bootle Area Action Plan area, including with climate change. It helps to make sure that Bootle Area Action Plan policy and supporting evidence is in line local and national planning policy and guidance in relation to management and mitigation of flood risk in the plan area. The Overview Update SFRA complements and informs the Sequential Test and Exception Test Assessment for Bootle Area Action Plan.

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 SFRA Overview Update is fit for purpose. The Environment Agency, United Utilities and Lead Flood Authority were consulted informally on the draft SFRA Overview Update.

ES3 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.

ES4 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.

ES5 The whole of the plan area is in Flood Zone 1, irrespective of climate change. There are no surface watercourses or surface water bodies, other than the canal; hence no fluvial (river) flood risk. As a landlocked area, there is no tidal flood risk.

ES6 Almost all surface water in the plan areas discharges to combined sewers. There are three highway drains in the plan area, connecting to combined sewers. Bootle's combined sewers mostly discharge to the MEPAS main sewer which links to the Sandon Dock Wastewater Treatment Work, or flow in Combined Sewer Overflows during times of flooding.

ES7 This SFRA Overview Update shows that surface water flood risk is the most significant source of flood risk in the Plan area. This includes areas at high, medium and low risk of surface water flooding (3.3%, 1% and 0.1% chance each year, respectively). Surface water risk is more extensive across the whole of Sefton (including the plan area) than in many other local authority areas.

ES8 Environment Agency surface water mapping extents indicate a multitude of localised areas at risk of surface water flooding, and more extensive areas at high and lower risk of surface

water flooding in two main locations, approximately between Seaforth Road and Akenside Street, and the area bounded by the canal, Litherland Road and Linacre Road. More extensive areas mainly at medium or low risk of surface water flooding are indicated north of Strand Road (west of Washington Parade), between Stanley Road/Linacre Road and Hornby Boulevard and in more linear areas, for example along transport routes. In terms of predicted surface water flood depths, relatively few areas are at risk of deeper flooding (above 90 cm). Most flooding would be at depths of below 30 cm or up to 90 cm.

ES9 There are relatively few historic records of surface water (highways) and sewer flooding in the plan area compared to the rest of Sefton; many of these were external flooding events. However, in their comments during the consultation on the Plan's Preferred Options, United Utilities identified a relatively small number of sites with *"on-site modelled sewer flood risk"* and a site "*with a record of sewer flooding on the site/ in the vicinity".*

ES10 Parts of Bootle are subject to groundwater flood risks. There is an extensive groundwater emergence zone to the west of the canal, with a small pocket east of the canal just north of Linacre Lane, although there are no recent records of groundwater flooding in the plan area.

ES11 The 2013 SFRA included mapping showing indicative suitability for sustainable drainage systems (SuDS). Suitability varies across the Bootle Area Action Plan area. The area of very low suitability links to the groundwater emergence zone. Some of the plan area has is high indicative suitability, with a small area of southern Bootle having very high suitability. However, it must be recognised that in an already heavily built-up area, parts of which have a legacy of contaminated land, pockets of opportunities for surface water to infiltrate into the ground may be relatively limited on some sites.

ES12 The 2013 SFRA identifies the potential risk of canal flooding in the plan area, and the most likely flow paths in the event of any breach; all to the western side of the canal. However, the risk of flooding from the canal should not determine whether development should take place on a site or not. Canal flooding is a residual risk. There is no reservoir flood risk within the plan area.

ES13 In practice, cumulative assessment of the impact of development on flood risk within Bootle Area Action Plan area should focus on surface water flood risk, groundwater emergence and site suitability for sustainable drainage systems and sewer flood risk, particularly on sites where United Utilities have indicated a risk.

ES14 Management and mitigation of surface water run-off is considered to be very important, including reductions in run-off rates on previously developed sites. The inter-relationships between surface water flood risk, groundwater emergence and site suitability for sustainable drainage systems and sewer flood risk are also important. The 2013 SFRA noted 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. However, 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.

ES15 Many policies in the 2017 Sefton Local Plan will remain in force in the Area Action Plan area, notably, Local Plan policy EQ8 'Flood risk and surface water'. Key parts of policy EQ8 relate to the sequential approach to development, design requirements for sustainable surface water

drainage systems (SuDS), reduction in surface water run-off rates and volumes, and meeting the challenge of climate change. The Validation Checklist for planning applications requires all submitted proposals for major development to include a completed Sefton SuDS Pro Forma, to demonstrate that the site's surface water drainage strategy meets these requirements.

ES16 In the light of the emerging findings of this SFRA Overview Update, and to consolidate this existing approach, part 9 of policy BAAP1 'Design' refers to then 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. Paragraph 5.12 of the explanation to the policy emphasises the risks of flooding from surface water, sewers and to a lesser extent groundwater and canal flood risk. In line with Local Plan policy EQ8 it calls for a 20% reduction in surface water run-off rates and volumes on previously developed sites, where reasonably practicable. Paragraph 5.12 stresses the need for careful consideration of surface water and other flood risk issues at the detailed site design, masterplanning and drainage details stage. It also notes that management and mitigation of these risks may affect the developable area of the sites and the detail of design and layout.

ES17 The sequential and exception test assessment of the 22 (re)development sites in Bootle Area Action Plan indicated that all of sites pass these tests. This is set firmly within the regeneration context of the Plan and area. 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. In relation to part a ('wider sustainability benefits') 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. It is assumed that part b of the exception test ('safety') is capable of being passed, subject to the detailed assessment which is explicit in paragraph 5.12 of the explanation to emerging Bootle Area Action Plan policy BAAP1 Design.

ES18 The SFRA Overview Update has 7 Recommendations. The first recognises the links between thiss SFRA Overview Update and the Sequential Test and Exception Test Assessment. Recommendations 2 and 3 require careful assessment and consideration of flood risk issues must be made at the detailed design, masterplanning and drainage details stages for all 22 development sites, and state that developers must recognise that this could affect the developable area of the site, quantum of development and the detailed design of proposals. These recommendations are taken forward in paragraph 5.12 of the Plan, as above. Recommendation 4 is that where infiltration SuDS are proposed, location-specific soakaway tests in line with BRE365 or similar should be used to confirm the suitability of the ground conditions. This should be completed at the conceptual design stage to avoid issues arising post-planning consent.

ES19 Recommendation 5 is that Recommendations 2-4 must be reflected in submitted SuDS/ Drainage Pro Forms and Site-specific Flood Risk Assessments, for all 22 (re)development sites. Development proposals must meet the surface water provisions of Local Plan policy EQ8 'Flood Risk and Surface Water. Recommendations 6 and 7 relate to emergency planning.

1. Introduction to the SFRA Overview Update

Purpose

1.1 The purpose of this Strategic Flood Risk Assessment (SFRA) Overview Update is to:

- Provide a clear, up-to-date understanding and overview of flood risk from all sources in the Bootle Area Action Plan area,
- Taking account, in a proportionate manner, of the impacts of climate change, and
- Make sure that Bootle Area Action Plan policy and supporting evidence is in line local and national planning policy and guidance in relation to management and mitigation of this flood risk,

1.2 Government guidance says that local planning authorities should carry out strategic flood risk assessments (SFRAs) to inform the development plan preparation process in their areas. Paragraph 167 of the National Planning Policy Framework[1] is clear that:

"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. …"

1.3 Environment Agency guidance on 'How to prepare a Strategic Flood Risk Assessment'[2] (SFRA) is clear that the SFRA will help inform planning decisions about the design and location of development and any flood risk management features and structures". It says that SFRAs should assess:

- *the "risk from all sources of flooding"*
- *the "cumulative impact that development or changing land use would have on the risk of flooding" and*
- *the "effect of climate change on risk"*

and should identify:

- *"opportunities to reduce the causes and impacts of flooding*
- *any land likely to be needed for flood risk management features and structures".*

Overview of Bootle Area Action Plan

1.4 Consultation on the Issues and Options stage took place from November 2021 to January 2022. Public consultation on the Bootle AAP Preferred Options[3] took place from 14th August to 6th November 2023. The Publication Draft is currently being prepared, with consultation due to take place in mid-2024[4].

1.5 The vision to 2040 and beyond for the Bootle Action Area Plan is supported by 15 objectives. The **vision** is that:

[1] National Planning Policy Framework, December 2023 – see https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf
[2] See https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment
[3] See https://www.sefton.gov.uk/media/7094/bootle-aap-local-plan-document-final.pdf
[4] See local-development-scheme2023_26-june2023.pdf (sefton.gov.uk)

'Our ambition is for Bootle to be one of the best places in which to grow up in the country. By 2040, a regenerated Bootle will be a place that provides a full range of opportunities to all its residents to live secure, fulfilling, healthy and supported lives whilst addressing key environmental challenges, including pollution and climate change. It will be a place that is open to sustainable business and provide skills, expertise, land, facilities and infrastructure that is attractive to a range of high-quality employers particularly those that would benefit from Bootle's superb locational advantages. Key to Bootle's success will be our children and young people who will have the spaces, opportunities, support and a voice to shape their town for the future.'

Objective 13 is "To set standards in new development that help the Council respond to the challenge of climate change*".*

1.6 There are twenty-four Bootle Area Action Plan policies, covering:

- Design and Best Use of Resources (policies BAAP1-2)
- Bootle Central Area (policies BAAP3-6)
- Local Shopping Parades (policy BAAP7)
- Getting Around (policy BAAP8)
- Nature (policy BAAP9)
- Healthy Bootle (policy BAAP10)
- Public Greenspace (policy BAAP11)
- Employment, Jobs and Training (policies BAAP12-15)
- Homes & Living (policies BAAP16-19)
- Regeneration Opportunity Areas (policies BAAP20-23)
- Environmental Improvements (policy BAAP24).

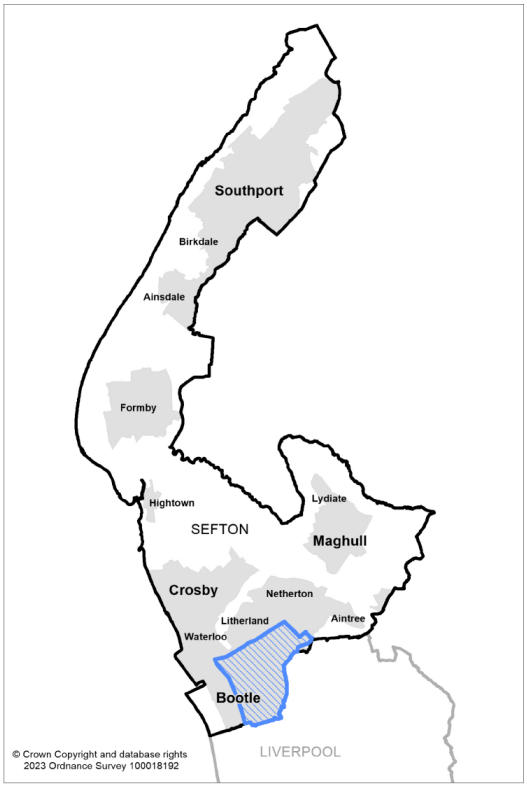
1.7 The Bootle Area Action Plan area (833.5 ha) covers only 5.38% of the Borough of Sefton (15,480 ha to mean high water), and about 15.9% of Sefton's population (44,000 people). The area covered by Bootle Area Action Plan, within the Sefton context, is shown in Figure 1.1. The plan area is entirely urban and almost all development is anticipated to be on sites that are previously developed. The plan area does not include any coastline for example

1.8 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.

1.9 However, Bootle Area Action Plan also identifies new sites and priorities. It 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. Bootle Area Action Plan includes 22 sites, Regeneration Opportunity Areas and other areas which may be termed 'development sites'. A plan showing these development sites in shown in Appendix 1, and they are listed in Figure 1.2 below. 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
- Regeneration Opportunity Areas.

Figure 1.1 Bootle Action Area Plan within the Sefton context



1.10 The Hawthorne Road/ Canal Corridor Regeneration Opportunity Area includes 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. They are listed in Figure 1.2 below. The plan also identifies other areas such as green spaces, local centres and primarily residential areas. Other policies set out the approach to design and best use of resources, getting around, affordable housing and housing mix and environmental improvements for example.

Figure 1.2 Development sites in Bootle Area Action Plan area (showing policy/ sites references)
BAAP3 Bootle Central Area:
BAAP4 Bootle Town Centre
BAAP5 Bootle Office Quarter / *policy BAAP12, site BE7 Bootle Office Quarter*
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/Orrell Mount
BE5 Land between Regent Road and A565
BE6 Bridle Road
BE8 Atlantic Park

Figure 1.2 Development sites in Bootle Area Action Plan area (showing policy/ sites references)
BE9 Senate Business Park
BAAP16 Provision of Housing Land:
BH1 People's Site, Linacre Lane *(within BAAP20 Hawthorne Road/Canal Corridor)*
BH3 Site of the former Bootle Gas Works *(within BAAP20 Hawthorne Road/Canal Corridor)*
BH4 Site of Litherland House, Litherland Rd *(within BAAP20 Hawthorne Road/Canal Corridor)*
BH5 Site of the former Johnsons Cleaners
BH6 503-509 Hawthorne Rd *(within BAAP20 Hawthorne Road/Canal Corridor)*
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)

1.11 Many other Local Plan policies will remain in force in the Area Action Plan area, notably policy EQ8 'Flood risk and surface water' which will remain the main flood risk policy against which planning applications will be assessed. The policy and its explanation is shown in Appendix 2. The Council has also adopted a Sustainable Drainage Systems (SuDS) and Flood Risk Information Note (2018)[5] which provides more information about how policy EQ8 is interpreted. This was subject to public consultation. This will also remain relevant to the plan area. More detailed information about this is set out in Chapter 3.

1.12 While Local Plan policy EQ8 'Flood risk and surface water' remains the main flood risk policy against which planning applications will be assessed, it should be noted that part 9 of the emerging Bootle Area Action Plan policy BAAP1 Design states that:

"9. Development proposals should help mitigate and adapt to the impact of climate change including taking appropriate opportunities to introduce, protect and enhance green and blue infrastructure, soft landscaping and biodiversity, and reduce surface water run-off rates and volumes and other sources of flood risk".

1.13 The explanation to this Bootle Area Action Plan policy BAAP1 also states that:

"5.12 Surface water run-off, and surface water, sewer and to a lesser extent groundwater and canal flood risk are issues in certain parts of Bootle, including on some housing and employment sites and Regeneration Opportunity and other areas. Development proposals for these sites will need careful consideration of these surface water and other flood risk issues at the detailed design, masterplanning and drainage details stages for the site. It should be noted that management and mitigation of these risks may affect the developable area of the sites and the detail of design and layout. This should be reflected in submitted SuDS/ Drainage Pro Forms and Site-specific Flood Risk Assessments. Development proposals

[5] See https://www.sefton.gov.uk/media/3497/flood-risk-information-note-fulldoc.pdf

on these sites must be able to show that the 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".

1.14 Also, Sefton Council requires applicants submitting major development proposals to complete its SuDS/ Drainage Pro Forma[6], which requires detailed information about the site, surface water discharge rates and volumes, types of SuDS to be used, maintenance and other information. This is in line with policy EQ8 and the requirement of paragraph 175 of the National Planning Policy Framework. The SuDS/Drainage Pro Forma is shown in Appendix 3.

SFRA Overview Update Scope

1.15 Sefton Council prepared Strategic Flood Risk Assessment (2013)[7] (SFRA) to inform the preparation of the 2017 Sefton Local Plan[8], including policy EQ8 'Flood risk and surface water'; and carried out sequential testing of sites in line with contemporaneous guidance. Much of the content of the SFRA remains relevant or broadly relevant to the Bootle AAP, as summarised in figure 1.3 below.

1.16 Sefton Council also prepared a Local Plan Site Flood Risk Screening Report (2015)[9] which provided flood risk information for allocated housing and employment sites, including several sites taken forward in the Bootle AAP. The LCR Combined Authority has also prepared a SFRA to inform their preparation of the Spatial Development Strategy[10]. This placed greater emphasis on surface water flood risk, not just river and tidal flood risk, in terms of the flood risk sequential approach.

1.17 This SFRA Overview Update will be informed by these existing Sefton and LCR documents, and by more recent Environment Agency surface water flood risk information. The scope of the SFRA Overview Update will also reflect the fact that Local Plan policy EQ8 'Flood risk and surface water', the SuDS and Flood Risk Information Note and use of the SuDS Pro Forma remain in force in the AAP area. The Council considers that this framework helps it to take a robust approach to the management and mitigation of flood risk for all sources. For the Bootle AAP area, surface water flood risk is considered to the main focus. The SFRA Overview Update will also take account of national planning policy and guidance.

1.18 The 2013 SFRA showed that the entire Bootle Action Area Plan area is within Flood Zone 1, that is, the area at lowest risk of tidal and river flooding. This removes the need for extensive discussions of river and tidal flood risk and management in this document. About half of the plan area falls within the Lower Mersey Catchment, the rest within the Alt catchment. There are no main rivers in the plan area.

[6] See https://www.sefton.gov.uk/media/7382/final_sefton_suds_-pro-forma_1_web.pdf and https://www.sefton.gov.uk/media/7381/final_sefton_suds_pro-forma_guidance_web.pdf
[7] See https://www.sefton.gov.uk/media/2389/flood-risk-assessment-capitasymonds-2013.pdf
[8] See https://www.sefton.gov.uk/localplan
[9] 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
[10] LCR Combined Authority, July 2023, unpublished Draft

1.19 The 2013 SFRA and 2015 Site Screening Report also indicated that surface water flood risk is the most significant source of flood risk affecting the Bootle Area Action Plan area (and indeed much of Sefton). Sewers, the canal and groundwater are other potential sources of flood risk; the Leeds and Liverpool Canal runs approximately north-south through the plan area. There are no reservoirs and no reservoir flood risk in the plan area.

Figure 1.3 Summary of relevance of 2013 SFRA to Bootle Area Action Plan

SFRA content	Relevance to Bootle Area Action Plan	Further comment
Sources of flooding/ flood risk:		
River flooding: Environment Agency fluvial flood zones Flood Zone 3b Impact of defences	2013 SFRA and current Environment Agency Flood Map for planning shows all of Bootle AAP area to be in the undefended Flood Zone 1	Not within detailed scope of this SFRA Overview Update – limited reference will be made.
Tidal flooding: Environment Agency tidal flood zones Impact of defences	2013 SFRA and current Environment Agency Flood Map for planning shows all of Bootle AAP area to be in the undefended Flood Zone 1	Not within detailed scope of this SFRA Overview Update – limited reference will be made.
Flood warning areas	2013 SFRA showed no Flood Warning Areas in Bootle AAP area.	Not within scope of this SFRA Overview Update
Surface water & sewer flooding:		
Surface Water Management Plan (SWMP) outputs	2013 SFRA indicates broad areas of surface water risk. Effectively superseded by Environment Agency Risk of Flooding for Surface Water data, although Sefton's Surface Water Management Plan is still relevant	Environment Agency Risk of Flooding from Surface Water data and surface water flooding, management and mitigation measures are within scope of this SFRA Overview Update. Sefton's Surface Water Management Plan is still relevant
Local Flood Risk Zones (1 in 100 annual probability event)		
Environment Agency Areas Susceptible to surface water flooding		
Critical Drainage Areas (CDAs)	2013 SFRA CDA remains relevant, as referred to in policy EQ8. Most of AAP area within the CDA	Within the scope of this this SFRA Overview Update
Historical Surface Water and Sewer Flooding	2013 SFRA provides relevant overview of magnitude and broad locations of these historic risk	Overview of these risks, and more recent Lead Local Flood Authority records is within the scope of this SFRA Overview Update

Figure 1.3 Summary of relevance of 2013 SFRA to Bootle Area Action Plan		
SFRA content	**Relevance to Bootle Area Action Plan**	**Further comment**
Indicative suitability for infiltration type SuDS	2013 SFRA remains broadly relevant.	Within the scope of this SFRA Overview Update
Potential Canal flood risk	2013 SFRA remains relevant.	Within the scope of this SFRA Overview Update
Groundwater flood risk	2013 SFRA remains relevant. Shows a groundwater emergence zone in part of AAP area, although currently the Environment Agency website indicates that flooding from groundwater is unlikely in this area	Overview of this risk is within the scope of this SFRA Overview Update
Reservoir flooding	2013 SFRA showed no reservoir flood risk in the AAP area. Current Environment Agency websites says that flooding from reservoirs is unlikely in this area.	Not within detailed scope of this SFRA Overview Update – limited reference will be made.
Use of the SFRA:		
Use of the SFRA for Local Planning and Development Management	Largely superseded by the adoption of the 2017 Sefton Local Plan including policy EQ8 'Flood risk and surface water' and recent national planning policy & guidance	Revised information to be included in this SFRA Overview Update if relevant
Guidance & recommendations:		
Guidance	Largely superseded by more recent national planning policy & guidance	Revised section on guidance to be included in this SFRA Overview Update
Recommendations	Most recommendations already taken forward in Local Plan policy EQ8 (which remains in force for Bootle AAP area). Other recommendations in relation river, tidal and reservoir flooding not relevant	Very few recommendations to be taken forward in this SFRA Overview Update. Additional, new recommendations may be required to reflect Local Plan policy EQ8 and more recent aspects of national policy and guidance

2. Understanding flood risk in Bootle AAP area

2.1 This chapter provides an overview of flood risk in Bootle Area Action Plan area, drawing on the information set out towards the end of chapter 1, including Figure 1.3. It will take account of the likelihood and consequences of flooding from all sources, taking account of climate change. The relevant datasets to inform this are set out in Figure 2.1. It also takes account of the national and local policy framework.

Figure 2.1 SFRA Overview Update – key datasets	
Sources of flooding/ flood risk	**Datasets (sources)**
Fluvial (river) flood risk	Environment Agency Flood Map for Planning 2013 SFRA for the Sefton Local Plan (background)
Tidal flood risk	Environment Agency Flood Map for Planning 2013 SFRA for the Sefton Local Plan (background)
Surface water flood risk	Environment Agency Risk of Flooding from Surface Water (RoFSW) mapping 2013 SFRA for the Sefton Local Plan - for Critical Drainage Areas Sefton MBC datasets - 2011 Surface Water Management Plan
Historical Surface Water and Sewer Flooding	2013 SFRA for the Sefton Local Plan Sefton MBC records United Utilities comments at Bootle Area Action Plan Preferred Options consultation
Indicative suitability for infiltration type SuDS	2013 SFRA for the Sefton Local Plan
Potential Canal flood risk	2013 SFRA for the Sefton Local Plan
Groundwater flood risk	2013 SFRA for the Sefton Local Plan
Reservoir flooding	2013 SFRA for the Sefton Local Plan

Topography and past development

2.2 Bootle has seen significant development and redevelopment for 150 years, sometimes involving man-made changes to ground levels (not least seen by the construction of the Leeds and Liverpool Canal). Bootle's industrial past has left large tracts of contaminated and/or derelict sites, land and/or buildings in areas that have low land values. This legacy requires investment to remediate vacant sites, overcome constraints and make them suitable for new development. Significant investment and redevelopment has already taken place, particularly associated with the former Housing Market Renewal initiative and former industrial sites, but elsewhere is still required. This industrial past interacts with some extent to current topography and flood risk.

2.3 Naturally, the Bootle AAP area is mostly flat or very gently undulating, except for a relatively short, steep slope up from the River Mersey more marked in the south, with some changes in levels on the western side of the canal or associated with other historic transport

infrastructure or land uses – parts of the area are 'made ground'. Much of the western part of the plan area (west of the canal) is within the 15 metre contour (15 m above OD), rising to extensive areas within the 20 metre contour. The eastern part of the plan area reaches heights of over 30 m OD, with a maximum height of around 40 m at the south-eastern boundary with Liverpool.

National and local policy context for flood risk management in the plan area

2.4 National planning policy requirements are set out in the National Planning Policy Framework[11] and online Planning Practice Guidance[12], with the Environment Agency providing further guidance.

2.5 Sefton Council as Local Planning Authority works closely with the Lead Local Flood Authority to implement policy requirements for management of flood risk and surface water, based on:

- The 2017 Sefton Local Plan, notably policy EQ8 'Flood risk and surface water'[13], which will remain in force in the Area Action Plan area, supplemented by part 9 of the proposed Bootle Action Area Plan policy BAAP1 'Design':
    - Sefton's 2018 Sustainable drainage systems (SuDS) and Flood Risk Information Note[14] which provides more information in relation to policy EQ8
- The Validation Checklist requirement all planning applications for major development to submit a completed SuDS Pro Forma[15] as part of the planning application
- Completion of the SuDS Pro Forma for some other developments, as relevant.

2.6 It is not yet clear whether any future introduction of national, mandatory technical standards for SuDS, or implementation of Schedule 3 of the Flood and Water Management Act will supersede part or all of this approach.

2.7 Local Plan policy EQ8 'Flood risk and surface water' (set out in Appendix 2) deals with:

Flood risk generally

- Part 1: sequential approach to development; between and within development sites.
- Part 2: Flood risk from any source not to increase and to reduce this where possible
- Part 3: Integrated approach to management of flood risk, surface water and foul drainage
- Part 4: Finished floor levels in relation to river and tidal flood risk, and climate change
- Part 5: Finished floor levels in relation to surface water flood risk, and climate change

Surface water management

- Part 6: Additional requirements for SFRA / SuDS Pro Forma in Sefton's Critical Drainage Areas. Most of the plan area is within Sefton's Critical Drainage Area (see Map 4 in Appendix 4).

[11] Current version December 2023, see https://assets.publishing.service.gov.uk/media/669a25e9a3c2a28abb50d2b4/NPPF_December_2023.pdf
[12] See https://www.gov.uk/government/collections/planning-practice-guidance
[13] See https://www.sefton.gov.uk/localplan
[14] See https://www.sefton.gov.uk/media/3497/flood-risk-information-note-fulldoc.pdf
[15] See https://www.sefton.gov.uk/media/7382/final_sefton_suds_-pro-forma_1_web.pdf

- Part 7: where reasonably practicable: a) 20% reductions in surface water run-off rates and volumes for previously developed sites, greenfield rates elsewhere, b) Sefton's sequential discharge hierarchy for surface water, c) above ground SuDS
- Part 8: Designing for climate change, urban creep (conversion of permeable surfaces to impermeable over time e.g. hard-surfacing of gardens and extensions to buildings), water quality, pollutions control and biodiversity
- Part 9: operation, management and maintenance of SuDS
- Part 10: protection of flood risk management areas as green and blue infrastructure.

2.8 The Validation Checklist[16] for planning applications requires all submitted proposals for major development to include a completed Sefton SuDS Pro Forma[17], to make sure the site's surface water drainage strategy meets Sefton's requirements. The Council may also seek the completion of the SuDS /Drainage Pro Forma for sites of 0.5 ha of more in Sefton's Critical Drainage Areas, or for 5 or more dwellings on sites where a substantive part of the site is at high risk of surface water flooding. There is accompanying SuDS Pro Forma Guidance[18].

2.9 The SuDS/ Drainage Pro Forma (shown in Appendix 3) was prepared by Sefton as Lead Local Flood Authority, and deals with requirements for:

- Section 1. Application and development details
- Section 2: impermeable area and existing drainage
- Section 3: peak runoff rates
- Section 4: discharge volume
- Section 5: storage
- Section 6: water quality protection
- Section 7: details of your sustainable drainage system
- Section 8: operation and maintenance

Fluvial flood risk and tidal flood risk (including functional floodplain)

2.10 There are no main rivers within or close to the plan area. The southern / western part of the Bootle Area Action Plan area is within the Lower Mersey catchment, the rest of the plan area is within the Alt-Crossens catchment. The whole of the plan area is in Flood Zone 1 for fluvial flooding, as shown in Map 1 in Appendix 4. This does not change when the recommended adjustments for climate change are made. Flood Zone 1 is land at lowest risk of river flooding. Within the plan area there are no areas in Flood Zone 2, Flood Zone 3a or Flood Zone 3b (functional floodplain).

Tidal flood risk

2.11 The Bootle Area Action Plan area is all inland. The plan area does not include or abut any coastline (mean high water mark). Accordingly, the whole of Bootle Area Action Plan area is in Flood Zone 1 for tidal flooding, as shown in Map 1 in Appendix 4. As above, this means

[16] See https://www.sefton.gov.uk/planning-building-control/apply-for-permission/getting-your-application-right-first-time/
[17] See https://www.sefton.gov.uk/media/7382/final_sefton_suds_-pro-forma_1_web.pdf
[18] See https://www.sefton.gov.uk/media/7381/final_sefton_suds_pro-forma_guidance_web.pdf

that in any year land has a less than 0.1% chance of flooding from the sea. This does not change when the recommended adjustments for sea level rise and climate change are made.

Surface water flood risk

2.12 There are no surface watercourses or surface water bodies in the plan area, other than the canal. Almost all surface water in the plan areas discharges to combined sewers (rather than separate foul and surface water sewerage systems, for example). There are three highway drains in the plan area, one along Pelham Drive, one by the north side of Asda and along parts of Rimrose Road and Derby Road. It is understood that these connect to combined sewers. The whole of Bootle is served by combined sewers, which mostly discharge to the MEPAS main sewer which links to the Sandon Dock Wastewater Treatment Work, or flow in Combined Sewer Overflows during times of flooding. The MEPAS main sewer is a 1990s enhancement to Bootle's sewerage network which was largely constructed up to a century earlier.

2.13 Environment Agency surface water mapping extents indicate a multitude of localised areas at risk of surface water flooding across the plan area, assumed in part to relate to small changes in elevation. This includes areas at high risk (3.3% chance each year), medium risk (1% chance each year) and low risk flooding (0.1% chance each year). This Environment Agency data shows 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.

2.14 More extensive areas at high and lower risk of surface water flooding are indicated in two main locations:

- Approximately between Seaforth Road and Akenside Street, especially closer to the A565, and on mainly open land on each side of Seaforth and Litherland station
- The area bounded by the canal, Litherland Road and Linacre Road.

2.15 More extensive areas mainly at medium or low risk of surface water flooding are indicated:

- North of Strand Road (west of Washington Parade)
- Between Stanley Road/Linacre Road and Hornby Boulevard.

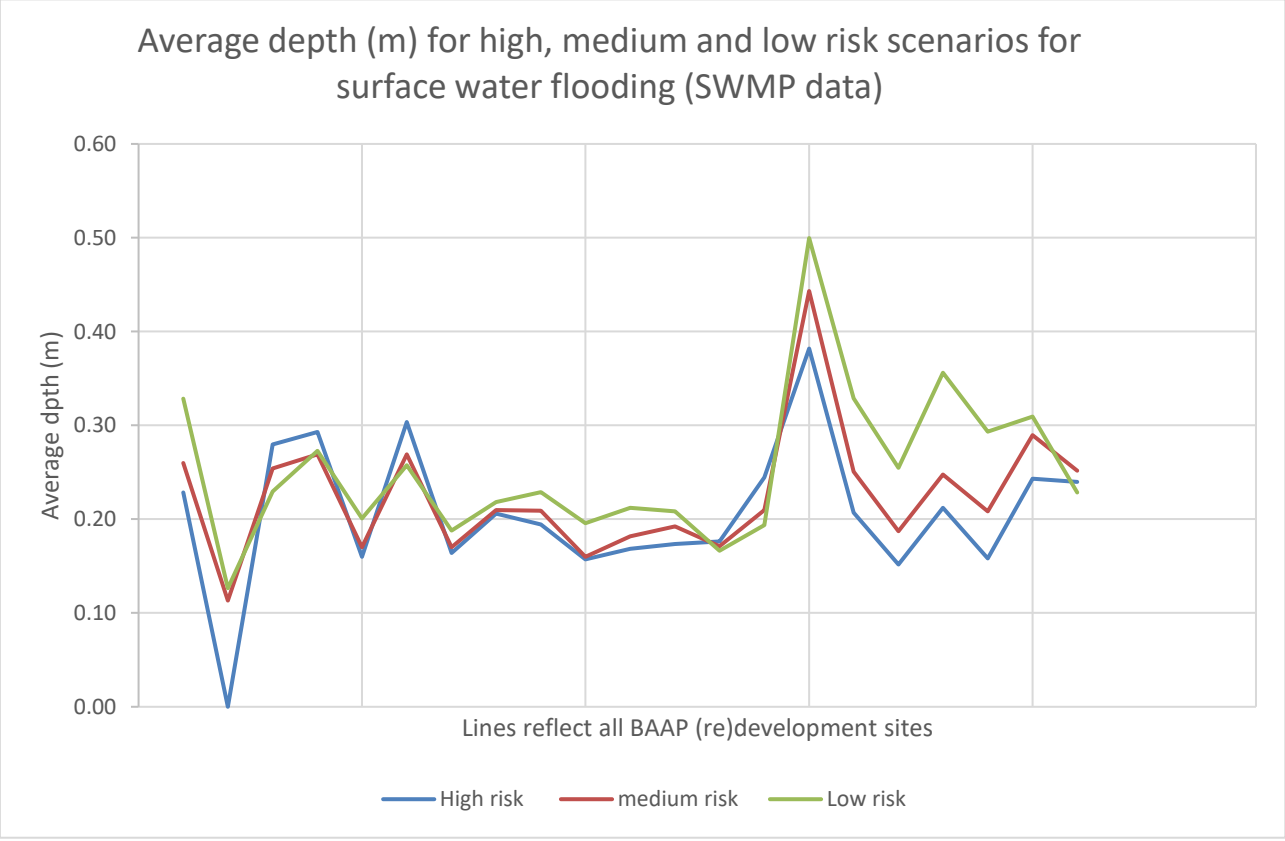
Other areas are more linear, for example alongside the route of the canal, the rail line linking to Aintree curve, or along various roads.

2.16 Surface water flood risk extents are shown in Map 2 in Appendix 4 (Environment Agency Risk of Flooding from Surface Water (RoFSW) mapping). It should be noted that this Environment Agency mapping shows much more extensive surface water flood risk in Sefton than across most of the rest of the Liverpool City Region and indeed the North West. This includes areas of low, medium and high surface water flood risk. It is considered that in part this reflects in part the data and methodology used in the initial assessment of surface water flood risk in Sefton (including the plan area), rather than wholly reflecting absolute differences in the magnitude of surface water risk between Sefton and the rest of the Liverpool City Region and North West. This should be borne in mind in any assessment of surface water flood risk in Sefton and in relation to Map 2 in Appendix 4.

2.17 The Environment Agency's Long-term Flood Risk Surface Water web-page[19] provides an overview of flood depths in areas at high, medium and low risk of surface water flooding, shown in Map 3 in Appendix 4. For areas at high risk of surface water flooding (3.3% chance each year), this Environment Agency web-site mapping indicates few instances of predicted depths above 90 cm. Most flooding would be at depths of below 30 cm or between 30 cm and 90 cm. For areas at medium risk of surface water flooding (1% chance each year), again there are few instances of predicted depths above 90 cm. Most flooding would be below 30 cm or between 30 cm and 90 cm. A similar picture emerges for areas at low risk of surface water flooding (0.1% chance each year). The Environment Agency mapping is understood to be informed in part by Sefton's 2011 Surface Water Management Plan (SWMP).

2.18 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)[20] 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 2.1 Surface Water Management Plan average depth data for each surface water 'risk' scenario



[19] See https://www.gov.uk/check-long-term-flood-risk
[20] See https://www.sefton.gov.uk/media/1442/sefton_swmp.pdf

2.19 Further analysis of Sefton's 2011 Surface Water Management Plan data has been carried out. Figure 2.1 above indicates the average depth of surface water flooding on each site for each of the high risk, medium risk and low risk scenarios. This 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.

2.20 Sefton's 2011 Surface Water Management Plan identified a Critical Drainage Area for surface water, which was taken forward in the 2013 SFRA and referred to in Local Plan policy EQ8 'Flood risk and surface water'. Note that this Critical Drainage Area stems from the Sefton SWMP, rather than being "*land which has been identified by the Environment Agency as having critical drainage problems*" as set out in footnote 59 to paragraph 173 of the National Planning Policy Framework.

2.21 Most of the Bootle Area Action Plan area is in a Critical Drainage Area (see Map 4 in Appendix 4). Local Plan policy EQ8 'Flood risk and surface water' requires a Site-specific Flood Risk Assessment to be submitted for all development on sites of 0.5 ha of more in Sefton's Critical Drainage Areas (compared to the national requirement of 1 hectare[21]). More recently the Council has sought the completion of its SuDS Pro Forma in such cases, rather than a full Site-specific Flood Risk Assessment, because the requirement stems from the need for effective management of surface water.

Surface Water and Sewer Flooding - Historic Records

2.22 Despite the Environment Agency mapping showing a number of areas at risk of surface water flooding, the 2013 SFRA indicated that there are relatively few historic records of surface water (highways) and sewer flooding in the Bootle AAP area compared to the rest of Sefton; many of these were external flooding events. The main exceptions were a number of records linked to an intense summer storm in 2010 in the Seaforth Road/ Akenside Street area.

2.23 This is confirmed by the SFRA for the Spatial Development Strategy (2023)[22]. The document refers to United Utilities' records of flood incidents from its drainage and sewer networks, presenting this at ward level as records are "*at the individual property level and therefore considered sensitive information*". The document shows that the wards which include the Bootle AAP area each had less than 10 United Utilities Historic Flooding incidents (the lowest category mapped, with 'more than 200' being the highest category).

2.24 United Utilities carried out initial sites assessments at Preferred Options stage (detailed modelling awaited)[23]. 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)"

[21] See paragraph 173 and footnote 59 of the December 2023 National Planning Policy Framework at https://assets.publishing.service.gov.uk/media/669a25e9a3c2a28abb50d2b4/NPPF_December_2023.pdf
[22] Especially paragraph 4.13.2 and figure 4-7; pages 45 and 46.
[23] United Utilities comments are reproduced in Appendix 4.

- BAAP5 / BE7 Bootle Office Quarter
- BAAP20 Hawthorne Road /Canal Corridor Regeneration Opportunity Area
- BAAP21 Bootle Village Regeneration Opportunity Area

2.25 However, United Utilities note 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 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".

2.26 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*.'

Groundwater flood risk

2.27 Groundwater flooding occurs when water levels in the ground rise above the ground surface. It is most likely to occur in low-lying areas underlain by permeable drift and rocks, such as the sandstones underlying some of the Area Action Plan area. It may result in watercourses flowing where there are normally none, and in other areas it may cause waterlogging of ground. It is difficult to predict how groundwater flooding will affect an area.

2.28 Map 5 in Appendix 4 reproduces groundwater flood risk information from the 2013 SFRA of the Local Plan. This indicates an extensive groundwater emergence zone to the west of the canal, with a small pocket east of the canal just north of Linacre Lane. There are no recent records of groundwater flooding in the Bootle AAP area.

2.29 The 2013 SFRA [24]notes that:

"With respect to new development, the consequences of groundwater near the surface or emerging at the surface may not necessarily directly impact the development itself [although it may constrain the use of SuDS, or basements]. *New development should have threshold and ground floor levels above the surrounding ground surface which would typically be sufficient to prevent internal flooding, particularly where the groundwater is only near the surface or where it emerges but flows or remains at very shallow depths".*

The 2013 SFRA also 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. However, currently 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.

[24] See especially paragraphs 4.6.9 – 4.6.12; pages 97 & 98.

Indicative suitability for sustainable drainage systems (SuDS)

2.30 The 2013 SFRA included mapping showing indicative suitability for sustainable drainage systems (SuDS), and this information is shown for the plan area in Map 5 in Appendix 4. This is based on a combination of the permeability of the overlying drift and the underlying geology, but with areas identified as being susceptible to groundwater emergence identified as having 'very low' suitability regardless of this geology. Map 6 in Appendix 4 and is equivalent in the 2013 SFRA indicates that indicative suitability for SuDS varies across the plan area. The area of very low suitability links to the groundwater emergence zone discussed above. There are areas of low indicative suitability, mainly to the east and south of this. The rest of the plan area has is high indicative suitability, with a small area of southern Bootle having very high suitability.

2.31 However, this SuDS Suitability mapping is indicative only. It is based on a combination of the permeability of the overlying drift and the underlying geology. Areas identified as being susceptible to groundwater emergence have been identified as 'very low' regardless of the underlying drift or solid geology. It should also be noted that in areas with a better SuDS suitability classification there may also be shallow groundwater or other factors such as the legacy of past uses on particular sites (possible contamination, 'made ground', barriers) will also affect the type and use of SuDS. Potentially, contamination could restrict or entirely prevent the use of infiltration SuDS. Where infiltration SuDS are proposed it is strongly recommended that location-specific soakaway tests in line with BRE365 or similar are used to confirm the siutability of the ground conditons. This should be completed at the conceptual design stage to avoid post-planning consent issues arising. Pockets of opportunities for surface water to infiltrate into the ground may be relatively limited on some sites.

Canal flood risk

2.32 The Leeds and Liverpool Canal which flows through the Area Action Plan area is a potential source of flooding. The canal is raised in a number of locations in Bootle (and elsewhere), with a potential risk of flooding if the condition of the embankments were to become increasingly poor. Map 5 in Appendix 4 indicates the potential risk of canal flooding in the plan area, identifying the most likely flow paths in the event of any breach. These risk areas and flow paths are all to the western side of the canal. Canal flooding may also occur when a watercourse's culvert passing under the canal is damaged or collapses. This was the cause of the 1994 flood in Maghull and 2018 flood in Melling.

2.33 However, there are no known watercourses or culverts under the canal in the Area Action Plan area, and no known instances of canal flooding in the area. It should be noted that while the risk is low, any breach could result in the spillage of considerable volumes of water as the nearest 'upstream' lock (in effect, a 'dam') on the canal is many miles away. The volume of water lost would depend on the height of the breach within the channel.

2.34 As set out in the 2013 SFRA, while canal flood risk may be relevant, and even important locally, when assessing risks to a site, and may be important locally, this is a residual risk. The risk of flooding from the canal should not determine whether development should take

place on a site or not. For the plan area this is not projected to change as a result of the impacts of climate change. Map 7 in Appendix 4 indicates canal flood risk in the plan area.

Reservoirs

2.35 There are no reservoirs in Sefton, hence none in the Bootle AAP area. The 2013 SFRA does not identify any part of the plan area as being at risk of reservoir flooding, and indeed the Environment Agency website indicates that the risk of such flooding is low. For the plan area this is not projected to change as a result of the impacts of climate change.

Overview of flood risk in Bootle AAP area and cumulative impacts

2.36 The above assessment shows that there is no river, tidal or reservoir flood risk in the plan area. There are no watercourses or main rivers in the plan area. The main risks are from surface water flooding, with limited risk of sewer flooding, groundwater flooding and a residual risk of canal flooding. Almost all of the plan area has a combined system (rather than separate foul and surface water sewers for example).

2.37 In practice, cumulative assessment of the impact of development on flood risk within Bootle Area Action Plan area should focus on surface water flood risk, groundwater emergence and site suitability for sustainable drainage systems and sewer flood risk, particularly on sites where United Utilities have indicated a risk (see above). The inter-relationships between these are also important. Management of surface water run-off, including reductions in run-off rates on previously developed sites, is considered to be very important.

Climate change and 'future proofing'

2.38 Paragraph 158 of the National Planning Policy Framework states that development plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk and a range of other issues, in line with the objectives and provisions of the Climate Change Act 2008. This is implicit in Local Plan policy EQ8 'Flood risk and surface water', for example in part 7 which seeks reductions to surface water run-off rates and volumes, and explicit in parts 4, 5 and 8. Parts 4 and 5 require the impacts of climate change to be taken into account when establishing finished floor levels in relation to tidal, river and surface water flood risk. Part 8 requires SuDS design to take account of climate change, as well as urban creep.

2.39 Part 8 of policy EQ8 is reflected in the requirements set out in Sefton's SuDS Pro Forma (see Appendix 3). The Pro Forma Guidance Note[25] is clear that in terms of climate change allowances, *"Sefton as Lead Local Flood Authority requires [applicants / developers] … to apply the 'Upper End' allowances for 2080 s set out in Table 1 below and 2070 s set out in Table 2 below".* These tables are reproduced as Figures 2.3 and 2.4 below[26]. Given that almost all of the Bootle Area Action Plan area relies on combined sewers for surface water discharge, it is also relevant that in practice, Sefton's Lead Local Flood Authority require pipework infrastructure in new development to be the recommended size plus 30%.

[25] See https://www.sefton.gov.uk/media/7381/final_sefton_suds_pro-forma_guidance_web.pdf
[26] Source of this data: https://environment.data.gov.uk/hydrology/climate-change-allowances/river-flow

Figure 2.3 Climate change allowances to be applied: peak river flow			
Maximum lifetime of the development	**'2020 s'** (2015 to 2039)	**'2050 s'** (2040 to 2069)	**'2080 s'** (2070 to 2115)
Peak river flow climate change allowance to be applied in parts of Bootle and Crosby (Lower Mersey catchment)	32%	55%	**90%**
Peak river flow climate change allowance to be applied in the rest of Sefton (Alt and Crossens Catchment)	31%	56%	**95%**

Figure 2.4 Climate change allowances to be applied: peak rainfall allowance		
Maximum lifetime of the development	**'2050 s'**	**'2070 s'**
Peak rainfall allowance: 3.3% annual exceedance rainfall event to be applied in parts of Bootle and Crosby (Lower Mersey catchment)	35%	**40%**
Peak rainfall allowance: 1% annual exceedance rainfall event to be applied in parts of Bootle and Crosby (Lower Mersey catchment)	40%	**45%**
Peak rainfall allowance: 3.3% annual exceedance rainfall event to be applied in the rest of Sefton (Alt and Crossens catchment)	35%	**40%**
Peak rainfall allowance: 1% annual exceedance rainfall event to be applied in the rest of Sefton (Alt and Crossens catchment)	40%	**45%**

2.40 The Government is currently considering[27] whether to implement Schedule 3 to the Flood and Water Management Act 2010[28]. This would establish a separate consent regime for sustainable drainage systems (SuDS), with a SuDS Approving Body being responsible for approval and adoption of sustainable drainage systems. It is likely that surface water drainage would be removed from the remit of the planning development management process and remit of Local Planning Authorities. However, there are too many, fundamental uncertainties about the final 'shape' and timing of this for this SFRA Overview Update to be 'future proofed' to take this into account.

Flood risk management assets

2.41 There are no rivers, watercourses or coastal areas and therefore no Environment Agency assets in the plan area, and limited assets owned by the Lead Local Flood Authority. There only are three highway drains, limited in extent. The Leeds and Liverpool Canal is managed by the Canal and River Trust, a public body. The plan area is largely built-up, with some green and blue infrastructure including urban parks and the canal. It is considered that there is very limited scope for Natural Flood Management, especially at a large scale, although there is scope for SuDS to reduce surface water run-off at a more site-specific scale.

2.42 United Utilities is responsible for the management of the adopted sewerage system (and other assets such as detention tanks and manholes). This includes maintenance and future investment, to help meet the future development and other needs of the area. Almost all of this relates to combined sewers. Also, there may be a limited number of private surface water sewers in the plan area.

[27] See https://www.gov.uk/government/publications/sustainable-drainage-systems-review
[28] See https://www.legislation.gov.uk/ukpga/2010/29/contents

3. Development and flood risk

Sequential approach (for plan preparation)

3.1 The Council has prepared a Sequential Test and Exception Test Assessment (STETA)[29] of sites in Bootle Area Action Plan, to inform and complement this SFRA Overview Update. The information in this chapter is based on that Assessment.

The Bootle Area Action Plan context

3.2 The sequential approach to site selection within the Bootle Area Action Plan area must be set within the sustainable regeneration context of the plan and 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. This is an Area Action Plan focussing on a small part of Sefton. The 2017 Sefton Local Plan has an over-arching role within the 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.

3.3 For example, there is a greater emphasis on identification of Regeneration Opportunity Areas in the plan, compared to many other development plans. 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.

3.4 In practice, site selection is less about choices between sites and more about the choice between promoting regeneration opportunities for each site or leaving it in its current (poor) condition. 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 referred to in chapter 2 and reproduced at Appendix 5.

3.5 Also, it should be recognised the Area Action Plan does not set out a housing or employment land requirement; this is the role of the Sefton Local Plan. Its policy MN1 sets out Sefton's housing and employment requirements for its plan period; that is, until 2030. However, whilst Bootle Area Action Plan does not set out a housing requirement, there is still a need to identify land for housing. Bootle is Sefton's second largest town, and the Area Action Plan will cover the period to 2040.

3.6 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 methodology[30]) 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 777 homes within housing allocation sites.

[29] See www.sefton.gov.uk/bootleaap

[30] See for example https://commonslibrary.parliament.uk/research-briefings/cbp-9268/ . The 'standard methodology' referred to predates that set out in the government's proposed changes to the National Planning Policy Framework published on 31 July 2024.

Figure 3.1 Overview of flood risk on (re)development 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 / *policy BAAP12, site BE7 Bootle Office Quarter*	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:									
BE1 Canal St/ Berry St	1	**14.49%**	**6.17%**	**16.89%**	*37.54%*	-	-	-	-
BE2 Maritime Enterprise Park	1	**13.82%**	**8.69%**	**13.98%**	*36.49%*	-	-	-	-
BE3 Hawthorne Rd/Aintree Rd	1	**27.68%**	**15.40%**	**19.72%**	*62.80%*	-	-	-	-
BE4 Kingfisher/Orrell Mount	1	**14.60%**	**5.01%**	**10.35%**	*29.96%*	-	-	-	-
BE5 Land between Regent Road and A565	1	**3.51%**	**3.32%**	**7.69%**	*14.52%*	-	-	-	-
BE6 Bridle Road	1	**15.06%**	**7.27%**	**13.46%**	*35.78%*	-	-	-	-
BE8 Atlantic Park	1	**20.17%**	**8.52%**	**19.80%**	*48.49%*	-	-	-	-
BE9 Senate Business Park	1	**14.29%**	**7.85%**	**18.51%**	*40.64%*	-	-	-	-
BAAP16 Provision of Housing Land:									
BH1 People's Site, Linacre Lane (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	1	**20.85%**	***3.63%***	***12.08%***	*36.56%*	**√**	-	-	-
BH3 Site of the former Bootle Gas Works (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	1	**52.96%**	**13.92%**	**22.08%**	*88.96%*	-	**√**	**√**	-
BH4 Site of Litherland House, Litherland Rd (within BAAP20	1	**74.38%**	**8.13%**	**15.63%**	*98.13%*	-	**√**	**√**	-

Figure 3.1 Overview of flood risk on (re)development 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)*				
Hawthorne Road/Canal Corridor Opportunity Area)									
BH5 Site of the former Johnsons Cleaners	1	**9.36%**	**17.54%**	**41.52%**	*68.42%*	-	**√**	**√**	-
BH6 503-509 Hawthorne Rd (within BAAP20 Hawthorne Road/Canal Corridor Opportunity Area)	1	**50.7%**	**9.44%**	**17.83%**	*77.97%*	**√**	-	**√**	-
BAAP20 Hawthorne Road/Canal Corridor Opportunity Area – other sites:									-
BR1 Land to Northwest of Linacre Lane and Hawthorne Road Junction	1	**19.00%**	**12.22%**	**24.89%**	*56.11%*	-	-	**√**	-
BR2 Land South of Linacre Lane between Hawthorne Road and Canal	1	**33.92%**	**15.96%**	**12.72%**	*62.59%*	-	-	**√**	-
BR3 Land between Hawthorne Road and Vaux Crescent/Place	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%*	-	**√**	-	--

Estimates are that with other permissions/windfalls, new provision could reach 1,500 additional homes.

Sefton's sequential approach

3.7 The SFRA and sequential assessment of the Sefton Local Plan focussed mainly on river and tidal flood zones; the SuDS and Flood Risk Information Note reflects this. The Sequential Test and Exception Test Assessment shows that as the whole of the plan area is within Flood Zone 1 for river and tidal flooding. All 22 of the development sites in Bootle Area Action Plan pass the sequential test on this basis, with no need for the exception test.

3.8 However, 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 Strategy[31] in effect equates differing surface water flood risks to specific river and tidal flood zones. That is, areas within the high-risk surface water flood event extent of the Risk of Flooding from Surface Water map would be in Flood Zone 3, areas within the medium risk surface water flood extent in Flood Zone 2, and areas within the low risk surface water flood extent within Flood Zone 1. As set out in Chapter 2, it should be borne in mind the extent of all surface water flood risk in Sefton appears considerably more extensive than the extent of such risks elsewhere in the Liverpool City Region and North West. All 22 (re)development sites identified in Bootle Area Action Plan include some areas at high risk of surface water flooding; all of the sites include areas at medium and low risk of surface water flooding (see Figure 3.1).

3.9 The Sequential Test and Exception Test Assessment carries out a more detailed sequential exception test assessment of the 22 sites in Bootle Area Action Plan, taking into account not just Flood Zones but also surface water flooding risk and also sewer flood risk, groundwater flood risk and canal flood risk. This approach is considered to be in accordance with national guidance and policy.

Overview of sequential assessment of Bootle Area Action Plan sites

3.10 Figure 3.1 above reproduces Figure 2.1 of the Sequential Test and Exception Test Assessment for Bootle Area Action Plan area. This provides an overview of flood risk from all sources on the 22 (re)development sites in Bootle Area Action Plan area.

3.11 This illustrates that surface water flood risk, and its interactions with sewer flood risk and groundwater flood risk is a significant issue in the Area Action Plan area. A residual risk of canal flooding is also relevant to some sites (see the Sequential Test and Exception Test Assessment, especially its Appendix). All of the 22 development sites are at some risk of surface water flooding, and some of sewer flooding (see Figure 3.1).

3.12 The sites with the greatest percentage of land (more than half of the site) at high risk of surface water flooding are the housing sites BH4 Site of Litherland House, Litherland Rd, BH3 Site of the former Bootle Gas Works, and BH6 503-509 Hawthorne Rd, as set out in Figure 3.1. All of these sites are in within BAAP20 Hawthorne Road/Canal Corridor Regeneration

[31] 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

Opportunity Area, which is characterized by a high incidence of derelict, vacant or underused land and buildings. These sites, plus BAAP22 Open land between Irlam Road and the Asda Store Regeneration Opportunity Area, also have the greatest percentage of land at some risk of surface water flooding.

3.13 All 22 sites include areas at medium and low risk of surface water flooding, as indicated in Figure 3.1. Ten 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. Employment site BE5 Land between Regent Road and A565 has only 3.51% at high risk of surface water flooding.

3.14 Figure 3.2 below reproduces Figure 3.2 of the Sequential Test and Exception Test Assessment for Bootle Area Action Plan area. This shows that all 22 sites in Bootle Area Action Plan pass the sequential test. This is set firmly within the regeneration context of the area set out above. 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.

3.15 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 term s 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.

Key recommendations of the Sequential Test and Exception Test Assessment

3.16 The key recommendation of the Sequential Test and Exception Test Assessment relate to:

- that Assessment informing this SFRA Overview Update
- to detailed design considerations including SuDS and surface water management, mitigation
- The role of Site-Specific FRAs and Sefton's Drainage Pro Forma.

These are discussed in more detail in succeeding sections.

3.17 Recommendation 1 is 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.*

Figure 3.2: Sequential test and exception test of the 22 (re)development 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 *Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within the area (particularly affecting Strand Shopping Centre)*	Yes. The central area is by definition, central. There are no sequential alternatives and it is not proposed to move Bootle's centre *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.*	n/a
BAAP5 Bootle Office Quarter ***This is also listed in policy BAAP12 as: BE7 Bootle Office Quarter***	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 *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*	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 • "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 (re)development 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?**
			or in the vicinity of the site.	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)". Insufficient alternative sites in plan area in lower FZ. *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.*	
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	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. *As existing public sewers pass through and near to this site which modelling data (and /*	n/a

Figure 3.2: Sequential test and exception test of the 22 (re)development 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?**
			Initial UU modelling at Preferred Options stage identified on-site sewer flood risk	*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.*	
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 (re)development 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/Orrell 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 (re)development 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 *Initial UU modelling at Preferred Options stage identified on-site sewer flood risk*	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. *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.*	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 (re)development 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	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 (re)development 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?**
				regeneration 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 (re)development 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			*Initial UU modelling at Preferred Options stage identified on-site sewer flood risk within BAAP20*	*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.*	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 (re)development 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

Figure 3.2: Sequential test and exception test of the 22 (re)development 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?**
					promoted on the site, if needed, to make a more sustainable neighbourhood. 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 *Initial UU modelling at Preferred Options stage identified on-site sewer flood risk*	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. *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.*	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 (re)development 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

Mitigation measures, SuDS and surface water management

3.18 The following Recommendations of the Sequential Test and Exception Test Assessment are relevant:

1. *For all of the 22 development sites in the Bootle Area Action Plan, careful assessment and consideration of flood risk issues is made at the detailed design, masterplanning and drainage details stages. This includes surface water flood risk, sewer, groundwater, and, where relevant canal flood risks; This includes surface water flood risk, sewer, groundwater, and, where relevant canal flood risks; currently and taking account of climate change and 'urban creep'[32].*

2. *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.*

3.19 Developers must give full and proper consideration to flood risk issues for all development sites, as above, in line with local and national planning policy and guidance. This includes the 22 sites listed in Figure 2.2 and other smaller scale development sites.

Completion of SuDS/Drainage Pro Formas and Site-Specific FRAs

3.20 The following Recommendations of the Sequential Test and Exception Test Assessment are relevant:

3. *This 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 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.*

4. *This should also be reflected in Site-Specific Flood Risk Assessments for these sites.*

3.21 Drainage Pro Formas and Site-Specific Flood Risk Assessments should be submitted for all sites in Bootle Area Action Plan area, as set out in Sefton's Validation Checklist for planning applications[33]. They should demonstrate that the requirements of Local Plan policy EQ8 'Flood risk and surface water' and Bootle Area Action Plan policy BAAP1 'Design' are met.

3.22 In summary, Site-specific FRAs must provide information, analysis and assessment about:

1) The development proposals, site and location

- Site name and address

[32] 'Urban creep' is the increasing density of development, due to extensions, paving over of gardens and other permeable areas, and the addition or extension of roads or buildings, which increases the impermeability of developed areas and causes rates and volumes of runoff to rise.

[33] See https://www.sefton.gov.uk/planning-building-control/apply-for-permission/getting-your-application-right-first-time/

- Description of development
- Type of development and vulnerability classification
- Type of development
- Has the development site been assessed in the SFRA?
  - If so, has the sequential test been carried out?
  - Has the exception test (if applicable) been applied and passed previously?
  - *If the exception test is required, the Site FRA should focus on part b (safety). A separate statement may be required regarding part a (wider sustainability benefits).*

2) Site specific flood risk from all sources to and from the site (current and future)

- The focus should be on surface water flood risk, and also sewer flood risk and groundwater flood risk.
- Canal flood risk is relevant for some sites.
- River and tidal risk should have proportionate, limited reference
- Flood hazard, risk and probability.

3) **Climate change**

- How the flood risk site is likely to be affected by climate change and how these risks will be managed.

4) **Surface water management**

- This section should be consistent with the sustainable drainage strategy for the site and the SuDS/ Drainage Pro Forma
- It should show how the requirements of Local Plan policy EQ8 'Flood risk and surface water' have been met
- Need to show that there are appropriate and effective mitigation measures for any surface water or linked flood risk on the site, that development is safe, and that surface water or other flood risk has not increased elsewhere (including outside the site) as a result of on-site measures .

5) **Occupants and users of the development**

- The numbers of future occupants and users of the new development
- The likely future pattern of occupancy and use
- Proposed measures for protecting more vulnerable people from flooding
- That safe access and egress routes can be achieved during a flood event
- Safe access and escape routes should be explicitly identified, as part of any agreed emergency plan.

6) **Residual risks that remain after the flood risk management and mitigation measures are implemented**

- Explain how these risks can be managed to keep the users of the development safe over its lifetime.

7) Other considerations, which may include:

- Additional sequential and exception test information
- Details of any proposed flood resistance and flood resilience measures.

Flood warning and evacuation plans

3.23 Developments that include areas that are designed to flood (e.g. amenity greenspace areas) or have a residual risk associated with them will need to contain appropriate flood warning plans and instructions so users and residents are safe in the event of a flood. Typically, this

will include both physical warning signs and written flood warning and evacuation plans. Those using any new development should be made aware of any evacuation plans. Typically too, this relates mostly to river or tidal flooding. The 2013 SFRA of the Local Plan showed that there are no Environment Agency Flood Warning Areas in the Bootle Area Action Plan area. However, the following paragraphs are included here in case this changes in the future.

3.24 For new development, the Local Planning Authority should determine whether any required flood warning and evacuation plans, or equivalent procedures, are sufficient or not, and should refuse to grant planning permissions where it is not satisfied. Although there is no statutory requirement for the Environment Agency or the emergency services to approve evacuation plans, Local Planning Authorities are accountable under their Civil Contingencies duties, via planning condition or agreement, to ensure that plans are suitable. Consultation with relevant organisations such as emergency planners, the Lead Local Flood Authority, Environment Agency, United Utilities and Canal and River Trust will inform such decisions.

3.25 Where required, Flood Warning and evacuation plans should typically consider issues such as[34]:

- Availability of existing flood warning system
- Rate of onset of flooding, flood extents and depths
- How the flood warning will be given and occupant's awareness of the likely frequency and duration of flood events
- The availability of site staff, occupants, or users to respond to a flood warning and the time taken to respond to a flood warning
- Designing and locating safe access routes, preparing evacuation routes and the identification of safe locations for evacuees
- The vulnerability of occupants, in terms of both national land-use based flood risk vulnerability classifications and the likely practical effects that the elderly, less able, children and other specific groups may be more vulnerable
- How easily damaged items can be replaced or relocated, and the expected time taken to re-establish normal use following an event.

3.26 Once the development receives planning permission, it will be the responsibility of the developer (as 'plan owner') to make sure the plan is put in place, and to liaise with the Local Planning Authority and Lead Local Flood Authority about its maintenance and updating.

Emergency planning

3.27 This SFRA can inform emergency planning approaches and delivery within Sefton and the wider area. Sefton Council, including the Lead Local Flood Authority, has emergency planning duties under the Civil Contingencies Act 2004 [35] .

[34] Based on Table 5-1 in the SFRA of the Spatial Development Strategy -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

[35] See https://www.legislation.gov.uk/ukpga/2004/36/contents and https://www.sefton.gov.uk/advice-benefits/crime-and-emergencies/emergency-planning/

4. Conclusions and recommendations

Conclusions

4.1 This Overview Update Strategic Flood Risk Assessment (SFRA) provides a clear, up-to-date understanding and overview of flood risk from all sources in the Bootle Area Action Plan area. It takes account of, in a proportionate manner, the impacts of climate change. It helps to make sure that Bootle Area Action Plan policy, supplemented by Local Plan policy EQ8 'Flood risk and surface water' and supporting evidence, is in line local and national planning policy and guidance for management and mitigation of flood risk. It complements and informs the Sequential Test and Exception Test Assessment for Bootle Area Action Plan.

4.2 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 SFRA Overview Update is fit for purpose.

4.3 Bootle Area Action Plan sets a sustainable regeneration context for the plan area, focussing on 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.

4.4 The Plan identifies 22 (re)development sites including housing and employment sites, 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 design and best use of resources, getting around, affordable housing and housing mix and environmental improvements for example. Part 9 of policy BAAP1 'Design' refers to then 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.

4.6 There are no surface watercourses or surface water bodies in the plan area, other than the canal; hence no fluvial(river) flood risk. As a landlocked area, there is no tidal flood risk. The whole of the plan area is in Flood Zone 1, even when climate change is taken into account.

4.7 Almost all surface water in the plan areas discharges to combined sewers, rather than separate foul and surface water sewerage systems, for example. There are three highway drains in the plan area, one along Pelham Drive, one by the north side of Asda and along parts of Rimrose Road and Derby Road. It is understood that these connect to combined sewers. The whole of Bootle is served by combined sewers, which mostly discharge to the MEPAS main sewer which links to the Sandon Dock Wastewater Treatment Work, or flow in Combined Sewer Overflows during times of flooding. The MEPAS main sewer is a 1990 s enhancement to Bootle's sewerage network which was largely constructed up to a century earlier.

4.8 This SFRA Overview Update shows that surface water flood risk is the most significant source of flood risk in the Plan area. This includes areas at high, medium and low risk of surface

water flooding (3.3%, 1% and 0.1% chance each year, respectively). Environment Agency surface water mapping extents indicate a multitude of localised areas at risk of surface water flooding. More extensive areas at high and lower risk of surface water flooding are indicated in two main locations:

- Approximately between Seaforth Road and Akenside Street, especially closer to the A565, and on mainly open land on each side of Seaforth and Litherland station
- The area bounded by the canal, Litherland Road and Linacre Road.

More extensive areas mainly at medium or low risk of surface water flooding are indicated:

- North of Strand Road (west of Washington Parade)
- Between Stanley Road/Linacre Road and Hornby Boulevard.

Other areas are more linear, for example alongside the route of the canal, the rail line linking to Aintree curve, or along various roads.

4.9 It should be noted that surface water flood risk is more extensive across the whole of Sefton (including the plan area) than in many other local authority areas, and that this includes areas of low, medium and high surface water flood risk.

4.10 In terms of predicted surface water flood depths, relatively few areas are at risk of deeper flooding (above 90 cm). Most flooding would be at depths of below 30 cm or between 30 cm and 90 cm. This broadly applies to areas of high, medium and low risk of surface water flooding.

4.11 There are relatively few historic records of surface water (highways) and sewer flooding in the Bootle AAP area compared to the rest of Sefton; many of these were external flooding events. The main exceptions were a number of records linked to an intense summer storm in 2010 in the Seaforth Road/ Akenside Street area.

4.12 In their comments during the consultation on the Preferred Options of Bootle Area Action Plan, United Utilities identified a number of sites with *"on-site modelled sewer flood risk"* including the housing site BH1 People's site, BAAP4 Bootle Town Centre, BAAP20 Hawthorne Road /Canal Corridor Regeneration Opportunity Area and BAAP21 Bootle Village Regeneration Opportunity Area. 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".* However, United Utilities go on to recognise the need to regenerate these sites, and suggest that sewer flood risk as well as other flood risk *"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".*

4.13 Parts of Bootle are subject to groundwater flood risks. There is an extensive groundwater emergence zone to the west of the canal, with a small pocket east of the canal just north of Linacre Lane, although there are no recent records of groundwater flooding in the Bootle AAP area.

4.14 The 2013 SFRA included mapping showing indicative suitability for sustainable drainage systems (SuDS). Suitability varies across the Bootle Area Action Plan area. The area of very low suitability links to the groundwater emergence zone. There are areas of low indicative suitability, mainly to the east and south of this. The rest of the plan area has is high

indicative suitability, with a small area of southern Bootle having very high suitability. However, it must be recognised that in an already heavily built-up area, parts of which have a legacy of contaminated land, pockets of opportunities for surface water to infiltrate into the ground may be relatively limited on some sites.

4.15 The 2013 SFRA identifies the potential risk of canal flooding in the plan area, identifying the most likely flow paths in the event of any breach. These risk areas and flow paths are all to the western side of the canal. However, the risk of flooding from the canal should not determine whether development should take place on a site or not. Canal flooding is a residual risk in parts of the Bootle Area Action Plan area. There is no reservoir flood risk within the plan area.

4.16 In practice, cumulative assessment of the impact of development on flood risk within Bootle Area Action Plan area should focus on surface water flood risk, groundwater emergence and site suitability for sustainable drainage systems and sewer flood risk, particularly on sites where United Utilities have indicated a risk.

4.17 Management and mitigation of surface water run-off is considered to be very important, including reductions in run-off rates on previously developed sites. The inter-relationships between surface water flood risk, groundwater emergence and site suitability for sustainable drainage systems and sewer flood risk are also important. The 2013 SFRA noted 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. However, 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.

4.18 Many policies in the 2017 Sefton Local Plan will remain in force in the Area Action Plan area, notably, Local Plan policy EQ8 'Flood risk and surface water'. Key parts of policy EQ8 relate to the sequential approach to development, design requirements for sustainable surface water drainage systems (SuDS), the need for the 20% reduction in surface water run-off rates and volumes on previously developed sites, and meeting the challenge of climate change. The Validation Checklist for planning applications requires all submitted proposals for major development to include a completed Sefton SuDS Pro Forma, to demonstrate that the site's surface water drainage strategy meets these requirements. The Drainage Pro Forma was prepared by the Council as Lead Local Flood Authority.

4.19 In the light of the emerging findings of this SFRA Overview Update, and to consolidate this existing approach, part 9 of policy BAAP1 'Design' refers to then 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. Paragraph 5.12 of the explanation to policy BAAP1 emphasises the risks of flooding from surface water and also sewer and to a lesser extent groundwater and canal flood risk, within the plan area. In line with Local Plan policy EQ8 it calls for a 20% reduction in surface water run-off rates and volumes on previously developed sites, where reasonably practicable. Reflecting United Utilities' concerns, paragraph 5.12 stresses the need for careful consideration of surface water and other flood risk issues at the detailed site design, masterplanning and drainage details stage. It also notes that management and mitigation of these risks may affect the developable area of the sites and the detail of design and layout.

4.20 The sequential and exception test assessment of the 22 (re)development sites in Bootle Area Action Plan indicated that all of sites pass these tests. This is set firmly within the regeneration context of the Plan and area. 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.

4.21 In relation to part a ('wider sustainability benefits') 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.

4.22 In terms of part b of the exception test ('safety'), it is assumed that this is capable of being passed. It assumes the need for detailed assessment at the detailed site design, masterplanning and drainage details stages, and that this could affect detailed design. As above, this is explicit in paragraph 5.12 of the explanation to emerging Bootle Area Action Plan policy BAAP1 Design.

Recommendations

4.23 There are 7 Recommendations, which are that:

1. **This SFRA Overview Update for Bootle Area Action Plan informs the preparation of Bootle Area Action Plan, and informs and complements its Sequential Test and Exception Test Assessment.**

2. **For all of the 22 development sites in the Bootle Area Action Plan, careful assessment and consideration of flood risk issues must be made at the detailed design, masterplanning and drainage details stages for 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. **Where infiltration SuDS are proposed location-specific soakaway tests in line with BRE365 or similar should be used to confirm the suitability of the ground conditions. This should be completed at the conceptual design stage to avoid issues arising post-planning consent.**

5. **Recommendations 2-4 must be reflected in submitted SuDS/ Drainage Pro Forms and Site-specific Flood Risk Assessments. These must be submitted for development on all 22 (re)development sites. This should also be reflected in Site-Specific Flood Risk Assessments for other sites. Development proposals must be able to show that the surface water 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.

6. **Developments that include areas that are designed to flood (e.g. amenity greenspace areas) or have a residual risk associated with them will need to contain appropriate flood warning plans and instructions so users and residents are safe in the event of a flood.**

7. **This SFRA should inform emergency planning approaches and delivery within Sefton and the wider area.**

5. References

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

Civil Contingencies Act 2004 – see https://www.legislation.gov.uk/ukpga/2004/36/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)

ADEPT and Environment Agency '**Flood risk emergency plans for new development'** (2019) – see https://www.adeptnet.org.uk/system/files/documents/ADEPT%20%26%20EA%20Flood%20risk%20emergency%20plans%20for%20new%20development%20September%202019....pdf

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)

Strategic Flood Risk Assessment (Nov23) for emerging LCR Spatial Development Strategy – 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

Merseyside and Halton Joint Waste Plan (adopted 2013) – see Waste Local Plan (sefton.gov.uk)

Sefton Local Development Scheme (2023) – see local-development-scheme2023_26-june2023.pdf (sefton.gov.uk)

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) 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

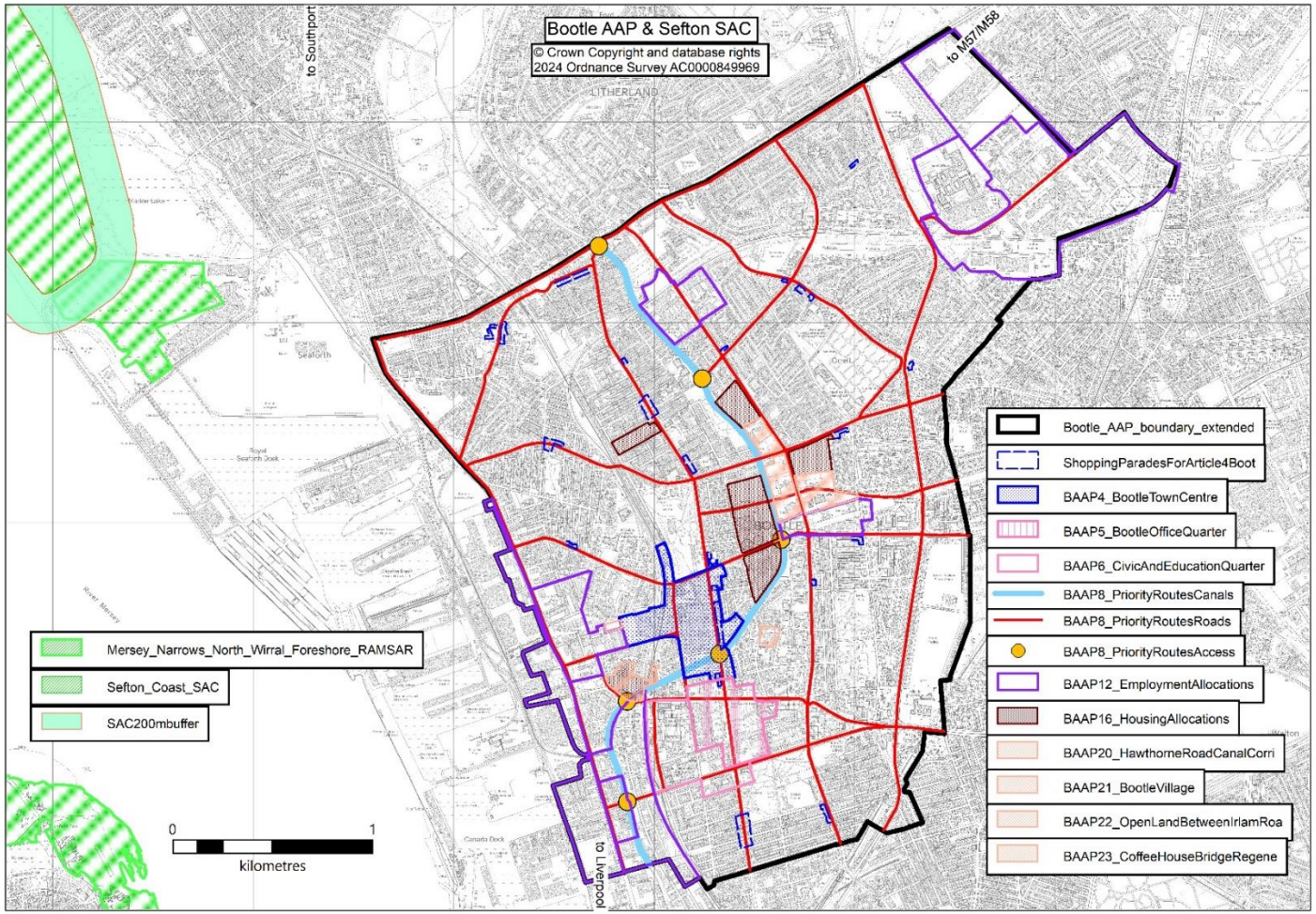
Sefton SuDS Pro Forma - see https://www.sefton.gov.uk/media/7382/final_sefton_suds_-pro-forma_1_web.pdf
Sefton's guidance note on 'How to fill in the SuDS Pro Forma - see https://www.sefton.gov.uk/media/7381/final_sefton_suds_pro-forma_guidance_web.pdf,

Flood Risk Sequential Assessment Report for Bootle Area Action Plan sites (2024) - see https://www.sefton.gov.uk/planning-building-control/planning-policy-including-local-plan-and-neighbourhood-planning/bootle-area-action-plan/

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/

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



Appendix 2: Sefton Local Plan extract: policy EQ8 'Flood risk and surface water' and its explanation

(See www.sefton.gov.uk/localplan)

CHAPTER TEN DESIGN AND ENVIRONMENTAL QUALITY

10.1 Key objectives of the Local Plan include making sure that all development achieves a high standard of design and environmental quality, reduces environmental risk, helps mitigate the effects of development, responds to climate change and contributes towards achieving a healthy environment. This chapter sets out how these issues will be addressed through the planning system in Sefton.

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MANAGING FLOOD RISK AND SURFACE WATER

10.49 Sefton is a low-lying, predominantly flat Borough. Flood risk from all sources and its management is an important local issue, especially surface water flood risk, which in any given year has a 1 in 100 chance (1%) of potentially affecting 30% of properties in Sefton. This is set out in the 2011 Sefton Surface Water Management Plan (SWMP) and reflected in the 2013 Strategic Flood Risk Assessment (SFRA), which Sefton has prepared in line with the National Planning Policy Framework and National Planning Practice Guidance.

10.50 Flooding has consequences for the economy, environment and for social, health and well-being.

10.51 Management of flood risk means designing to control and where possible reduce the risk (and hence consequences) from any source of flooding. Climate change, especially increased rainfall intensity is likely to increase both the risk of surface water and other flooding in Sefton and the challenge of managing it effectively. Much of Sefton's agricultural land lies mainly within low-lying areas reliant on pumped drainage. It is particularly vulnerable to changes in rainfall amounts and intensity, land drainage and how flood risk is managed.

10.52 Hence, it is important in Sefton that new development manages flood risk from all sources and critically that surface water is managed sustainably through use of sustainable drainage systems or schemes (SuDS). Sustainable management of surface water links to the Local Flood Risk Strategy which the Council has a duty to prepare. It also links to national requirements for sustainable drainage, set out in the National Planning Policy Framework and other national policy guidance.

10.53 Paragraphs 99 to 104 of the NPPF, and national planning guidance, stress the need for flood risk management, including the need to develop policies to manage flood risk from all sources and to take opportunities offered by new development to reduce the causes and impacts of flooding.

EQ8 FLOOD RISK AND SURFACE WATER

Flood risk generally

1. Development must be located in areas at lowest risk of flooding from all sources, unless the Sequential Test and where appropriate the Exceptions test set out in national policy have been passed. Within the site, uses with the greater vulnerability to flooding must be located in areas with lower risk of flooding, unless it is demonstrated that there are overriding reasons why this should not take place.

2. Development proposals must not increase flood risk from any sources within the site or elsewhere, and where possible should reduce the causes and impacts of flooding.

3. Development proposals must incorporate an integrated approach to the management of flood risk, surface water and foul drainage.

4. Ground floor and basement access levels of all development should be a minimum of 600mm above the 1 in 100 annual probability fluvial flood level or the 1 in 200 annual probability tidal flood level with an allowance for climate change, taking into account the presence of defences and the residual risks of failure of those defences.

5. Ground floor and basement access levels of all development should be a minimum of 300mm above the 1 in 100 annual probability surface water flood level with an allowance for climate change.

Surface water management

6 In addition to the national requirements, site-specific Flood Risk Assessments will also be required for all development on sites of 0.5 hectares or more in Critical Drainage Areas as defined in the Strategic Flood Risk Assessment.

7. Where reasonably practicable, development must incorporate sustainable drainage systems to manage surface water run-off within the site, so that:

- **a. Surface water run-off rates and volumes are reduced by 20% (compared to the pre-existing rates) for sites covered by buildings or impermeable hard surfaces, and for greenfield sites do not exceed greenfield rates**
- **b. Surface water discharge is targeted using a sequential approach, and proposals for the attenuated discharge of surface water into anything other than the ground must demonstrate why the other sequentially preferable alternatives cannot be implemented:**
  - **i. Into the ground (infiltration),**
  - **ii. Into a watercourse or surface water body,**
  - **iii. Into a surface water sewer, or**
  - **iv. Into a combined sewer**
- **c. Above ground, natural drainage features rather than engineered or underground systems are used.**

8. Sustainable drainage systems must be designed to provide effective drainage for properties and their capacity must take account of the likely impacts of climate change and likely changes in impermeable area within the site over the lifetime of the development. Sustainable drainage systems and any water storage areas must control pollution and should enhance water quality and existing habitats and create new habitats where practicable.

9. Suitable arrangements for long-term access to and operation, maintenance and management of sustainable drainage systems must be incorporated within development proposals. This includes both surface and subsurface components of sustainable drainage systems, over the lifetime of the development.

10. Development on an area which is an adopted Sustainable Drainage System or has a formal flood risk management function is acceptable in principle where the development proposals do not reduce the ability of the area to manage the surface water or flood risk.

Key Policy Links

- NH2 Nature

National /regional context

- SuDS Manual, CIRIA (Construction Industry Research and Information Association)
- Non-Statutory Technical Standards for Sustainable Drainage Systems, Defra (2015)

Explanation

10.54 The National Planning Policy Framework (NPPF) and National Planning Practice Guidance (PPG) set out the 'sequential test' and subsequent 'exception test' approach which must be followed to make sure that development is located within areas at lowest risk of flooding from all sources (except in relation to most changes of use or minor developments). The sequential test aims to steer new development to Flood Zone 1 - areas with a low probability of river or sea flooding. Where there are no reasonably available sites in Flood Zone 1, councils should take into account the flood risk vulnerability of land uses (as set out in PPG) and consider reasonably available sites in Flood Zone 2 - areas with a medium probability of river or sea flooding. Only where there are no reasonably available sites in Flood Zones 1 or 2 should the suitability of sites in Flood Zone 3 - areas with a high probability of river or sea flooding - be considered, taking into account the flood risk vulnerability of land uses. For some uses land in Flood Zone 2 or 3 should be used only if the exceptions test (as set out in PPG) is passed. Other sources of flooding are also relevant.

10.55 The 2013 Strategic Flood Risk Assessment (SFRA) indicates the locations and sources of flood risk in Sefton. Where the majority of a site is at lowest risk of flooding, parts of the site which are at greater risk must be subject to the sequential test, and if necessary the exception test, and the resulting uses and site design should reflect this.

10.56 Paragraph 102 of the NPPF says that the exception test can be passed only where it is demonstrated both that the development provides wider sustainability benefits to the community that outweigh flood risk and that the development will be safe for its lifetime. In applying the exception test the Council will give only limited weight to housing need as a "wider sustainability benefit capable of outweighing flood risk". Flood resistance and/or flood resilience design measures alone should not be used to justify development in areas at greater risk of flooding.

10.57 Paragraph 103 of the NPPF says that development proposals should not increase flood risk elsewhere, and paragraph 100 says that local plans should use opportunities offered by new development to reduce the causes and impacts of flooding. Part 2 of the policy reflects this. Where development proposals include raising ground levels in areas where surface water or flood water flows or collects (including land in Flood Zones 2 and 3), compensatory reductions in ground levels within the site must also be included, i.e. where infilling of the flood plain or sustainable drainage systems are proposed, flood storage must be provided to compensate for this, including an allowance for climate change. This is to make sure that areas next to the site or further away do not suffer from increased surface water or flood levels.

10.58 All options for reducing flood risk and/or surface water run-off from new development and implementing solutions (where viable) should be considered. Some of these will help achieve the surface water run-off rates and volumes set out in part 7a. Examples of ways that development can reduce flood risk overall include:

- Creation of new flood water storage areas within the site to reduce on-site or downstream flood risk or surface water flows from the site
- Appropriate, landscaped buffers around watercourses, free from buildings, structures or trees, to allow for access to flood defences and/or channels and for maintenance
- No new culverts, and removal of existing culverts, redundant structures and engineered river channels, together with taking opportunities to enhance the natural environment and setting of waterbodies or re-creation of natural river channels with associated habitat creation or enhancement
- An increase in the amount of soft surfacing such as grass or other planting (i.e. replacing what was hard-surfacing or buildings) to increase the scope for surface water to soak away, including 'green roofs'
- Use of permeable paving or surfacing treatments rather than impermeable surfaces to increase the scope for surface water to soak away, together with their continuing maintenance to make sure that they remain permeable
- Water efficiency, including grey water or rainwater recycling
- Tree and woodland planting in appropriate locations and of appropriate species
- Flood resistant or flood resilient design where appropriate.

10.59 Some of these examples, such as the need for a buffer adjacent to watercourses for maintenance, also relate to Environment Agency byelaws.

10.60 Part 3 of the policy reflects the need for an effective, integrated, approach to management of flood risk, surface water and foul drainage. This would include

assessment of potential interactions and the most effective ways of managing these in combination, rather than considering each in isolation. Parts 4 and 5 are based on the recommendations in the 2013 Strategic Flood Risk Assessment and need to make sure that development is safe.

10.61 The NPPF sets out the national requirements for site-specific Flood Risk Assessments. Part 6 sets out additional requirements, based on the recommendations in the 2013 Strategic Flood Risk Assessment and the 2011 Surface Water Management Plan and reflects the significance of surface water flood risk in Sefton. Critical Drainage Areas are identified in both documents. National Planning Practice Guidance 2014 includes a checklist for site-specific Flood Risk Assessments.

10.62 Applicants should refer to national and local guidance on sustainable drainage systems (SuDS), and should set out the arrangements for their on-going maintenance. It may be that the most sustainable form of surface water drainage varies between different parts of a development site, including where a site includes areas covered by buildings or impermeable hard surfaces as well as undeveloped 'greenfield' areas, or due to the site's topography. In these cases the applicant must incorporate the most sustainable drainage option for each different part of the site within the overall drainage scheme. It is recognised that Parts 7, 8 and 9 of the policy may be difficult to achieve for some changes of use or extensions.

10.63 United Utilities have indicated that connection of surface water drainage to a public sewer should be the last resort. They have also indicated that unless surface water discharges into the ground (soaks away), the applicant must demonstrate why each of the other sequentially preferable destinations for discharging surface water from sites, set out in part 7(b) of the policy cannot be used.

10.64 It may also be necessary to co-ordinate the delivery of infrastructure improvements. In the case of the larger development sites, it may be necessary to ensure that the delivery of development is guided by United Utilities' strategies which ensure coordination between different developments and phases over lengthy periods of time by a number of developers.

10.65 It should not be assumed that Sefton Council or a Parish or Town Council will adopt or maintain any sustainable drainage system. The applicant will be expected to make sure that suitable arrangements and legal agreements are in place, for the lifetime of the development, for access to and operation, maintenance and management of sustainable drainage systems. The Council will need to be satisfied that these are in place before planning permission is granted.

10.66 The Council will usually expect these arrangements and legal agreements to include planning conditions, and other mechanisms which, for the lifetime of the development:

a. Clarify who will be responsible for management and maintenance of the sustainable drainage system and how this will be funded
b. Provide contact details of the responsible body to the lead local flood authority

c. Recognise that the maintenance and management schedules and requirements of the sustainable drainage system are integral parts of that system and so will also form part of the approved sustainable drainage system to be implemented. This includes procedures for monitoring and review

d. Recognise that all of the maintenance and management schedules and material changes to them must be agreed in writing by the Council before they are implemented.

10.67 Part 10 recognises the need to retain the flood risk management functions of existing SuDS or flood risk management schemes, for example those shown as flood or surface water storage areas within planning permissions, or operating as such. Such areas are part of Sefton's strategic green infrastructure network.

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Appendix 3: Sefton SuDS Pro Forma

Sefton SuDS pro-forma (and see [See https://www.sefton.gov.uk/media/7382/final_sefton_suds_-pro-forma_1_web.pdf]

This pro-forma is a requirement for any planning application for Major Development[36], as set out in Sefton Council's Validation Checklist.
It supports applicants in summarising and confirming how surface water from a development will be managed sustainably under current and future conditions.
Your sustainable drainage system should be designed in accordance with **CIRIA The SuDS Manual C753** and any necessary adoption standards.

How to complete

Blue Box	Instruction/ Question
Orange Box	Evidence Required
White Box	To be completed by Developer / Consultant

1. Complete ALL white boxes
2. Submit this pro-forma to the Local Planning Authority, along with:

- Sustainable Drainage Strategy
- Site Specific Flood Risk Assessment (if required)
- Supporting evidence, as indicated in orange boxes of this pro-forma.

Guidance to support you

The pro-forma should be completed in conjunction with 'Completing your SuDS Pro Forma Guide.'
The pro-forma can be completed using freely available tools such as **Tools for Sustainable Drainage Systems** or appropriate industry standard surface water management design software.

[36] *as defined in Section 2 of **Statutory Instrument 2015 No. 595** or on sites in Critical Drainage Areas.*

Section 1. Application & Development Details

Planning Application Reference *(if available)*	
State type of planning application *i.e. Pre-application, Outline, Full, Hybrid, Reserved Matters** **Information only required if drainage is to be considered as part of reserved matters application*	
Developer(s) Name:	
Consultant(s) Name:	
Development Address *(including postcode)*	
Development Grid Reference *(Eastings/Northings)*	
Total Development Site Area (Ha)	
Drained Area (Ha)* of Development	
Please indicate the flood zone that your development is in. Tick all that apply. *Based on the Environment Agency Flood Map for Planning and Sefton's Strategic Flood Risk Assessment (to identify Flood Zones 3a/3b).*	Flood Zone 1 ☐ Flood Zone 2 ☐ Flood Zone 3a ☐ Flood Zone 3b ☐
What is the surface water risk of the site? Tick all that apply. *Based on the Environment Agency Surface Water Flood Map.*	High ☐ Medium ☐ Low ☐
Is your site in a Critical Drainage Area? *Based on Sefton Council's Strategic Flood Risk Assessment and shown in the SuDS and Flood Risk Information Note*	Yes ☐ No ☐
Have you submitted a Site Specific Flood Risk Assessment (FRA)? *See separate guidance notes for clarification on when a FRA is required*	Yes ☐ No ☐

Have you submitted a Sustainable Drainage Strategy?	Yes ☐ No ☐	
Does your drainage proposal provide multi-functional benefits via SuDS? *Please refer to section 29.1 of the SuDS Manual.*	Yes ☐ No ☐	
Expected Lifetime of Development *(years)* *Refer to Planning Practice Guidance "Flood Risk and Coastal Change" Paragraph 006*		
Development Type:		**State Proposed Number of Units**
Greenfield Site • *Site is wholly undeveloped, and a new drainage system will be installed*	☐	
Previously Developed/ Brownfield Site • *Site is already developed, and the entirety of the existing surface water drainage system will be used to serve the new development (evidence must be provided to prove existing surface water drainage system is reusable);* ***OR*** • *Where records of the previously developed system are not available so that the hydraulic characteristics of the system cannot be determined or where the drainage system is not in reasonable working order i.e. broken, blocked or no longer operational for other reasons.*	☐	
Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 1.		

Section 2: Impermeable Area and Existing Drainage

	Existing (E)	Proposed (P)	Change (P – E)	Urban Creep (UC) (P) + 10% for UC
State Impermeable Area (Ha) *10% Urban Creep allowance required for all residential developments.*				
Evidence Required: Plans showing development layout of site with existing and proposed impermeable areas.			☐	

Are there existing sewers, watercourses, water bodies, highway drains, soakaways or filter drains on the site?	Yes ☐ No ☐ Don't Know ☐
Evidence Required: Plan(s) showing existing layout to include all: • Watercourses, open and culverted • Water bodies – ponds, swales etc. • Sewers, including manholes • Highway drains, include manholes, gullies etc. • Infiltration features - soakaways, filter drains etc.	☐

Drainage Design *Outline planning applications should be able to demonstrate that a suitable drainage system is achievable.* *All other type of planning application should provide full details or reference to previous planning application where drainage details have been submitted or approved.*	
Select which design approach you are taking to manage water quantity *(refer to Section 3.3 SuDS Manual)* **Approach 1 – Volume control / Long Term Storage (Technical Standards S2/3, S4/5)** • *The attenuated runoff volume for the 1 in 100 year 6 hour event (plus climate change allowance) is limited to the greenfield runoff volume for the 1 in 100 year 6 hour event, with any additional runoff volume utilising long term storage and either infiltrated or released at 2 l/s/ha* • *The discharge rate for the critical duration 1 in 1 year event is restricted to the 1 in 1 year greenfield runoff rate*	☐

• *The discharge rate for the critical duration 1 in 100 year event (plus climate change allowance) is restricted to the 1 in 100 year greenfield runoff rate* **Approach 2 – Qbar (Technical Standards S6)** • *Justification has been provided that the provision of volume control/long term storage is not appropriate and an attenuation only approach is proposed. All events up to the critical duration 1 in 100 year event (plus climate change allowance) are limited to Qbar (1 in 2 year greenfield rate) or 2 l/s/ha, whichever is greater.*	☐
Evidence Required: Plans showing: • Existing flow routes and flood risks • Modified flow routes • Contributing and impermeable areas • Current (if any) and proposed 'source control' and 'management train' locations of sustainable drainage components (C753 Chapter 7) • Details of drainage ownership • Details of exceedance routes (Technical Standards S9) • Topographic survey • Locations and number of existing and proposed discharge points *Note consideration should be given to manage surface water from both impermeable and permeable surfaces (including gardens and verges) likely to enter the drainage system.*	☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 2.	

Section 3: Peak Runoff RATES – Technical Standards S2, S3 and s6 (unless S1 applies)

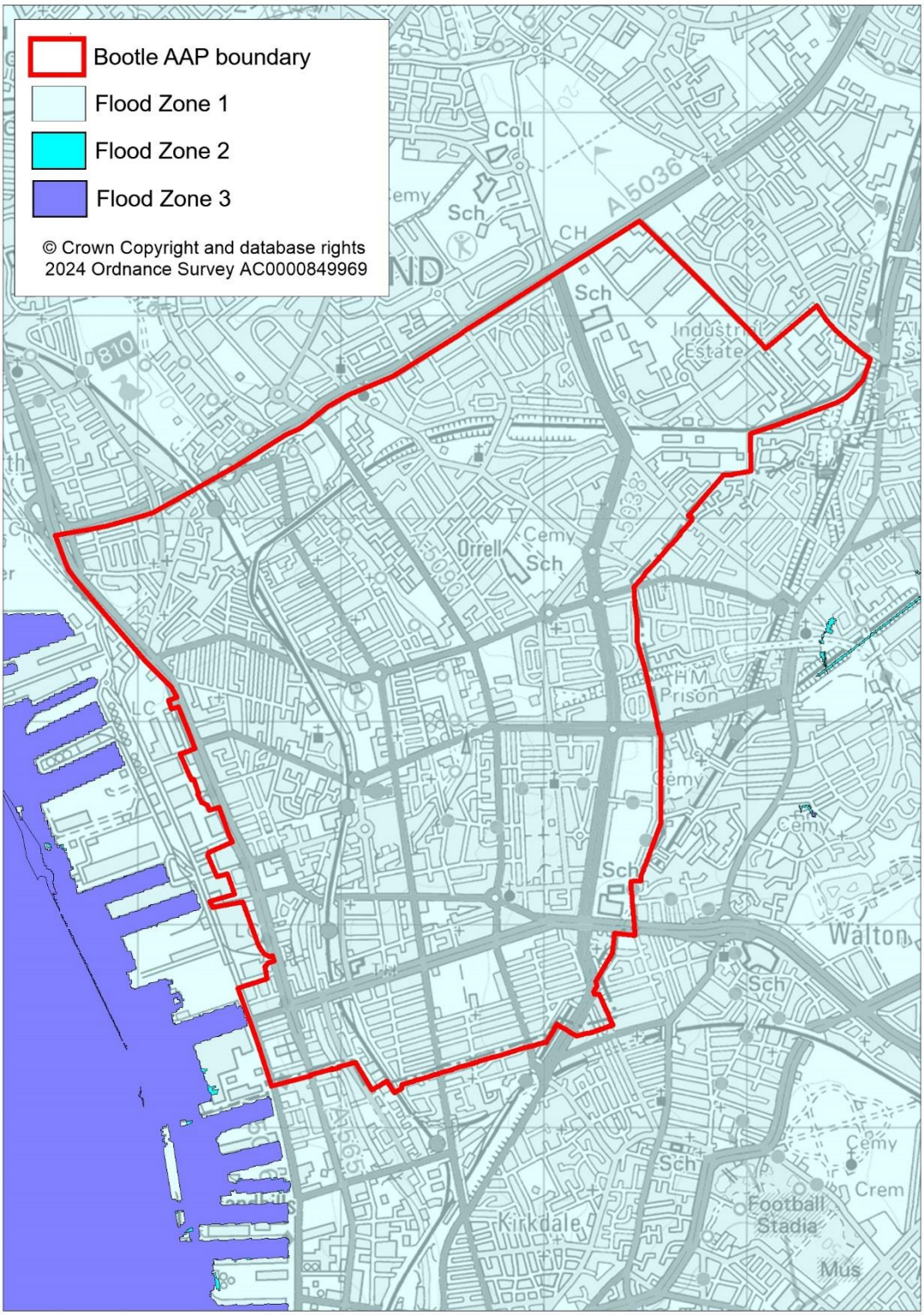
Rainfall Event	Existing Rate (l/s)	Greenfield Rate (l/s)	Proposed Rate (l/s) ***Previously developed* sites –** *discharge rates must be reduced by at least 20%, in line with Local Plan policy EQ8 'Flood risk and surface water'* ***Greenfield sites -*** *S3 should be equivalent to Greenfield runoff rates –discuss with LLFA if this is not achievable pre-application*
Qbar *(Approach 2)*			
1 in 1 Year Event *(Approach 1)*			
1 in 30 Year Event			
1 in 100 Year Event* *(Approach 1)*			
1 in 100 Year Plus 45% for Climate Change	N/A	N/A	
** Total discharge at the 1 in 100 year rate should be restricted to the greenfield runoff volume for the 1 in 100 Year 6 hour event with additional volumes (long-term storage volume) released at a rate no greater than 2 l/s/ha where infiltration is not possible.* *The climate change allowance should only be applied to the proposed rate and not the existing or greenfield rate.*			
Evidence Required: Methodology used to calculate peak runoff rate clearly stated and justified. Impermeable areas plan, supported by topographical survey confirming positive drainage. Hydraulic calculations and details of software used.		☐ ☐ ☐	

Appendix 4: Flood Risk mapping

A4.1 This appendix consists of a series of maps indicating the risk of flooding within the Bootle Area Action Plan area. There are separate plans for each source of flooding and associated information:

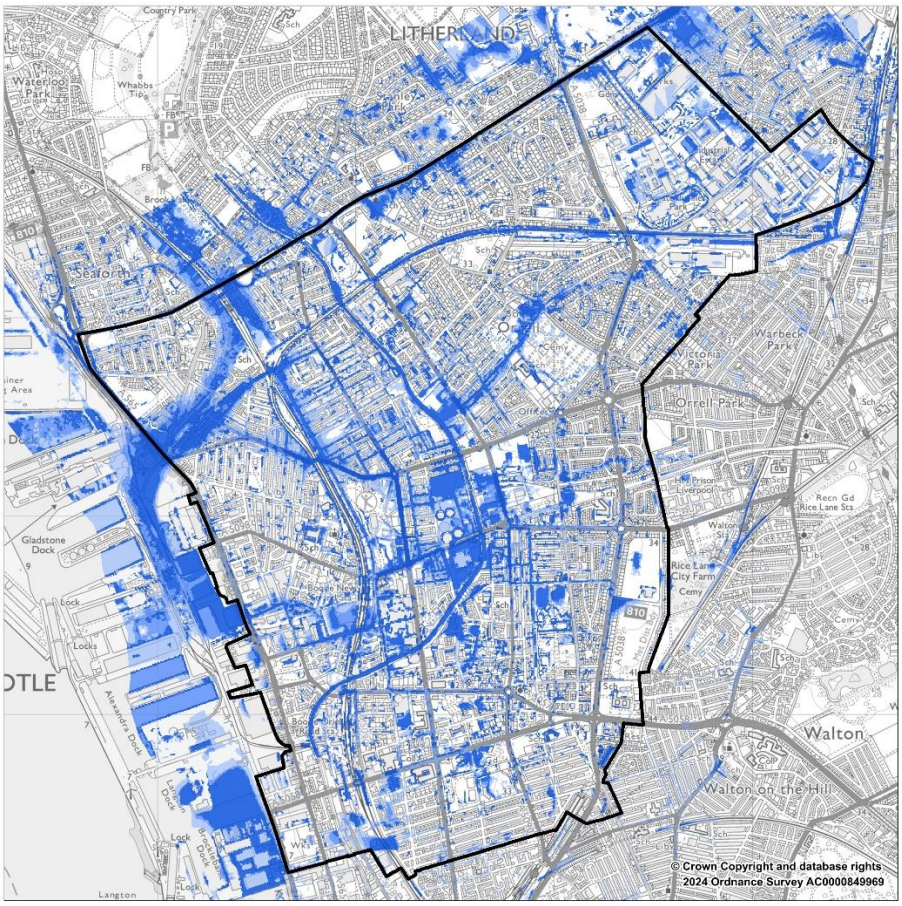
- Map 1: Fluvial and tidal flood risk (from Environment Agency Flood Map for Planning)
- Map 2: Surface water flood risk extents (from Environment Agency RoFSW)
- Map 3 Surface water flood risk depths (from Environment Agency RoFSW):
  - Map 3a: High risk (1 in 30) depth
  - Map 3b: Medium risk (1 in 100)
  - Map 3a: Low risk (1 in 1000) depth
- Map 4: Critical Drainage Area (from 2011 Surface Water Management Plan/ 2013 SFRA)
- Map 5: Groundwater flood risk (from 2013 SFRA)
- Map 6: Indicative suitability for SuDS (from 2013 SFRA)
- Map 7: Canal flood risk (from 2013 SFRA)

Map 1: Fluvial and tidal flood risk (from Environment Agency Flood Map for Planning)



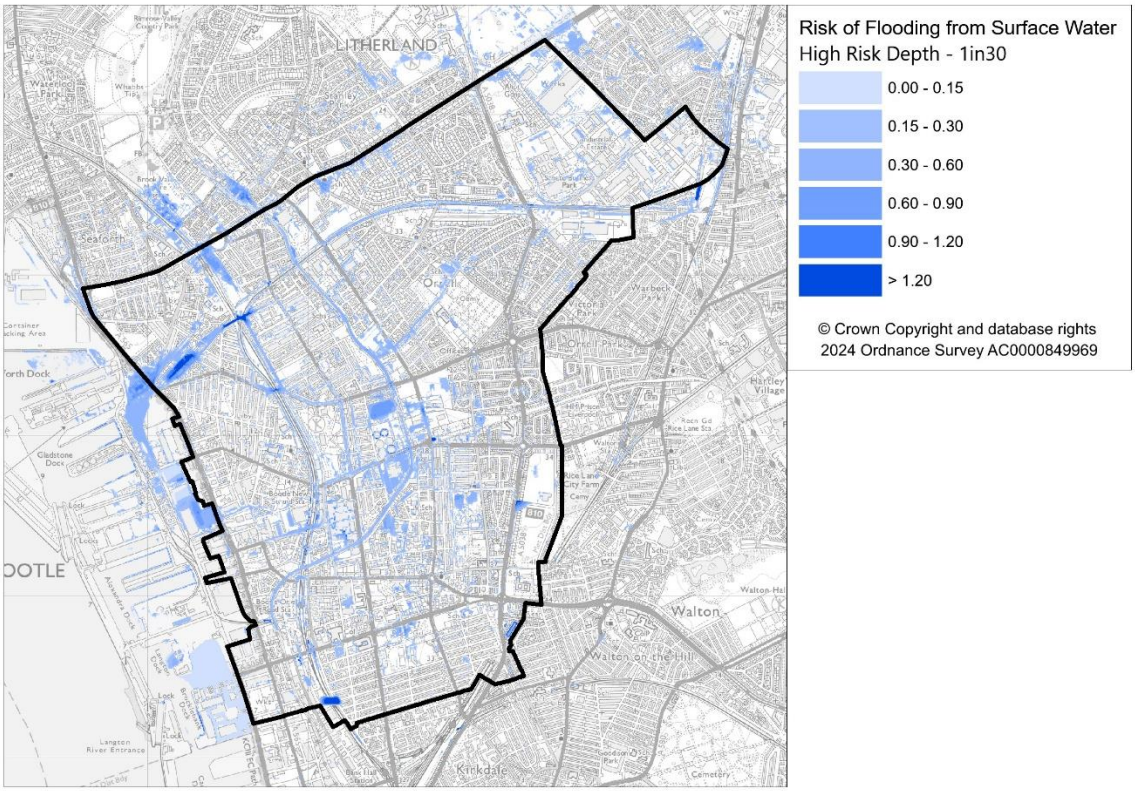
Map 2: Surface water flood risk

(from Environment Agency Risk of Flooding from Surface Water (RoFSW) data)

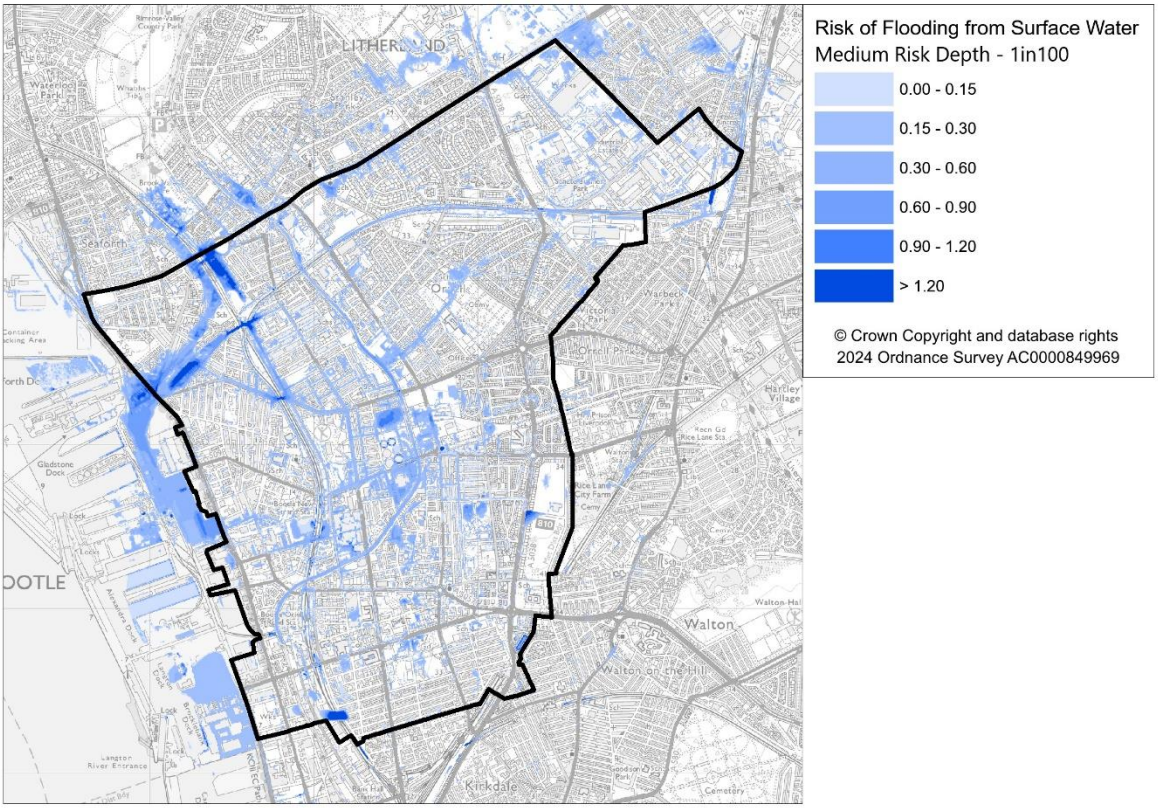


<u>Map 3: Surface water flood risk depths</u> (from Environment Agency RoFSW):

Map 3a: High risk (1 in 30) depth

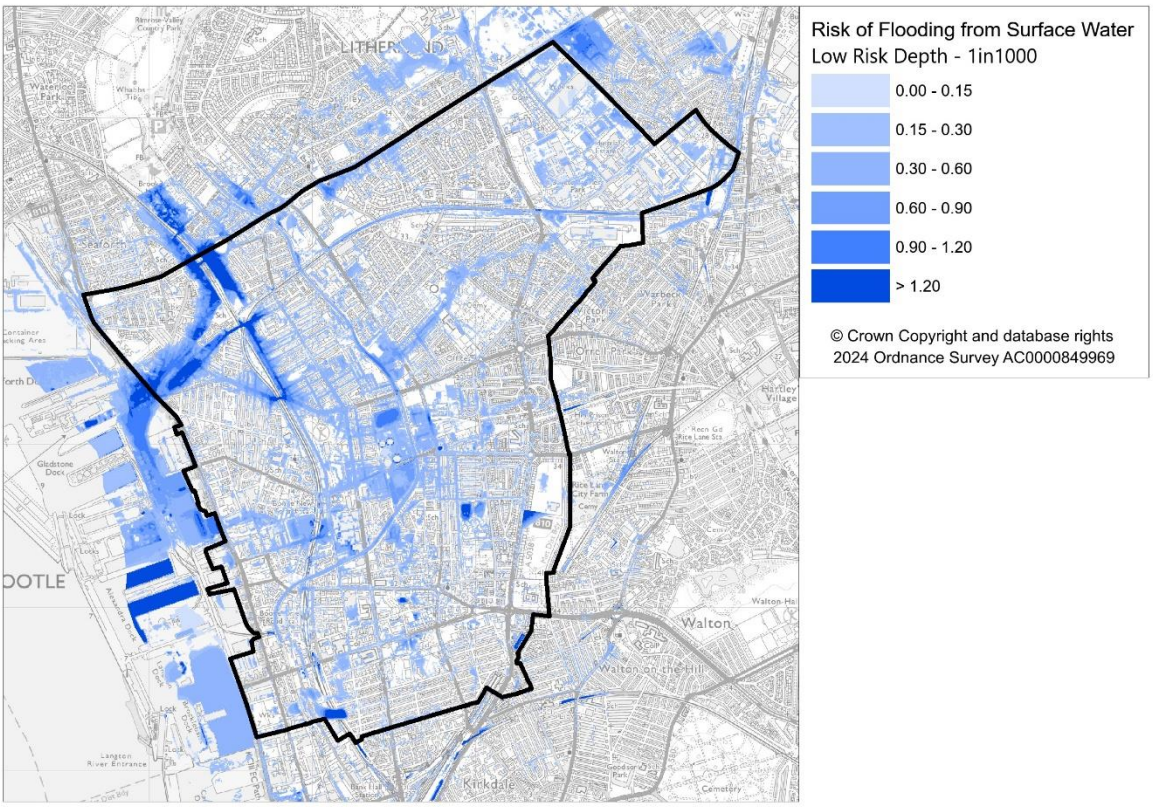


Map 3b: Medium risk (1 in 100) depth



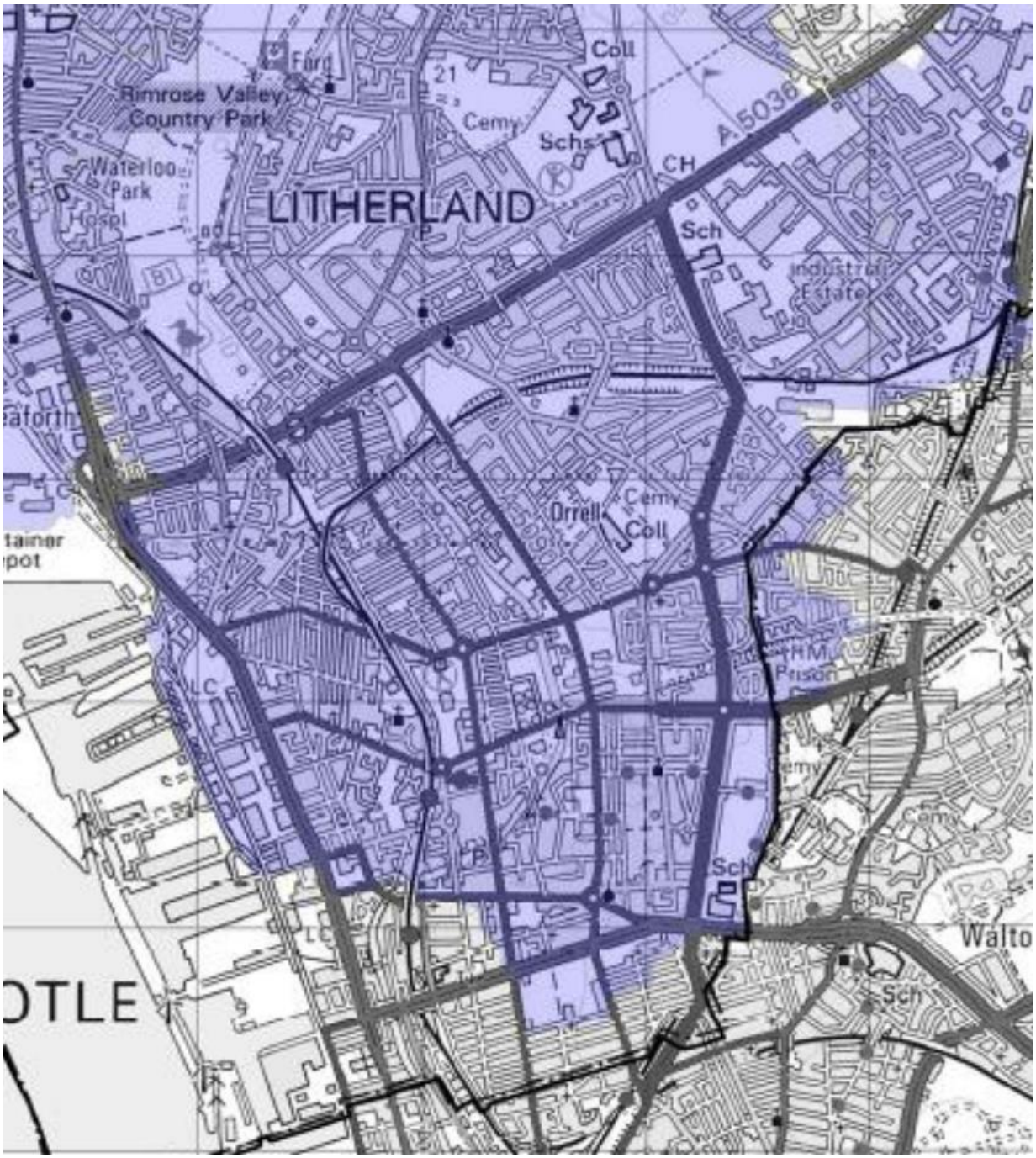
<u>Map 3: Surface water flood risk depths</u> (from Environment Agency RoFSW):

Map 3a: Low risk (1 in 1000) depth



Map 4: Critical Drainage Area (from 2011 Surface Water Management Plan/ 2013 SFRA)

Legend: *Purple shading is the Critical Drainage Area*

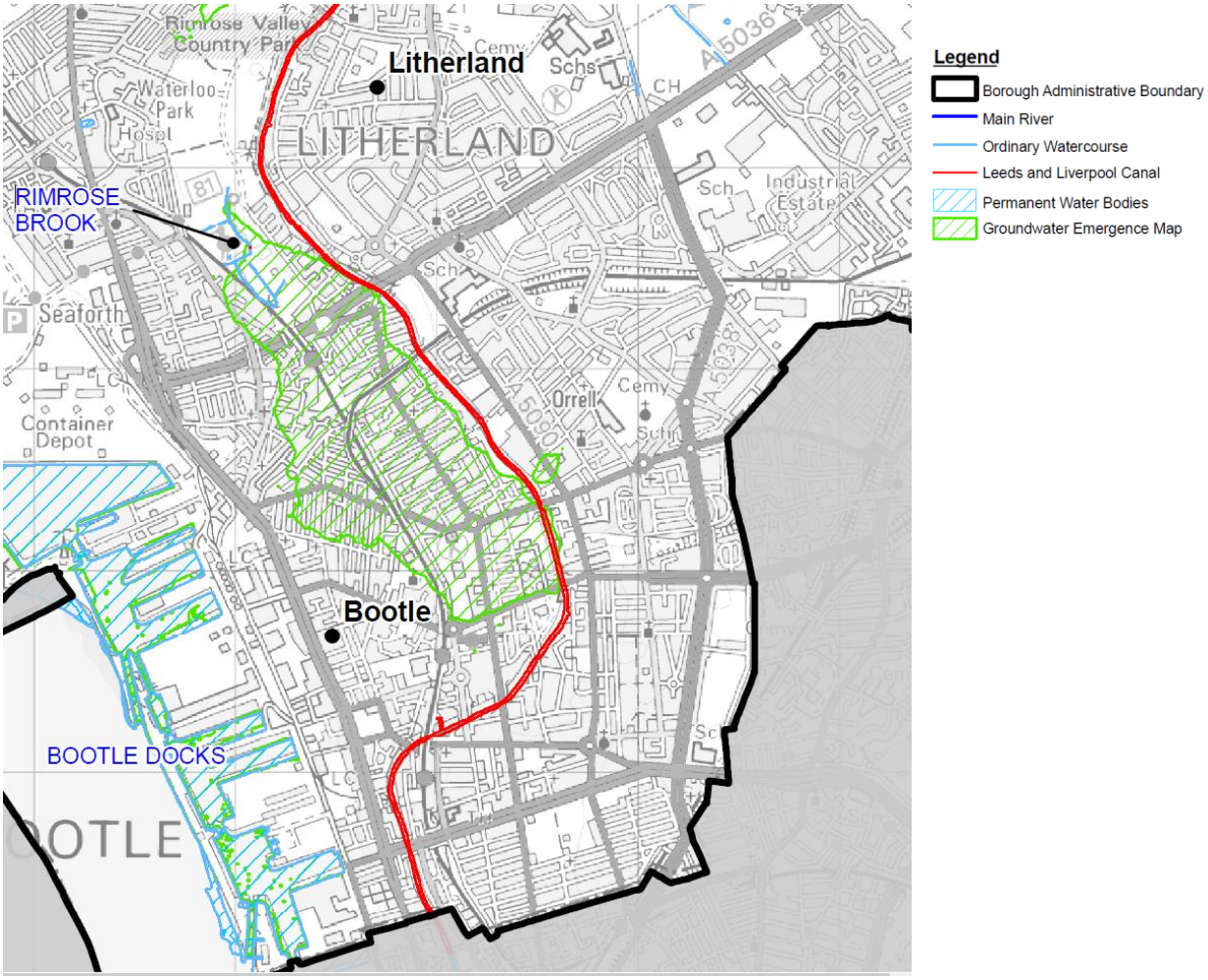


Map 5: Groundwater flood risk (from 2013 SFRA)

Extract from 2013 SFRA of the Local Plan: Figure 17-2 Groundwater Flood Risk

(Document EN.3, see https://www.sefton.gov.uk/planning-building-control/planning-policy-including-local-plan-and-neighbourhood-planning/local-plan-examination-library/

Notes: Flood data provided by the Environment Agency 2012. All rights reserved (ref : PRE4990)

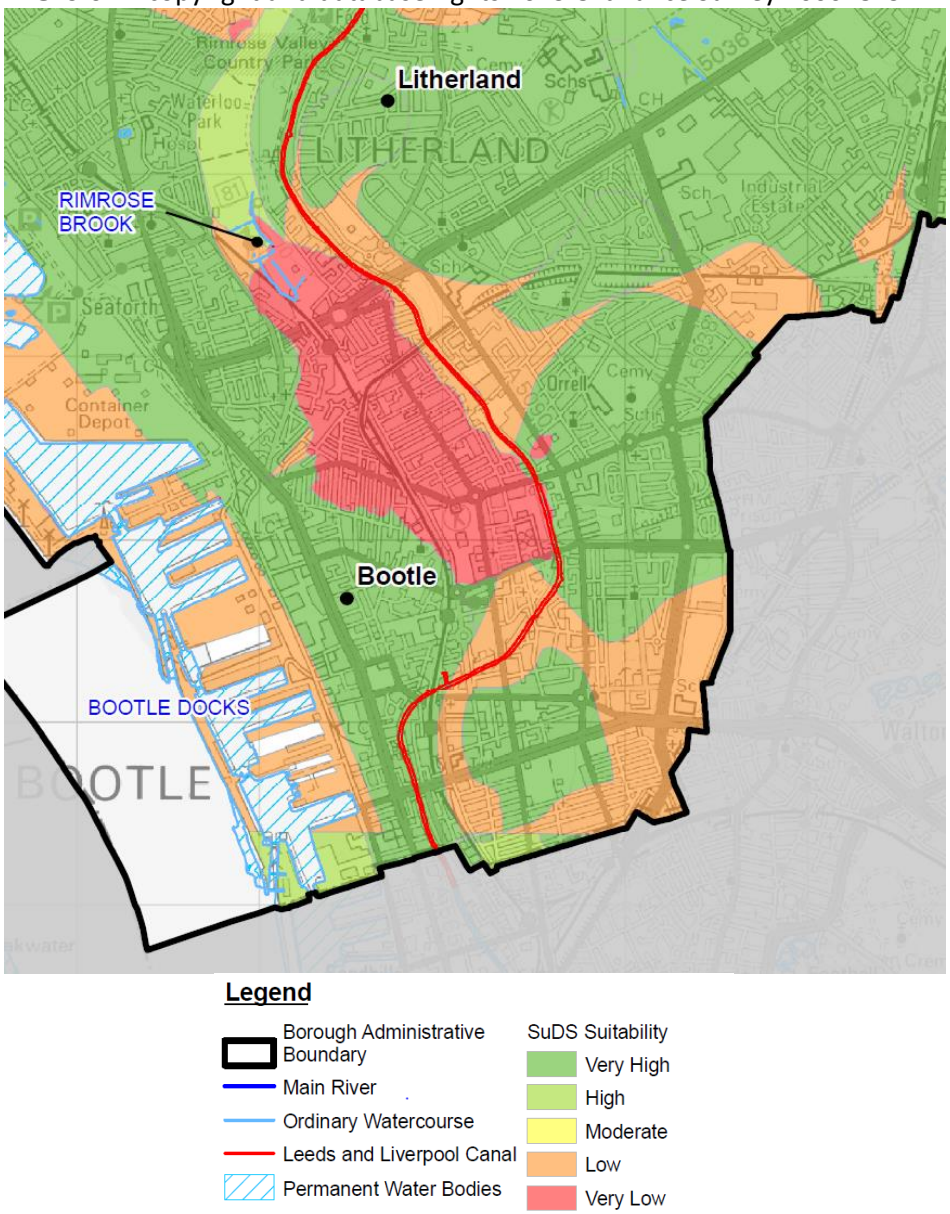


Map 5: Indicative suitability for SuDS (from 2013 SFRA)

Extract from 2013 SFRA of the Local Plan: Figure 21-2 SuDS Suitability

(Document EN.3, see https://www.sefton.gov.uk/planning-building-control/planning-policy-including-local-plan-and-neighbourhood-planning/local-plan-examination-library/

Notes: The SuDS Suitability is based on a combination of the permeability of the overlying drift and the underlying geology. Areas identified as being susceptible to groundwater emergence have been identified as 'very low' regardless of the underlying drift or solid geology. It should also be noted that in areas with a better SuDS suitability classification there may also be shallow groundwater or ptentially contamination that could restrict or entirely prevent the use of infiltration SuDS. Where infiltration SuDS are proposed it is strongly recommended that location-specific soakaway tests in line with BRE365 or similar are used to confirm the suitability of the ground conditons. This should be completed at the conceptual design stage to avoid post-planning consent issues arising. Flood data provided by the Environment Agency 2012. All rights reserved (ref : PRE4990)

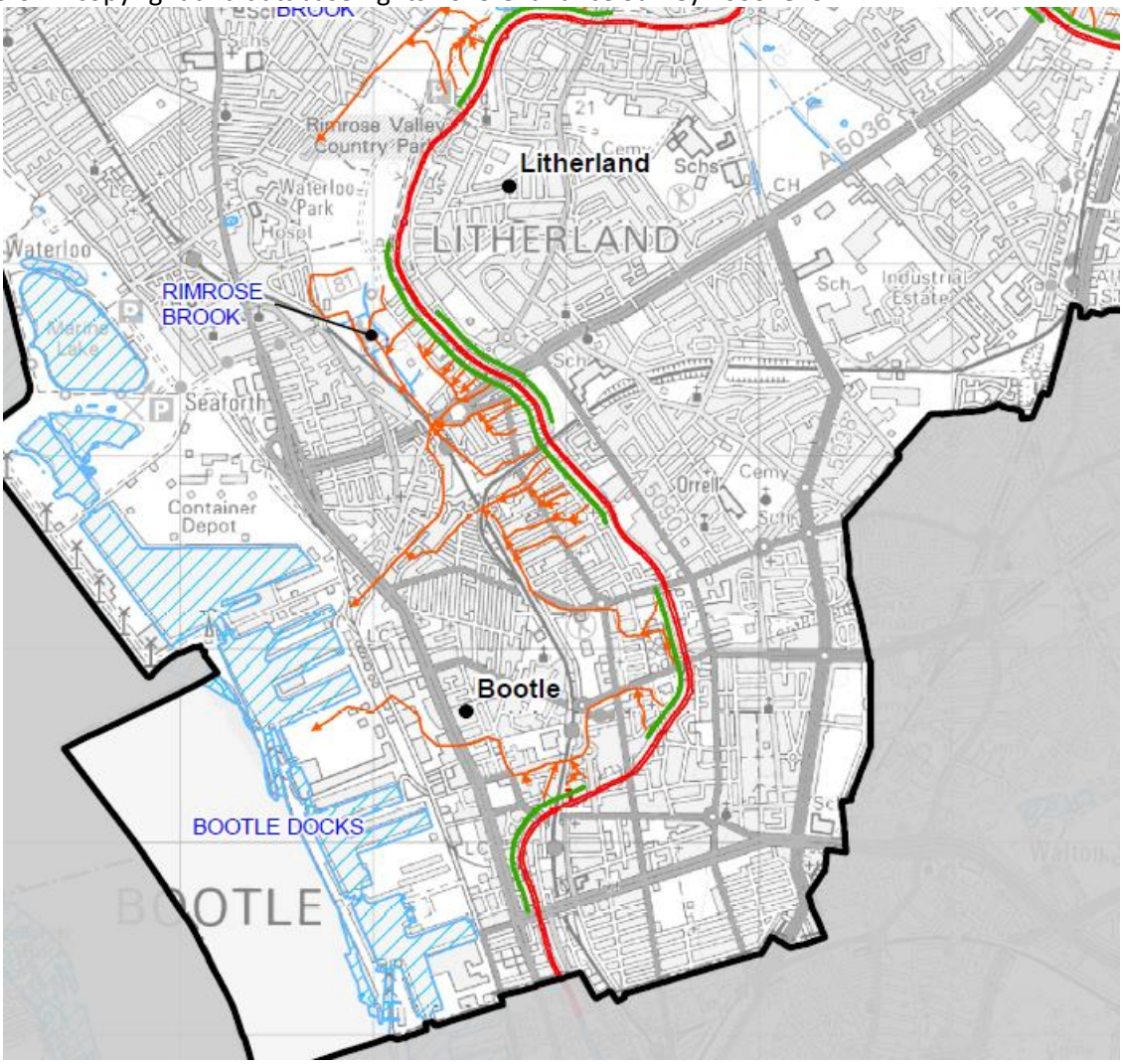


Map 6: Canal flood risk (from 2013 SFRA)

Extract from 2013 SFRA of the Local Plan: Figure 20-1 Potential Canal Risk

(Document EN.3, see https://www.sefton.gov.uk/planning-building-control/planning-policy-including-local-plan-and-neighbourhood-planning/local-plan-examination-library/

Notes: Modelling of canal breaches has not been undertaken. The flow directions are based on topographical 'rolling ball' analysis only.



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Permanent Water Bodies
- Raised sections of canal
- Potential canal flow path in event of failure

Appendix 5: United Utilities' comments on Bootle AAAP Preferred Option

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 (UUW) as part of the Draft Bootle Area Action Plan ('*the AAP*').

UUW 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.

UUW 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 according 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 levels 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, UUW 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.

UUW 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 UUW 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