

Table 6.4: Simple Index Approach Results Summary

	Total Suspended Solids	Metals	Hydrocarbons
Pollution Hazard Score	0.8	0.8	0.9
Pollution Mitigation Score	0.9	0.9	0.9
Sufficiency of SuDS	Sufficient	Sufficient	Sufficient

7.0 Summary and Conclusions

7.1 Introduction

- 7.1.1 A site-specific Flood Risk Assessment (FRA) has been undertaken for a proposed battery energy storage system (BESS) development, located on a 0.8ha Site at Portsmouth Water Bedhampton WTW, Havant, Hampshire.

7.2 Flood Risk

- 7.2.1 The risk of flooding is assessed as follows:

- The risk of fluvial flooding is assessed as negligible.
- The risk of tidal flooding is assessed as negligible for most of the Site and medium along the southeastern boundary.
- The risk of groundwater flooding is assessed as high for the entire Site.
- The risk of surface water flooding is assessed as negligible for most of the Site and low along surface water flow pathways and ponding.
- The risk of flooding from sewers is assessed as negligible for most of the Site and low along the reaches of the identified assets.
- The risk of flooding from all other sources is assessed as negligible.

7.3 Mitigation Measures

- 7.3.1 Flood risk can be mitigated to a negligible or low and acceptable level through the following approach:

- Provide an 8m easement free from development along the side of Hermitage Stream. This easement would provide access for inspection and maintenance purposes, including vehicle access.
- Set the surface water outfall from the proposed development at an appropriate height, i.e. above the 1 in 100-year+51%CC flood level (5.53m AOD).
- Set vulnerable electrical equipment a minimum of +150mm above the modelled 1 in 100-year 51%+CC flood level.
- Adoption of a surface water management strategy.
- Fit outfall with flapped outfalls to avoid surcharging in a flood event and allow surface water to still discharge.
- Lined attenuation to prevent groundwater ingress.
- Sequentially develop the Site, limiting the built development outside the mapped extent of surface water flooding associated with overland flow pathways.
- Provide a development free easement (3m either side) of onsite Southern Water sewer assets, or re-direct around the Site boundary.

7.4 Flood Guidance

- 7.4.1 The proposed battery energy storage system use is classified as essential infrastructure. Essential infrastructure uses are considered acceptable in terms of flood risk in Flood Zone 1, 2 and 3 (low to high risk). There is however a risk of flooding from other sources. Subject to the implementation of the above mitigation measures, the Sequential Test would be passed, and the Exception Test would not be required.

7.5 Site Drainage

Surface Water

- 7.5.1 The proposed development will increase the area of impermeable surfaces and therefore increase the amount of runoff without mitigation.
- 7.5.2 Surface water runoff from the Site will be restricted to 2l/s, which offers a betterment to existing conditions with uncontrolled runoff across all return periods.
- 7.5.3 Surface water runoff from the proposed development would be attenuated on-site up to and including the 1 in 100-year event, plus 45% climate change.
- 7.5.4 A SuDS drainage scheme is proposed to manage excess runoff from the development, comprising a geocellular attenuation tank designed to maintain runoff at pre-development rates, with an outfall to Hermitage Stream.
- 7.5.5 SuDS treatment, including attenuation tanks will improve water quality. A maintenance and management ensure the effectiveness of the drainage strategy during the operation phase.

7.6 Conclusion

- 7.6.1 This FRA demonstrates the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of national policy and guidance.
- 7.6.2 The development should therefore not be precluded on the grounds of flood risk, as well as surface water drainage.



KEY:
 Site Location

P03	21/03/25	Redline updated	DL	EOC	EOC
P02	02/04/24	Redline updated	DL	EOC	EOC
P01	08/12/23	Issued for comment / approval	LW	DA	DA
Rev	Date	Description	DRA	CHK	APP

Project
Bedhampton Waterworks

Client
E101 Hub 4 Ltd

Drawing Title
Site Location Plan

Scale 1:20,000@A3	Date 08/12/23	Status Preliminary
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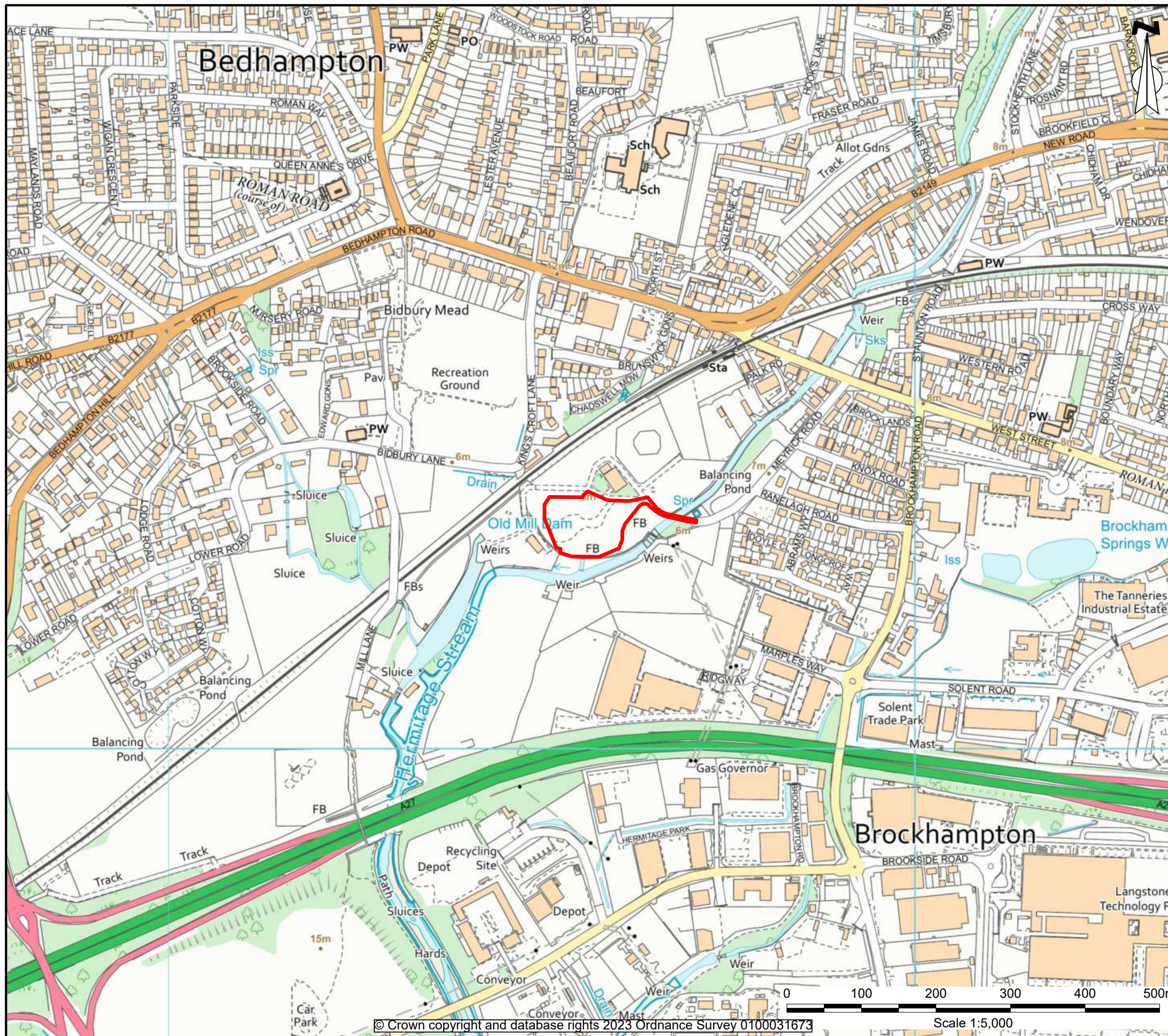
DWG No. SHF.3055.001-ENZ-XX-XX-DR-Y-0001	Revision P02
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Scale 1:20,000



KEY:

- Site Boundary
- Surface Water Features

P03	21/03/25	Redline updated	DL	EOC	EOC
P02	02/04/24	Redline updated	DL	EOC	EOC
P01	08/12/23	Issued for comment / approval	LW	DA	DA
Rev	Date	Description	DRA	CHK	APP

Project
Bedhampton Waterworks

Client
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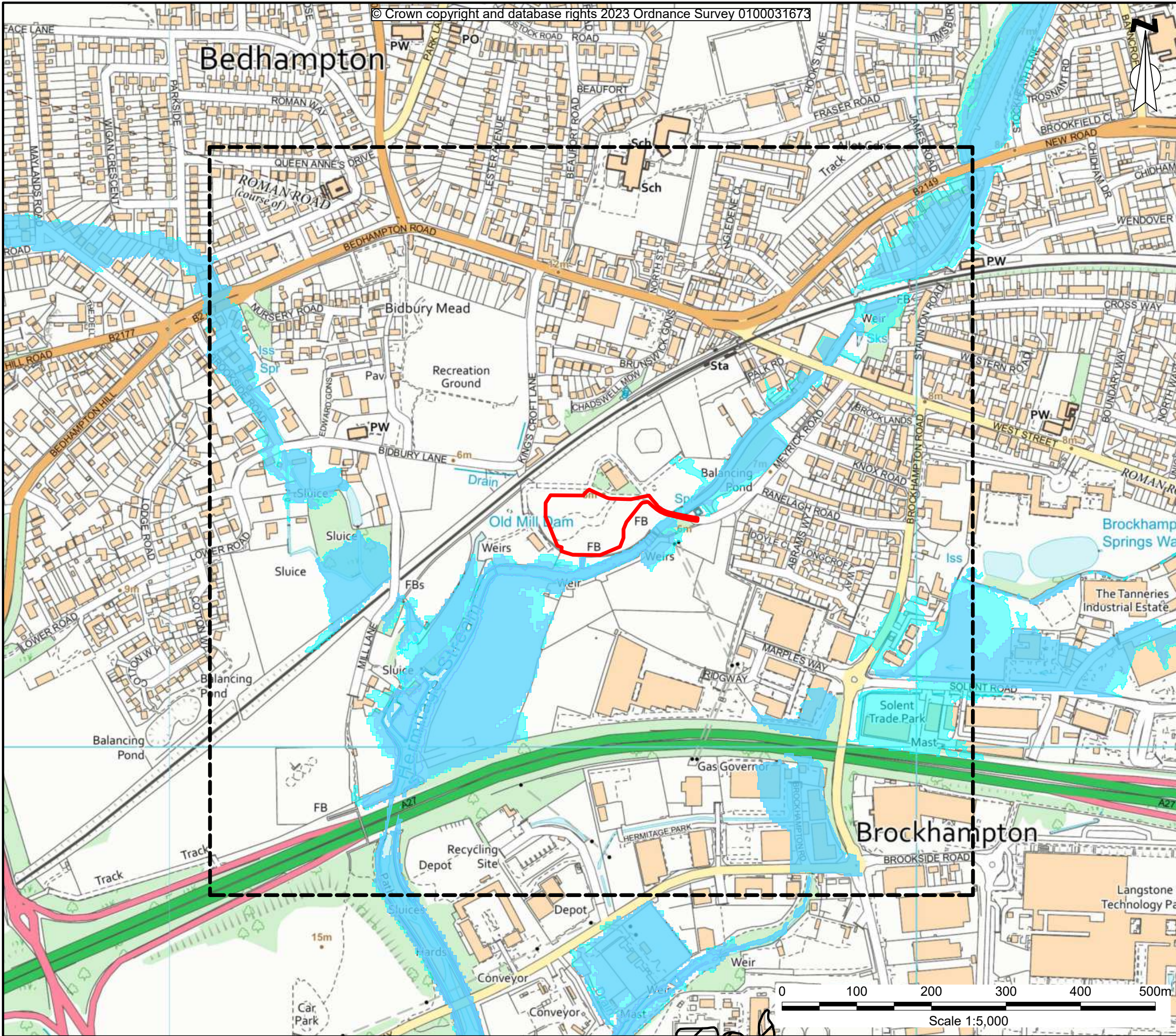
Drawing Title
Surface Water Features

Scale 1:5,000@A3	Date 08/12/23	Status Preliminary
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DWG No. SHF.3055.001-ENZ-XX-XX-DR-Y-0002	Revision P03
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KEY:

- Site Boundary
- Areas Benefitting From Flood Defences
- Flood Zone 3
- Flood Zone 2
- Flood Zone 1

P03	21/03/25	Redline updated	DL	EOC	EOC
P02	02/04/24	Redline updated	DL	EOC	EOC
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Project

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Drawing Title

EA Flood Zones

Scale
1:5,000@A3

Date
08/12/23

Status
Preliminary

DWG No.

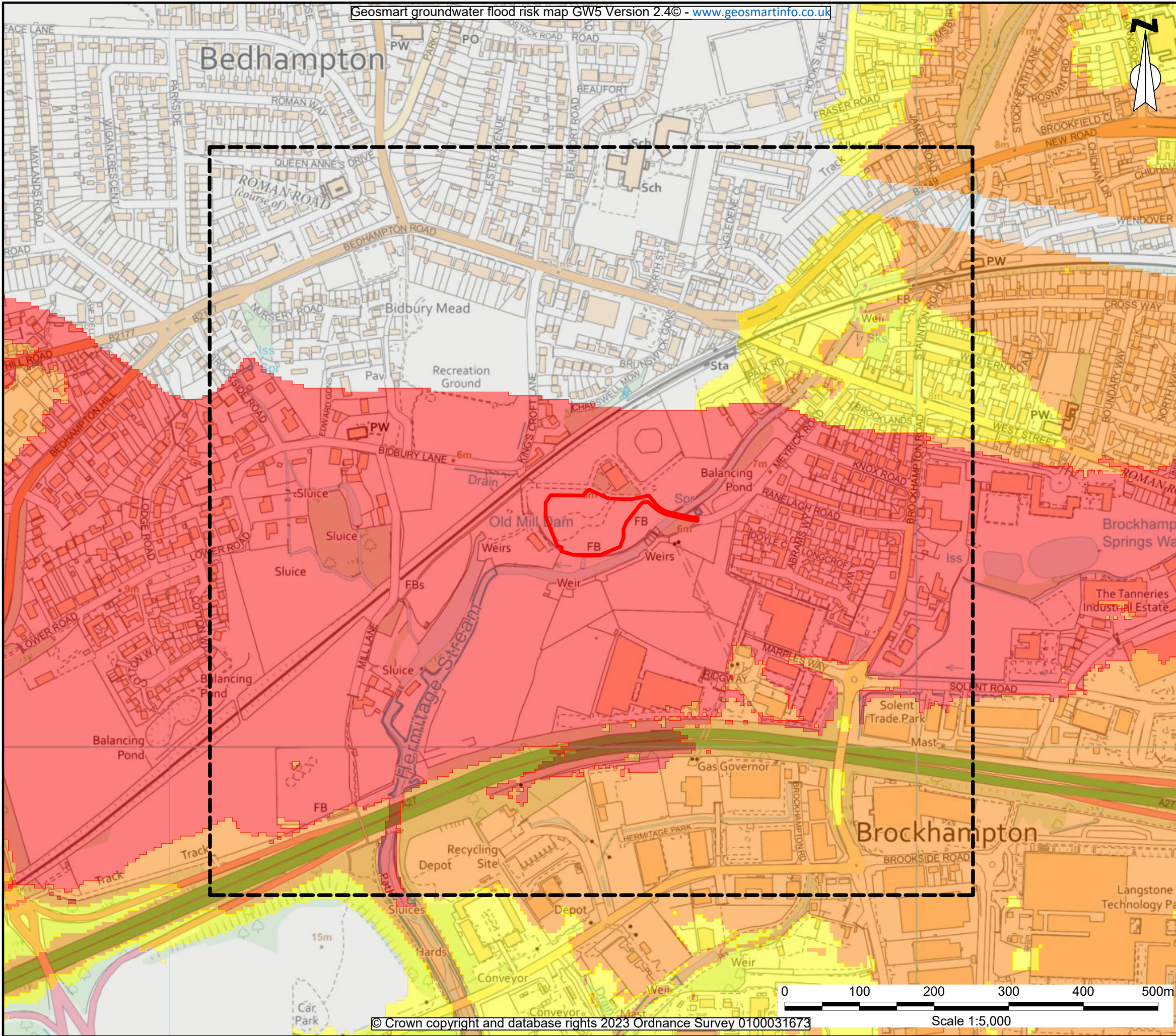
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Revision

P03



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KEY:

- Site Boundary
- Class 1 - High Risk
- Class 2 - Moderate Risk
- Class 3 - Low Risk
- Class 4 - Negligible Risk

P03	21/03/25	Redline updated	DL	EOC	EOC
P02	02/04/24	Redline updated	DL	EOC	EOC
P01	08/12/23	Issued for comment / approval	LW	DA	DA
Rev	Date	Description	DRA	CHK	APP

Project
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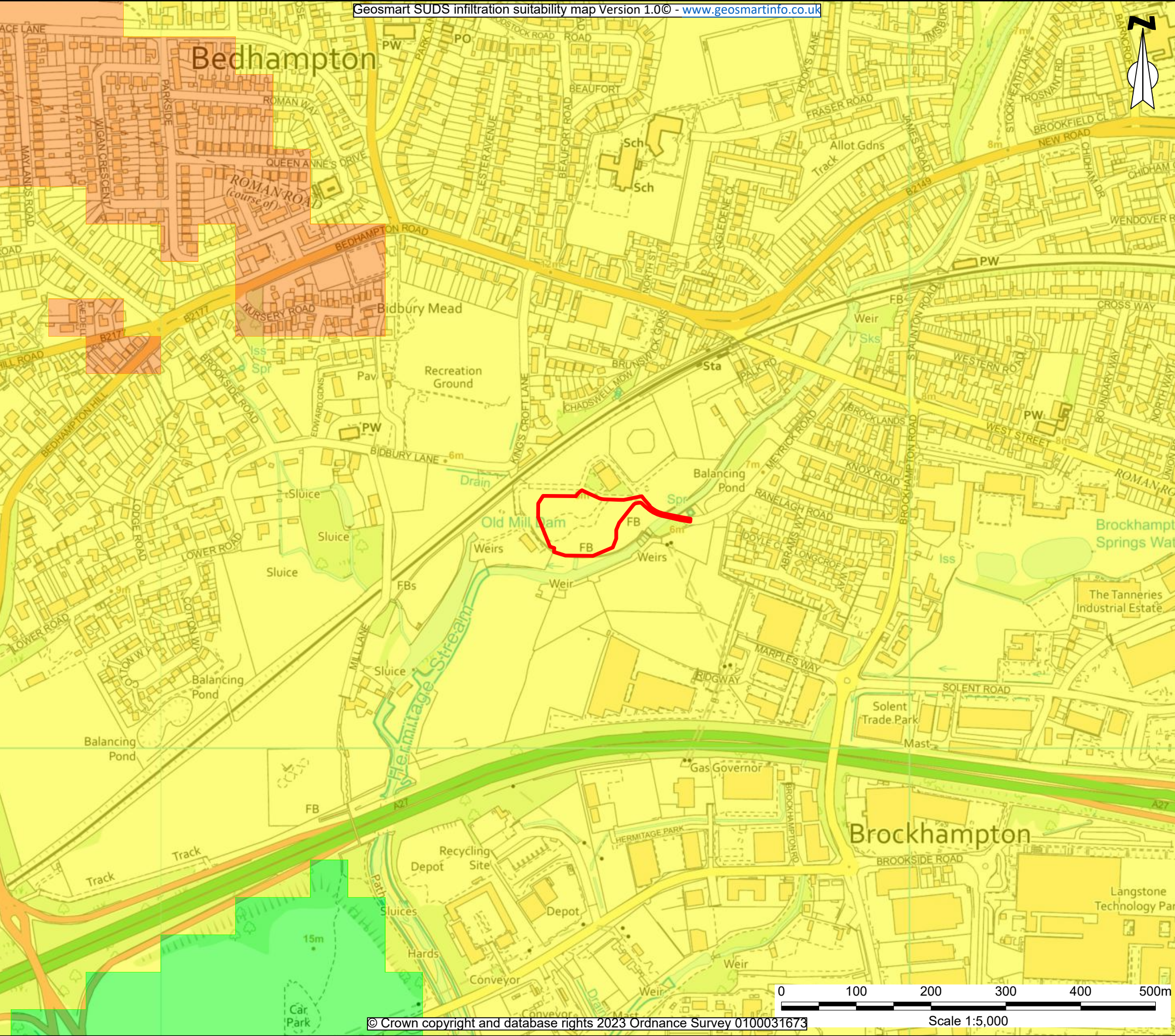
Drawing Title
Groundwater Flood Risk

Scale 1:5,000@A3	Date 08/12/23	Status Preliminary
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DWG No. SHF.3055.001-ENZ-XX-XX-DR-Y-0004	Revision P03
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Geosmart SUDS infiltration suitability map Version 1.0© - www.geosmartinfo.co.uk

KEY:

- Site Boundary
- High Potential
- Moderate Potential
- Low Potential

P03	21/03/25	Redline updated	DL	EOC	EOC
P02	02/04/24	Redline updated	DL	EOC	EOC
P01	08/12/23	Issued for comment / approval	LW	DA	DA
Rev	Date	Description	DRA	CHK	APP

Project
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Client
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Drawing Title
SuDS Infiltration Potential

Scale 1:5,000@A3	Date 08/12/23	Status Preliminary
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