FLOOD RISK ASSESSMENT ADDENDUM

Safe Access and Egress Route

3–4 Liverpool Buildings, Liverpool Road, Worthing, BN11 1SY

Site	3–4 Liverpool Buildings, Liverpool Road, Worthing, West Sussex, BN11 1SY
Proposal	Change of use of the first floor to a two-bedroom, four-person flat (Use Class C3), extension of extract flue, removal of rear staircase and alterations to fenestration
Local Planning Authority	Worthing Borough Council (Adur & Worthing Councils) — application AWDM/0237/26
Lead Local Flood Authority	West Sussex County Council
Client	Mr Michael Stirk
Purpose	Mapped safe access and egress route requested by the Council's drainage consultant (WSP), to supplement the Eco 360 Flood Risk Assessment (revised issue, 12 June 2026)
Report reference	FRE-LIVERPOOL-2026-ADD01
Prepared by	Antony Riozzi BEng (Hons), Director, Flood Risk Environmental
Date	5 October 2026

Document control

Revision	Date	Description	Prepared	Checked
0	05/10/2026	Original issue	AR	AR

This addendum has been prepared by Flood Risk Environmental for Mr Michael Stirk in connection with planning application AWDM/0237/26. It should be read together with the Eco 360 Flood Risk Assessment (12 June 2026), which it supplements and does not replace. It relies on publicly available Environment Agency data and on the drawings and information supplied by the client and his architect.

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1. Introduction

1.1 Flood Risk Environmental (FRE) has been instructed by Mr Michael Stirk to prepare a mapped safe access and egress route for the proposed first-floor flat at 3–4 Liverpool Buildings, Liverpool Road, Worthing (Worthing Borough Council application AWDM/0237/26).

1.2 In its consultation response of 5 March 2026, WSP, acting as drainage consultant to the Council, advised that insufficient information had been provided to demonstrate safe access and egress in terms of surface water flood risk. WSP asked the applicant to demonstrate that surface water flood depths are acceptable for safe access and egress, and to provide a mapped route of safe access and egress avoiding flooding from all sources.

1.3 The revised Flood Risk Assessment prepared by Eco 360 (12 June 2026) states at Sections 6.4 and 6.5 that a mapped safe access and egress route should be provided as part of the FRA appendix, showing the preferred route from the building entrance to areas of lower flood risk. The plan was not included in the appendices, and the Council's planning officer has asked for it. This addendum provides that plan (Appendix A, Drawing SK01), a long section and hazard summary along the route (Appendix B, Drawing SK02) and the supporting assessment.

1.4 The addendum is limited to safe access and egress. It does not revise the Eco 360 FRA, which continues to set out the wider assessment of flood risk to and from the development.

1.5 The Environment Agency datasets were accessed on 4 and 5 October 2026. The architect's CAD file contains the OS location plan at true scale with National Grid lines. The proposed ground floor plan was fitted to the OS outline of the building (residuals 0.3–0.5 m) to locate the DG03 entrance. Ground levels are taken from LiDAR and are not a measured survey.

1.6 In line with the EA standing advice (paragraph 2.6), the suitability of the main datasets has been appraised as follows:

- **EA Product 4 (Arun Coastal Modelling, JBA Consulting, 2012; issued June 2026).** The EA's detailed local tidal model data for the site, with climate change scenarios for 2070 and 2115. The nodes lie at the margin of the modelled outlines, so the reported levels are close to local ground level. The model predates the current UKCP18 allowances, so it has been cross-checked against the SFRA future tidal level.
- **Adur and Worthing SFRA tidal level (JBA Consulting, December 2023).** A coast-wide extreme still-water level from the Coastal Extremes Study, uplifted for upper end sea level rise to 2125. It is regional rather than site-specific and excludes wave effects, so it is used as a cross-check.
- **EA Flood Map for Planning surface water depths (2025).** National modelling enhanced with local modelling, on a 2 m grid with banded depths and upper end climate change. It is indicative rather than property-level, but suitable for a route-scale assessment of depths along the access.
- **EA Risk of Flooding from Surface Water hazard and speed layers (2025).** Likelihood bands for hazard rating and speed thresholds from the same national modelling. The climate change version uses only the central 2050s allowance.
- **EA Flood Map for Planning flood zones (NaFRA2).** Extents only, with no levels or depths, so used for classification and not for the access assessment.
- **EA 1 m LiDAR composite DTM.** Bare-earth ground levels, interpolated beneath buildings and not a measured survey.

Information reviewed

Table 1: Information reviewed

Source	Use in this addendum
Eco 360 Flood Risk Assessment, revised issue (12 June 2026)	Development description, flood risk context and Flood Risk Emergency Plan (Sections 6.4 and 6.5)
EA Product 4, ref. EIR2026/26520 (10 June 2026), Arun Coastal Modelling 2012 (JBA Consulting) — Eco 360 FRA Appendices E to H	Modelled tidal flood levels at the site
WSP consultation response (5 March 2026) and planning officer's query	Scope of information requested
Enhance Architecture drawings 2519_3-4LB_X000 Rev A (location and block plans) and 2519_3-4LB_P301 Rev A (proposed ground floor plan)	Application red line and position of the residential entrance (DG03)
Enhance Architecture CAD file 3-4LB_FRE.dxf (OS location plan and proposed ground floor plan)	Base mapping and entrance position on Drawing SK01
Emails from the client and architect (5 October 2026), with route sketch and photograph of the Bank Passage archway	Confirmation of the residents' route, that Bank Passage is ungated, and of the right of passage
EA Flood Map for Planning — surface water spatial planning depths, present day and climate change	Surface water depth along the route
EA Risk of Flooding from Surface Water (NaFRA2) — hazard and speed layers, present day and climate change	Flood hazard rating and flow speed along the route
EA Flood Map for Planning — Flood Zones 2 and 3 (NaFRA2)	Flood zone of the route
EA Flood Map for Planning — Flood Zones plus climate change	Indicative future extent of flooding from the sea
JBA Consulting (2023) Technical Note: Adur and Worthing Tidal Risk Zones (Level 1 SFRA)	Future extreme tidal level to 2125 (upper end allowance)
Worthing Local Plan Policy DM20; West Sussex LLFA Policy for the Management of Surface Water	Local policy and Lead Local Flood Authority requirements
EA LiDAR composite DTM, 1 m resolution	Ground levels along the route
EA reservoir flood extents (dry day and wet day), Recorded Flood Outlines and flood warning / alert areas	Other sources of flooding and flood warning coverage

2. Policy and Guidance

2.1 **National Planning Policy Framework.** The NPPF published on 17 August 2026 is a material consideration from the day of its publication (Annex A). Policy F7 requires, among other things, that development in a location at risk from any form of flooding is safe throughout its lifetime and that *"any residual risk can be safely managed, and safe access and escape routes are included where appropriate, as part of an agreed emergency plan"* (F7(2)(c)). Under Policy F5(2)(c)(iii), changes of use other than to caravan, camping, chalet, mobile home or park home sites are not subject to the sequential test. WSP's response of March 2026 referred to the previous (December 2024) NPPF; the safe access requirement is carried forward in Policy F7.

2.2 **Planning Practice Guidance.** PPG Flood Risk and Coastal Change paragraph 044 (Reference ID 7-044-20220825) states that, if the probability of inundation is high, safe access and escape should be maintained for the lifetime of the development. Paragraph 047 (Reference ID 7-047-20220825) states that safe access routes should, wherever possible, be located above design flood levels and avoid flow paths, and that where this is not possible *"limited depths of flooding may be acceptable, provided that the proposed access is designed with appropriate signage etc. to make it safe"*. It notes that the acceptable depth depends on velocity and debris. Paragraph 052 (Reference ID 7-052-20220825) requires applicants for a change of use to show that the proposal meets the objectives of the NPPF policy on flood risk.

2.3 **Worthing Local Plan.** Policy DM20 (Flood risk and sustainable drainage) of the Worthing Local Plan 2020–2036, adopted 28 March 2023, requires a site-specific FRA for all development, including change of use, in Flood Zones 2 and 3, and for development introducing a more vulnerable use on land at increased flood risk in future. Under DM20(c) the FRA must demonstrate that current and future flooding from all sources *"and any residual risk can be safely managed"* (c)(iii), and must *"ensure safe access and egress to and from the development, where necessary as part of an agreed flood warning and evacuation plan"* (c)(iv). The Adur and Worthing Level 1 Strategic Flood Risk Assessment (July 2024) provides the local evidence base. It states that safe access and egress will need to be demonstrated at all development sites and that emergency vehicular access should be possible during times of flood, and it recommends that the Councils' emergency planners are consulted before an emergency flood plan is produced.

2.4 **Lead Local Flood Authority.** West Sussex County Council is the Lead Local Flood Authority. Its Policy for the Management of Surface Water (November 2018), adopted by Adur & Worthing Councils, sets the requirements for surface water drainage proposals; the proposal does not change the building footprint or its drainage. West Sussex County Council is the statutory consultee on sustainable drainage for major applications. On this minor application the Council's drainage consultant, WSP, has advised on safe access.

2.5 **Climate change.** Environment Agency guidance on climate change allowances states that residential development should be considered to have a minimum lifetime of 100 years and that, for development with a lifetime beyond 2100, the upper end peak rainfall allowances for the 2070s epoch (2061 to 2125) should be assessed for the 1% and 3.3% annual exceedance probability events. The climate change layers of the EA Flood Map for Planning surface water spatial planning depths use the upper end allowance for the 2070s epoch (2061–2125). They therefore represent the design surface water event for this development directly, and are referred to as "+ CC" in this addendum. For flooding from the sea, the Flood Map for Planning "Flood Zones plus climate change" layer ignores the benefit of defences and uses the upper end allowance for cumulative sea level rise to 2125. The EA advises that Flood Zone 1 land within that extent should be treated as if it were in Flood Zone 2 when deciding whether to consult the EA or follow standing advice.

2.6 **Environment Agency standing advice.** The EA flood risk standing advice (last updated 28 May 2026) states that where the Flood Map for Planning shows a Flood Zone 1 site at increased future risk from rivers or the sea, the guidance should be applied as if the site were in Flood Zone 2, and that

more vulnerable development, including change of use, in Flood Zone 2 should follow its standing advice for vulnerable developments. On access and escape, this asks for a safe route set above estimated flood levels that connects the site to an area away from current or future flood risk, and for an explanation of how the development could be evacuated before an extreme flood (0.1% AEP plus climate change), following the ADEPT and EA guidance on flood risk emergency plans for new development. It also asks the FRA to appraise the suitability of the datasets used and, for surface water, to convert the banded depths to an estimated flood level using land levels.

2.7 **Flood hazard.** Flood hazard to people is assessed using the hazard rating (HR) method of Defra/Environment Agency FD2320/TR2, as clarified by the EA and HR Wallingford Supplementary Note on Flood Hazard Ratings and Thresholds (May 2008): HR = d × (v + 0.5) + DF, where d is depth (m), v is velocity (m/s) and DF is a debris factor. The classification recommended for development planning is reproduced in Table 2.

Table 2: Flood hazard classification (FD2320)

Hazard rating (HR)	Hazard to people classification
Less than 0.75	Very low hazard – caution
0.75 to 1.25	Danger for some – includes children, the elderly and the infirm
1.25 to 2.0	Danger for most – includes the general public
More than 2.0	Danger for all – includes the emergency services

Source: EA / HR Wallingford Supplementary Note on Flood Hazard Ratings and Thresholds (May 2008), Table 4, after FD2320/TR2 Table 13.1.

2.8 The EA Risk of Flooding from Surface Water hazard layers report the likelihood of the hazard rating exceeding thresholds of 0, 0.25, 0.5, 0.75, 1.25 and 2.0. The likelihood bands are High (1 in 30 or more), Medium (between 1 in 30 and 1 in 100) and Low (between 1 in 100 and 1 in 1,000). The climate change version of the hazard and speed layers uses the central allowance for the 2050s epoch.

3. Access Arrangement and Proposed Route

Residential entrance

3.1 The proposed flat occupies the first floor only. It is reached at ground level through a dedicated residential entrance at the rear of the building (door DG03 on drawing P301 Rev A), which opens into a lobby containing the residential refuse and cycle store and the internal stair. The ground floor frontage onto Liverpool Buildings remains the commercial café and is not a route for residents.

3.2 The upper floor was previously reached by an external staircase in the same rear area (Eco 360 FRA, Appendix K). The proposal replaces this with an internal stair but does not change the ground level at which occupants enter and leave the building. Scaled from the architect's existing rear elevation (Eco 360 FRA, Appendix K), the first floor is about 3.6 m above the rear yard, or about 8.9 m AOD; this should be confirmed by measured survey.

3.3 DG03 opens onto the rear service yard, which connects to Bank Passage, a service lane running north through an archway to Liverpool Road. The application red line on drawing X000 Rev A includes the rear yard and the northern section of Bank Passage up to Liverpool Road.

3.4 The client confirmed on 5 October 2026 that residents will leave by the rear entrance into Bank Passage and follow it out onto Liverpool Road. He confirmed that there is no gate or other restriction along the passage, that it is available to residents at all times, and that the property benefits from a right of passage over Bank Passage under its title. The architect has confirmed that the archway onto Liverpool Road is gate-free (Figure 1).



Figure 1: Bank Passage archway from Liverpool Road, looking south — no gate (Google Street View image, 2023, supplied by the client's architect)

Proposed route

3.5 The proposed safe access and egress route is shown on Drawing SK01 (Appendix A). It runs for approximately 186 m from DG03, across the rear yard, north along Bank Passage and through the archway to Liverpool Road. From there it follows Liverpool Road east to its junction with Chapel Road

and then Chapel Road north to the place of safety, on Chapel Road north of Market Street at about 6.8 m AOD. The route is divided into four sections (Table 3).

Table 3: Route sections

Section	Description	Chainage (m)	Length (m)	Ground level (m AOD)
A	Rear entrance (DG03) and rear yard	0–13.6	14	5.31–5.43
B	Bank Passage to archway at Liverpool Road	13.6–32	18	5.34–5.52
C	Liverpool Road to Chapel Road junction	32–62.5	30	5.52–5.59
D	Chapel Road northbound to place of safety	62.5–186.5	124	5.50–6.83

3.6 Two alternatives were considered and rejected. The first was to go west and north along Liverpool Road, where shallow surface water is mapped more frequently in the carriageway. The second was to go south along Bank Passage towards South Street, where deeper surface water ponding (300–600 mm) and Flood Zone 3 are mapped.

4. Flood Risk Along the Route

Rivers and the sea — EA Product 4 modelled data

4.1 The EA's modelled tidal data for the site are the Product 4 obtained by Eco 360 (EIR2026/26520, 10 June 2026), from the Arun Coastal Modelling (JBA Consulting, 2012), and includes climate change scenarios for the 2070 and 2115 epochs. The relevant pages are reproduced in Appendix C. The Product 4 gives modelled levels and depths at two nodes at the rear of the building: Node 1 (514883, 102570), about 3 m from the DG03 entrance, and Node 2 (514879, 102570). Table 4 sets out the results.

Table 4: EA Product 4 modelled tidal levels and depths at the site

Scenario	Node 1 level (m AOD)	Node 1 depth (m)	Node 2 level (m AOD)	Node 2 depth (m)
0.5% AEP (2070), defended	5.21	0.00	–	–
0.5% AEP (2115), undefended	5.25	0.02	5.24	0.00
0.5% AEP present day, 0.5% AEP (2070) undefended, 0.5% AEP (2115) defended and 0.1% AEP	–	–	–	–

Source: EA Product 4, EIR2026/26520 (10 June 2026), Tables 1 to 4. "–" = no level or depth reported at the node.

4.2 Applying these modelled levels to the LiDAR ground levels along the route (Drawing SK02) shows the route ground at 5.31 m AOD or higher throughout, so above both modelled levels. The margin is smallest at the DG03 entrance (about 0.06 m on LiDAR), is at least 0.25 m from Liverpool Road onwards, and rises to about 1.6 m at the place of safety. The only modelled tidal depth on the access is the nominal 0.02 m at Node 1 in the 2115 undefended scenario; the 2070 defended scenario gives 0.00 m.

4.3 Using the FD2320 method (Table 2) with the Product 4 depth of 0.02 m and the FD2320 default debris factor of 0.5 for depths up to 0.25 m, the hazard rating is 0.02 × (v + 0.5) + 0.5. The Product 4 does not report velocity, but even at 2.0 m/s the rating is 0.55, which is "very low hazard – caution". The modelled tidal hazard on the route is therefore very low in both scenarios.

4.4 As a cross-check against current allowances, the Adur and Worthing Level 1 SFRA (JBA Consulting technical note, December 2023) derives a present-day 1% AEP extreme tidal level of 4.1 m AOD for the Adur and Worthing coastline from the Coastal Extremes Study, and a future level of 5.20 m AOD by adding 1.10 m for upper end sea level rise to 2125 in South East England. This agrees closely with the Product 4 levels. The route ground is above it throughout, by about 0.11 m at the entrance and at least 0.30 m from Liverpool Road onwards, so the route remains above the tidal flood level for the 100-year lifetime of the development.

Rivers and the sea — Flood Map for Planning

4.5 On the current EA Flood Map for Planning (NaFRA2 flood zones, checked on 5 October 2026), Flood Zone 3 overlaps about 3 m² at the south-west front corner of the building and Flood Zone 2 a further small area just outside it. The rest of the site, including the DG03 entrance, and the whole route are in Flood Zone 1.

4.6 The Flood Zones plus climate change layer, which ignores defences and allows for upper end sea level rise to 2125, covers the whole site and the route as far as Chapel Road at about Chainage 172; the place of safety is outside it (Drawing SK01). Under the EA guidance in paragraph 2.5 the site should therefore be treated as at least Flood Zone 2, and the Eco 360 FRA's treatment of the site as Flood Zone 3 remains precautionary. The layer is an indicative national extent without levels or depths and is not intended to show whether an individual property is at risk. The site-specific Product 4 levels, corroborated by the SFRA future tidal level, are therefore used to assess the route.

4.7 The site lies on the boundary of the Environment Agency Flood Warning Area "Rustington, Worthing and Lancing" (065FWC2801) and Flood Alert Area "Coastal areas of Rustington to Shoreham" (065WAC407). Tidal flooding is forecast, and warnings would normally be issued in advance of an event.

Surface water

4.8 Surface water depths along the route, taken from the EA Flood Map for Planning surface water spatial planning depths, are summarised in Table 5. Each cell gives the deepest band mapped within that section.

Table 5: Surface water depth along the route

Section	1 in 30	1 in 100	1 in 1,000	1 in 30 + CC	1 in 100 + CC	1 in 1,000 + CC
A	150–300 mm	150–300 mm	150–300 mm	150–300 mm	150–300 mm	300–600 mm
B	Dry	150–300 mm	150–300 mm	150–300 mm	150–300 mm	150–300 mm
C	Dry	Dry	Dry	Dry	Dry	< 150 mm
D	Dry	Dry	< 150 mm	Dry	< 150 mm	< 150 mm

Source: EA Flood Map for Planning, surface water spatial planning depths (2 m grid). "+ CC" = upper end allowance, 2070s epoch. Dry = outside the mapped extent.

4.9 The entrance and rear yard (Section A) and Bank Passage (Section B) lie at the northern edge of a surface water ponding and flow area that extends south towards Montague Street and South Street. In the design event (1 in 100 + CC), mapped depths in these sections are no greater than the 150–300 mm band. In the most extreme scenario (1 in 1,000 + CC), the 300–600 mm band is reached only at the entrance threshold. In the 1 in 30 event, Section A is wet only in the first few metres at the door.

4.10 Liverpool Road at the Bank Passage archway (Chainage 32) is outside all mapped surface water extents, from the 1 in 30 to the 1 in 1,000 + CC event. Along Liverpool Road and Chapel Road (Sections C and D) the route is outside the mapped extents for the 1 in 30, 1 in 100 and 1 in 30 + CC events. Isolated shallow patches below 150 mm are mapped along the Chapel Road kerb line in the 1 in 100 + CC and 1 in 1,000 events. The place of safety is outside all mapped extents.

4.11 Following the EA standing advice, the banded depths have been converted to a maximum estimated surface water flood level by adding the upper bound of the band to the LiDAR ground level. For the design event (1 in 100 + CC) this gives up to about 5.6 m AOD at the entrance (5.31 + 0.30 m) and in Bank Passage (5.34 + 0.30 m). This is higher than the tidal design levels, so surface water governs at the entrance. The first-floor accommodation, at about 8.9 m AOD, is more than 3 m above both.

Summary along the route and surface water hazard

Table 6: Flood zone, tidal level, hazard rating and flow speed along the route

Section	Flood Zone (present day)	Within Flood Zones + CC	Min. height above Product 4 level (5.25 m AOD)	Product 4 tidal depth	EA SW hazard, 1 in 100 (present and + CC)	EA SW hazard, 1 in 1,000 (present and + CC)	SW flow speed, 1 in 100 + CC (m/s)
A	FZ1	Yes	+0.06 m	0.02 m (Node 1)	< 0.75 (very low)	≥ 0.75 (DG03 threshold only)	0.5–1.0
B	FZ1	Yes	+0.09 m	0.00 m	< 0.75 (very low)	< 0.75	0.5–1.0
C	FZ1	Yes	+0.27 m	0.00 m	< 0.75 (very low)	< 0.75	< 0.25
D	FZ1	To Ch 172	+0.25 m	0.00 m	< 0.75 (very low)	< 0.75	0.25–0.5

Source: EA Flood Map for Planning (NaFRA2 flood zones and Flood Zones plus climate change); EA Product 4 EIR2026/26520 (2115 undefended scenario); EA 1 m LiDAR DTM; EA Risk of Flooding from Surface Water (NaFRA2) hazard and speed layers, where "+ CC" = central allowance, 2050s epoch.

4.12 The EA hazard layers show a hazard rating below 0.75 ("very low hazard – caution") along the whole route in the 1 in 100 event, with and without climate change. A rating of 0.75 or more ("danger for some") is reached only in the cell at the DG03 threshold, and only in the Low likelihood band (between 1 in 100 and 1 in 1,000). A rating of 1.25 or more is not reached anywhere on the route in any likelihood band.

4.13 Bank Passage acts as a shallow flow path towards the south. Flow speeds of 0.5–1.0 m/s are mapped there in the 1 in 100 event, but the combination of depth and speed still gives a hazard rating below 0.75. Speeds along Liverpool Road and Chapel Road are generally below 0.25 m/s in the 1 in 100 event.

Other sources

4.14 The route is outside the EA reservoir flood extents for both the dry-day and wet-day scenarios, and no EA Recorded Flood Outlines or Historic Flood Map extents are mapped on it. The Eco 360 FRA assesses groundwater flood risk as low and identifies no recorded sewer flooding at the site, and nothing in the data reviewed for this addendum indicates otherwise along the route.

5. Assessment of Safe Access and Egress

5.1 **Rivers and the sea.** On the EA Product 4 modelled data the route lies above the modelled tidal levels for the 0.5% AEP (2070) defended and 0.5% AEP (2115) undefended scenarios throughout, and above the SFRA's 2125 upper end tidal level of 5.20 m AOD. The maximum modelled depth on the access is 0.02 m at the entrance, with a very low hazard rating, and the route is in Flood Zone 1 on the present-day Flood Map for Planning. It therefore meets the PPG paragraph 047 preference for a route above design flood levels in respect of flooding from the sea.

5.2 **Surface water.** Beyond Chainage 32 (Liverpool Road at the Bank Passage archway) the route is outside the mapped design surface water extent and continues on rising ground to the place of safety. It cannot avoid surface water entirely in its first 32 m, because the residential entrance itself sits at the edge of a mapped ponding area and there is no alternative entrance for residents. For this section the second part of PPG paragraph 047 applies, under which limited depths of flooding may be acceptable where the access is made safe.

5.3 For that section the evidence shows:

- mapped depths no greater than 150–300 mm in the design event (1 in 100 + upper end CC), over a distance of about 32 m;
- an EA hazard rating below 0.75 ("very low hazard – caution") in the 1 in 100 event, with and without climate change, and no "danger for most" or "danger for all" rating anywhere on the route;
- dry ground within about 32 m of the door, in Flood Zone 1 and outside all mapped surface water extents; and
- emergency vehicle access along Liverpool Road and Chapel Road to within about 32 m of the entrance, outside the mapped design surface water extent.

5.4 **Safe refuge.** All habitable and sleeping accommodation is at first floor level, at about 8.9 m AOD and more than 3 m above the estimated surface water and tidal flood levels. Surface water flooding from intense rainfall is typically of short duration. Occupants can therefore remain in the flat until water in the rear yard and Bank Passage has receded, rather than walking through it. This responds to the PPG paragraph 047 point that even low levels of flooding can pose a risk to people in situ.

5.5 **Extreme flood and residual risk.** For the extreme flood in the EA standing advice (0.1% AEP plus climate change), surface water depths at the entrance threshold may reach the 300–600 mm band in the 1 in 1,000 + CC event. Intense rainfall gives little warning, so occupants should stay in the first-floor flat, which is the safe refuge, until the water has receded rather than evacuate. Tidal flooding is forecast in advance and the site is covered by EA flood warnings. In an extreme tidal event, or one exceeding the modelled levels through wave overtopping or failure of the sea defences, occupants would therefore have time to evacuate early by the route to the place of safety on Chapel Road at about 6.8 m AOD, or to remain in the first-floor flat. The measures in Section 6 address both.

6. Flood Risk Management Measures

6.1 The following measures should be incorporated in the Flood Risk Emergency Plan recommended at Section 6.5 of the Eco 360 FRA. The plan should follow the ADEPT and EA guidance Flood Risk Emergency Plans for New Development (September 2019), should be prepared in consultation with Adur & Worthing Councils' emergency planners as the SFRA recommends, and should be provided to every occupant and retained for the lifetime of the development:

- **Route plan.** Drawing SK01 to be included in the Flood Risk Emergency Plan and displayed inside the residential entrance.
- **Signage.** A notice inside DG03 advising occupants not to enter floodwater and showing the route north via Bank Passage to Liverpool Road and Chapel Road (PPG paragraph 047). Occupants should not use Bank Passage southwards during or after heavy rain.
- **Warnings.** Occupants to register with the Environment Agency Floodline warning service for the site and to monitor Met Office severe weather warnings for heavy rain, as surface water flooding is not covered by EA flood warnings. On receipt of a tidal Flood Warning, occupants should leave early by the route to Chapel Road, or remain in the first-floor flat if it is no longer safe to leave.
- **Shelter in place.** During a surface water event occupants should remain in the first-floor flat and leave by the route only once the rear yard and Bank Passage are clear of water, or on the advice of the emergency services.
- **Keep the route clear.** Refuse and cycles to be kept in the internal store so that the entrance and Bank Passage route are not obstructed.

6.2 These measures could be secured by a planning condition requiring the Flood Risk Emergency Plan, incorporating Drawing SK01, to be provided to occupants before first occupation and retained thereafter.

7. Conclusions

7.1 This addendum provides the mapped safe access and egress route that Sections 6.4 and 6.5 of the Eco 360 FRA refer to, in response to the WSP consultation response of 5 March 2026 and the planning officer's query.

7.2 The route runs approximately 186 m from the residential entrance (DG03) via the rear yard, Bank Passage, Liverpool Road and Chapel Road to a place of safety on Chapel Road at about 6.8 m AOD. On the EA Product 4 modelled data the route is above the modelled tidal levels throughout, with a maximum depth of 0.02 m at the entrance. It is also above the Adur and Worthing SFRA's 2125 upper end tidal level of 5.20 m AOD, and it is in present-day Flood Zone 1. The place of safety is outside all mapped surface water extents.

7.3 Only the first 32 m of the route, between the entrance and Liverpool Road, lies within the mapped surface water extent. There, depths in the design event (1 in 100 + upper end CC) are no greater than 150–300 mm and the EA hazard rating is below 0.75 ("very low hazard – caution"). This is consistent with the limited depths that PPG paragraph 047 accepts where access is made safe by appropriate signage and management.

7.4 With all accommodation at first floor level providing safe refuge, and with the signage and Flood Risk Emergency Plan measures in Section 6, occupants can reach and leave the development safely. The residual surface water risk can be safely managed in accordance with NPPF Policy F7, PPG paragraphs 044 and 047 and Worthing Local Plan Policy DM20(c)(iii) and (iv).

8. References

Adur & Worthing Councils (2023). Worthing Local Plan 2020–2036, adopted 28 March 2023 — Policy DM20 Flood risk and sustainable drainage.

Adur & Worthing Councils (2024). Adur and Worthing Level 1 Strategic Flood Risk Assessment, July 2024 (JBA Consulting).

ADEPT and Environment Agency (2019). Flood risk emergency plans for new development: a guide for planners. September 2019.

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FLOOD RISK ENVIRONMENTAL

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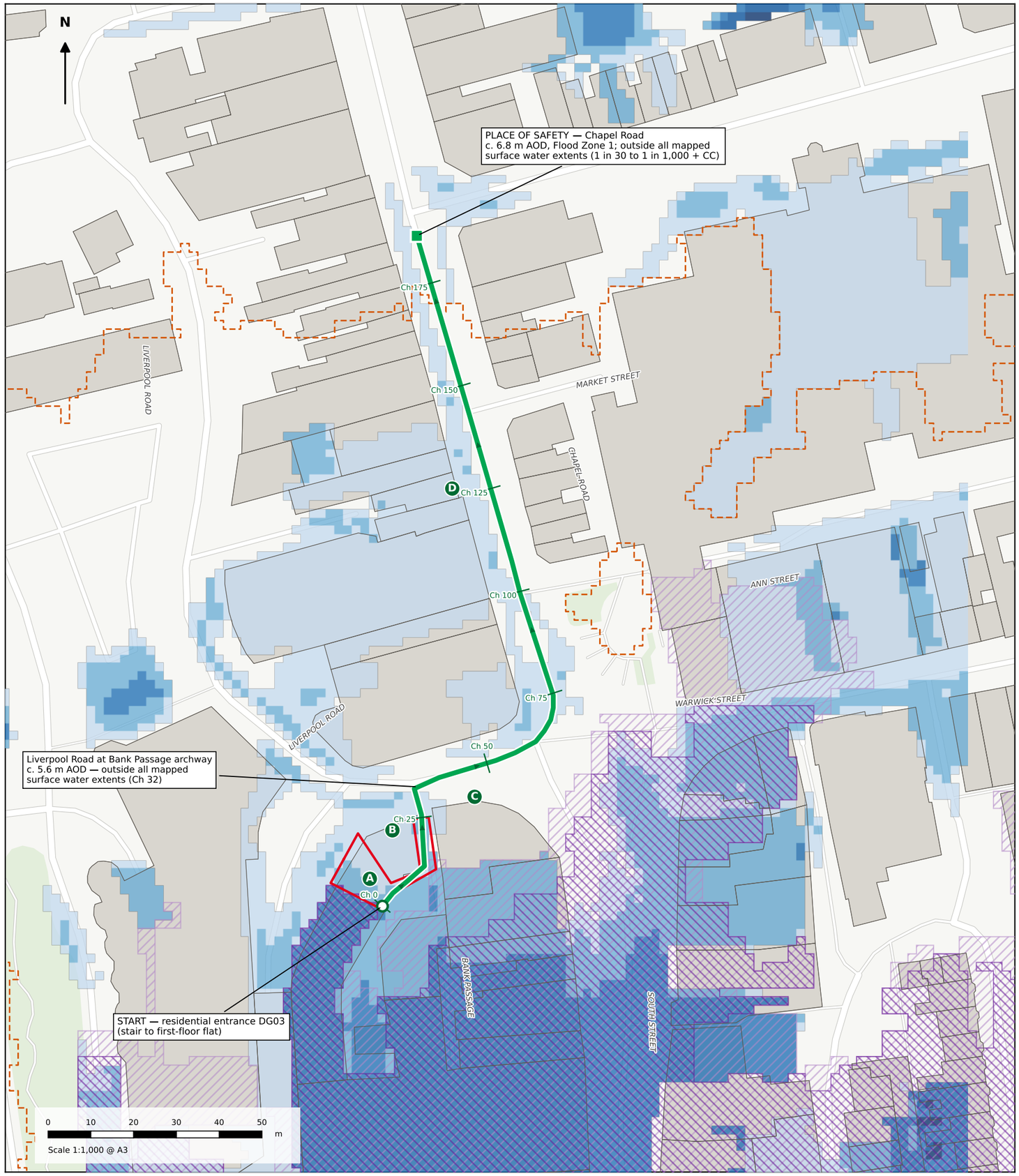
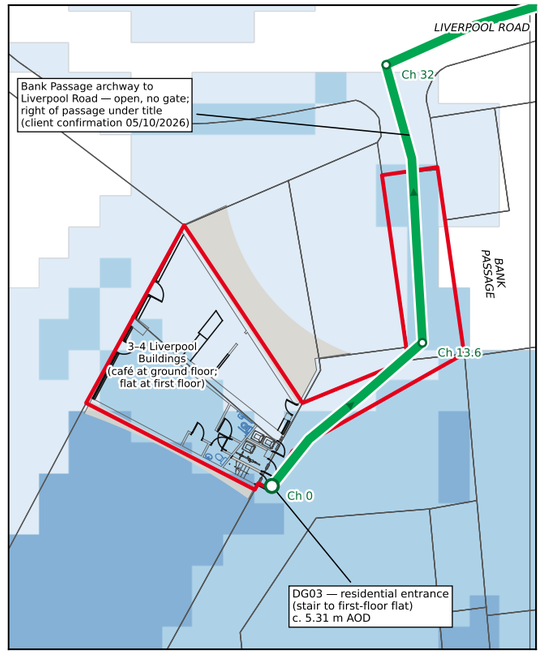
APPENDIX A

Drawing FRE-LIVERPOOL-2026-SK01 Rev 0

Safe Access and Egress Route Plan



INSET — REAR ENTRANCE AND BANK PASSAGE (1:400 @ A3)



KEY

- Application red line (from 2519_3-4LB_X000 Rev A)
- Safe access / egress route (direction of travel)
- Route section (see Drawing SK02)
- Start — residential entrance DG03
- Place of safety — Chapel Road

Surface water depth, 1 in 100 + CC (EA Flood Map for Planning):

- less than 150 mm
- 150 – 300 mm
- 300 – 600 mm
- greater than 600 mm
- Flood Zone 2 (EA Flood Map for Planning)
- Flood Zone 3 (EA Flood Map for Planning)
- Limit of Flood Zones plus climate change (FMfP)

Rev	Date	Description	By
0	05/10/26	Original issue	AR

PROJECT

3–4 Liverpool Buildings, Liverpool Road, Worthing, BN11 1SY
Change of use — first-floor 2-bed flat
Worthing BC ref. AWDM/0237/26
Client: Michael Stirk

NOTES

1. Drawing for planning purposes only. Read with FRE addendum FRE-LIVERPOOL-2026-ADD01 and the Eco 360 FRA (12/06/2026).
2. Route: DG03 → rear yard → Bank Passage (within red line) → archway → Liverpool Road → Chapel Road; c. 186 m. Bank Passage is ungated with a right of passage under the title (client confirmation, 05/10/2026).
3. Only Sections A–B (first c. 32 m) lie within mapped surface water extents: max 150–300 mm in 1 in 100 + CC. EA RoFSW hazard rating <0.75 ("very low hazard– caution") along the whole route for 1 in 100 (+CC); ≥0.75 only at the DG03 threshold in the 1 in 1,000 likelihood band.
4. Tidal: route ground (min. 5.31 m AOD) is above the EA Product 4 levels (EIR2026/26520) of 5.21 m AOD (0.5% AEP 2070, defended) and 5.25 m AOD (0.5% AEP 2115, undefended) and the Adur & Worthing SFRA 2125 upper end tidal level of 5.20 m AOD. Product 4 depth at the entrance 0.00-0.02 m.
5. Occupants should not walk through floodwater. In a surface water event remain in the first-floor flat (safe refuge) until water has receded; use this route once clear.
6. SW depths: EA Flood Map for Planning surface water spatial planning depths; CC = upper end allowance, 2070s epoch (2061–2125). Hazard/speed: EA RoFSW (NaFRA2), CC = central allowance, 2050s epoch. Flood zones: EA Flood Map for Planning (NaFRA2). Levels: EA 1 m LiDAR composite DTM. © Environment Agency copyright and/or database right 2025–2026. All rights reserved.
7. Main map base © OpenStreetMap contributors (ODbL). Inset base: OS mapping and proposed ground floor plan from Enhance Architecture CAD (3-4LB_FRE.dxf), OS © Crown copyright; plan fitted to OS outline (±0.5 m). Not a survey.

FLOOD RISK ENVIRONMENTAL
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DRAWING TITLE

SAFE ACCESS AND EGRESS ROUTE PLAN

Drawn: AR Checked: AR Status: PLANNING

Scale: 1:1,000 & 1:400 @ A3 Date: 05/10/2026

Job No: FRE-LIVERPOOL-2026

Drawing No: FRE-LIVERPOOL-2026-SK01 Rev: 0

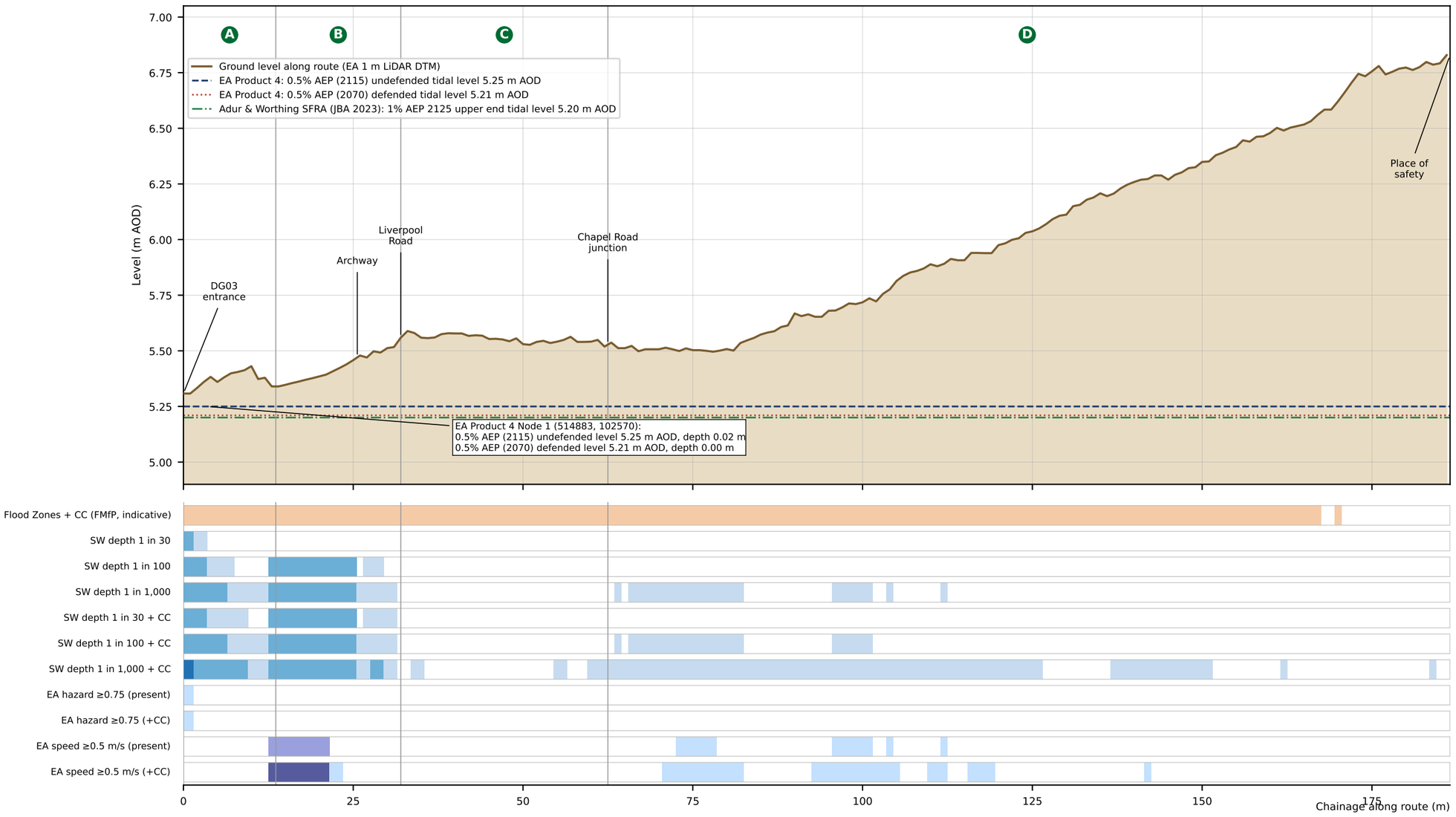
Original sheet size A3 | Sheet 1 of 2

APPENDIX B

Drawing FRE-LIVERPOOL-2026-SK02 Rev 0

Safe Access and Egress Route — Long Section and Hazard Summary

LONG SECTION ALONG SAFE ACCESS / EGRESS ROUTE (chainage from DG03 entrance)



Depth band: <150 mm · 150–300 mm · 300–600 mm · 600–900 mm

Blank = not within mapped extent / threshold not exceeded.

EA likelihood band (hazard / speed threshold exceeded): High (≥1 in 30) · Medium (≥1 in 100) · Low (≥1 in 1,000)

Section	Description	Chainage (m)	Length (m)	Ground level (m AOD)	Flood Zone	Min. height above 5.25 m AOD tidal level	SW depth 1 in 100 + CC	SW depth 1 in 1,000 + CC	EA hazard rating 1 in 100 (+CC)	Max speed band 1 in 100 (+CC)
A	Rear entrance (DG03) and rear yard	0 – 13.6	14	5.31 – 5.43	FZ1	+0.06 m	150–300 mm	300–600 mm	< 0.75 (very low – caution)	0.5 – 1.0 m/s
B	Bank Passage to archway at Liverpool Road	13.6 – 32	18	5.34 – 5.52	FZ1	+0.09 m	150–300 mm	150–300 mm	< 0.75 (very low – caution)	0.5 – 1.0 m/s
C	Liverpool Road to Chapel Road junction	32 – 62.5	30	5.52 – 5.59	FZ1	+0.27 m	Dry (not mapped)	<150 mm	< 0.75 (very low – caution)	< 0.25 m/s
D	Chapel Road northbound to place of safety	62.5 – 186.5	124	5.50 – 6.83	FZ1	+0.25 m	<150 mm	<150 mm	< 0.75 (very low – caution)	0.25 – 0.5 m/s

Notes: SW = surface water (EA Flood Map for Planning surface water spatial planning depths; CC = upper end allowance, 2070s epoch). EA hazard and speed from Risk of Flooding from Surface Water (NaFRA2) likelihood layers (CC = central allowance, 2050s epoch). Hazard classes per FD2320 (HR <0.75 = very low hazard – caution).

Section A: hazard rating ≥0.75 occurs only in the "Low" (1 in 100 to 1 in 1,000) likelihood band, in the cell at the DG03 threshold. Ground levels are EA 1 m LiDAR (bare earth, not a measured survey). Tidal levels from EA Product 4 EIR2026/26520 (Arun Coastal Model 2012) and the Adur & Worthing SFRA tidal risk zones note (JBA, Dec 2023).

Rev	Date	Description	By
0	05/10/26	Original issue	AR

PROJECT

3–4 Liverpool Buildings, Liverpool Road, Worthing, BN11 1SY
Change of use — first-floor 2-bed flat
Worthing BC ref. AWDM/0237/26
Client: Michael Stirk

FLOOD RISK ENVIRONMENTAL
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DRAWING TITLE

SAFE ACCESS AND EGRESS ROUTE LONG SECTION AND HAZARD SUMMARY

Drawn: AR Checked: AR Status: PLANNING

Scale: H 1:1,000 (approx.) @ A3 Date: 05/10/2026

Job No: FRE-LIVERPOOL-2026

Drawing No: FRE-LIVERPOOL-2026-SK02 Rev: 0

Original sheet size A3 | Sheet 2 of 2

FLOOD RISK ENVIRONMENTAL

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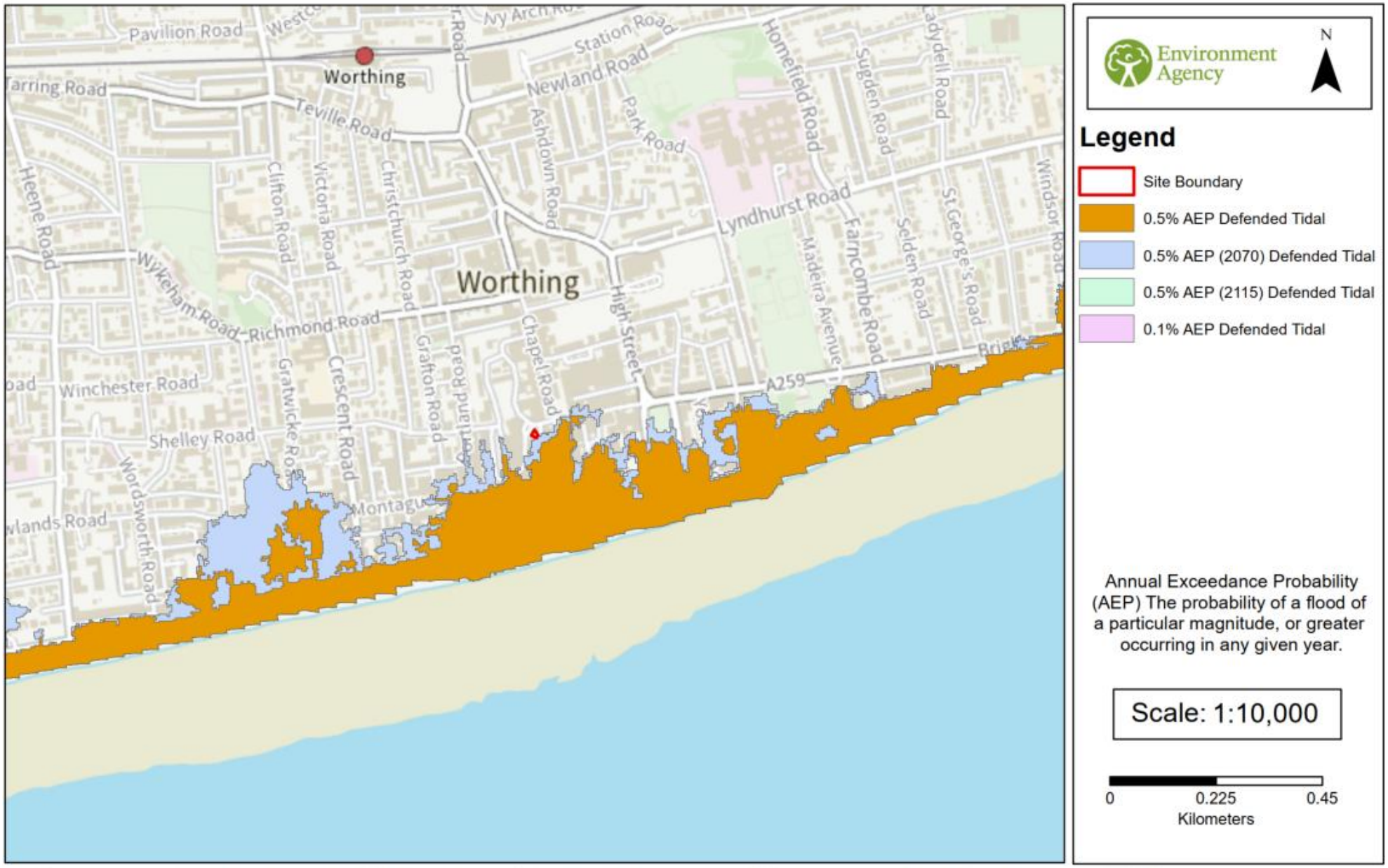
APPENDIX C

EA Product 4 Data, ref. EIR2026/26520 (10 June 2026)

As reproduced in Eco 360 FRA (12 June 2026), Appendices E to H

Appendix E: Modelled Flood Outlines – Tidal Defended Scenario
Environment Agency Product 4 data showing defended tidal flood extents for the site and surrounding area.

Modelled Flood Outlines Tidal (Defended). Centred BN11 1SY. Created 10/06/2026.



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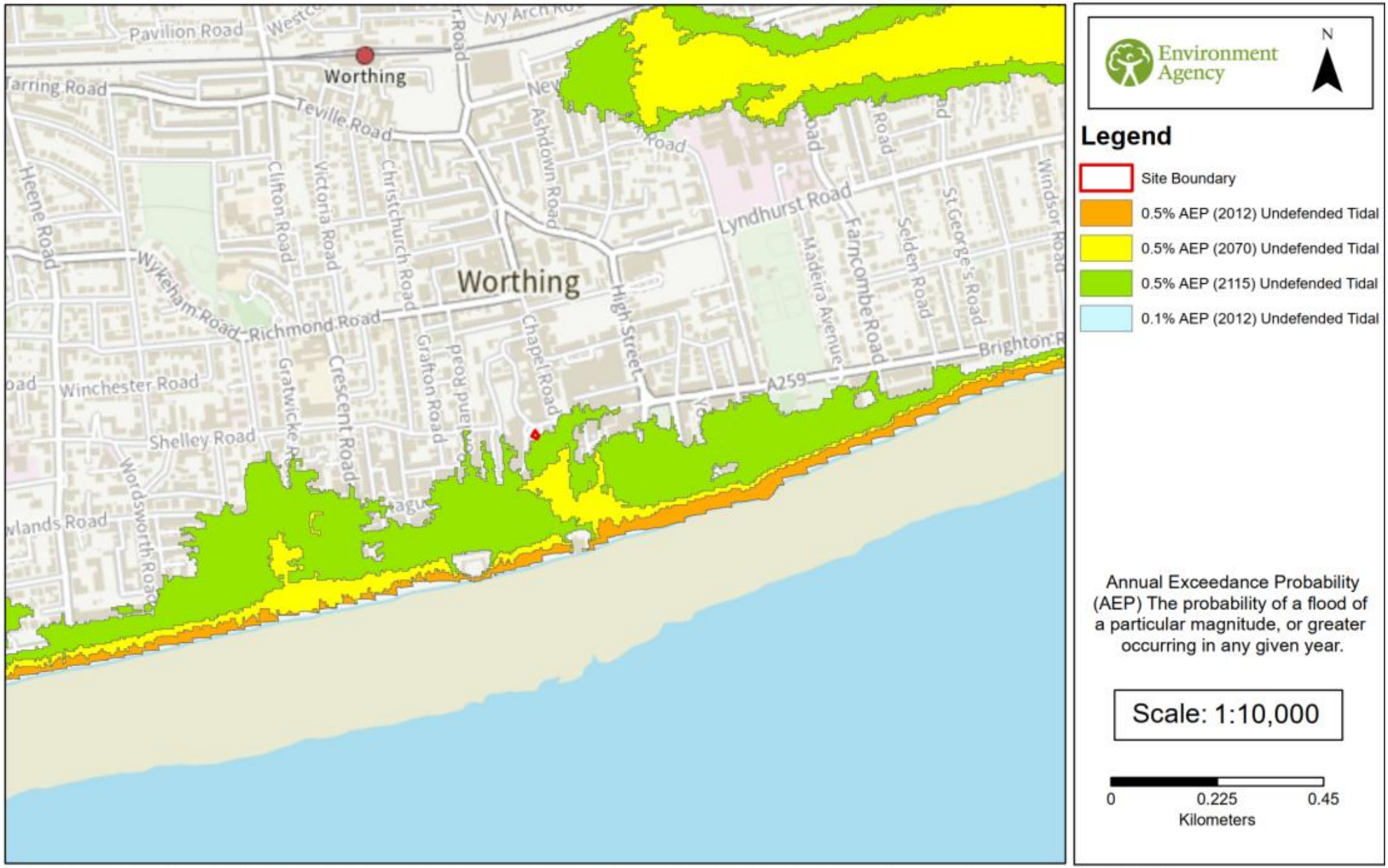
Appendix F: Modelled Flood Outlines – Tidal Undefended Scenario
Environment Agency Product 4 data showing undefended / defences removed tidal flood extents for the site and surrounding area.

Modelled Flood Outlines Tidal (Undefended). Centred BN11 1SY. Created 10/06/2026.



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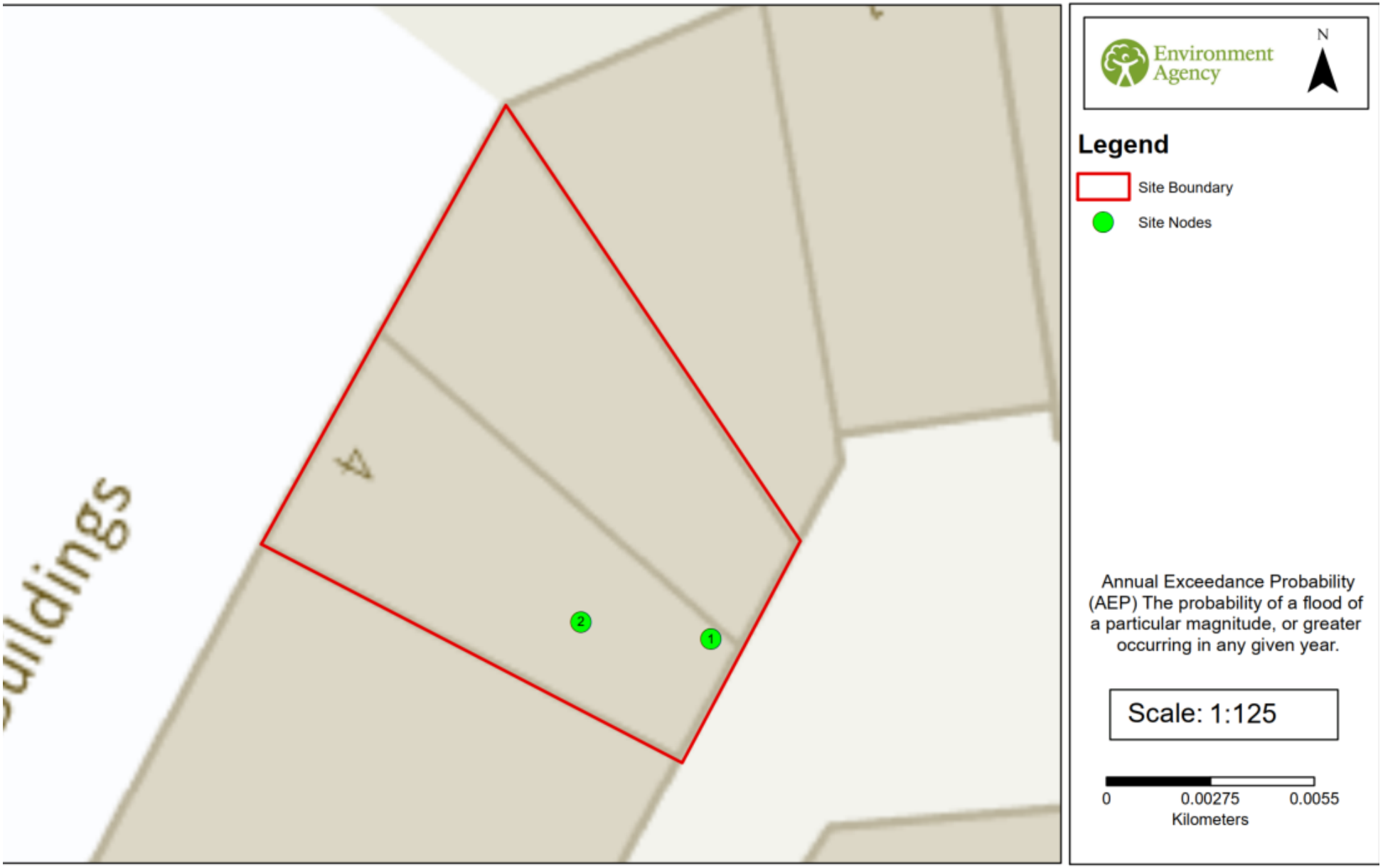
Appendix G: FRA Site Boundary and Environment Agency Model Node Points
Site boundary and hydraulic model node locations used for the Environment Agency Product 4 flood level and depth data.

FRA Site Boundary and Node Points. Centred BN11 1SY. Created 10/06/2026.



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Appendix H: Environment Agency Product 4 Modelled Tidal Flood Levels and Depths
Summary table of modelled tidal flood levels and depths at the site nodes.

Environment Agency

Product 4 Flood Risk Data Requested by:

Site: 514879,102574 (easting and northing coordinates)

Table 1: Water Levels: Tidal Undefended

	NGR		Modelled Flood Levels in Metres AOD Undefended Annual Exceedance Probability			
Node Ref	Eastings	Northings	0.5%	0.5% (2070)*	0.5% (2115)*	0.1%
1	514883	102570	-	-	5.25	-
2	514879	102570	-	-	5.24	-

Table 2: Water Levels: Tidal Defended

	NGR		Modelled Flood Levels in Metres AOD Defended Annual Exceedance Probability			
Node Ref	Eastings	Northings	0.5%	0.5% (2070)*	0.5% (2115)*	0.1%
1	514883	102570	-	5.21	-	-
2	514879	102570	-	-	-	-

Table 3: Water Depths: Tidal Undefended

	NGR		Modelled Flood Depths in Metres Undefended Annual Exceedance Probability			
Node Ref	Eastings	Northings	0.5%	0.5% (2070)*	0.5% (2115)*	0.1%
1	514883	102570	-	-	0.02	-
2	514879	102570	-	-	0.00	-

Table 4: Water Depths: Tidal Defended

	NGR		Modelled Flood Depths in Metres Defended Annual Exceedance Probability			
Node Ref	Eastings	Northings	0.5%	0.5% (2070)*	0.5% (2115)*	0.1%
1	514883	102570	-	0.00	-	-
2	514879	102570	-	-	-	-

All levels taken from: Arun Coastal Modelling (2012), by JBA Consulting.

Produced on: 10/06/2026

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