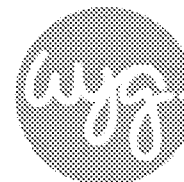


Former LEC Airfield – Maintenance Access Track Bognor Regis

Flood Risk Assessment

L Taylor

June 2014



REPORT CONTROL

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Project: Former LEC Airfield – Maintenance Access Track

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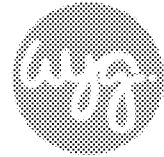
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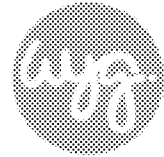
Appendices

Appendix A: Location Plan

Appendix B: Development Plan

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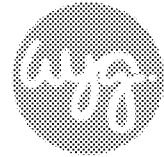
1.0 INTRODUCTION

WYG Engineering Ltd has been commissioned to carry out a Flood Risk Assessment (FRA) in support of a planning application for a maintenance access track to the former LEC airfield.

This Flood Risk Assessment is prepared in accordance with the requirements of the National Planning Policy Framework (NPPF) and accompanying technical guide. NPPF sets out the framework for planning decisions made by the local, regional and national government and the Environment Agency (EA). In order that planning authorities can make informed decisions on the development of sites in areas at risk of flood, NPPF requires the developer to carry out an assessment of flood risk. These requirements include the following:

- Assessment of the magnitude and severity of flood risk to the site
- Assess suitability of site and development through the use of the Exception Test (if required)
- Consider flood risk due to overtopping of existing flood defences
- Assess impact of proposed development on flood risk to adjacent developments
- Determine ability of existing and proposed drainage to accommodate development flows with respect to surface flooding
- Demonstrate that appropriate mitigation measures have been taken to prevent flooding
- Demonstrate that appropriate emergency situations have been considered e.g. overland flow paths, evacuation routes

This report addresses the requirements of NPPF and other issues which are deemed relevant to flood risk.



2.0 DEVELOPMENT DESCRIPTION AND LOCATION

2.1 Development and location

The site is located north east of Bognor Regis, to the east of Shripney Road (A29). The site currently consists of a runway which was built in the 1940's and is no longer operational. A location plan can be seen in Appendix A.

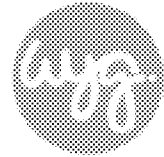
The development consists of the construction of a maintenance access track to connect the existing runway with Felpham Way to the south. The track will cross Lidsey Rife, which will require the construction of a temporary bridge. The track will be made of permeable stone. The layout can be seen in Appendix B.

2.2 Vulnerability Classification

The development comprises of a maintenance access track. The development is acceptable as it is only being used for access to and from the site, and it won't be used at times of extreme weather conditions.

2.3 Flood Zone Classification

The majority of the site falls under Flood Zone 3 on the EA's flood zones for planning maps. An extract of the map, relevant to the site can be found in Appendix C. This is Flood Zone 3a, which is defined as "land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year." It should be noted that this zone lies outside the functional floodplain which is classed as flood zone 3b.



3.0 FLOOD HAZARD FOR THE SITE

3.1 Sources of Flooding

3.1.1 Fluvial and Tidal Flooding

The site is at risk of flooding from both the Lidsey Rife which runs through the centre of the site, as well as tidal flooding from the English Channel to the south. The EA maps show that the site is at risk of flooding from a more than a 1% probability event from fluvial and tidal sources. The EA maps can be seen in Appendix C.

The Arun District Council SFRA includes information about Bognor Regis and the site. The SFRA shows that the site is in Tidal Zone 3a. The part of the site next to the bridge over the rife is in Fluvial Zone 3a. These maps can be seen in Appendix D.

3.1.2 Flooding from Surface Water

The site is generally flat, sloping gently towards Lidsey Rife which acts as a low point for the site. There is one steeper area of ground near the tennis courts in the adjacent site to the east. The rife flowing through the site prevents surface water ponding from occurring by draining water away from the site. The EA maps can be seen in Appendix C.

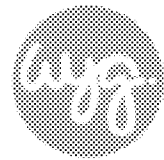
3.1.3 Flooding from Groundwater

The presence of Lidsey Rife suggests that the land on the site will be well drained, as the river will provide a good level of land drainage. This is reinforced in the SFRA which states that:

"The Sussex Rifles, which drain the flat coastal plan, respond rapidly to rainfall due to the waterlogged clay soils in the area. Flood velocities are relatively slow however due to shallow gradients. The watercourses in these areas are therefore runoff dominated. The likelihood of groundwater flooding in these regions is relatively low".

However, the whole area is underlain with chalk and as such, is more vulnerable to groundwater flooding than areas which are underlain by other bedrocks. The map showing the probability of groundwater flooding from the SFRA is included in Appendix D.

The SFRA states that there are no records of groundwater flooding in Arun.



3.1.4 Flooding from Infrastructure Failure

There is no infrastructure (e.g. reservoirs, flood defences etc) in the area which could fail and cause flooding.

3.1.5 Flooding from Sewers

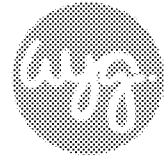
There are no sewers on the site as it is currently a greenfield site.

There are a number of sewer flooding incidents recorded for the area. These have been collated as part of the SFRA. The nearest of these is at a leisure centre which is located to the west of the site.

The sewers are the responsibility of Southern Water and are assumed to be well maintained.

3.2 Existing Drainage on Site

The site is currently greenfield and, as such, has no formal drainage arrangements. The site naturally drains into Lidsey Rife, which flows across the site.



4.0 DETAILED DEVELOPMENT PROPOSALS

4.1 *Development Description*

The development consists of the construction of a maintenance access track, to connect to Felpham Way to the south.

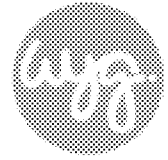
The track will be approximately 800m long, and will roughly follow the proposed route of part of the proposed Bognor Regis north/south relief road which will be constructed in the future.

The access track will be set at the existing ground level. The proposal is to strip and set aside topsoil, and then provide a hardcore/capping layer fill of 300mm to provide the track. The width of the topsoil will be 4.5m to allow for a useable track width of 4.0m. A temporary bridge will also be constructed to cross the Lidsey Rife. The soffit of the bridge will be set at the level of the existing river banks.

As the track will not be a permanent construction, it will be made of a semi-permeable material. A percentage of the rainfall will be allowed to infiltrate through the surface, whilst the remaining rainfall will run off the sides of the track on the surrounding land and into Lidsey Rife.

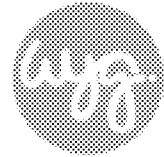
4.2 *Managing off-site flood risk*

The run-off rate and volume will remain the same as before the development, so there will be no change to the off-site flood risk.



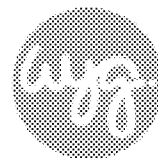
5.0 RESIDUAL RISKS

There will be a residual risk of flooding from either tidal or fluvial sources in extreme events. However, these residual risks are considered acceptable as the development is a maintenance access track and won't be used in times of extreme flooding events. This residual risk would not pose a threat to life.



6.0 SUMMARY AND CONCLUSIONS

- The proposed development is to build a maintenance access track between the airfield and Felpham Way to the south.
- The site is mainly in Flood Zone 3, a more than 1% chance of the site flooding due to rivers and/or more than 0.5% chance of the site flooding from the sea.
- The site is at risk of groundwater flooding due to its underlying geology, however, there are no reports of groundwater flooding in Arun.
- The development will not increase the run-off rates or volumes from the site.
- There will be an acceptable residual risk of flooding from extreme tidal events (<0.5% chance in any given year).

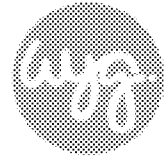


APPENDIX A

Location Plan

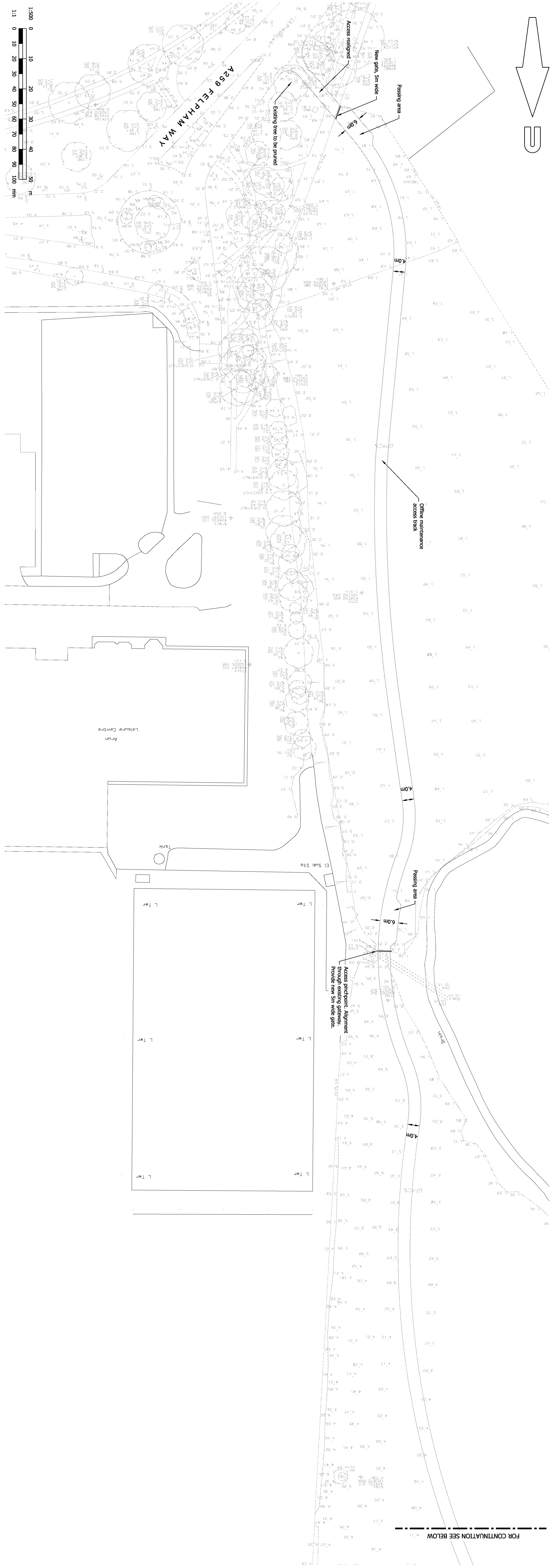
Appendix A – Location Plan



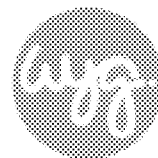


APPENDIX B

Development Plan



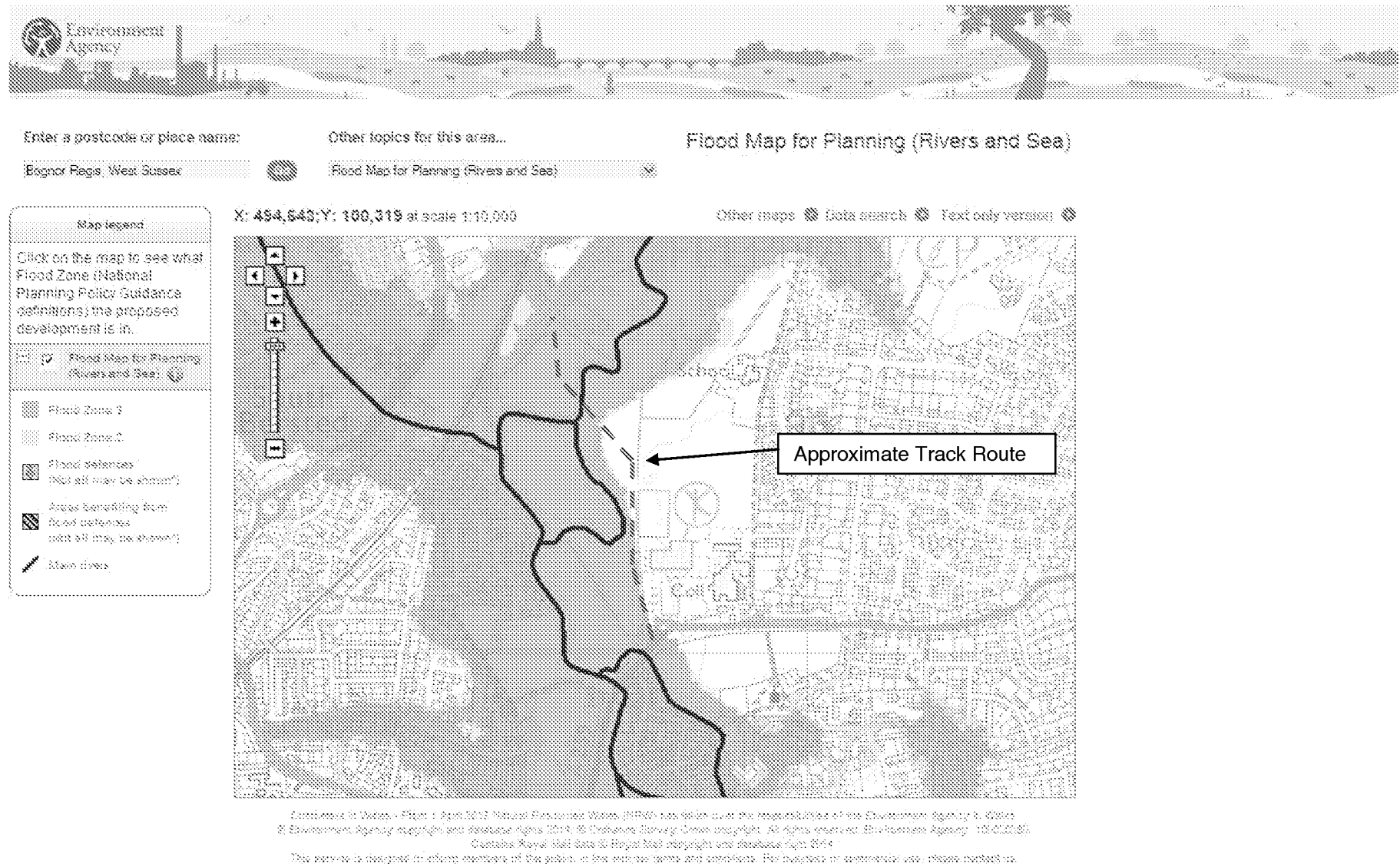
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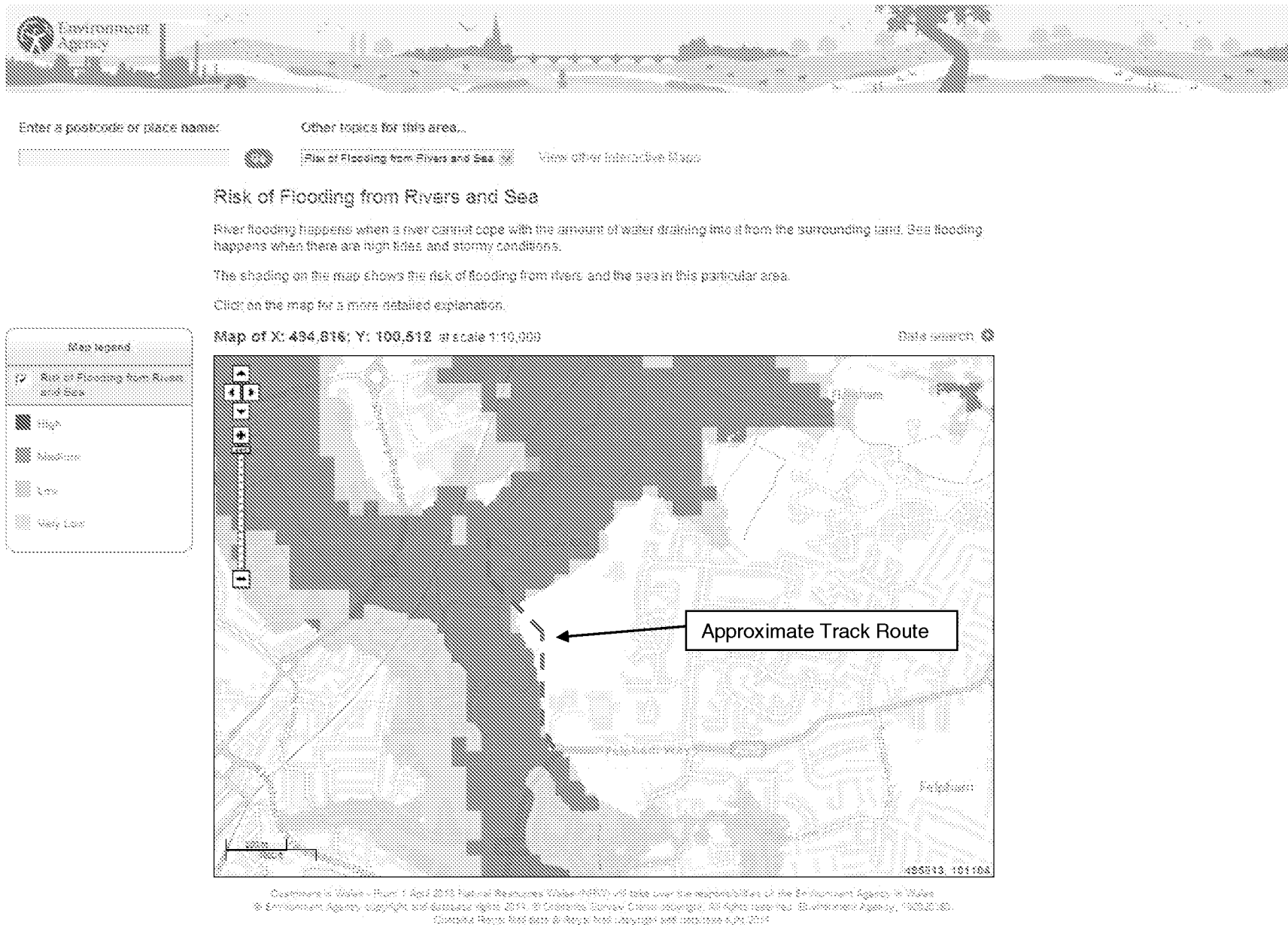
APPENDIX C

Environment Agency Maps

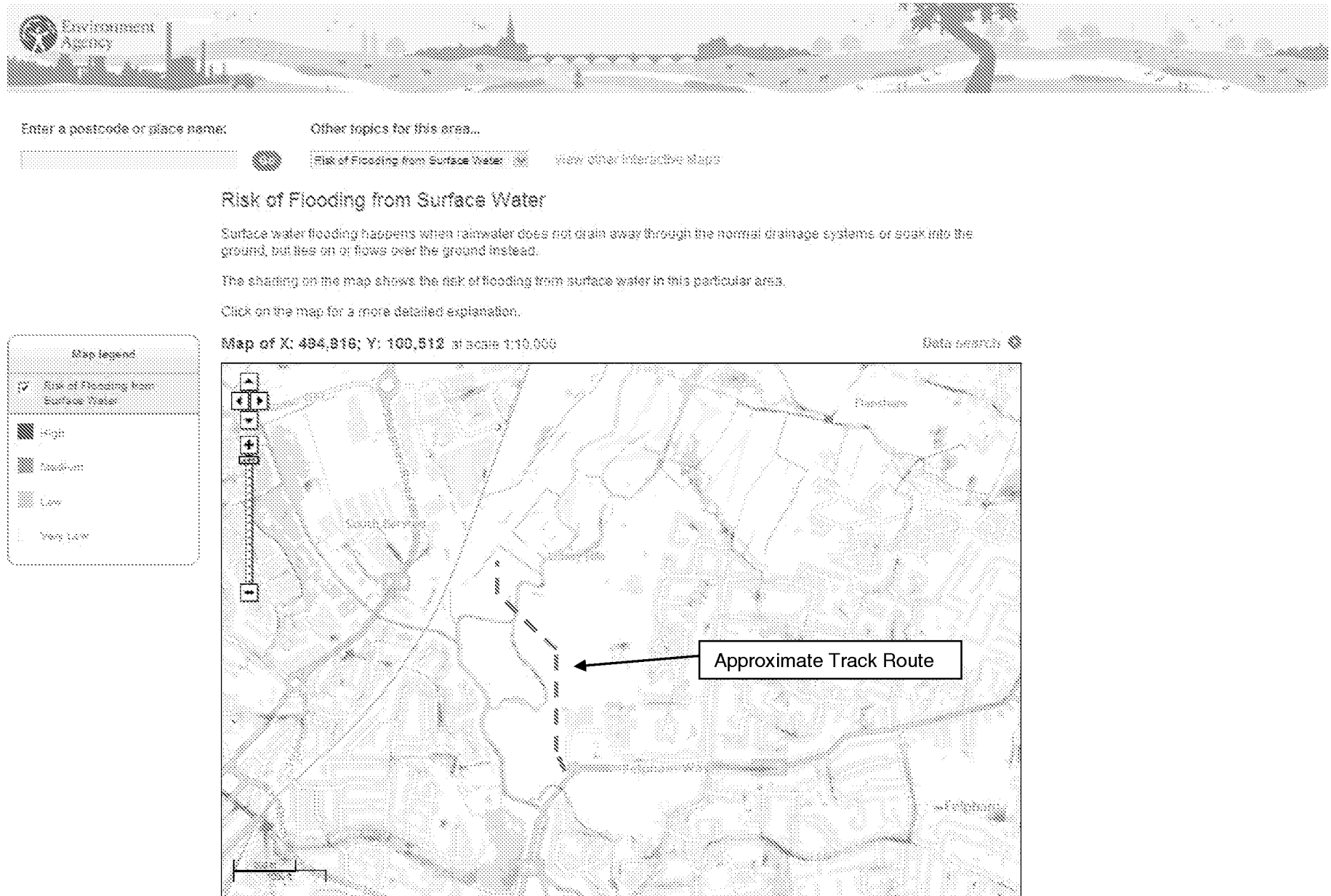
Appendix C – Flood Map for Planning

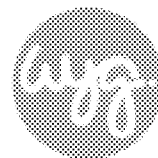


Appendix C – Risk of Flooding from Rivers and Sea



Appendix C – Risk of Flooding from Surface Water





APPENDIX D

Arun District Council Strategic Flood Risk Assessment Maps

Appendix D – Tidal Flood Zone Extents



Notes

The Arun SFRA is a strategic assessment of flooding. Users of the SFRA should be aware of this when interpreting the information presented. The user is directed to the SFRA reports which outline the uncertainties associated with the studies. Particular attention is drawn to the following:

- Flood extent boundaries are not considered definitive. Land adjacent to these areas may also be at risk.
- Some flooding mechanisms have not been included in the assessment. The 'coastal risk area' is based on advice from LA Engineers and requires further assessment.

Arun District Council SFRA

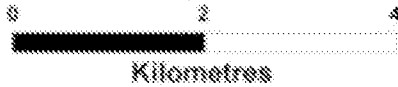
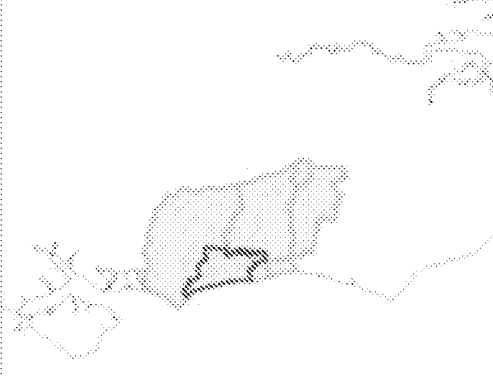
Map F1-T - Tidal Flood Zone Extents



CAPITA SYMONDS

Legend

- Arun District Boundary
- Zone 3b Tidal Extent (defended)
- Zone 3a Tidal Extent (no defences)
- Zone 2 Tidal Extent (no defences)
- Coastal Risk Area



Scale at A3: 1:80,000

Date: 31/01/2008

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Map_F1-T.wpd

Appendix D – Fluvial Flood Zone Extents



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Arun District Council SFRA

Map F1-F - Fluvial Flood Zone Extents

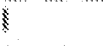


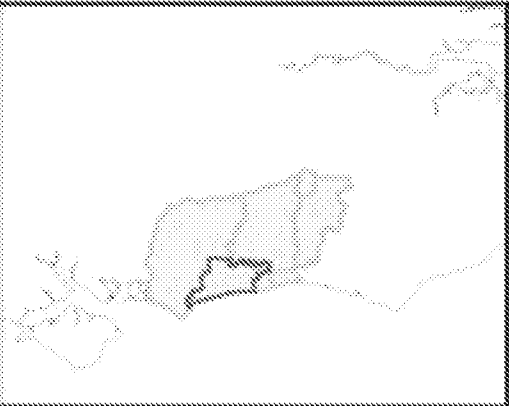
ARUN DISTRICT COUNCIL



CAPITA SYMONDS

Legend

-  Arun District Boundary
-  Zone 3b Fluvial Extent (defended)
-  Zone 3a Fluvial Extent (no defences)
-  Zone 2 Fluvial Extent (no defences)





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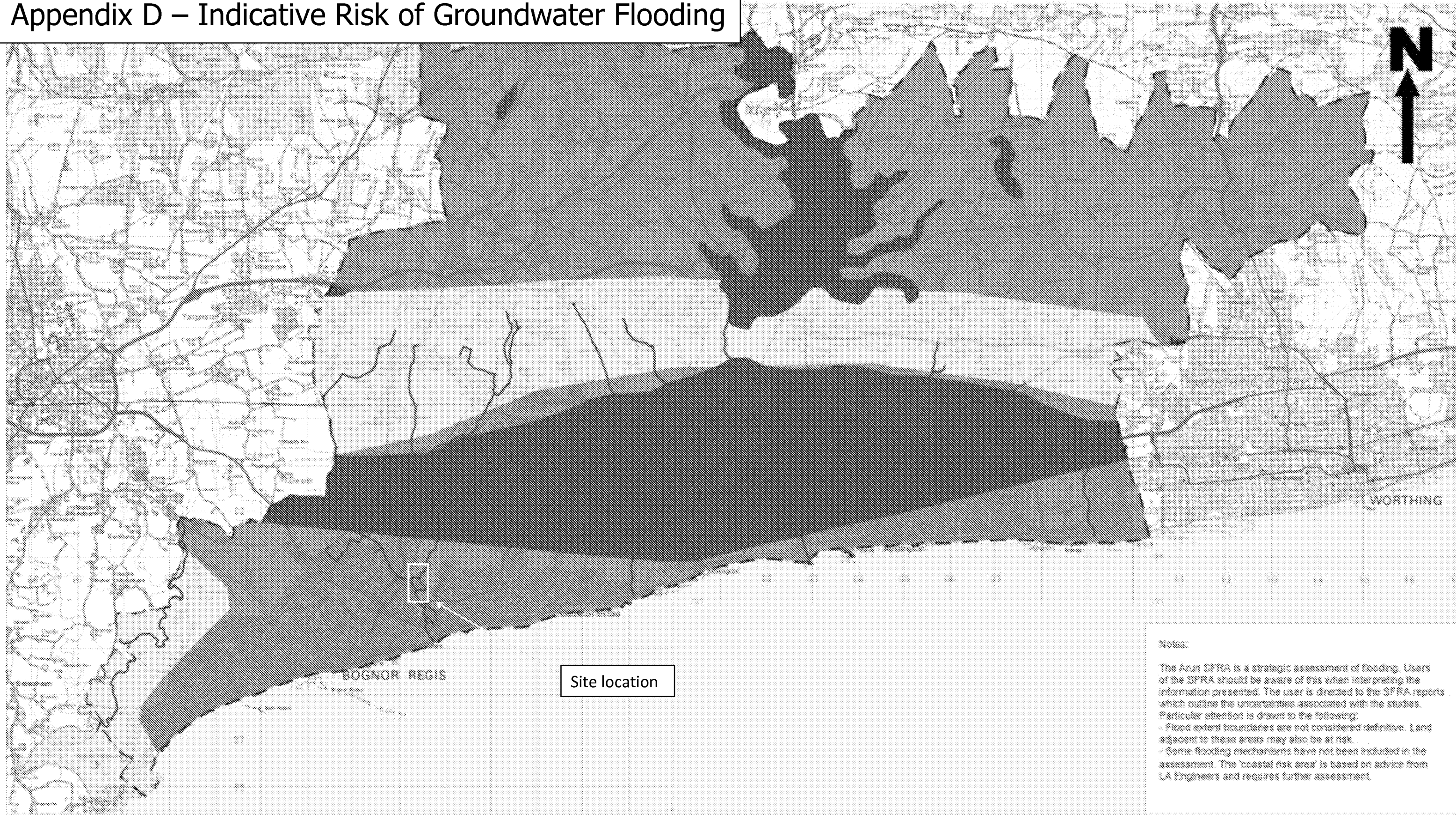
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Map F1-F.yor

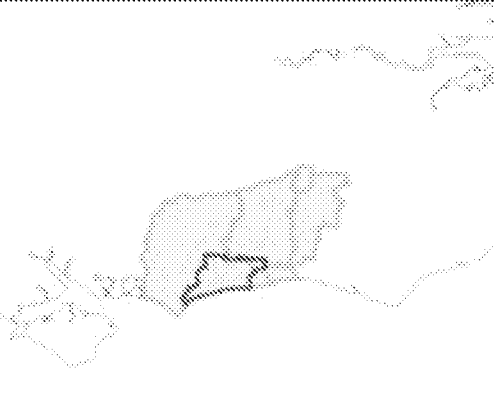
Appendix D – Indicative Risk of Groundwater Flooding



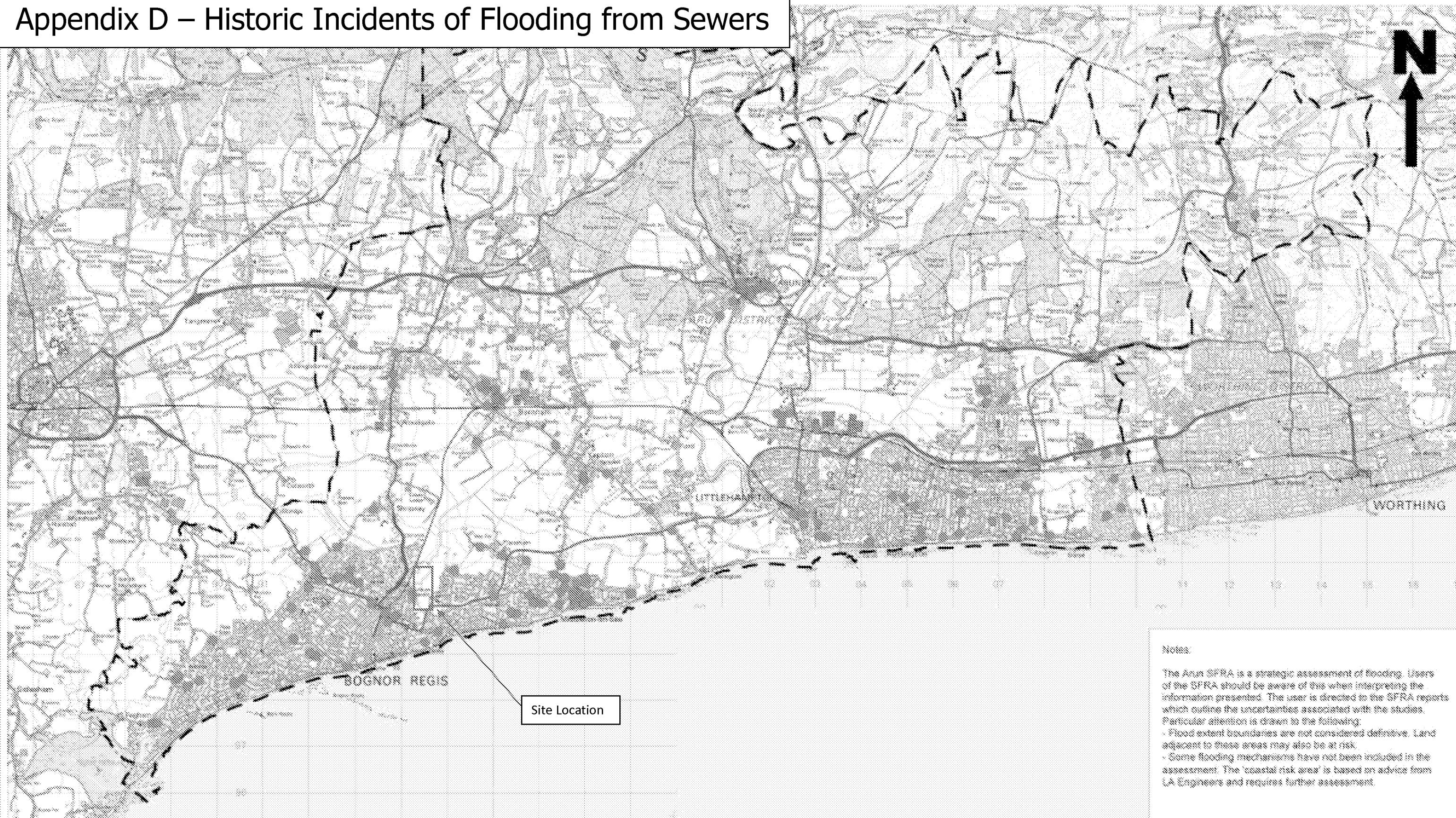
Notes:

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Arun District Council SFRA Map G1 - Indicative Risk of Groundwater Flooding  CAPITA SYMONDS ARUN DISTRICT COUNCIL F100014/PL	Legend  Arun District Boundary  Main River  Groundwater Emergence Zones Groundwater Flood Risk  High  Medium	 Scale at A3: 1:80,000 Date: 31/01/2008 Note the property of this drawing and design is vested in Capita Symonds Limited and must not be copied or reproduced in any way without their written consent. Based on Ordnance Survey mapping and reproduced by Capita Symonds Ltd license no. 100018487 (2008) with the permission of the Controller of Her Majesty's Stationary Office Crown copyright. Map_G1.wpd
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Appendix D – Historic Incidents of Flooding from Sewers



Notes:

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Arun District Council SFRA

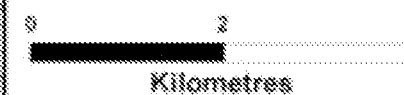
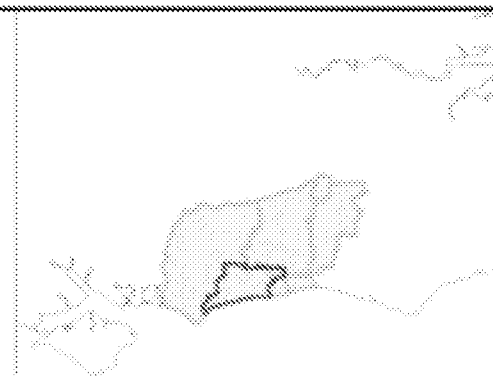
Map S - Historic Incidents of Flooding from Sewers



CAPITA SYMONDS

Legend

- Arun District Boundary
- Historic Incidents of Sewer Flooding



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