

## Appendix A. Maps and Figures

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Legend

 Southend-on-Sea Administrative Area

Surface Water Flood Depths

-  0
-  10
-  20
-  30
-  40
-  50
-  60

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Client



Project Title

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

Drawing Title

LIDAR TOPOGRAPHIC SURVEY

Drawn PP	Checked SK	Approved JR	Date Oct 2015
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47071307

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1:40,000

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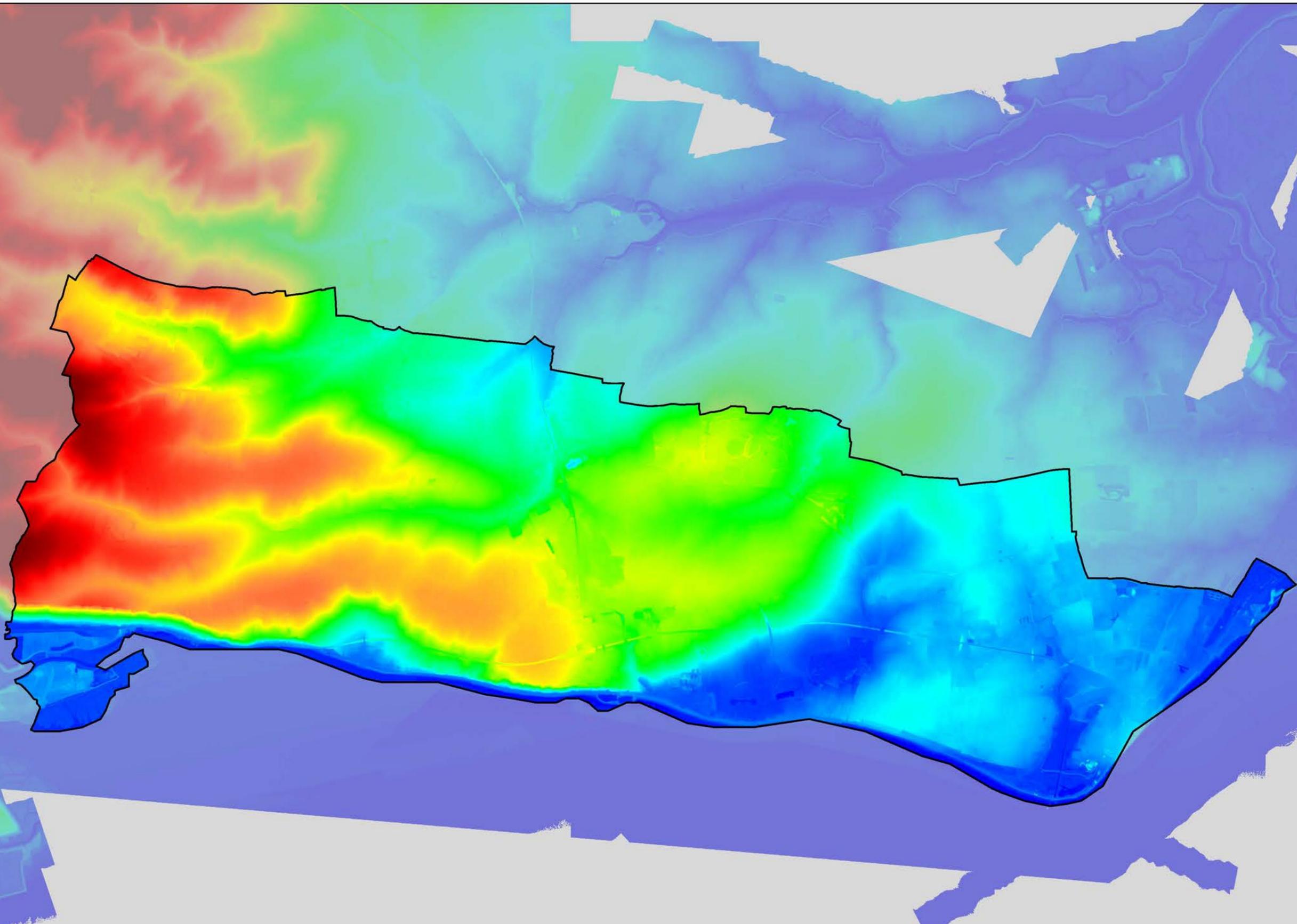


Drawing Number

Figure A1

Rev

2



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**Legend**

 Southend-on-Sea Administrative Area

**Surface Water Flood Depths**

 High Risk (>3.3% AEP)  
 Medium Risk (1% - 0.1% AEP)  
 Low Risk (<0.1% AEP)

**Notes**

1. This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (UFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
2. The potential impact of surface water flooding can vary according to the depth of the water, and its velocity (speed and direction that it is flowing in).
3. Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead. This type of flooding can be difficult to predict as it is hard to forecast exactly where or how much rain will fall in any storm.

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Project Title  
**SOUTHEND-ON-SEA  
 SURFACE WATER  
 MANAGEMENT PLAN**

Drawing Title  
**SURFACE WATER  
 FLOOD RISK**

Drawn PP	Checked SK	Approved JR	Date Oct 2015
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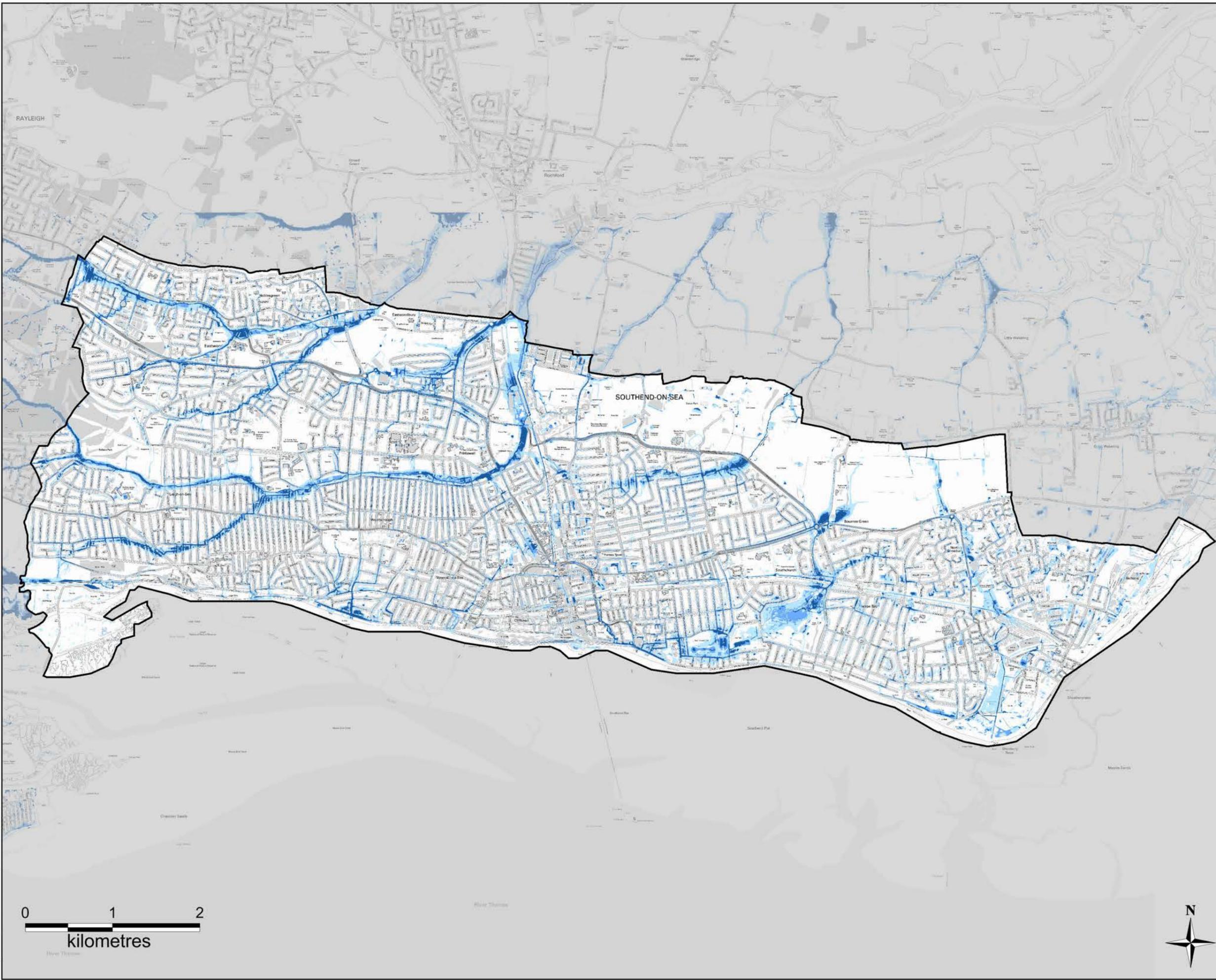
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Drawing Number <b>Figure A2</b>	Rev <b>2</b>
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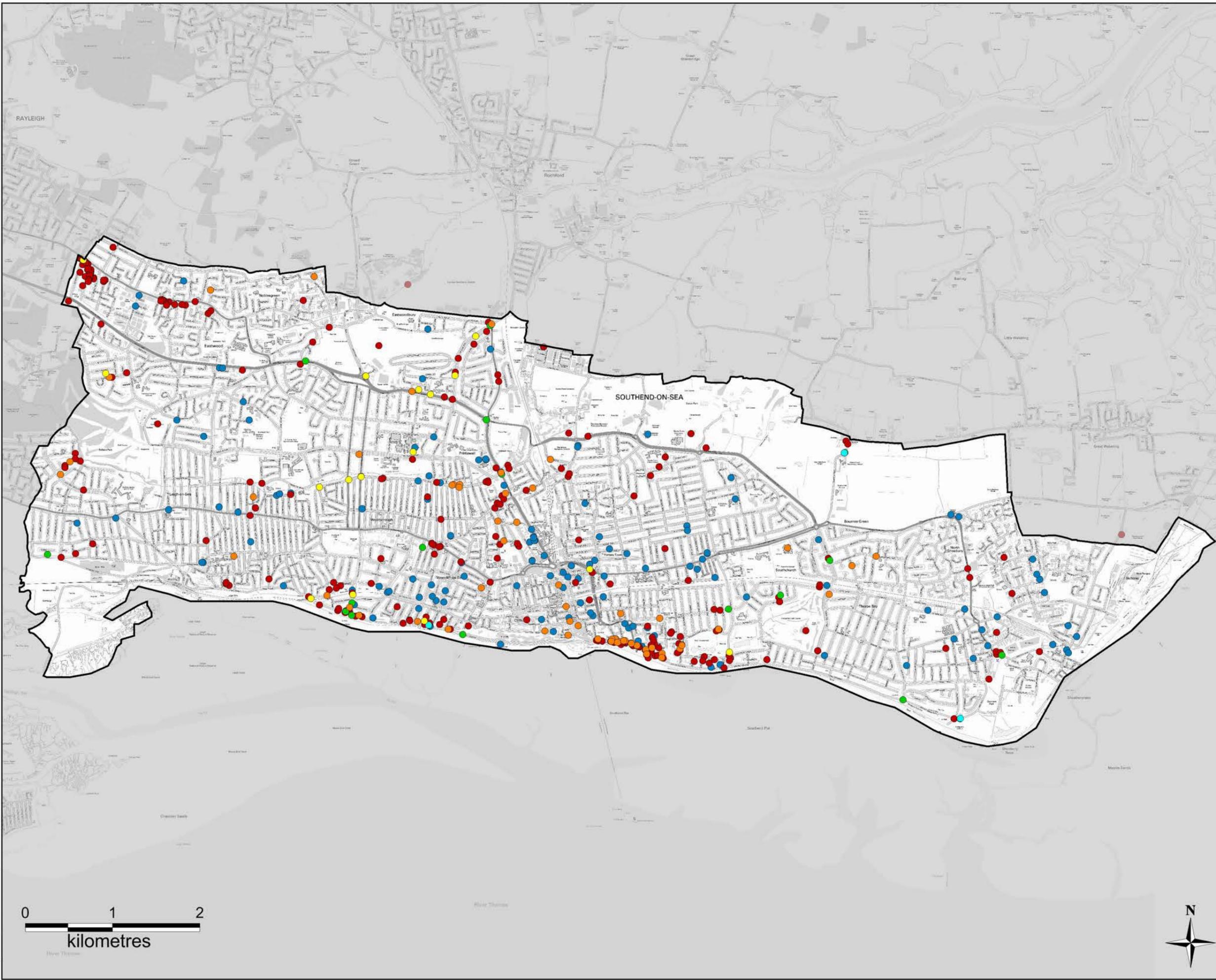
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**Legend**

 Southend-on-Sea Administrative Area

**Recorded Flood Incidents**

-  Flooding 19th September 2014 (61 incidents recorded)
-  Flooding 20th July 2014 (16 incidents recorded)
-  Flooding 13th October 2013 (3 incidents recorded)
-  Flooding 11th October 2013 (18 incidents recorded)
-  Flooding 24th August 2013 (255 incidents recorded)
-  Flooding pre 2010 (146 incidents recorded)



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**SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN**

Drawing Title  
**ORDINARY WATERCOURSES  
AND MAIN RIVERS**

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Drawing Number <b>Figure A3</b>	Rev <b>2</b>
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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

Surface Water Flood Depth (1% AEP)

-  High (>900mm)
-  Medium (300-900mm)
-  Low (<300mm)

**Notes**

- This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
- The potential impact of surface water flooding can vary according to the depth of the water, and its velocity (speed and direction that it is flowing in).
- Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead. This type of flooding can be difficult to predict as it is hard to forecast exactly where or how much rain will fall in any storm.

**Intended Use**

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**Project Title**

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SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

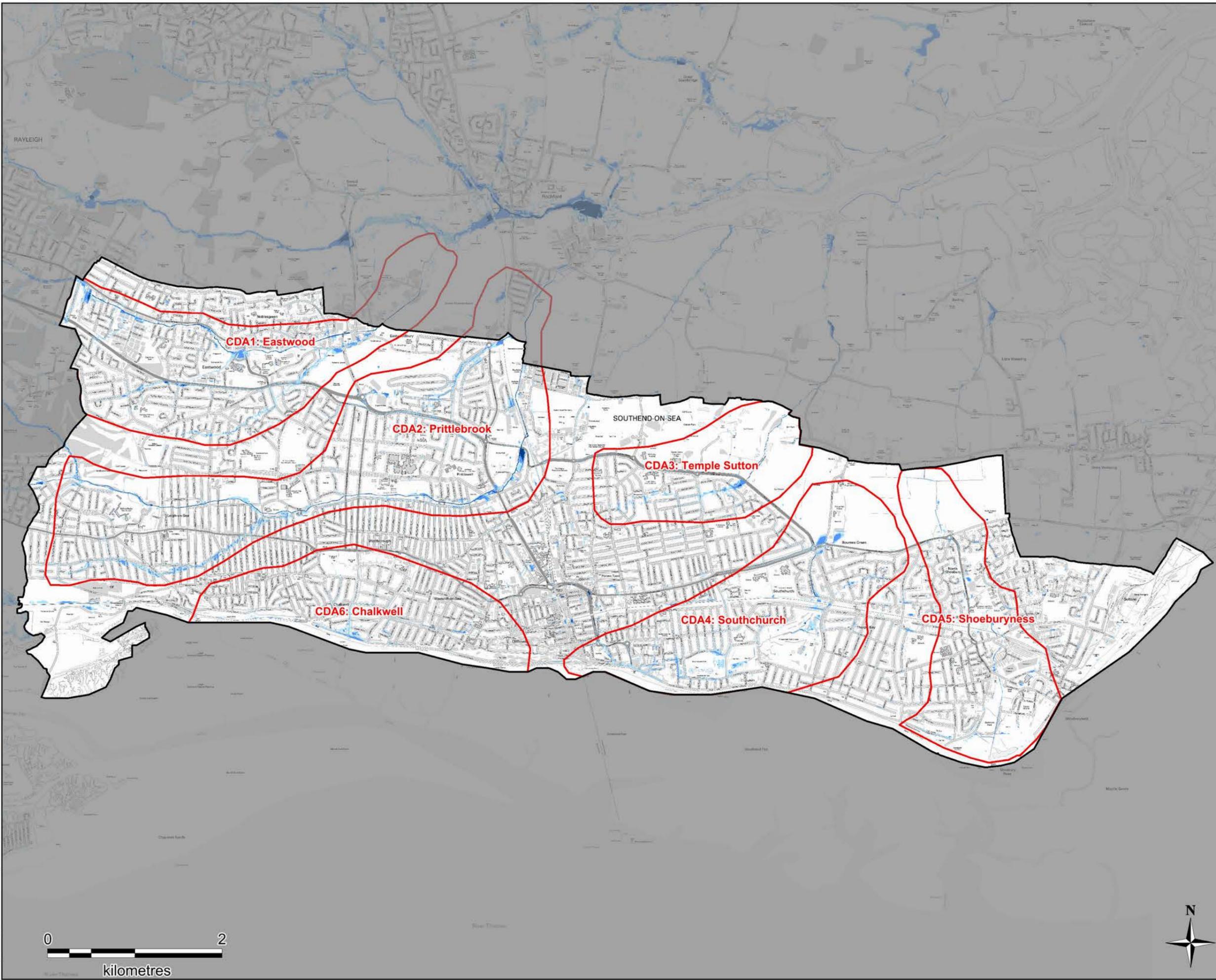
SURFACE WATER  
FLOOD DEPTHS  
(3.33% AEP)

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**Figure A4a** Rev  
**3**



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**Legend**

-  Southend-on-Sea Borough Boundary
  -  Critical Drainage Area
- Surface Water Flood Hazard (1% AEP)
-  Extreme (>2.0) (Danger for all)
  -  Significant (1.25-2.0) (Danger for most)
  -  Moderate (0.75-1.25) (Danger for some)
  -  Caution (<0.75) (Very low hazard)

**Notes**

1. This drawing has been based on the Environment Agency Updated Flood Map for Surface Water (uFMSW).
2. Flood Hazard has been defined based on the joint Environment Agency and Defra R & D Technical Report FD2321 (March 2006).
3. Degree of Flood Hazard can be interpreted as follows:
  - Caution: Flooding with shallow flowing water or deep standing water.
  - Moderate: Flooding with deep or fast flowing water.
  - Significant: Flooding with deep fast flowing water. Dangerous for most people.
  - Extreme: Flooding with deep fast flowing water. Dangerous for all (including the emergency services).

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SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

SURFACE WATER  
FLOOD HAZARD  
(3.33% AEP)

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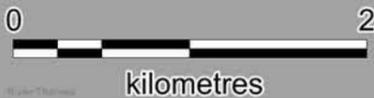
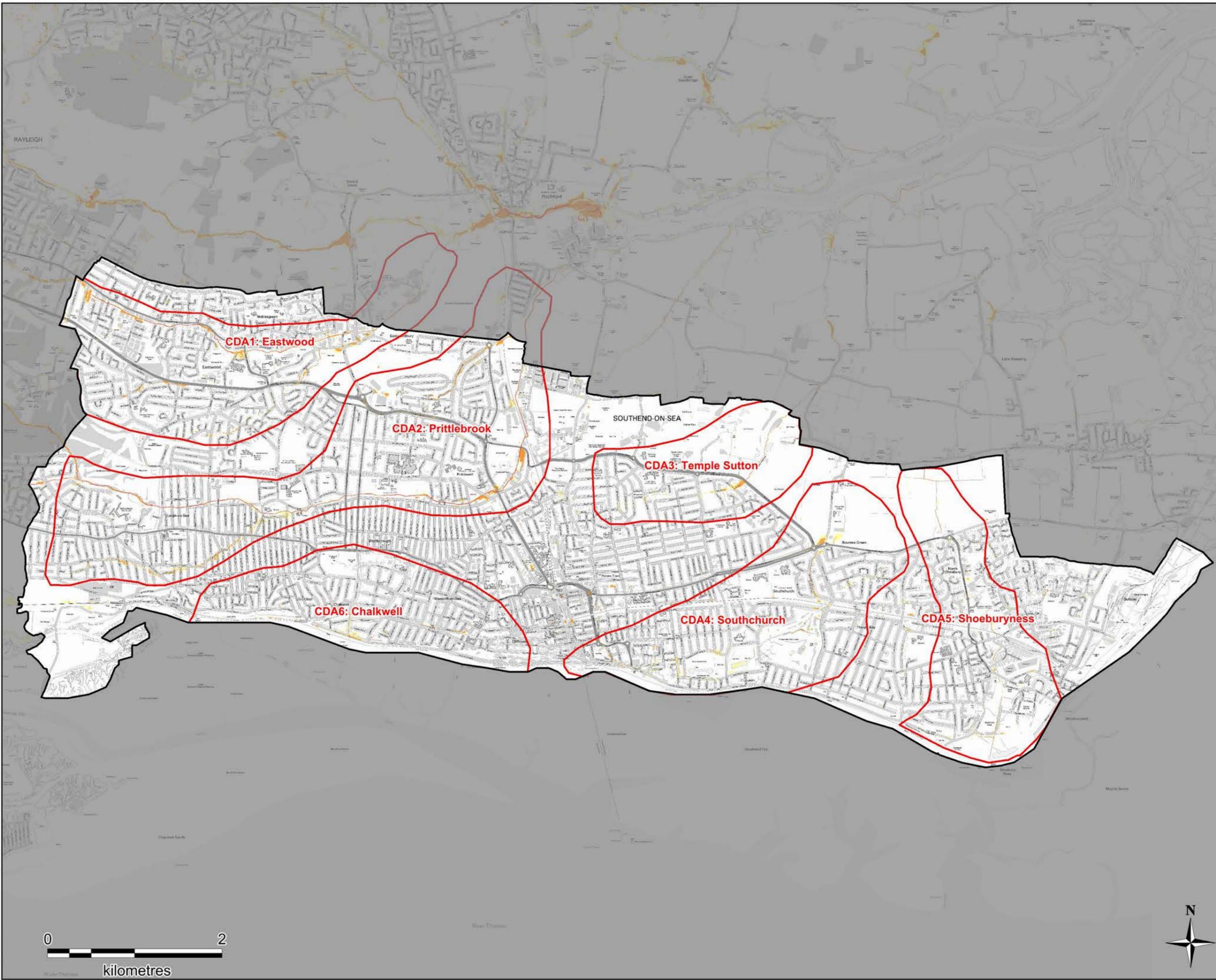
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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

Surface Water Flood Depth (1% AEP)

-  High (>900mm)
-  Medium (300-900mm)
-  Low (<300mm)

**Notes**

- This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
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**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

SURFACE WATER  
FLOOD DEPTH  
(1% AEP)

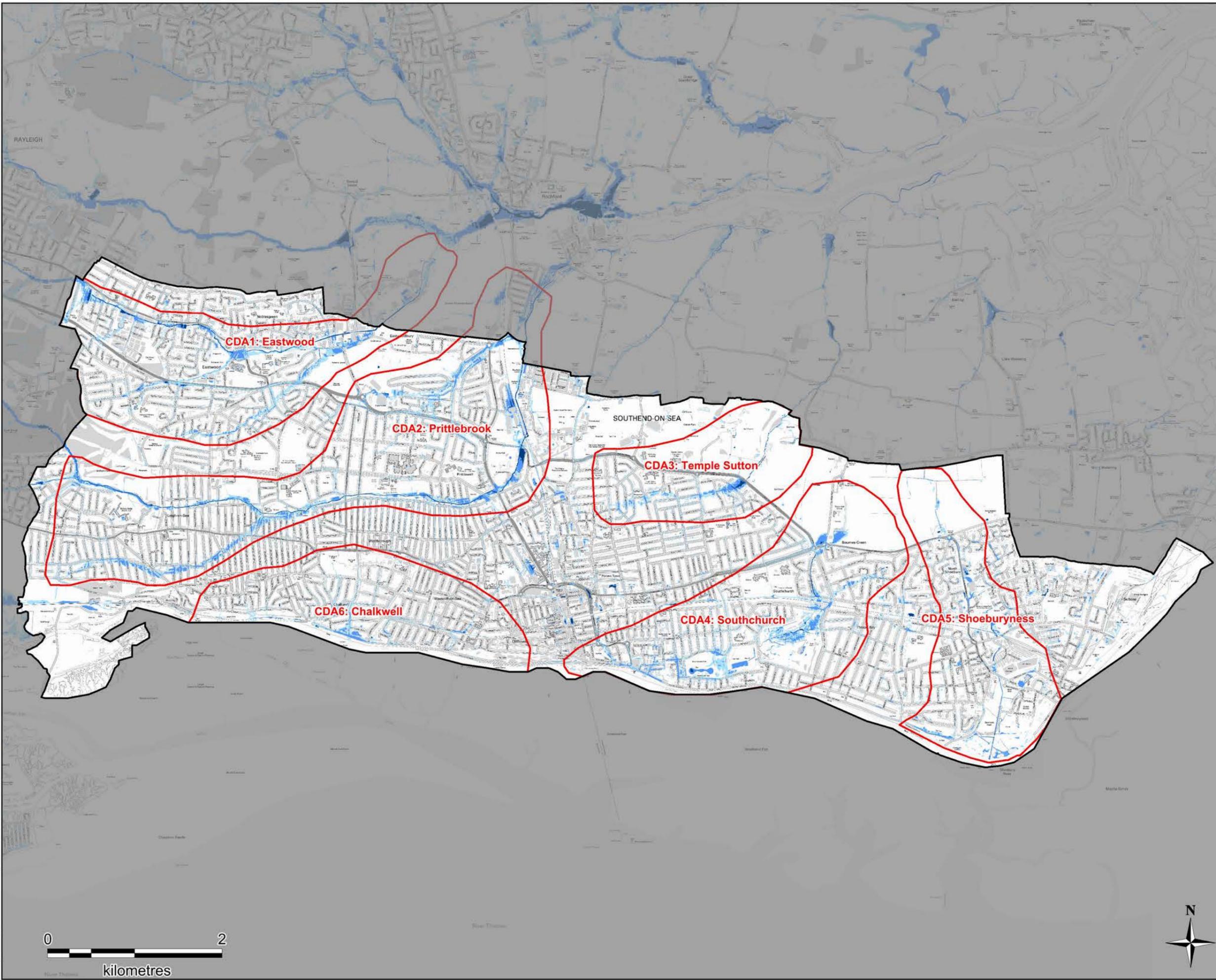
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**Drawing Number** Figure A4c **Rev** 3



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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

**Surface Water Flood Hazard (1% AEP)**

-  Extreme (>2.0) (Danger for all)
-  Significant (1.25-2.0) (Danger for most)
-  Moderate (0.75-1.25) (Danger for some)
-  Caution (<0.75) (Very low hazard)

**Notes**

- This drawing has been based on the Environment Agency Updated Flood Map for Surface Water (uFMSW).
- Flood Hazard has been defined based on the joint Environment Agency and Defra R & D Technical Report FD2321 (March 2006).
- Degree of Flood Hazard can be interpreted as follows:
  - Caution: Flooding with shallow flowing water or deep standing water.
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  - Significant: Flooding with deep fast flowing water. Dangerous for most people.
  - Extreme: Flooding with deep fast flowing water. Dangerous for all (including the emergency services).

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**Project Title**

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SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

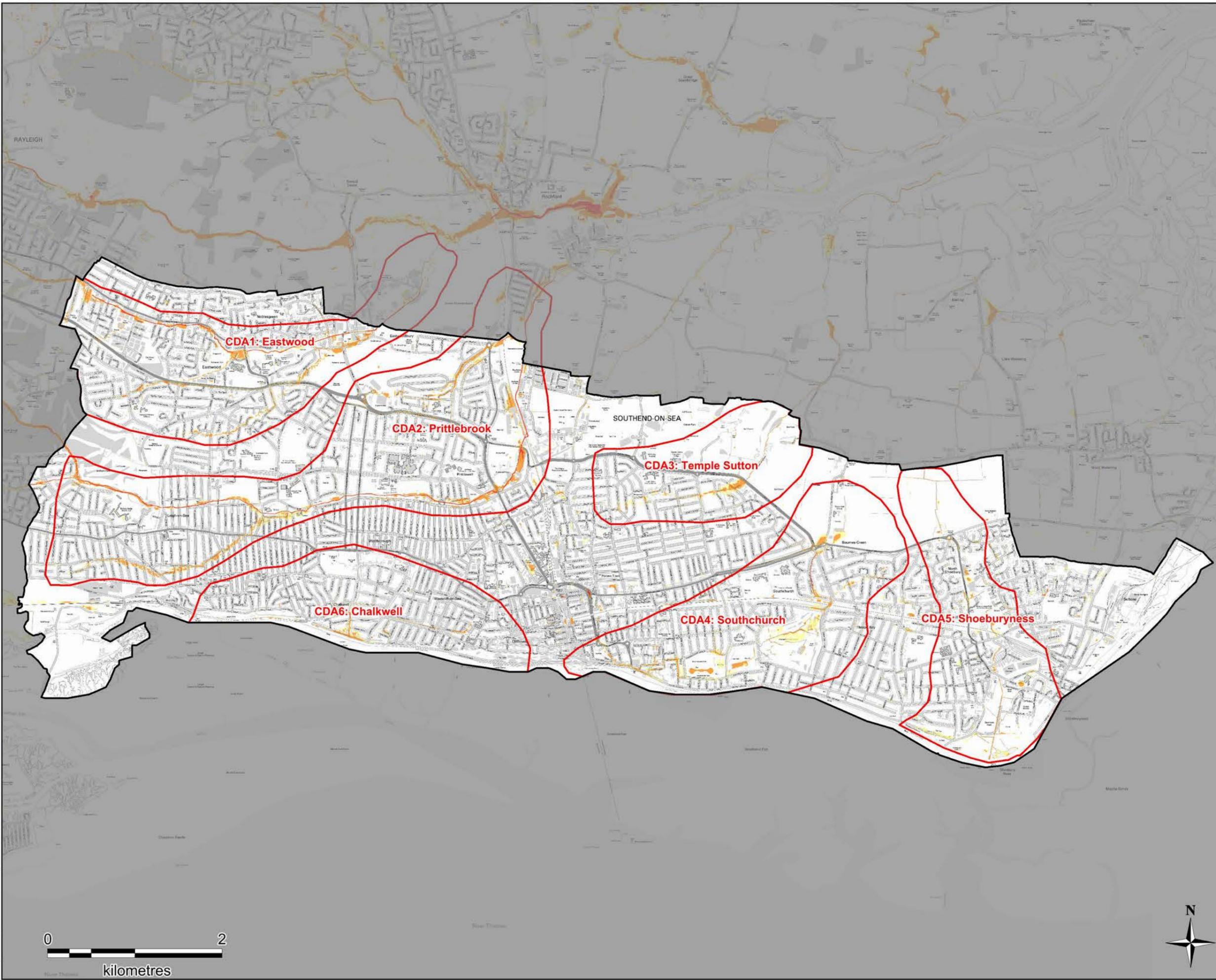
SURFACE WATER  
FLOOD HAZARD  
(1% AEP)

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**Figure A4d** Rev  
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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

Surface Water Flood Depth (1% AEP)

-  High (>900mm)
-  Medium (300-900mm)
-  Low (<300mm)

**Notes**

- This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
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**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

SURFACE WATER  
FLOOD DEPTH  
(0.1% AEP)

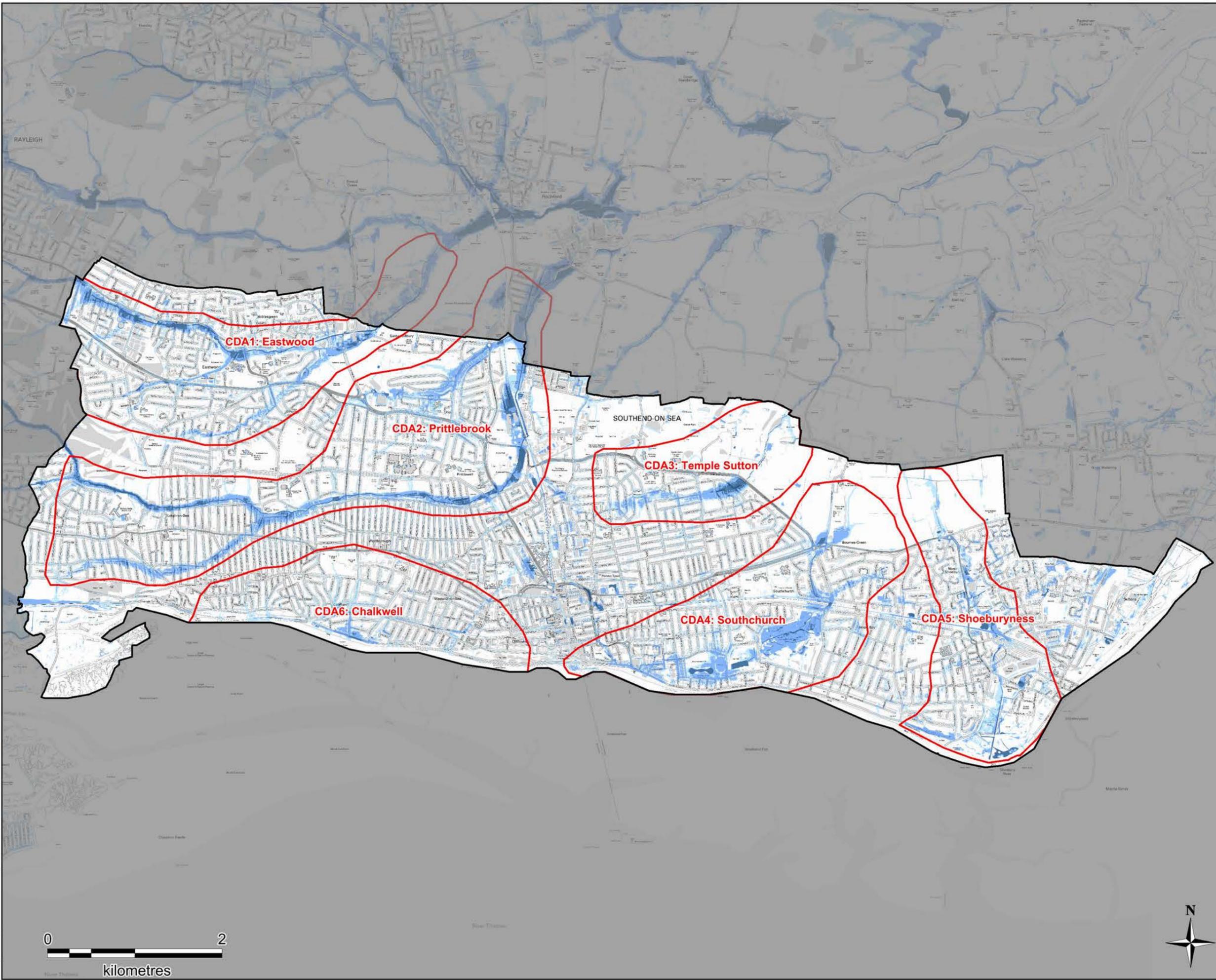
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**Figure A4e**

Drawing Number **3**



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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

**Surface Water Flood Hazard (1% AEP)**

-  Extreme (>2.0) (Danger for all)
-  Significant (1.25-2.0) (Danger for most)
-  Moderate (0.75-1.25) (Danger for some)
-  Caution (<0.75) (Very low hazard)

**Notes**

1. This drawing has been based on the Environment Agency Updated Flood Map for Surface Water (uFMSW).
2. Flood Hazard has been defined based on the joint Environment Agency and Defra R & D Technical Report FD2321 (March 2006).
3. Degree of Flood Hazard can be interpreted as follows:
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**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

SURFACE WATER  
FLOOD HAZARD  
(0.1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
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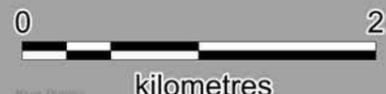
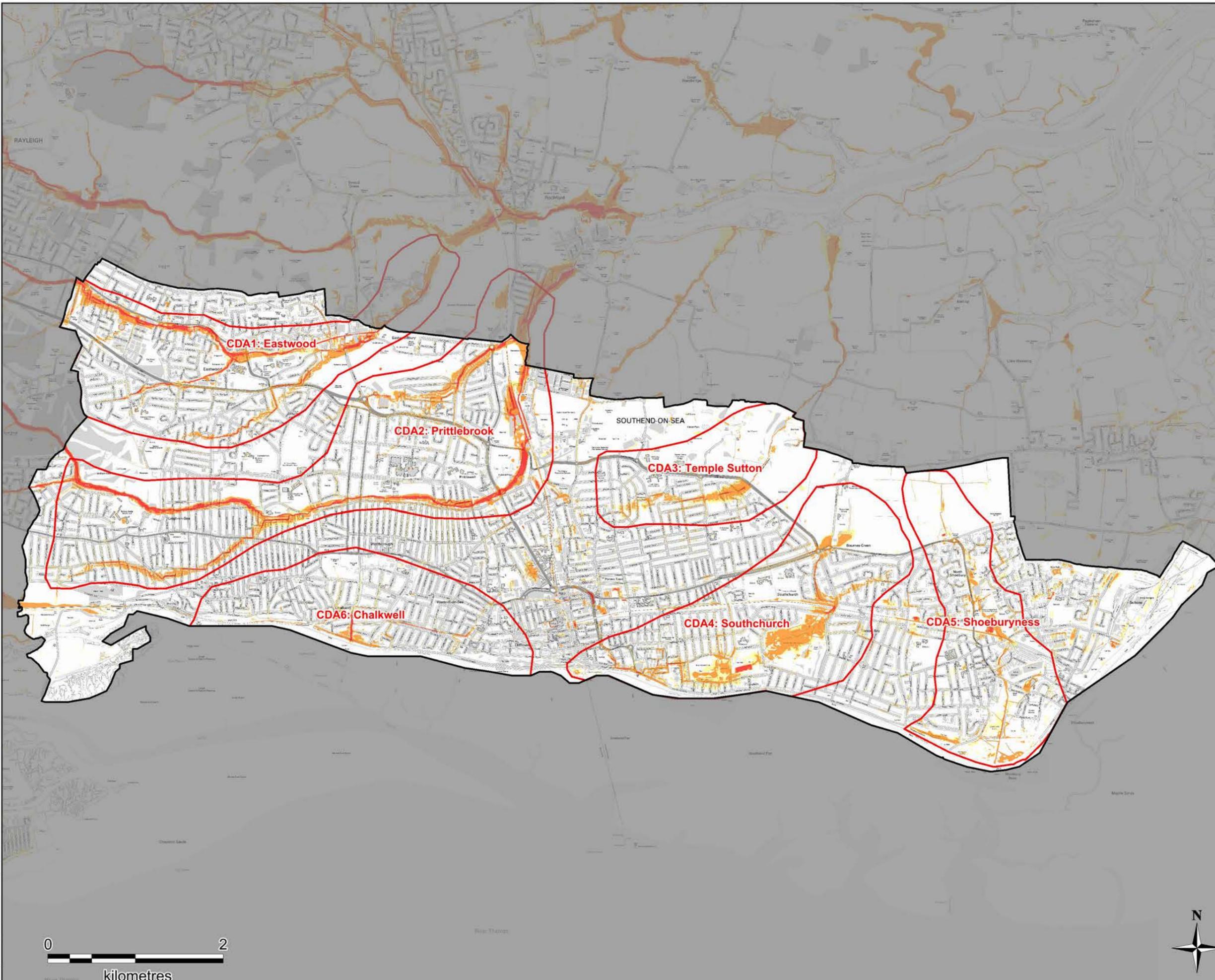
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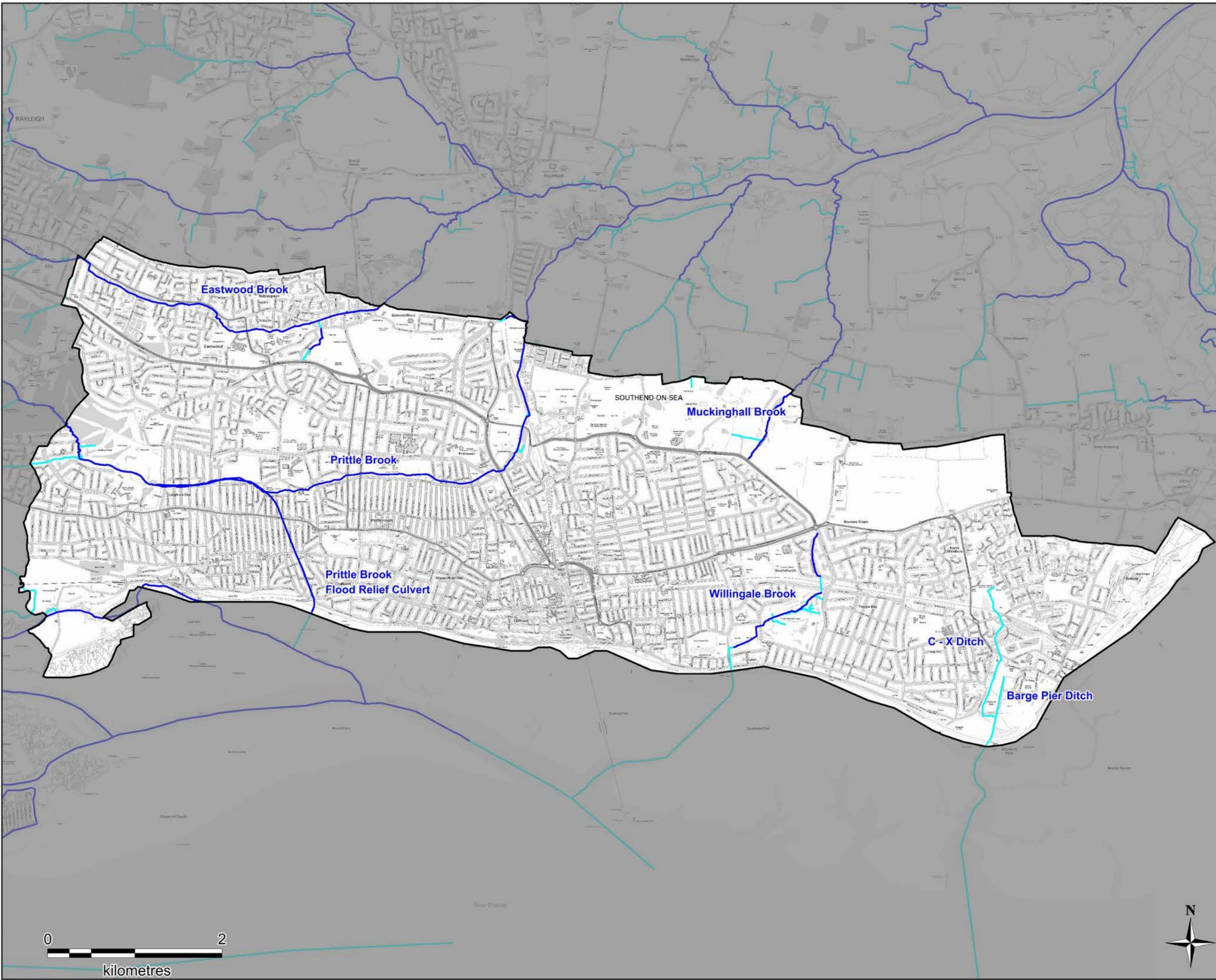
Drawing Number <b>Figure A4f</b>	Rev <b>3</b>
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**Legend**

-  Southend-on-Sea Borough Boundary
- Watercourses**
-  Main Rivers
-  Ordinary Watercourse



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Project Title  
**SOUTHEND-ON-SEA SURFACE WATER MANAGEMENT PLAN**

Drawing Title  
**ORDINARY WATERCOURSES AND MAIN RIVERS**

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AECOM Internal Project No. 47071307		Scale at A3 1:40,000	

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Drawing Number <b>Figure A5</b>	Rev <b>2</b>
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**Legend**

- Southend-on-Sea Borough Boundary
- Critical Drainage Area

Surface Water Flood Depth (1% AEP)

- High (>900mm)
- Medium (300-900mm)
- Low (<300mm)

**Notes**

1. This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
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3. Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead. This type of flooding can be difficult to predict as it is hard to forecast exactly where or how much rain will fall in any storm.

**Intended Use**

This map is intended to provide a strategic overview of surface water flood risk. It is not suitable for assessing flood risk for individual properties.

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**Purpose of Issue** FINAL

**Client**

**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA1: EASTWOODBURY  
SURFACE WATER DEPTH  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:15,000	

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**Figure A6a** Rev 3

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# RAYLEIGH

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### Legend

-  Southend-on-Sea Borough Boundary
  -  Critical Drainage Area
- Surface Water Flood Hazard (1% AEP)
-  Extreme (>2.0) (Danger for all)
  -  Significant (1.25-2.0) (Danger for most)
  -  Moderate (0.75-1.25) (Danger for some)
  -  Caution (<0.75) (Very low hazard)

### Notes

1. This drawing has been based on the Environment Agency Updated Flood Map for Surface Water (uFMSW).
2. Flood Hazard has been defined based on the joint Environment Agency and Defra R & D Technical Report FD2321 (March 2006).
3. Degree of Flood Hazard can be interpreted as follows:
  - Caution: Flooding with shallow flowing water or deep standing water.
  - Moderate: Flooding with deep or fast flowing water.
  - Significant: Flooding with deep fast flowing water. Dangerous for most people.
  - Extreme: Flooding with deep fast flowing water. Dangerous for all (including the emergency services).

### Intended Use

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### Purpose of Issue

FINAL

### Client



### Project Title

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

### Drawing Title

CDA1: EASTWOODBURY  
FLOOD HAZARD  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
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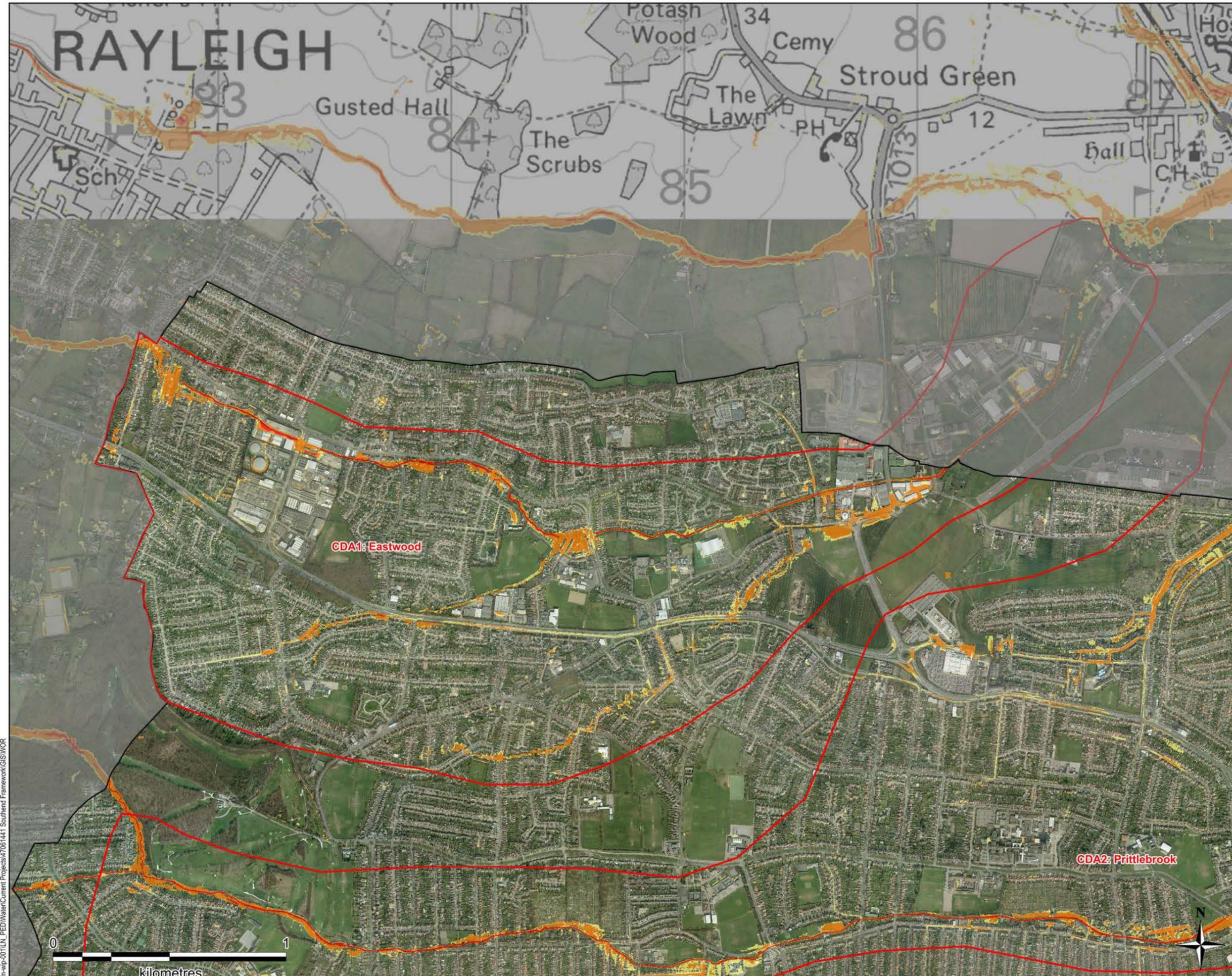
AECOM Internal Project No. 47071307	Scale at A3 1:15,000
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Drawing Number <b>Figure A6b</b>	Rev <b>3</b>
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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

Surface Water Flood Depth (1% AEP)

-  High (>900mm)
-  Medium (300-900mm)
-  Low (<300mm)

**Notes**

- This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
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**Intended Use**

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**Purpose of Issue** FINAL

**Client**



**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA2: PRITTLEBROOK  
SURFACE WATER DEPTH  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:17,500	

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Drawing Number <b>Figure A7a</b>	Rev <b>3</b>
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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

**Surface Water Flood Hazard (1% AEP)**

-  Extreme (>2.0) (Danger for all)
-  Significant (1.25-2.0) (Danger for most)
-  Moderate (0.75-1.25) (Danger for some)
-  Caution (<0.75) (Very low hazard)

**Notes**

- This drawing has been based on the Environment Agency Updated Flood Map for Surface Water (uFMSW).
- Flood Hazard has been defined based on the joint Environment Agency and Defra R & D Technical Report FD2321 (March 2006).
- Degree of Flood Hazard can be interpreted as follows:
  - Caution: Flooding with shallow flowing water or deep standing water.
  - Moderate: Flooding with deep or fast flowing water.
  - Significant: Flooding with deep fast flowing water. Dangerous for most people.
  - Extreme: Flooding with deep fast flowing water. Dangerous for all (including the emergency services).

**Intended Use**

This map is intended to provide a strategic overview of surface water flood hazard. It is not suitable for assessing flood hazard for individual properties.

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**Purpose of Issue** FINAL

**Client** 

**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA2: PRITTLEBROOK  
FLOOD HAZARD  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:17,500	

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Drawing Number <b>Figure A7b</b>	Rev <b>3</b>
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**Legend**

- Southend-on-Sea Borough Boundary
- Critical Drainage Area

Surface Water Flood Depth (1% AEP)

- High (>900mm)
- Medium (300-900mm)
- Low (<300mm)

**Notes**

- This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
- The potential impact of surface water flooding can vary according to the depth of the water, and its velocity (speed and direction that it is flowing in).
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**Intended Use**

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**Purpose of Issue**

FINAL

**Client**

**Project Title**

SOUTHEND-ON-SEA SURFACE WATER MANAGEMENT PLAN

**Drawing Title**

CDA3: TEMPLE SUTTON SURFACE WATER DEPTH (1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:10,000	

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**Drawing Number**

Figure A8a

**Rev**

3

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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

**Surface Water Flood Hazard (1% AEP)**

-  Extreme (>2.0) (Danger for all)
-  Significant (1.25-2.0) (Danger for most)
-  Moderate (0.75-1.25) (Danger for some)
-  Caution (<0.75) (Very low hazard)

**Notes**

- This drawing has been based on the Environment Agency Updated Flood Map for Surface Water (uFMSW).
- Flood Hazard has been defined based on the joint Environment Agency and Defra R & D Technical Report FD2321 (March 2006).
- Degree of Flood Hazard can be interpreted as follows:
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**Purpose of Issue** FINAL

**Client**



**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA3: TEMPLE SUTTON  
FLOOD HAZARD  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:10,000	

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**Figure A8b**



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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

Surface Water Flood Depth (1% AEP)

-  High (>900mm)
-  Medium (300-900mm)
-  Low (<300mm)

**Notes**

1. This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).
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**Purpose of Issue** FINAL

**Client**



**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA4: SOUTHCHURCH  
SURFACE WATER DEPTH  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:12,000	

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**Figure A9a** Rev  
**3**



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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

**Surface Water Flood Hazard (1% AEP)**

-  Extreme (>2.0) (Danger for all)
-  Significant (1.25-2.0) (Danger for most)
-  Moderate (0.75-1.25) (Danger for some)
-  Caution (<0.75) (Very low hazard)

**Notes**

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  - Significant: Flooding with deep fast flowing water. Dangerous for most people.
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**Purpose of Issue** FINAL



**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA4: SOUTHCHURCH  
FLOOD HAZARD  
(1% AEP)

Drawn EB	Checked EG	Approved EG	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:12,000	

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**Drawing Number** Figure A9b **Rev** 3



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<b>Legend</b>	
	Southend-on-Sea Borough Boundary
	Critical Drainage Area
<b>Surface Water Flood Depth (1% AEP)</b>	
	High (>900mm)
	Medium (300-900mm)
	Low (<300mm)

**Notes**

1. This map shows the predicted likelihood of surface water flooding based on the updated Flood Map for Surface Water (uFMSW) data, which may be subject to further analysis in the future. Further information on the mapping is provided on the Environment Agency website: [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency).

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Drawing Status: **FINAL**

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Job Title



**SOUTHEND-ON-SEA SURFACE WATER MANAGEMENT PLAN**

Drawing Title

**CDA5: SHOEBURYNESS SURFACE WATER DEPTH (1% AEP)**

Scale at A3	1: 10,000	AECOM Internal Project No.	47071307
Drawn	EB	Checked	EG
Approved	JR	Date	Oct 2015
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Drawing Number: **Figure A10a** Rev: **3**





**Legend**

- Southend-on-Sea Borough Boundary
- Critical Drainage Area

**Surface Water Flood Hazard (1% AEP)**

- Extreme (>2.0) (Danger for all)
- Significant (1.25-2.0) (Danger for most)
- Moderate (0.75-1.25) (Danger for some)
- Caution (<0.75) (Very low hazard)

**Notes**

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  - Moderate: Flooding with deep or fast flowing water.
  - Significant: Flooding with deep fast flowing water. Dangerous for most people.
  - Extreme: Flooding with deep fast flowing water. Dangerous for all (including the emergency services).

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Drawing Status: **FINAL**

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Job Title

**SOUTHEND-ON-SEA SURFACE WATER MANAGEMENT PLAN**

Drawing Title

**CDA5: SHOEBURYNESS FLOOD HAZARD (1% AEP)**

Scale at A3	1: 10,000	AECOM Internal Project No.	47071307
Drawn	EB	Checked	EG
Approved	JR	Date	Oct 2015

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Drawing Number: **Figure A10b** Rev: **3**



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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

Surface Water Flood Depth (1% AEP)

-  High (>900mm)
-  Medium (300-900mm)
-  Low (<300mm)

**Notes**

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**Purpose of Issue** FINAL

**Client**



**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA6: CHALKWELL  
SURFACE WATER DEPTH  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
AECOM Internal Project No. 47071307		Scale at A3 1:12,000	

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**Drawing Number** Figure A11a **Rev** 3



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**Legend**

-  Southend-on-Sea Borough Boundary
-  Critical Drainage Area

**Surface Water Flood Hazard (1% AEP)**

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-  Significant (1.25-2.0) (Danger for most)
-  Moderate (0.75-1.25) (Danger for some)
-  Caution (<0.75) (Very low hazard)

**Notes**

1. This drawing has been based on the Environment Agency Updated Flood Map for Surface Water (uFMSW).
2. Flood Hazard has been defined based on the joint Environment Agency and Defra R & D Technical Report FD2321 (March 2006).
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  - Moderate: Flooding with deep or fast flowing water.
  - Significant: Flooding with deep fast flowing water. Dangerous for most people.
  - Extreme: Flooding with deep fast flowing water. Dangerous for all (including the emergency services).

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**Purpose of Issue**

FINAL

**Client**



**Project Title**

SOUTHEND-ON-SEA  
SURFACE WATER  
MANAGEMENT PLAN

**Drawing Title**

CDA6: CHALKWELL  
FLOOD HAZARD  
(1% AEP)

Drawn EB	Checked EG	Approved JR	Date Oct 2015
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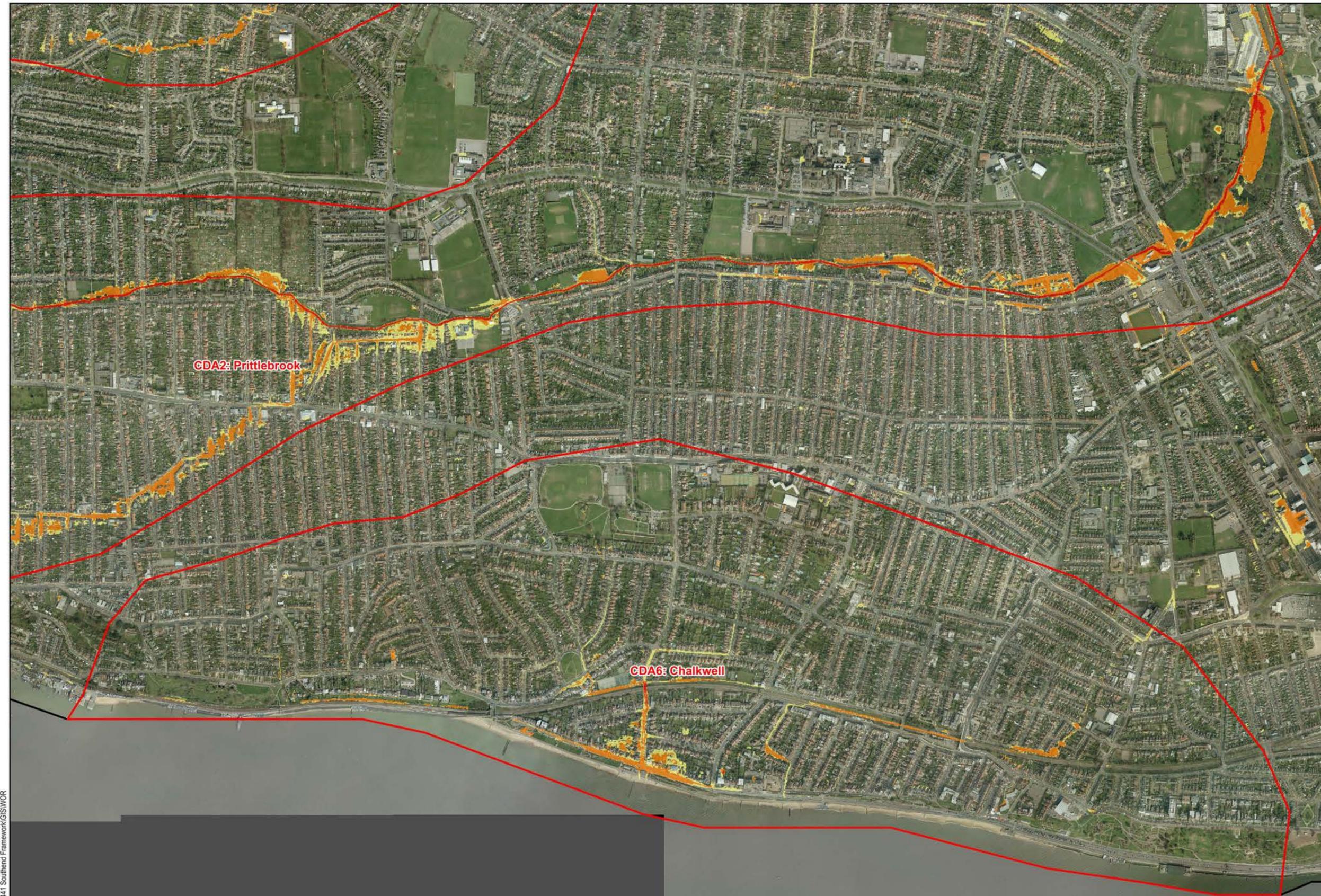
AECOM Internal Project No. 47071307 Scale at A3 1:12,000

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Drawing Number <b>Figure A11b</b>	Rev <b>3</b>
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CDA2: Prittlebrook

CDA6: Chalkwell



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