

## Appendix B: Depth Mapping

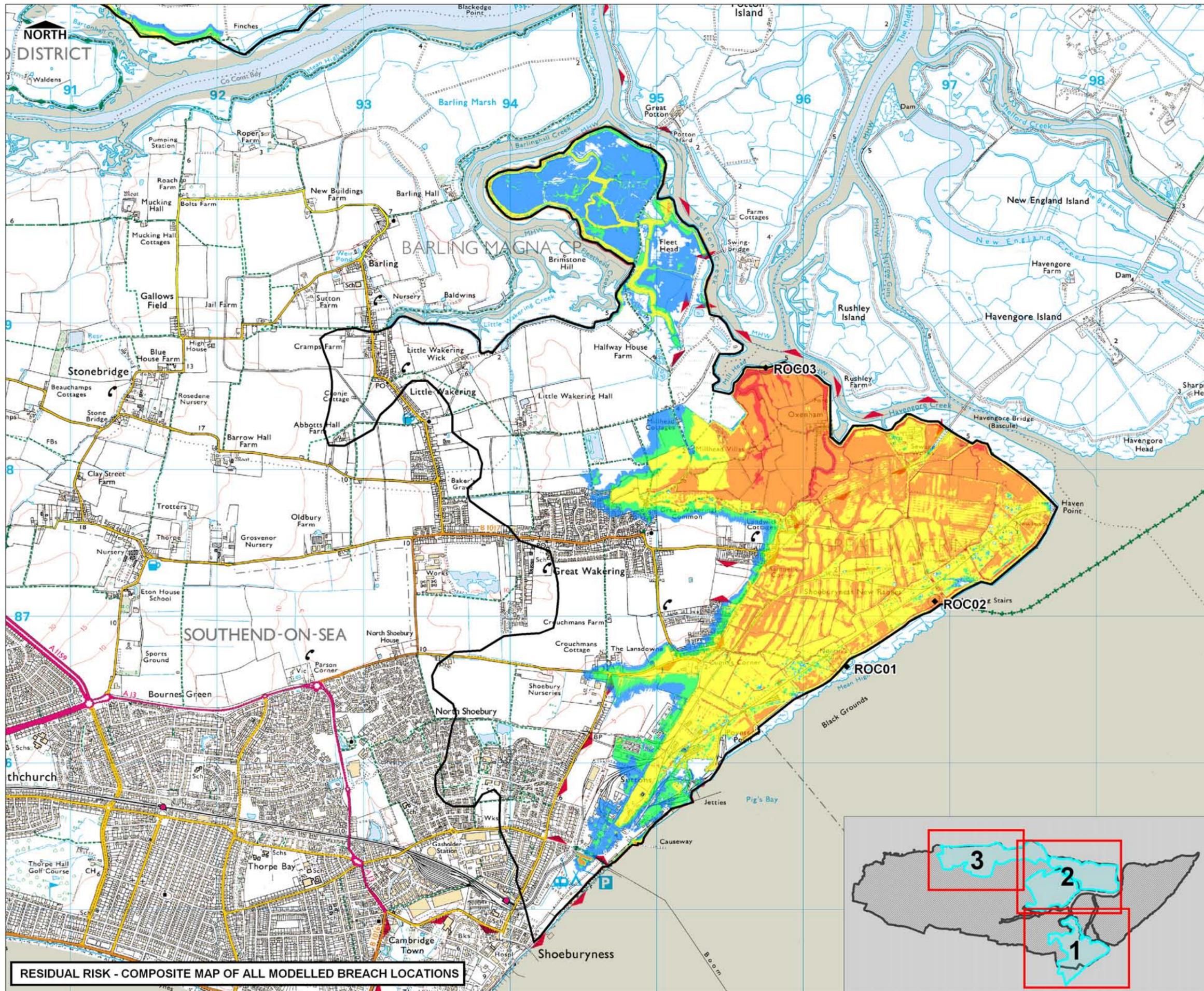
### **Residual Risk – Composite of Breach Results and Overtopping**

*(Composite Results for all breaches; ROC01, ROC02, ROC03, ROC04, ROC05, ROC06, ROC07)*

- B1 (View 1-3)** Maximum Flood Depth from Breaches & Overtopping (1 in 0200yr event, 2010)
- B2 (View 1-3)** Maximum Flood Depth from Breaches & Overtopping (1 in 1000yr event, 2010)
- B3 (View 1-3)** Maximum Flood Depth from Breaches & Overtopping (1 in 0200yr event, 2110 incl. CC)
- B4 (View 1-3)** Maximum Flood Depth from Breaches & Overtopping (1 in 1000yr event, 2110 incl. CC)

### **Potential Impact of Overtopping of Defences**

- B5 (View 1-3)** Maximum Flood Depth from Overtopping (1 in 0200yr event, 2110 incl. CC)
- B6 (View 1-3)** Maximum Flood Depth from Overtopping (1 in 1000yr event, 2110 incl. CC)



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
- 2.0m to 3.0m
- 3.0m to 5.0m and greater

**TECHNICAL NOTE**

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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH 0200YR (2010)**

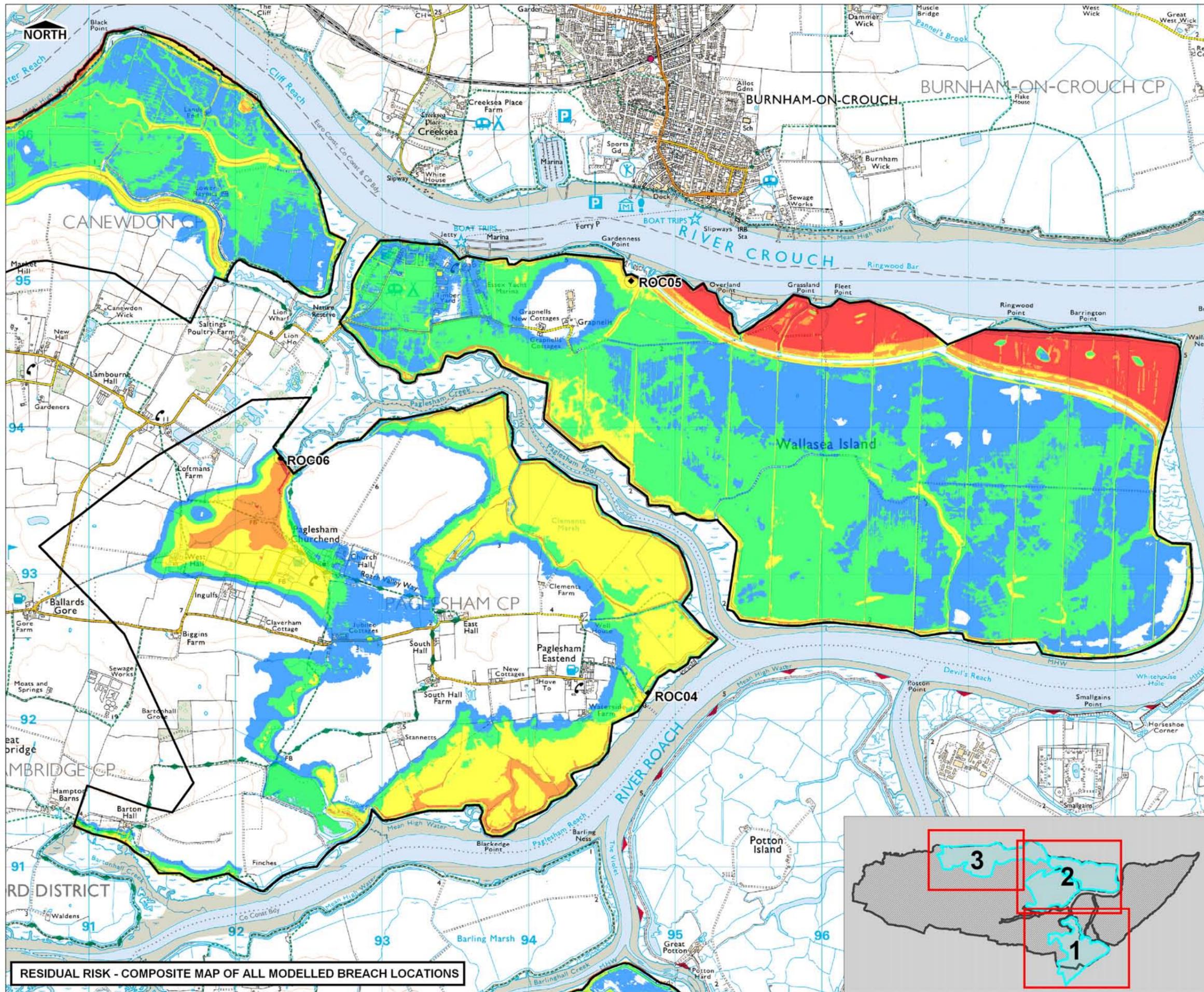
ALL BREACHES (ROC01-ROC07) & OVERTOPPING



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DRAWING NUMBER  
**FIGURE B-1 (View 1)**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
- 2.0m to 3.0m
- 3.0m to 5.0m and greater

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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH 0200YR (2010)**

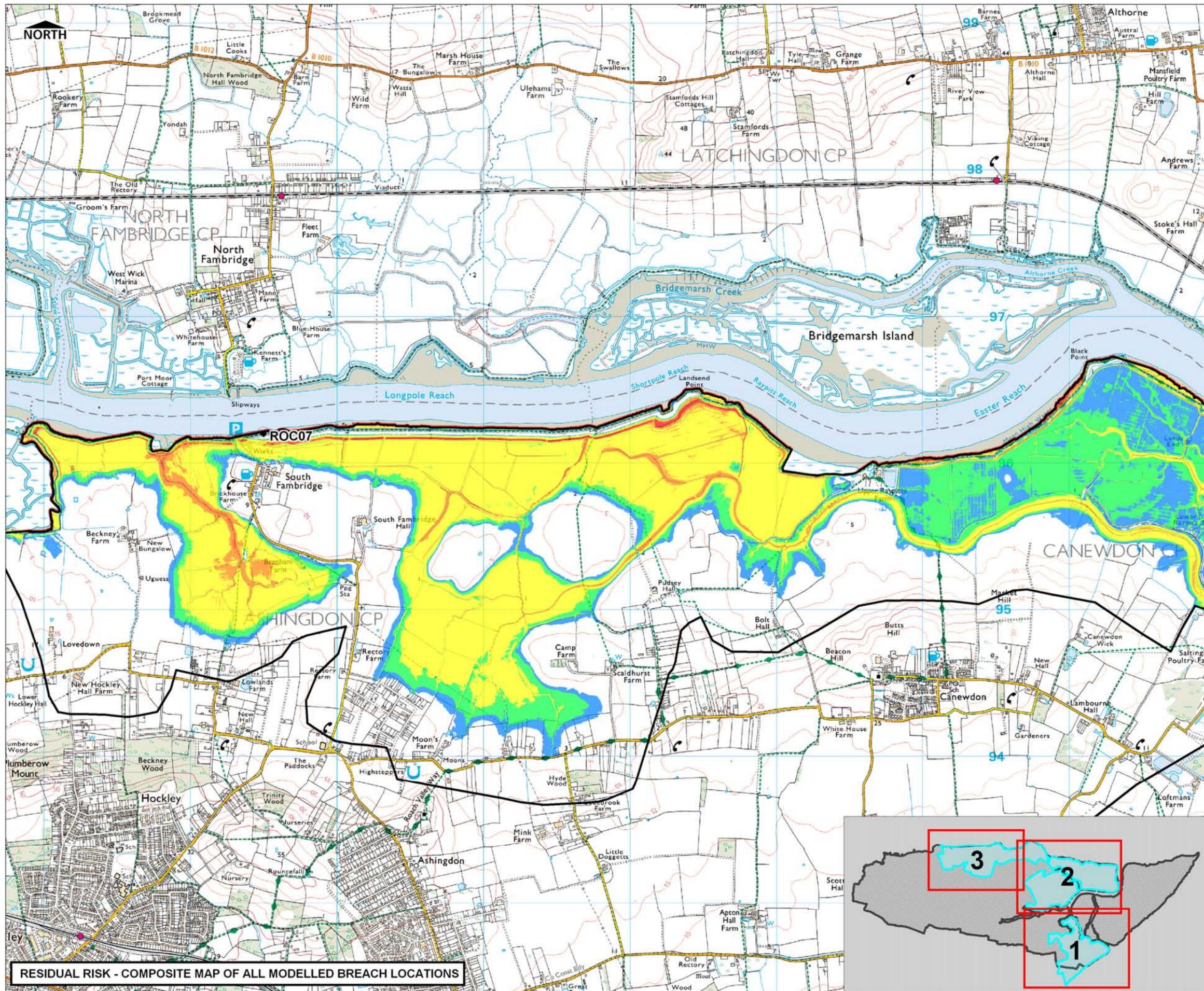
ALL BREACHES (ROC01-ROC07) & OVERTOPPING



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DRAWING NUMBER  
**FIGURE B-1 (View 2)**

**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
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**THAMES GATEWAY SOUTH ESSEX  
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH  
0200YR (2010)**

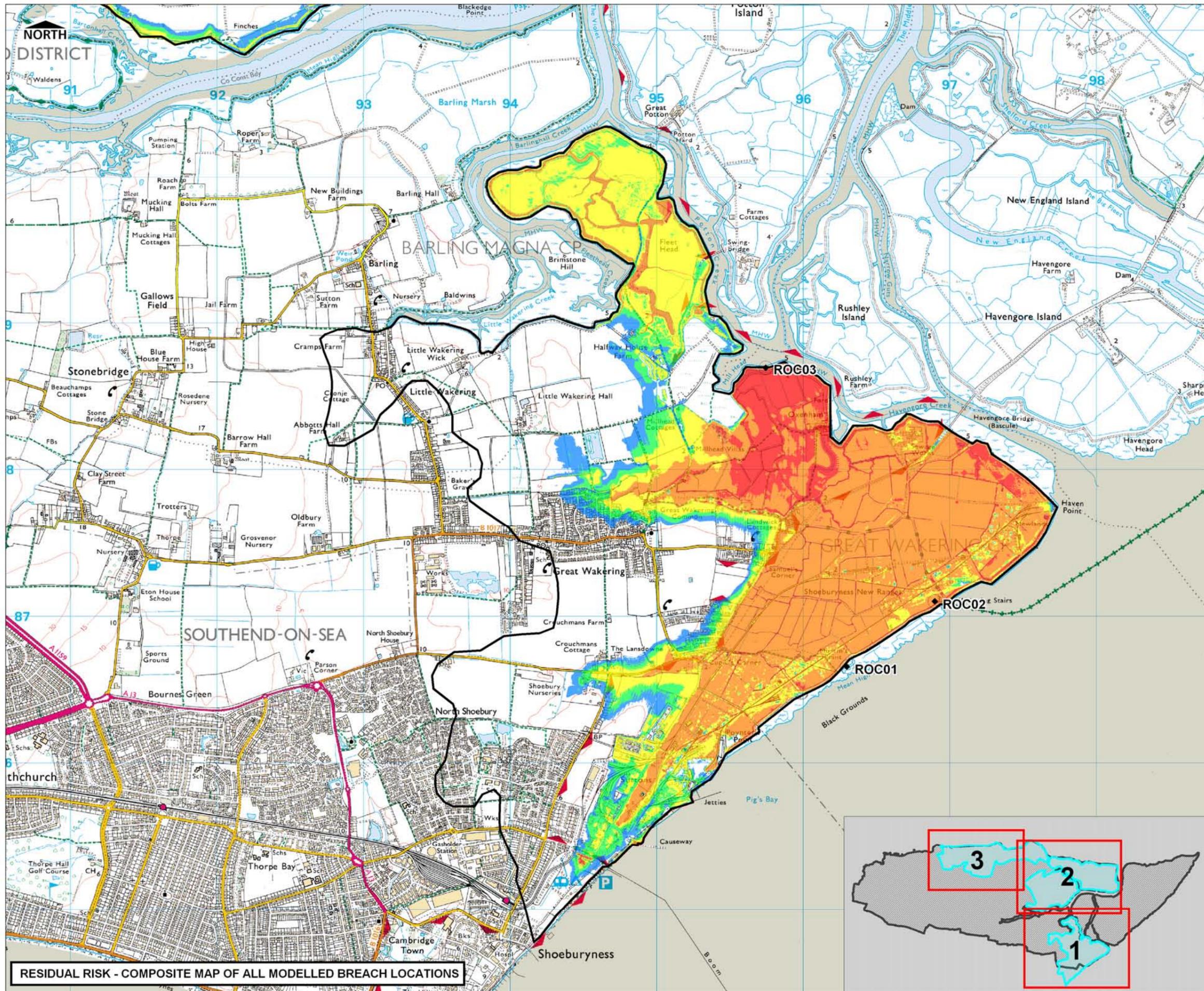
*ALL BREACHES (ROC01-ROC07) & OVERTOPPING*

Basildon Council      castlepoint      Rochford District Council

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DRAWING NUMBER  
**FIGURE B-1 (View 3)**

**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

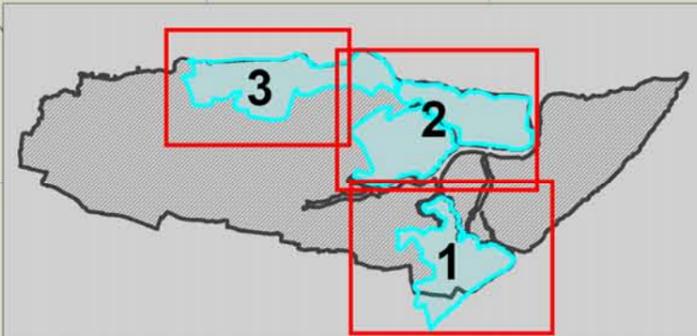
**COMPOSITE MAXIMUM FLOOD DEPTH 1000YR (2010)**

ALL BREACHES (ROC01-ROC07) & OVERTOPPING

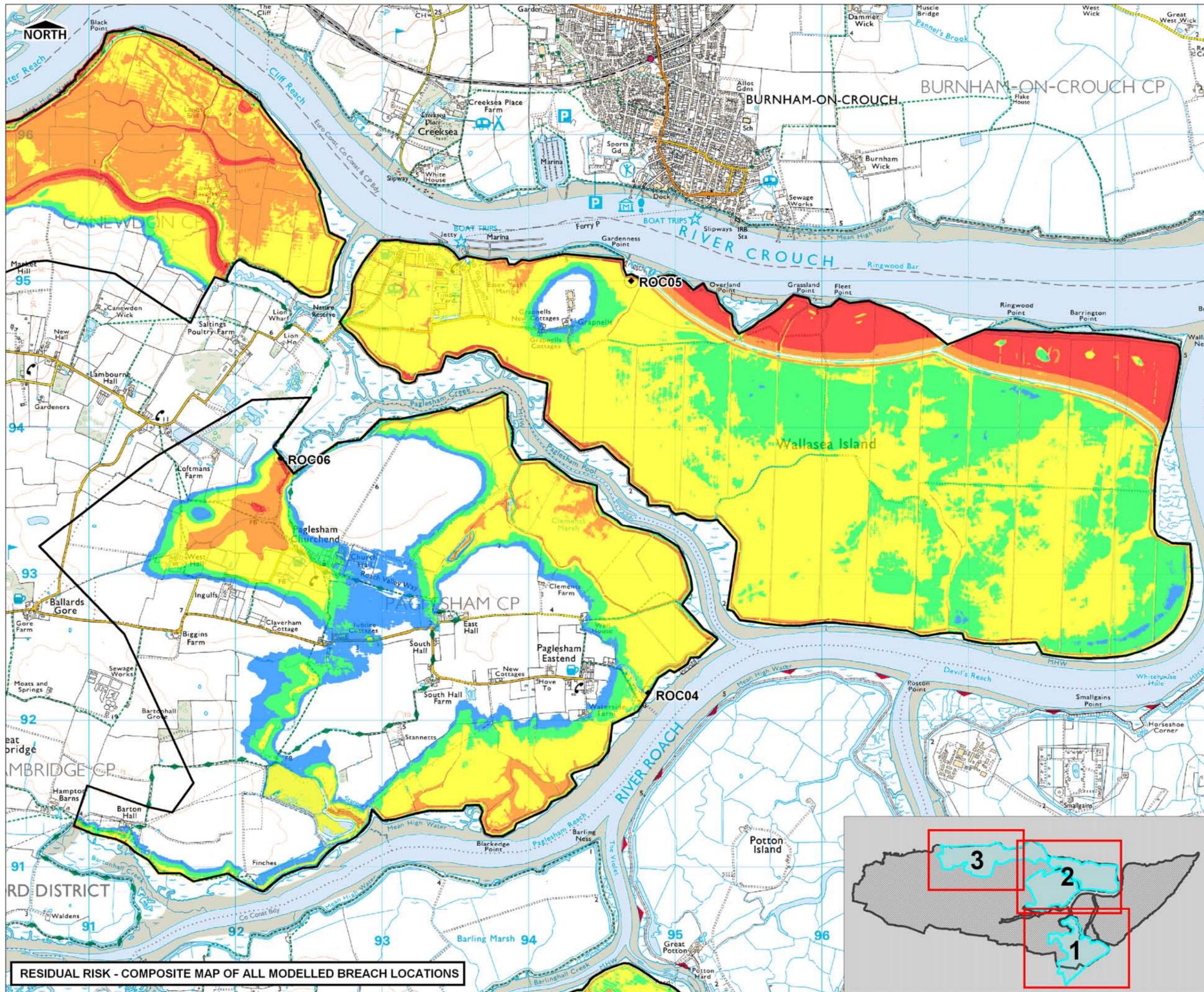


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**FIGURE B-2 (View 1)**



**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

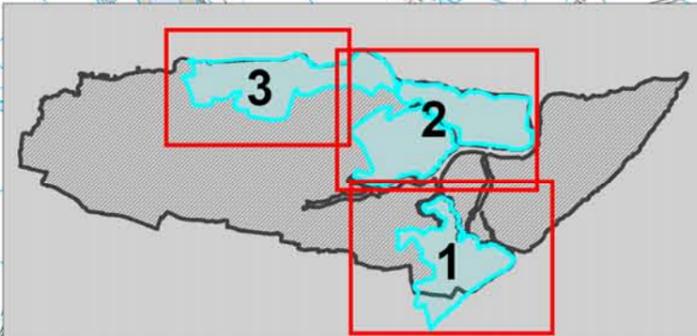
**COMPOSITE MAXIMUM FLOOD DEPTH 1000YR (2010)**

ALL BREACHES (ROC01-ROC07) & OVERTOPPING

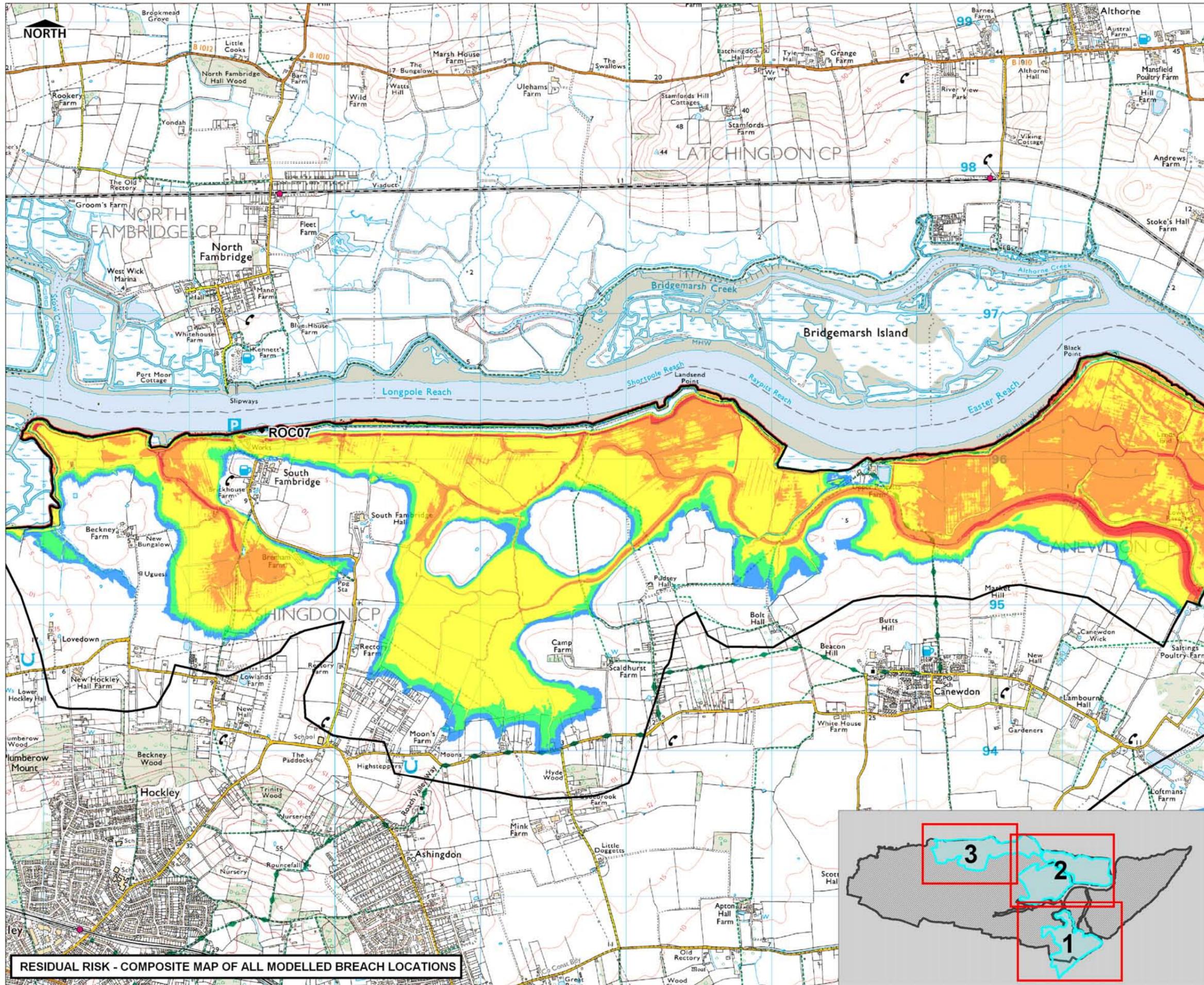


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**FIGURE B-2 (View 2)**



**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**



RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS

**KEY**  
 — Flood Cells      ◆ Breach Location

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THAMES GATEWAY SOUTH ESSEX  
 STRATEGIC FLOOD RISK ASSESSMENT

COMPOSITE MAXIMUM FLOOD DEPTH  
 1000YR (2010)

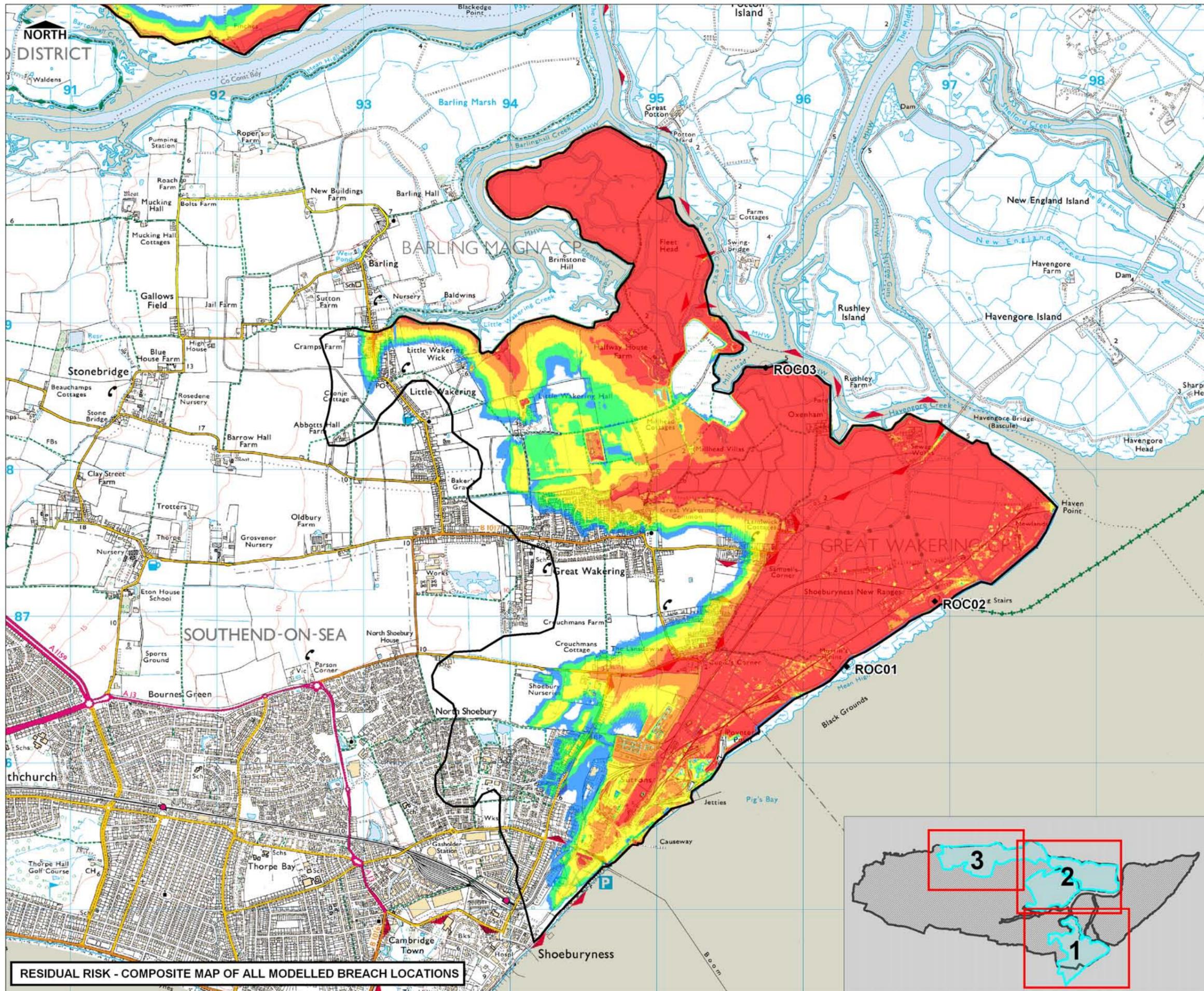
ALL BREACHES (ROC01-ROC07) & OVERTOPPING



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DRAWING NUMBER  
**FIGURE B-2 (View 3)**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH 0200YR (2110)**

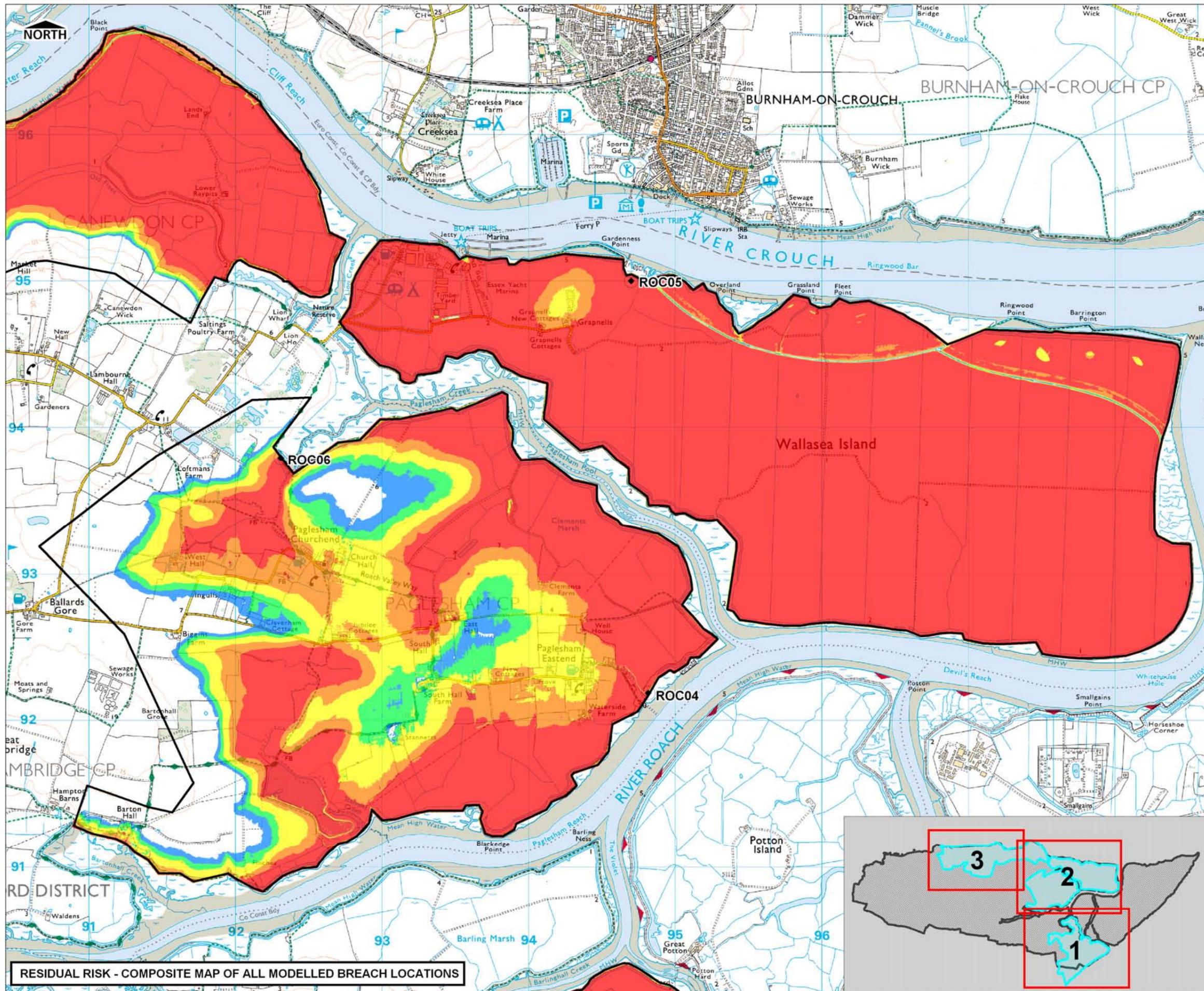
ALL BREACHES (ROC01-ROC07) & OVERTOPPING



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DRAWING NUMBER

**FIGURE B-3 (View 1)**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
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**THAMES GATEWAY SOUTH ESSEX  
STRATEGIC FLOOD RISK ASSESSMENT**

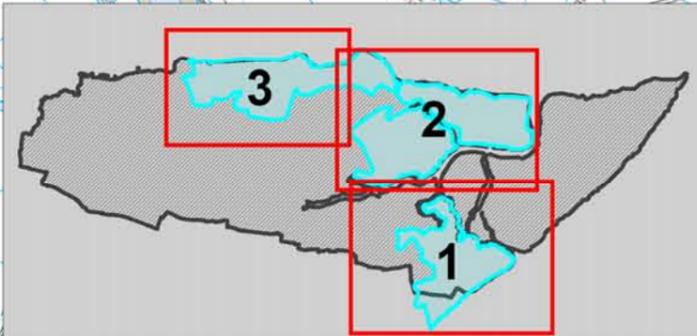
**COMPOSITE MAXIMUM FLOOD DEPTH  
0200YR (2110)**

**ALL BREACHES (ROC01-ROC07) & OVERTOPPING**

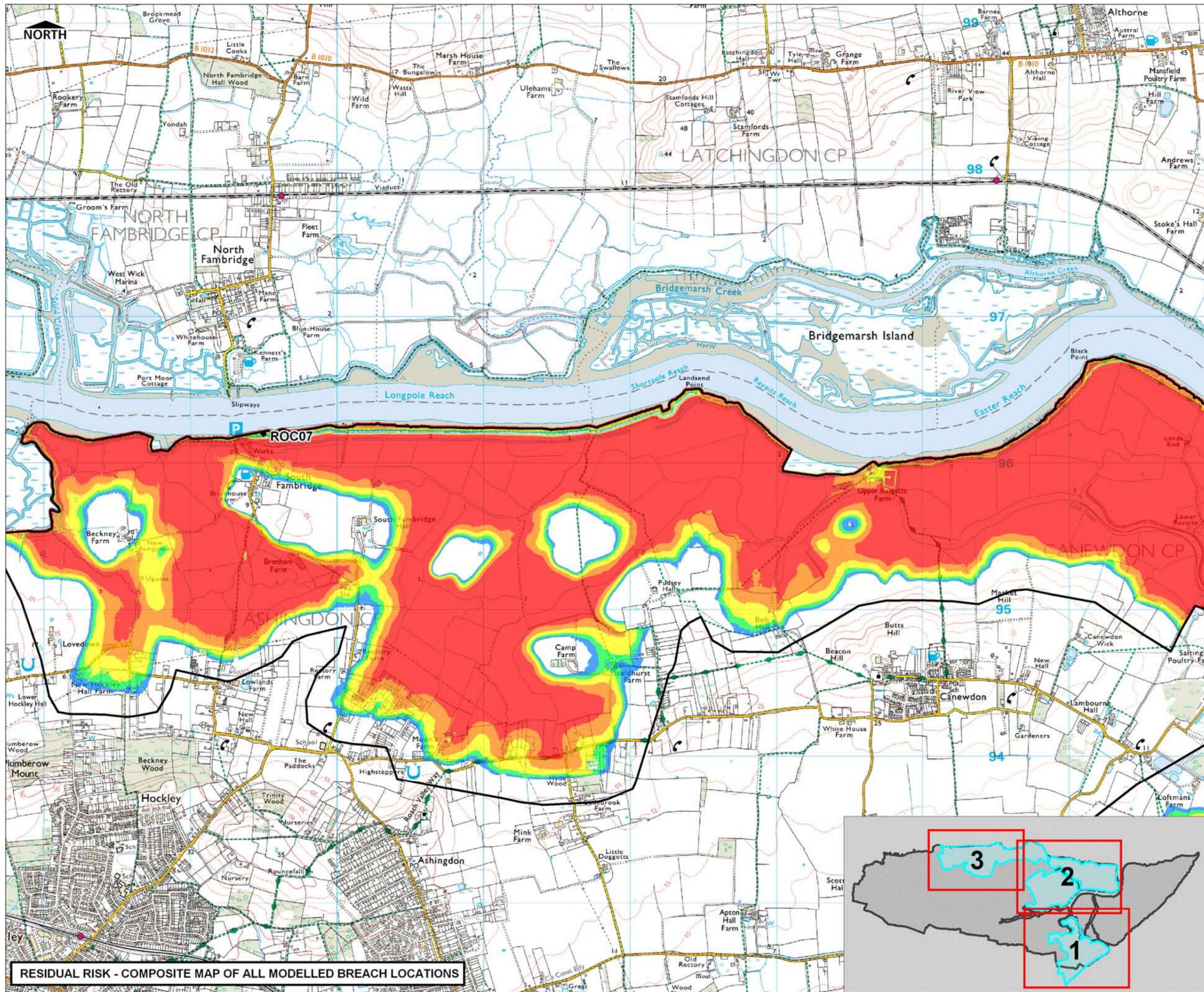
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**FIGURE B-3 (View 2)**



**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
- 2.0m to 3.0m
- 3.0m to 5.0m and greater

**TECHNICAL NOTE**

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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH 0200YR (2110)**

**ALL BREACHES (ROC01-ROC07) & OVERTOPPING**

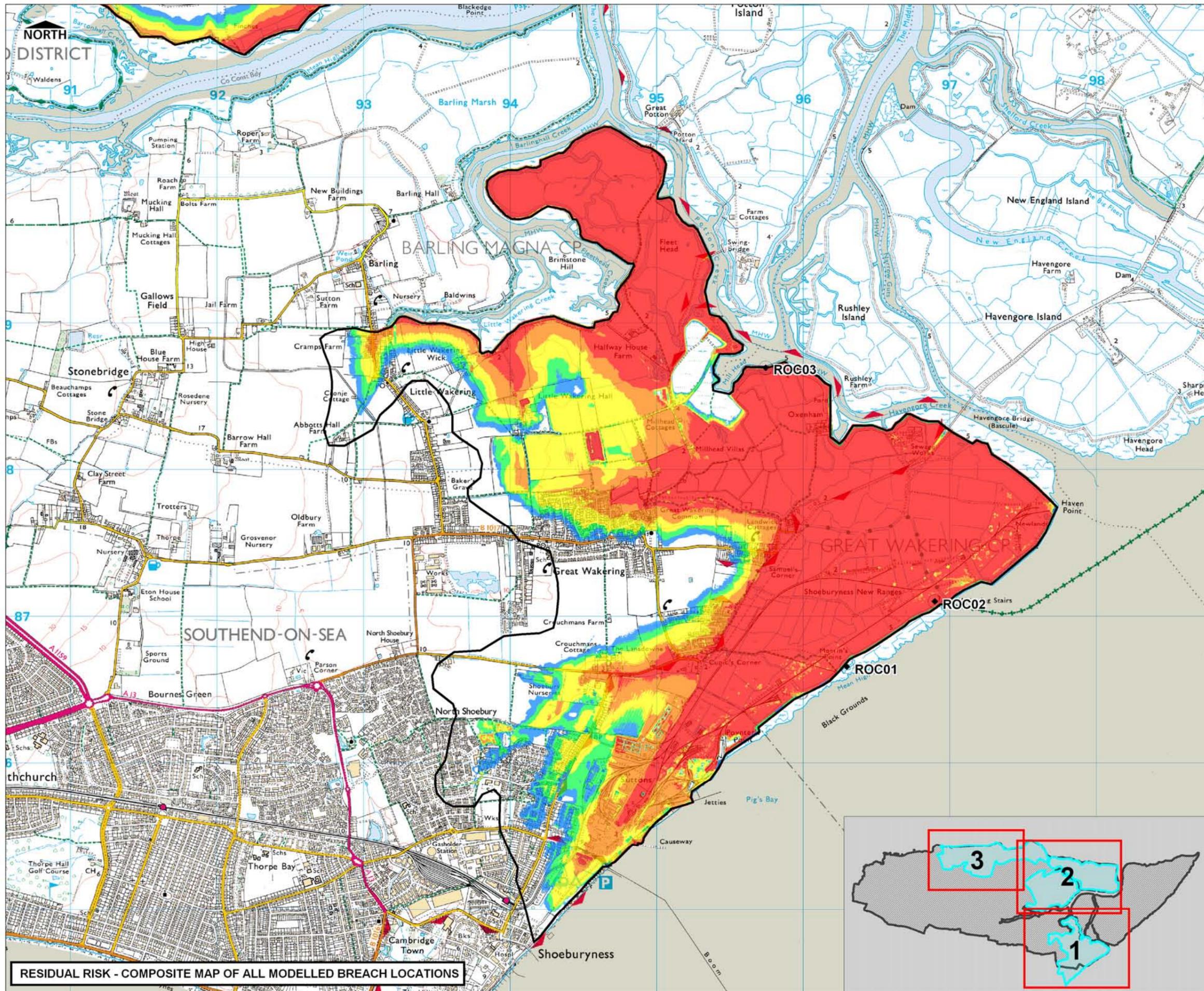
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DRAWING NUMBER

**FIGURE B-3 (View 3)**

**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH 1000YR (2110)**

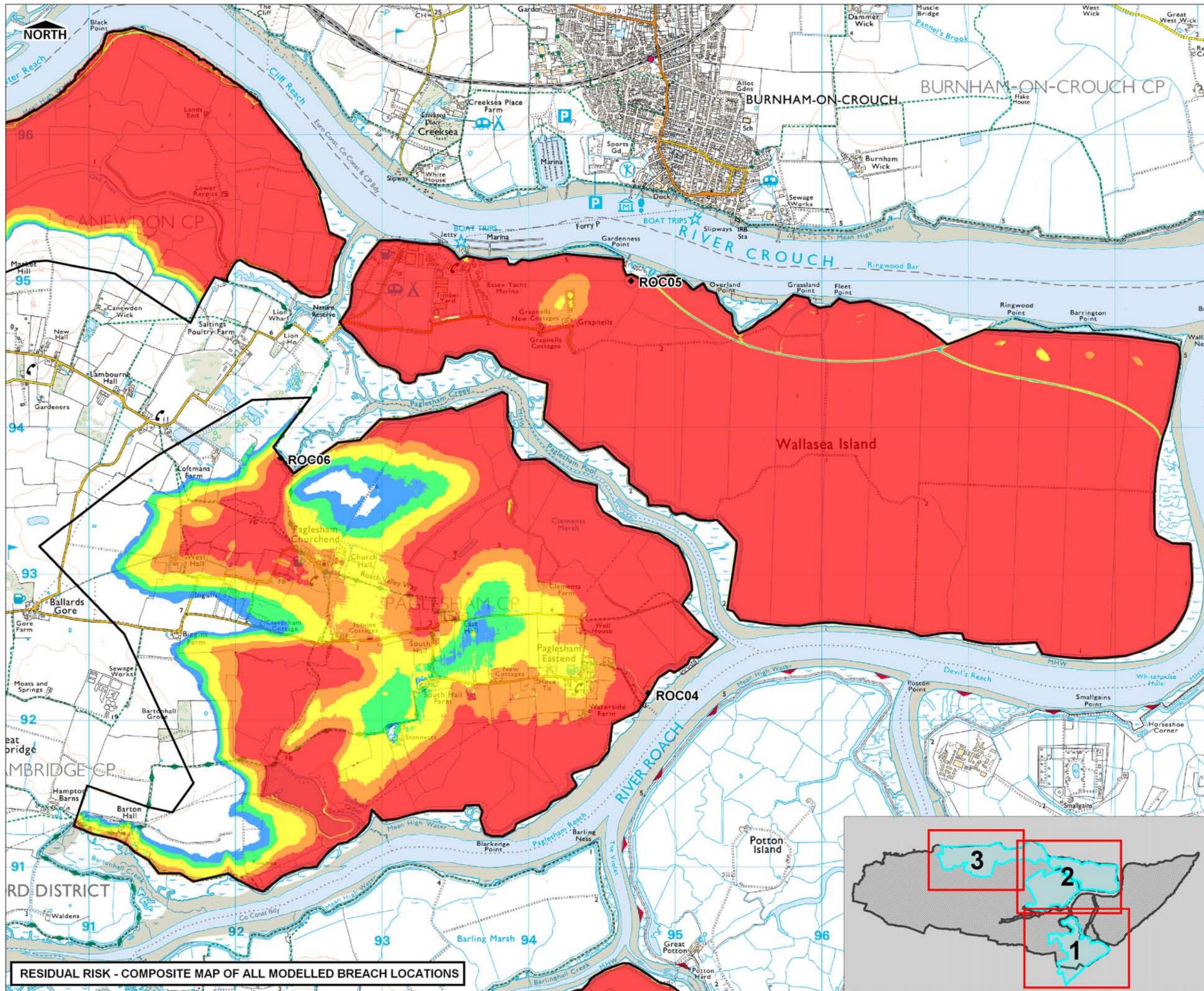
ALL BREACHES (ROC01-ROC07) & OVERTOPPING



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DRAWING NUMBER  
**FIGURE B-4 (View 1)**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

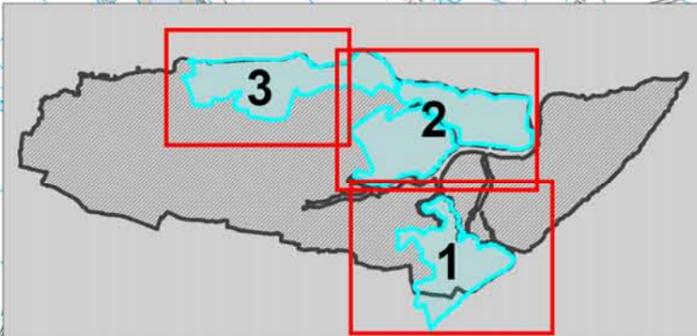
**COMPOSITE MAXIMUM FLOOD DEPTH 1000YR (2110)**

ALL BREACHES (ROC01-ROC07) & OVERTOPPING

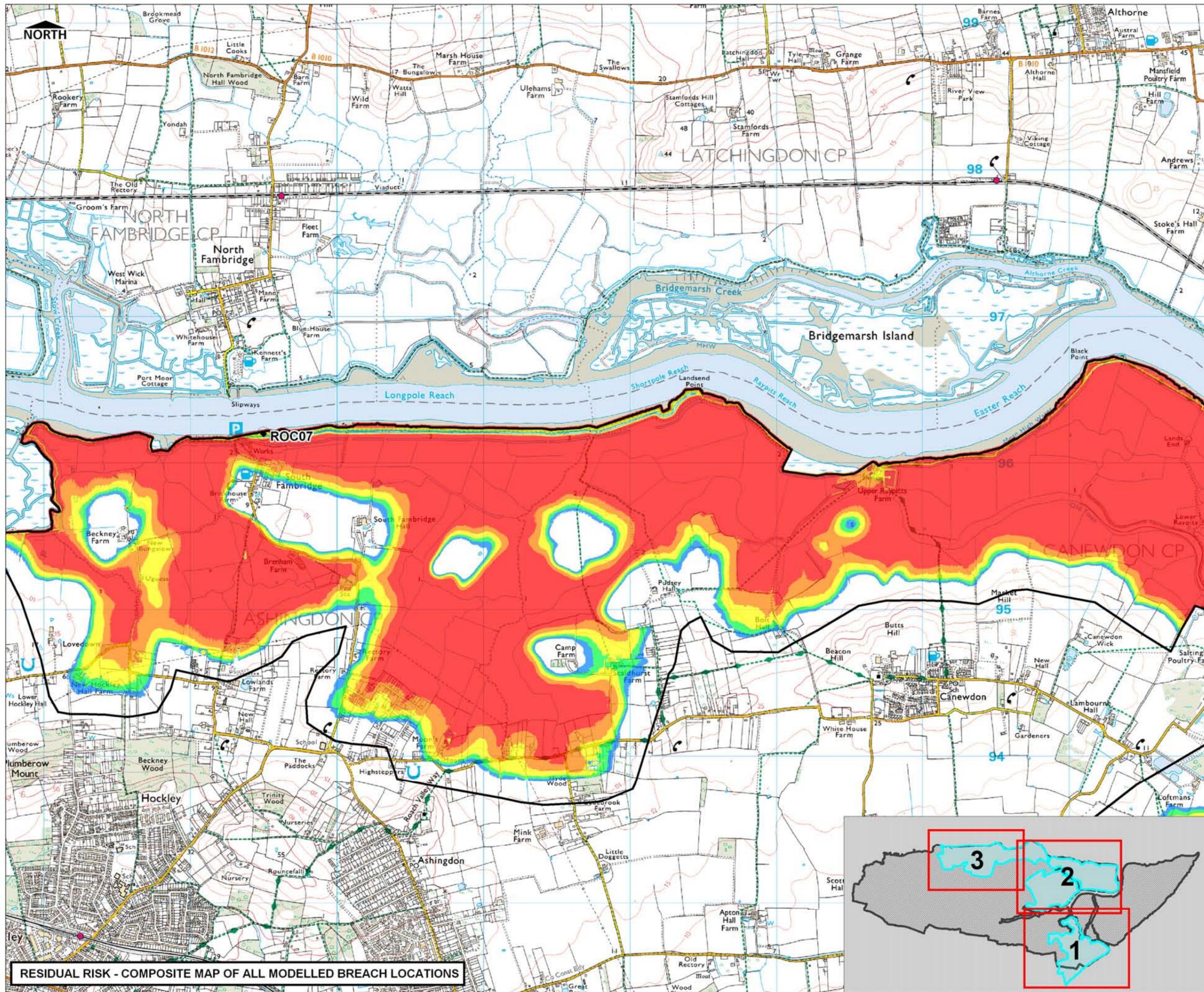


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**FIGURE B-4 (View 2)**



**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**



**KEY**

— Flood Cells      ◆ Breach Location

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
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- 1.0m to 2.0m
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**THAMES GATEWAY SOUTH ESSEX  
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH  
1000YR (2110)**

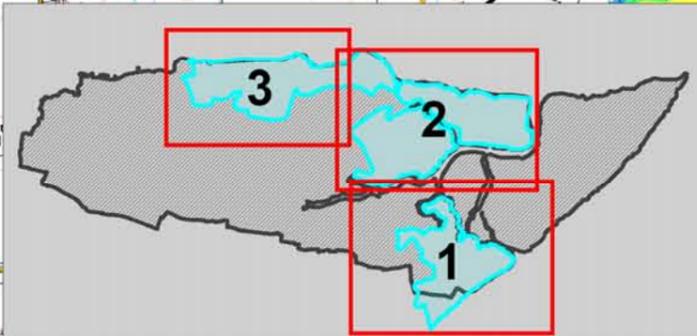
**ALL BREACHES (ROC01-ROC07) & OVERTOPPING**

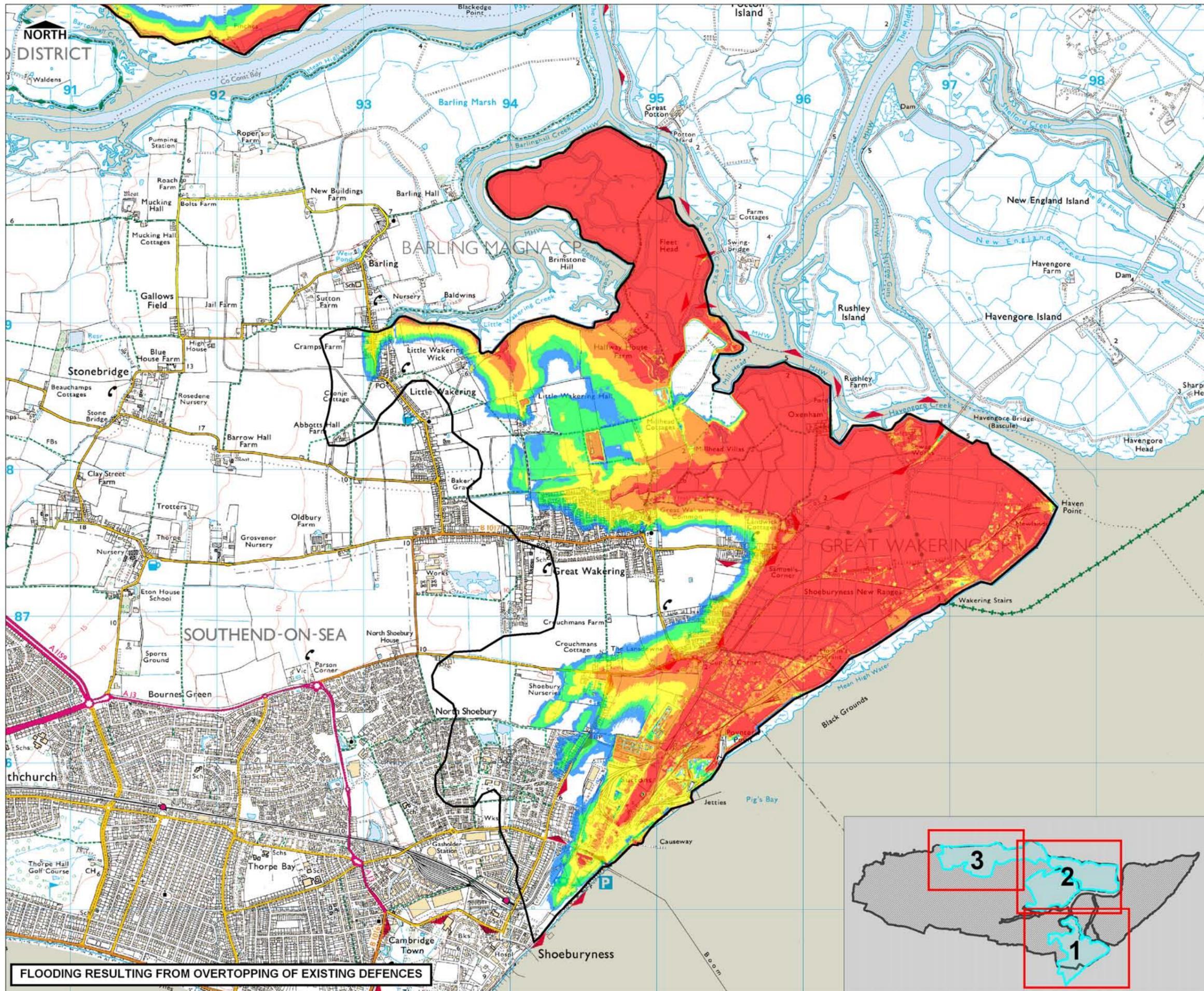
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DRAWING NUMBER  
**FIGURE B-4 (View 3)**

**RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS**





**KEY**

- Flood Cells
- Maximum Flood Depth [m]**
- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
- 2.0m to 3.0m
- 3.0m to 5.0m and greater

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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

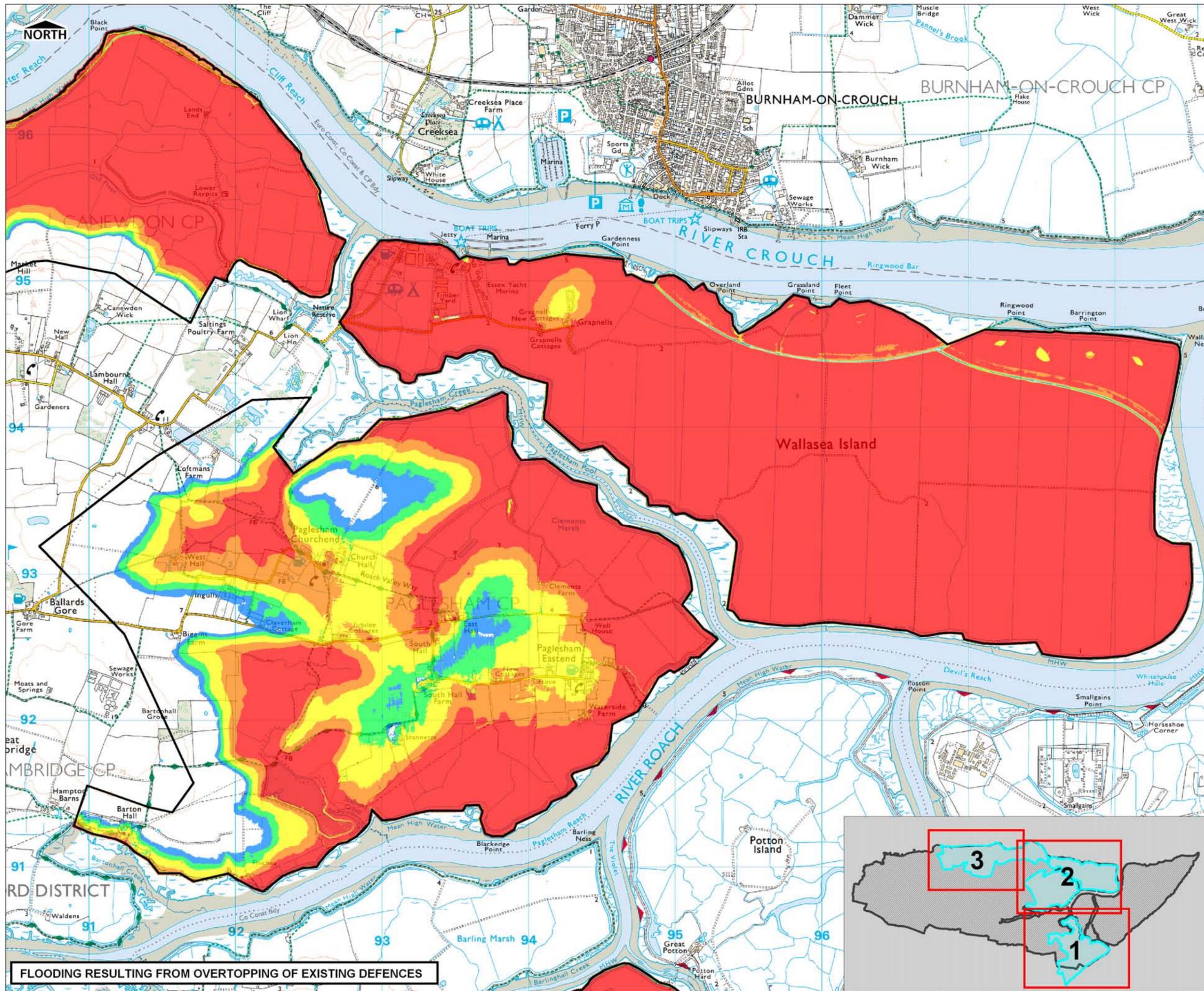
**COMPOSITE MAXIMUM FLOOD DEPTH 0200YR (2110) OVERTOPPING**



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DRAWING NUMBER  
**FIGURE B-5 (View 1)**



**KEY**

— Flood Cells

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
- 2.0m to 3.0m
- 3.0m to 5.0m and greater

**TECHNICAL NOTE**

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**THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH 0200YR (2110) OVERTOPPING**



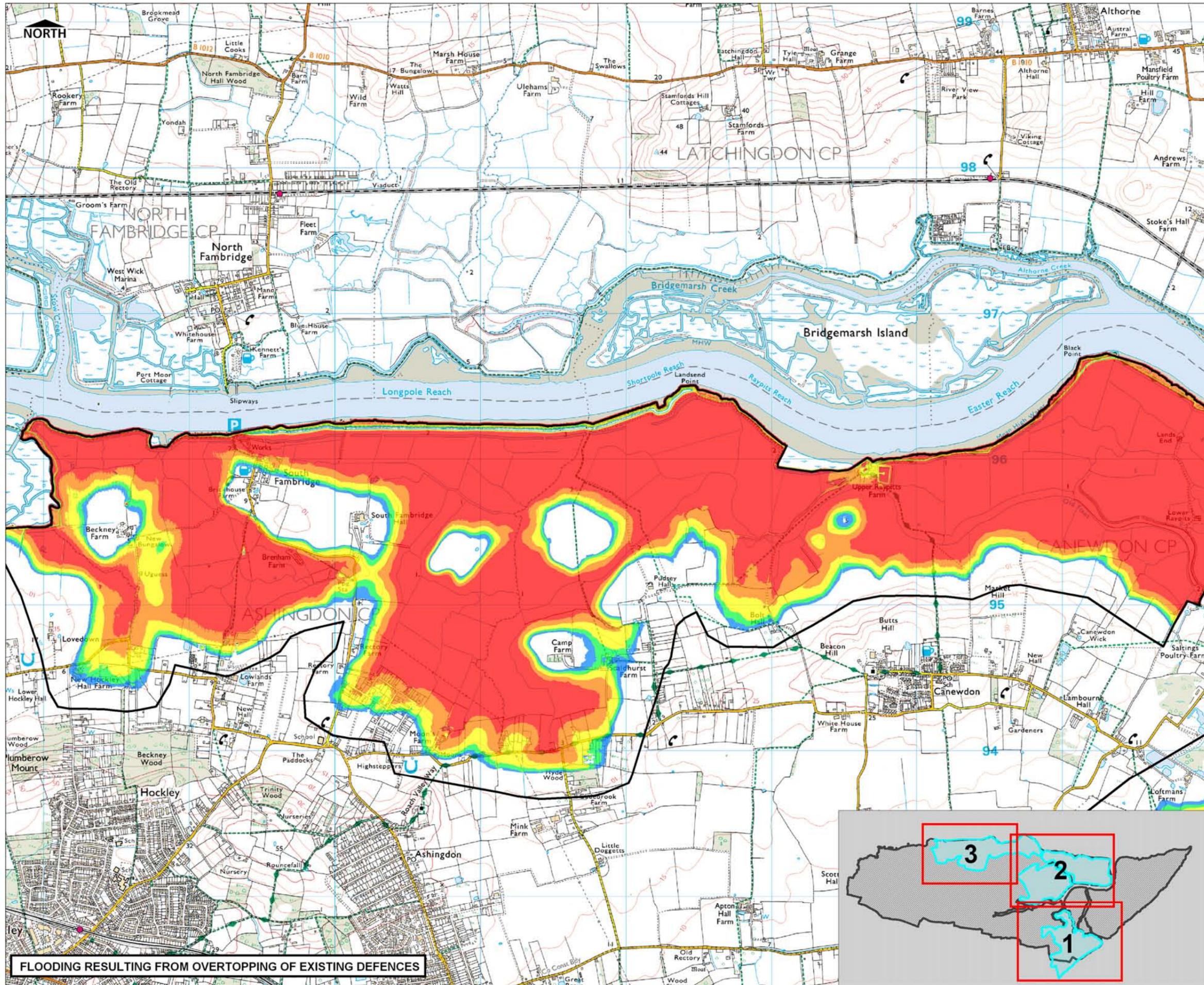
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**FIGURE B-5 (View 2)**

**FLOODING RESULTING FROM OVERTOPPING OF EXISTING DEFENCES**



**KEY**

— Flood Cells

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
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STRATEGIC FLOOD RISK ASSESSMENT**

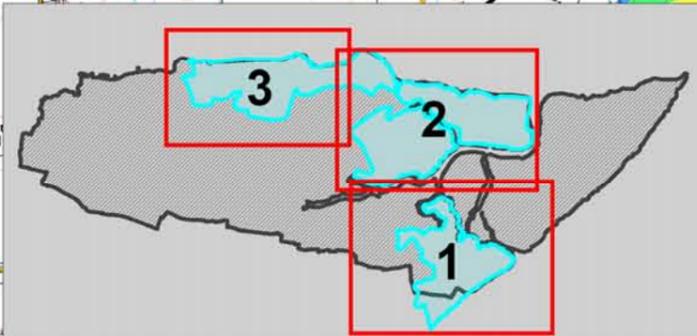
**COMPOSITE MAXIMUM FLOOD DEPTH  
0200YR (2110)  
OVERTOPPING**



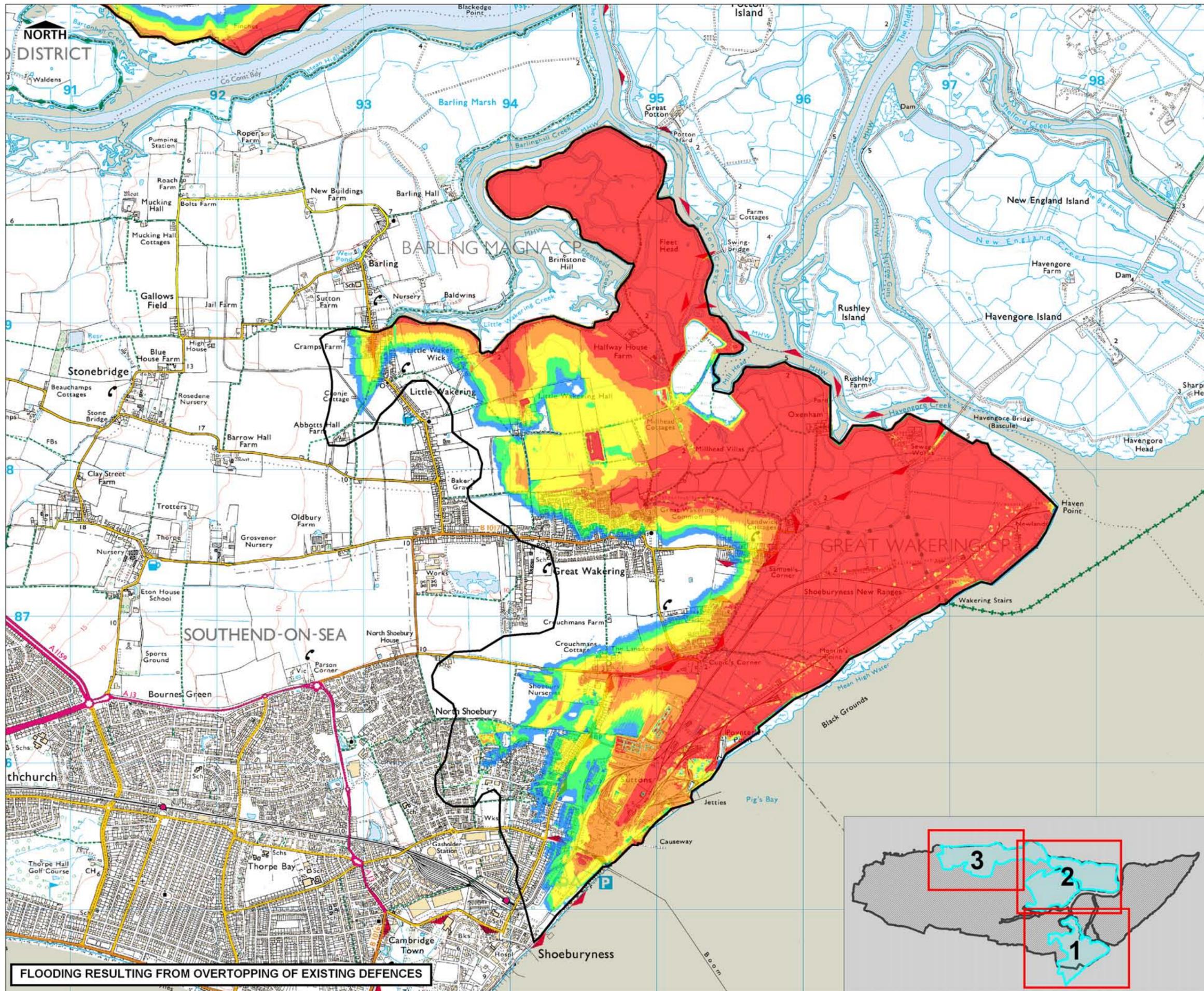
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DRAWING NUMBER  
**FIGURE B-5 (View 3)**



**FLOODING RESULTING FROM OVERTOPPING OF EXISTING DEFENCES**



**KEY**

— Flood Cells

**Maximum Flood Depth [m]**

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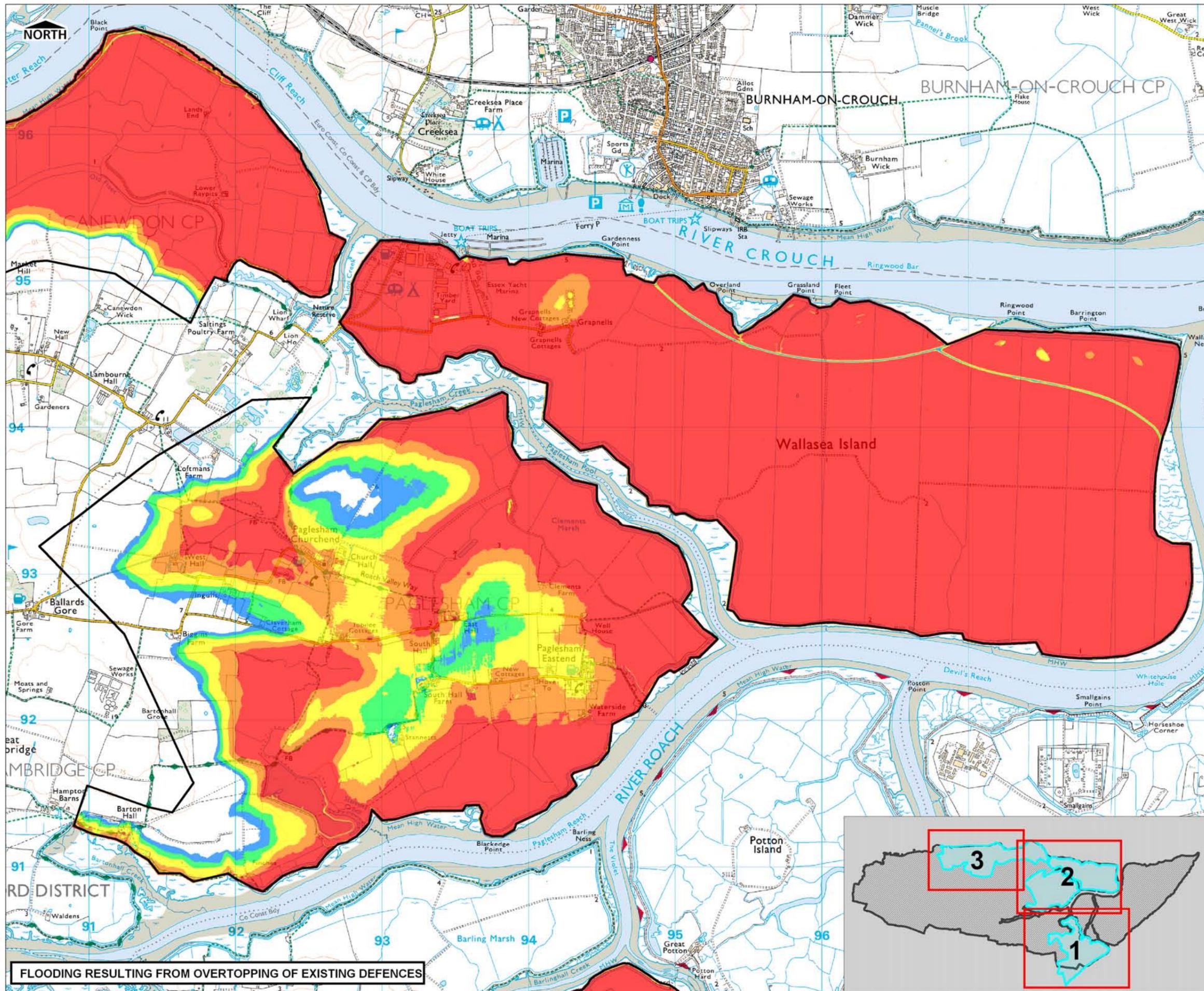
**THAMES GATEWAY SOUTH ESSEX  
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH  
1000YR (2110)  
OVERTOPPING**



Scott Wilson  
6-8 Greencoat Place  
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**DRAWING NUMBER  
FIGURE B-6 (View 1)**



**KEY**

— Flood Cells

**Maximum Flood Depth [m]**

- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
- 2.0m to 3.0m
- 3.0m to 5.0m and greater

**TECHNICAL NOTE**

Hydraulic modelling has been undertaken using 2-D hydraulic modelling software MIKE21-HDFM (ver. 2009), to assess the effect of overtopping of defences. The model simulates 3 tidal cycles with the peak level occurring on the second peak and two slightly smaller peaks either side.

The mapped scenario shows the actual risk of flooding; that resulting solely from overtopping of existing defences.

The maximum flood depth is calculated by subtracting the LIDAR topographic data from the peak water level achieved at each element in the model throughout the simulation.

A thorough description of methodology and assumptions is included within the SFRA Main Report.

**USER NOTE**

This plan has been produced in accordance with Planning Policy Statement 25 - Development and Flood Risk. Because the information is indicative rather than specific, local planning authorities will nevertheless need to consult the Environment Agency on individual applications.

**FLOODABLE AREAS NOT SHOWN**

Land adjacent to watercourses not included within this study. Areas susceptible to drainage system inadequacies or localised ponding. Areas flooded due to debris blockage unless shown for specific structures. Areas flooded from breaches in flood defences.

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**THAMES GATEWAY SOUTH ESSEX  
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE MAXIMUM FLOOD DEPTH  
1000YR (2110)  
OVERTOPPING**

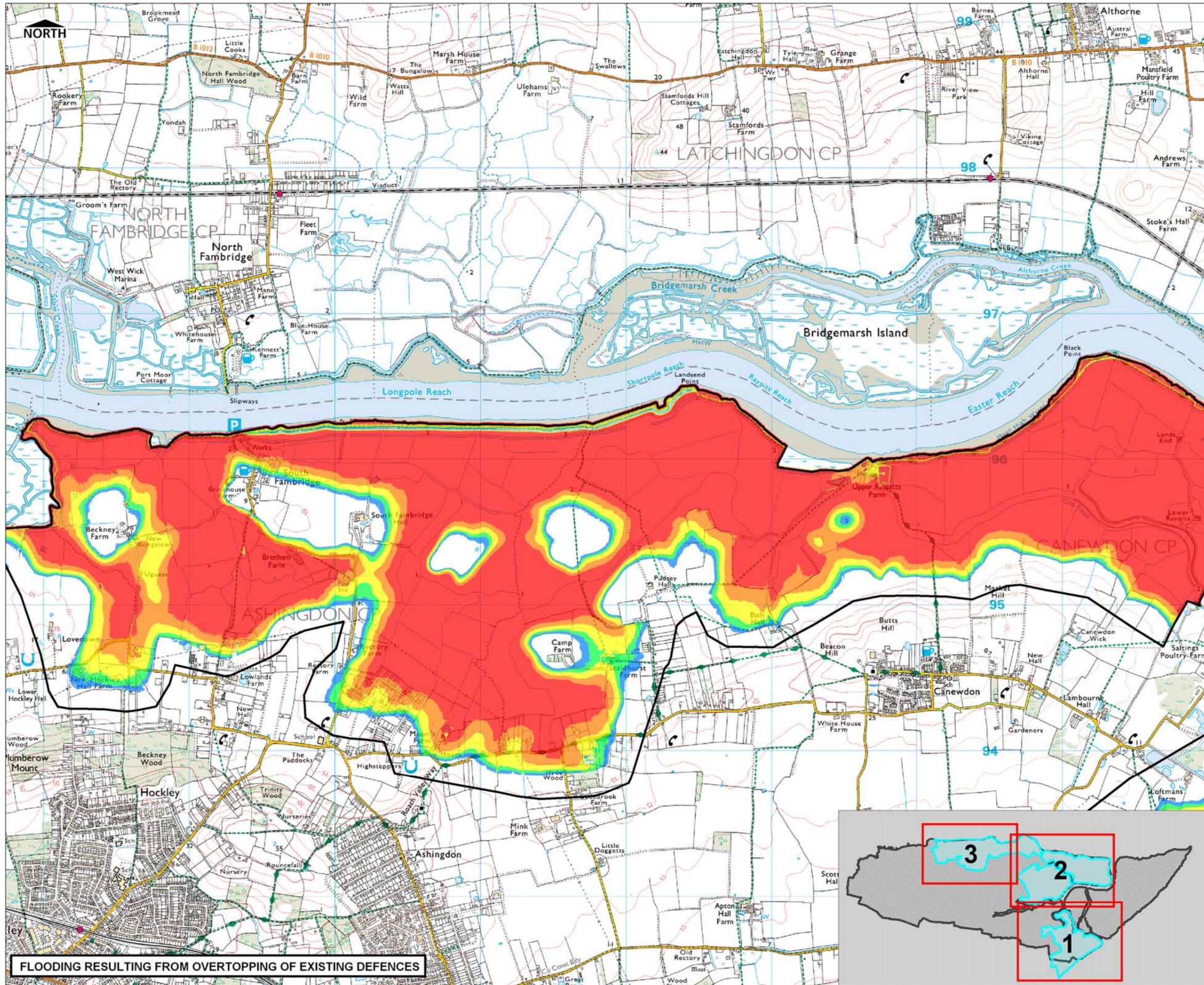
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DRAWING NUMBER  
**FIGURE B-6 (View 2)**

REV 02



**FLOODING RESULTING FROM OVERTOPPING OF EXISTING DEFENCES**

**KEY**

- Flood Cells
- Maximum Flood Depth [m]**
- 0.0m to 0.5m
- 0.5m to 1.0m
- 1.0m to 2.0m
- 2.0m to 3.0m
- 3.0m to 5.0m and greater

**TECHNICAL NOTE**  
 Hydraulic modelling has been undertaken using 2-D hydraulic modelling software MIKE21-HDFM (ver. 2009), to assess the effect of overtopping of defences. The model simulates 3 tidal cycles with the peak level occurring on the second peak and two slightly smaller peaks either side. The mapped scenario shows the actual risk of flooding; that resulting solely from overtopping of existing defences. The maximum flood depth is calculated by subtracting the LIDAR topographic data from the peak water level achieved at each element in the model throughout the simulation. A thorough description of methodology and assumptions is included within the SFRA Main Report.

**USER NOTE**  
 This plan has been produced in accordance with Planning Policy Statement 25 - Development and Flood Risk. Because the information is indicative rather than specific, local planning authorities will nevertheless need to consult the Environment Agency on individual applications.

**FLOODABLE AREAS NOT SHOWN**  
 Land adjacent to watercourses not included within this study. Areas susceptible to drainage system inadequacies or localised ponding. Areas flooded due to debris blockage unless shown for specific structures. Areas flooded from breaches in flood defences.

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**THAMES GATEWAY SOUTH ESSEX  
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**COMPOSITE MAXIMUM FLOOD DEPTH  
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**FIGURE B-6 (View 3)**