

Appendix C: Hazard Mapping

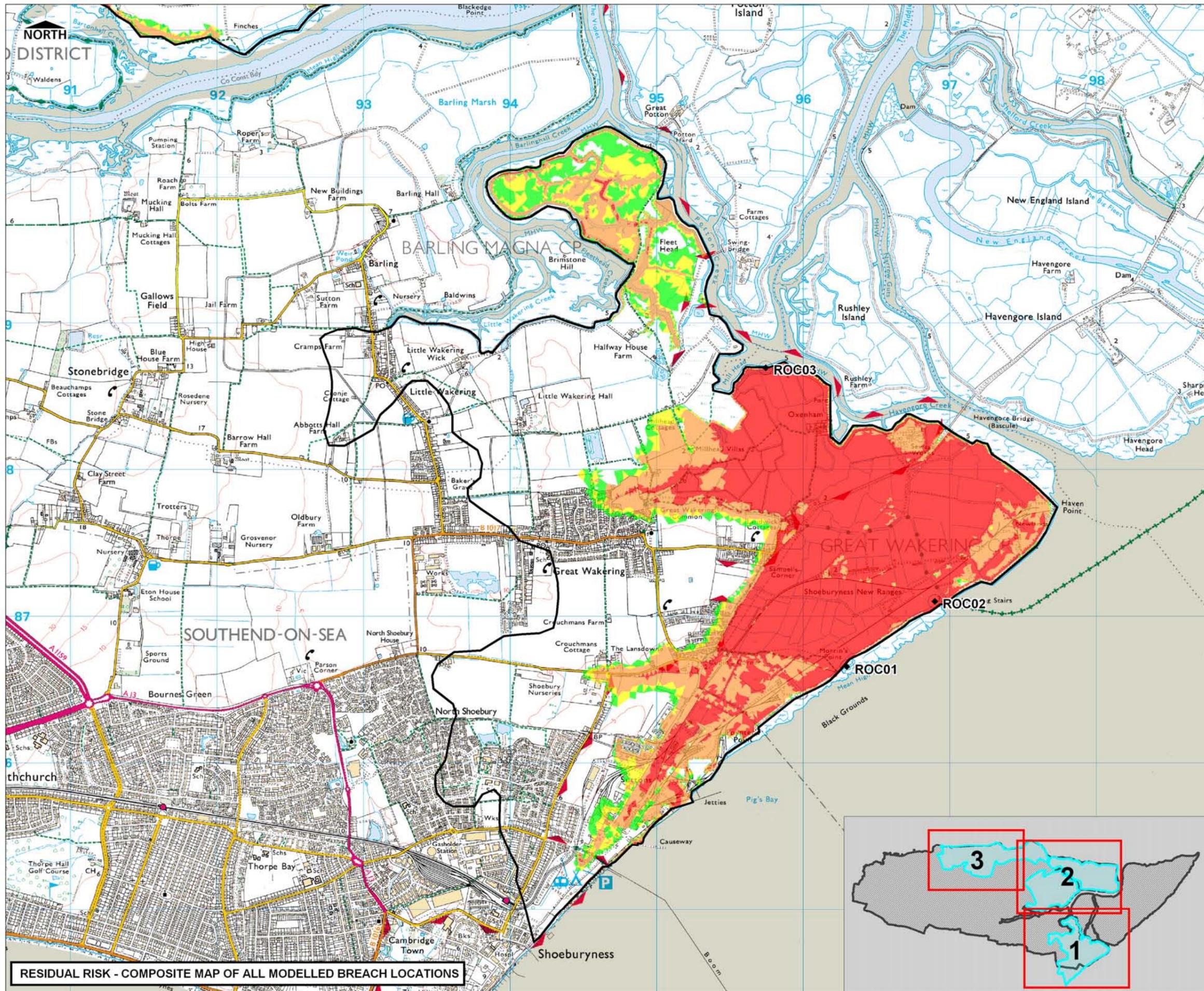
Residual Risk – Composite of Breach Results and Overtopping

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

- C1 (View 1-3)** Maximum Flood Hazard from Breaches & Overtopping (1 in 0200yr event, 2010)
- C2 (View 1-3)** Maximum Flood Hazard from Breaches & Overtopping (1 in 1000yr event, 2010)
- C3 (View 1-3)** Maximum Flood Hazard from Breaches & Overtopping (1 in 0200yr event, 2110 incl. CC)
- C4 (View 1-3)** Maximum Flood Hazard from Breaches & Overtopping (1 in 1000yr event, 2110 incl. CC)

Potential Impact of Overtopping

- C5 (View 1-3)** Maximum Flood Hazard from Overtopping (1 in 0200yr event, 2110 incl. CC)
- C6 (View 1-3)** Maximum Flood Hazard from Overtopping (1 in 1000yr event, 2110 incl. CC)



KEY

— Flood Cells ◆ Breach Location

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

TECHNICAL NOTE

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THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT

COMPOSITE FLOOD HAZARD RATING 0200YR (2010)

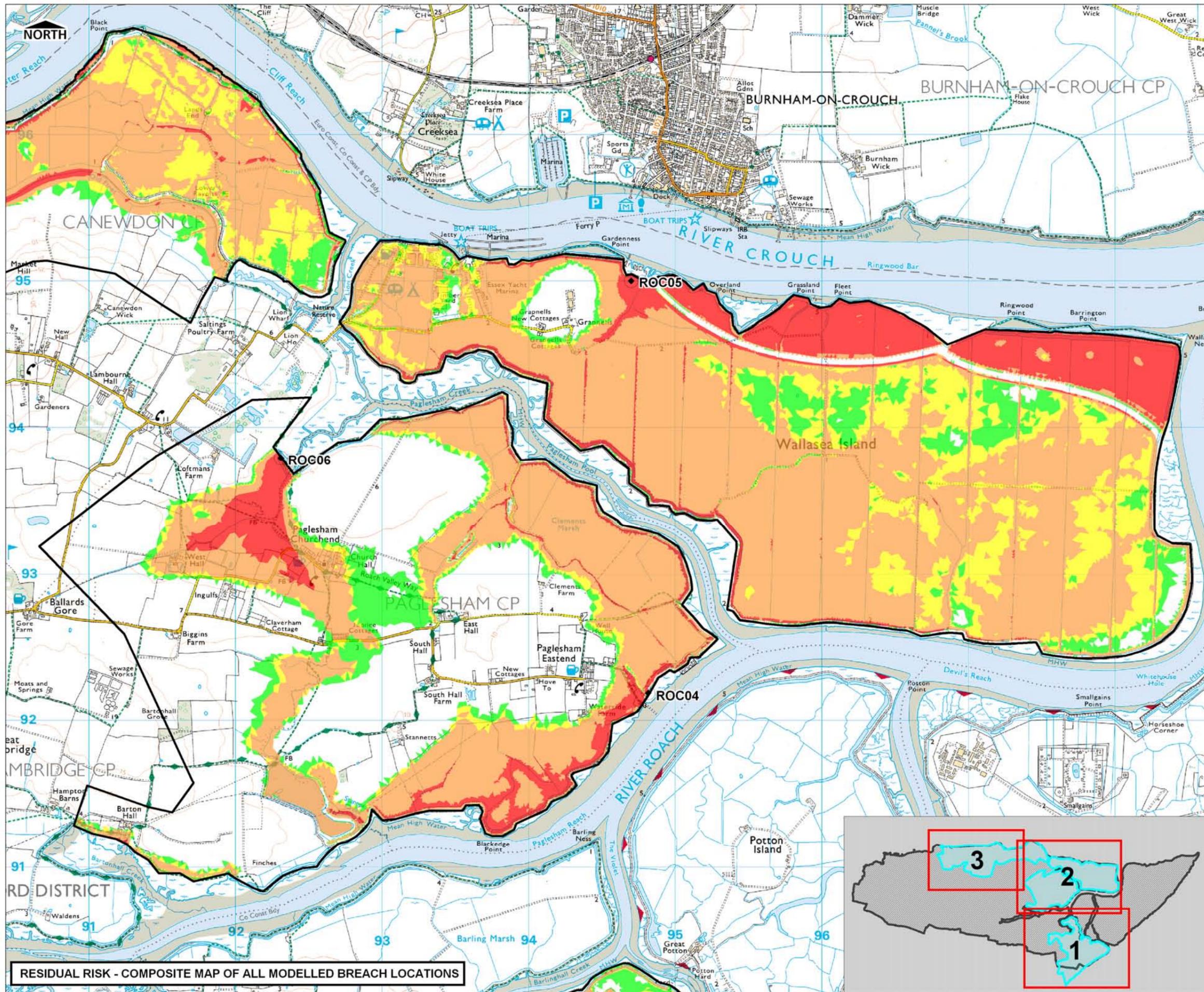
ALL BREACHES (ROC01-ROC07) & OVERTOPPING

Basildon Council castlepoint Rochford District Council

Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER

FIGURE C-1 (View 1)



KEY

— Flood Cells ◆ Breach Location

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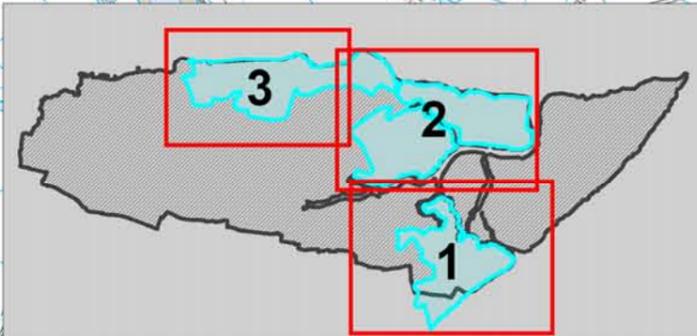
**THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE FLOOD HAZARD RATING
0200YR (2010)
ALL BREACHES (ROC01-ROC07) & OVERTOPPING**

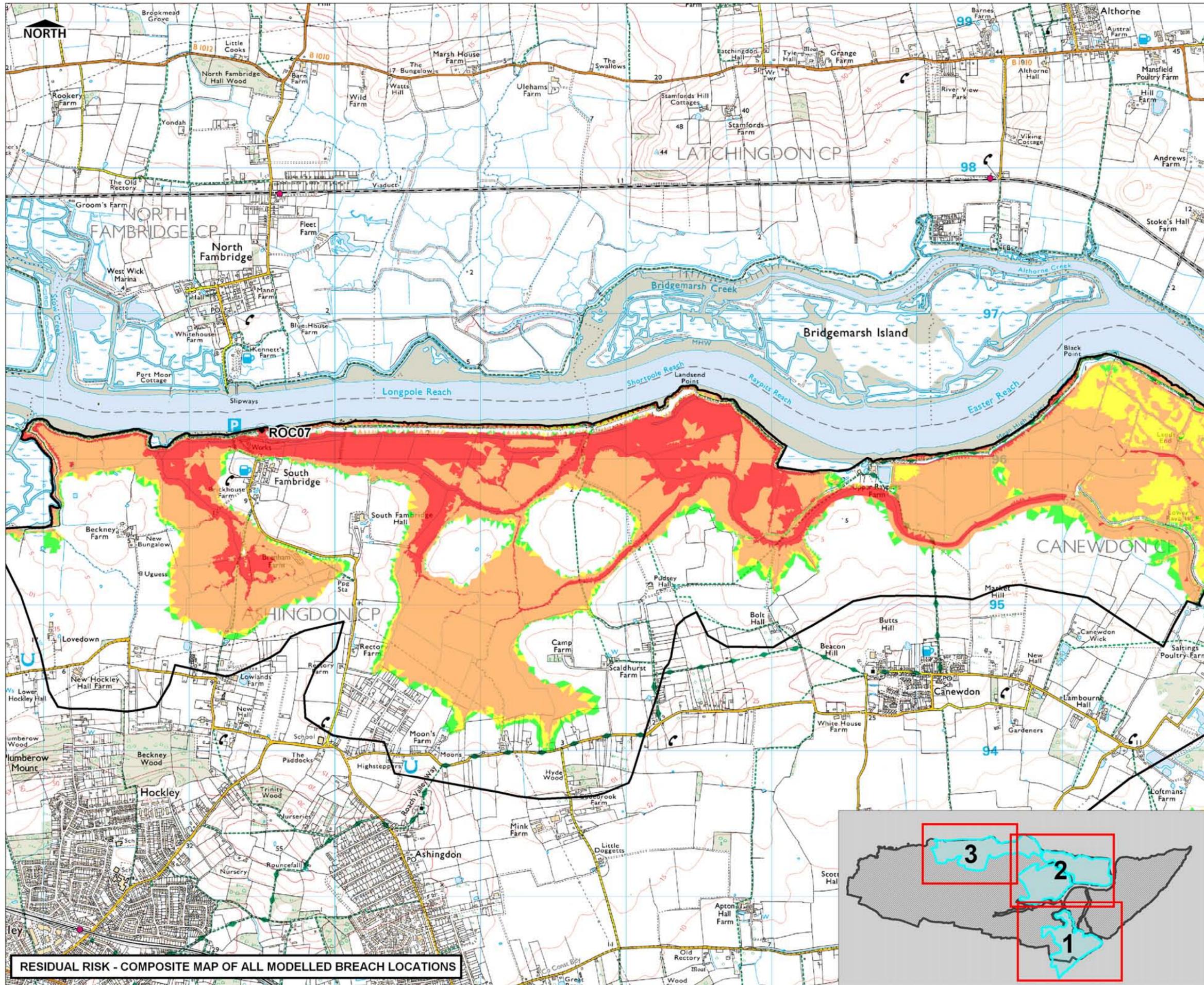


Scott Wilson
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Tel: (020) 7798 5000

DRAWING NUMBER
FIGURE C-1 (View 2)



RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS



KEY

— Flood Cells ◆ Breach Location

Flood Hazard Rating

- Low Hazard
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**THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT**

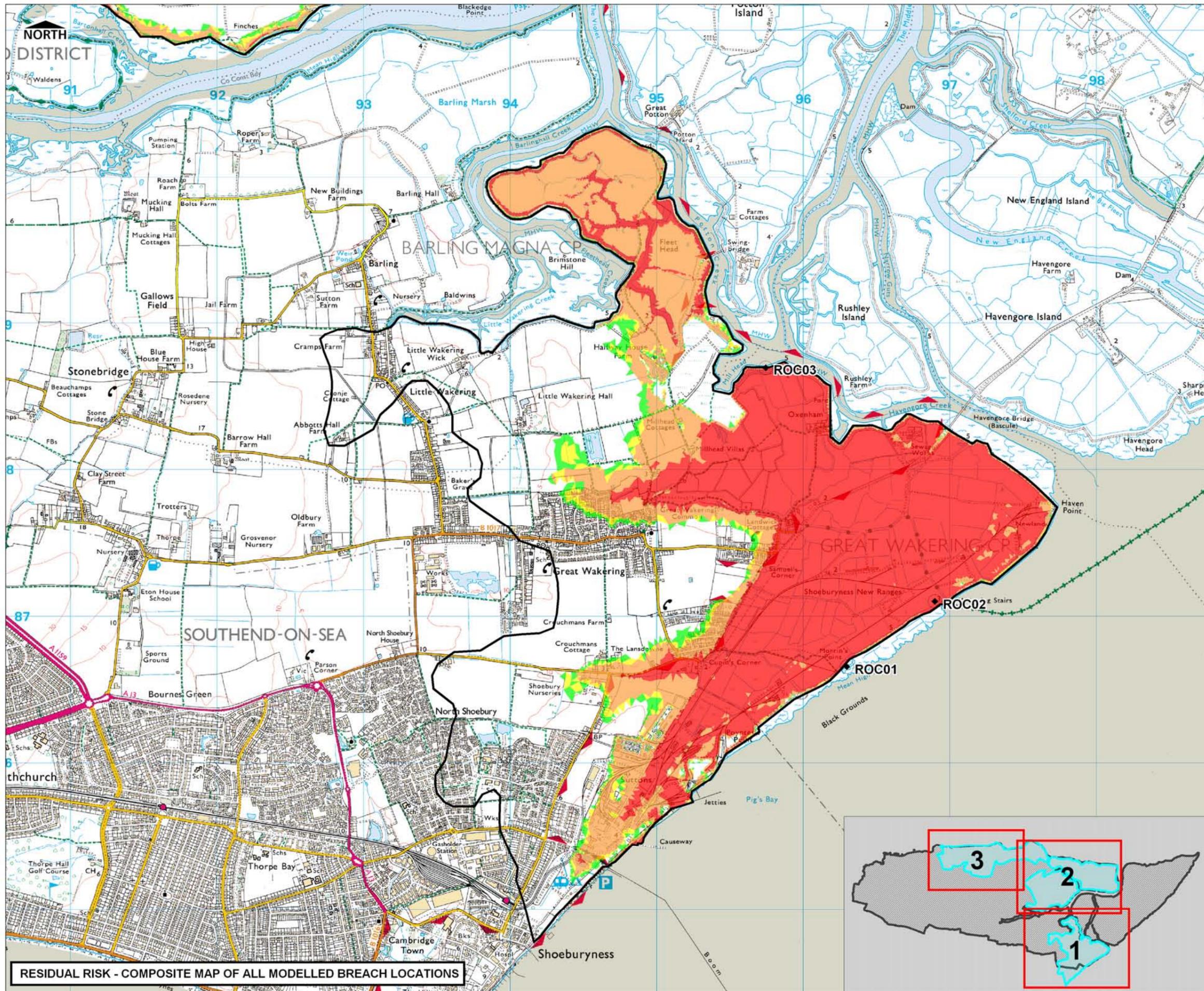
**COMPOSITE FLOOD HAZARD RATING
0200YR (2010)**

ALL BREACHES (ROC01-ROC07) & OVERTOPPING



Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER
FIGURE C-1 (View 3)



KEY

— Flood Cells ◆ Breach Location

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

**COMPOSITE FLOOD HAZARD RATING
1000YR (2010)**

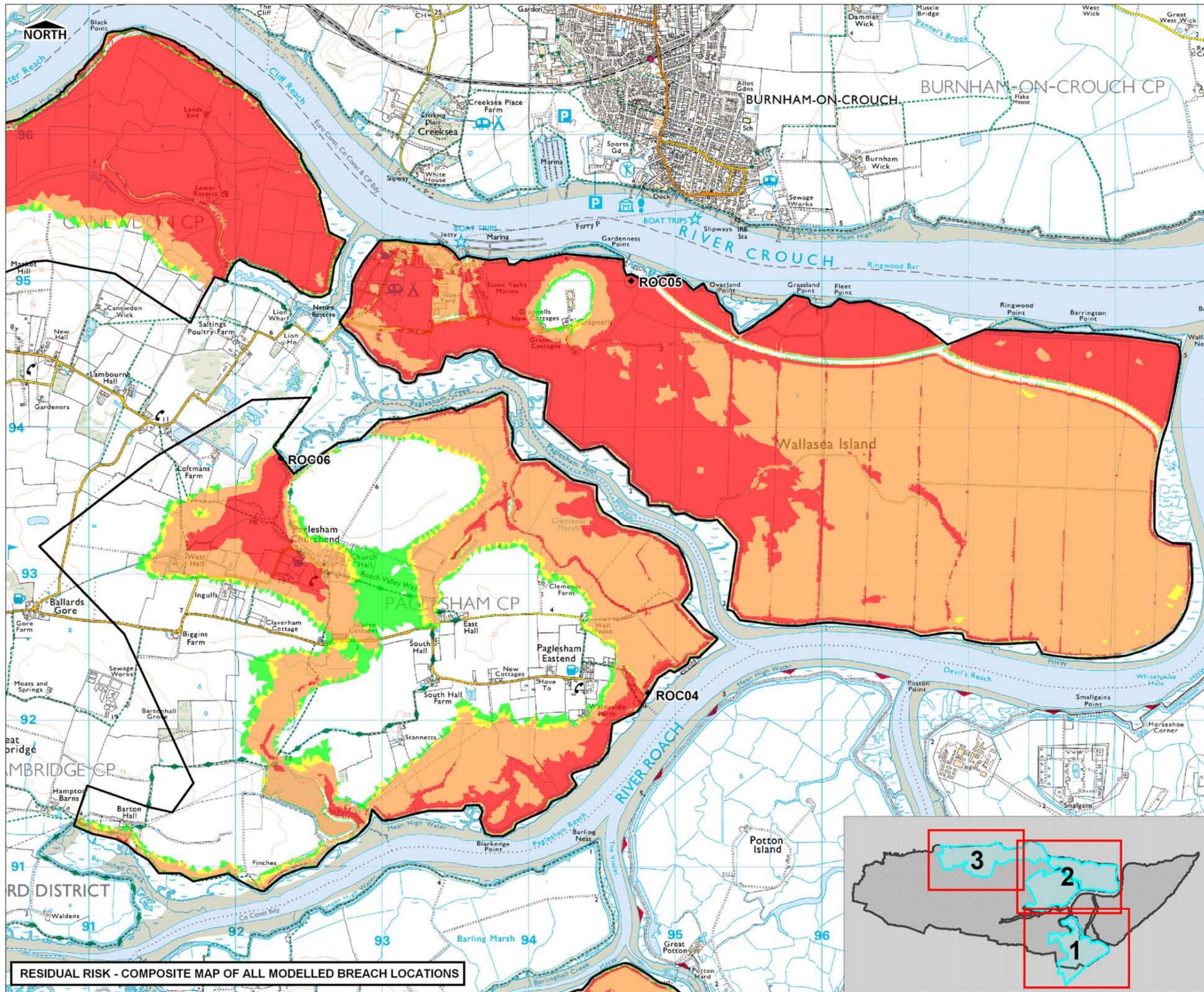
ALL BREACHES (ROC01-ROC07) & OVERTOPPING

Basildon Council castlepoint Rochford District Council

Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER

FIGURE C-2 (View 1)



KEY

— Flood Cells ◆ Breach Location

Flood Hazard Rating

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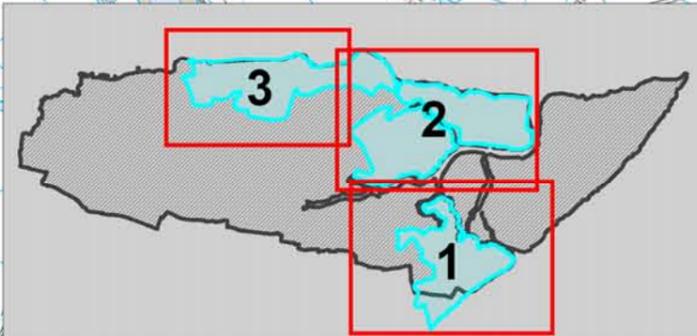
THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT

COMPOSITE FLOOD HAZARD RATING 1000YR (2010)
ALL BREACHES (ROC01-ROC07) & OVERTOPPING

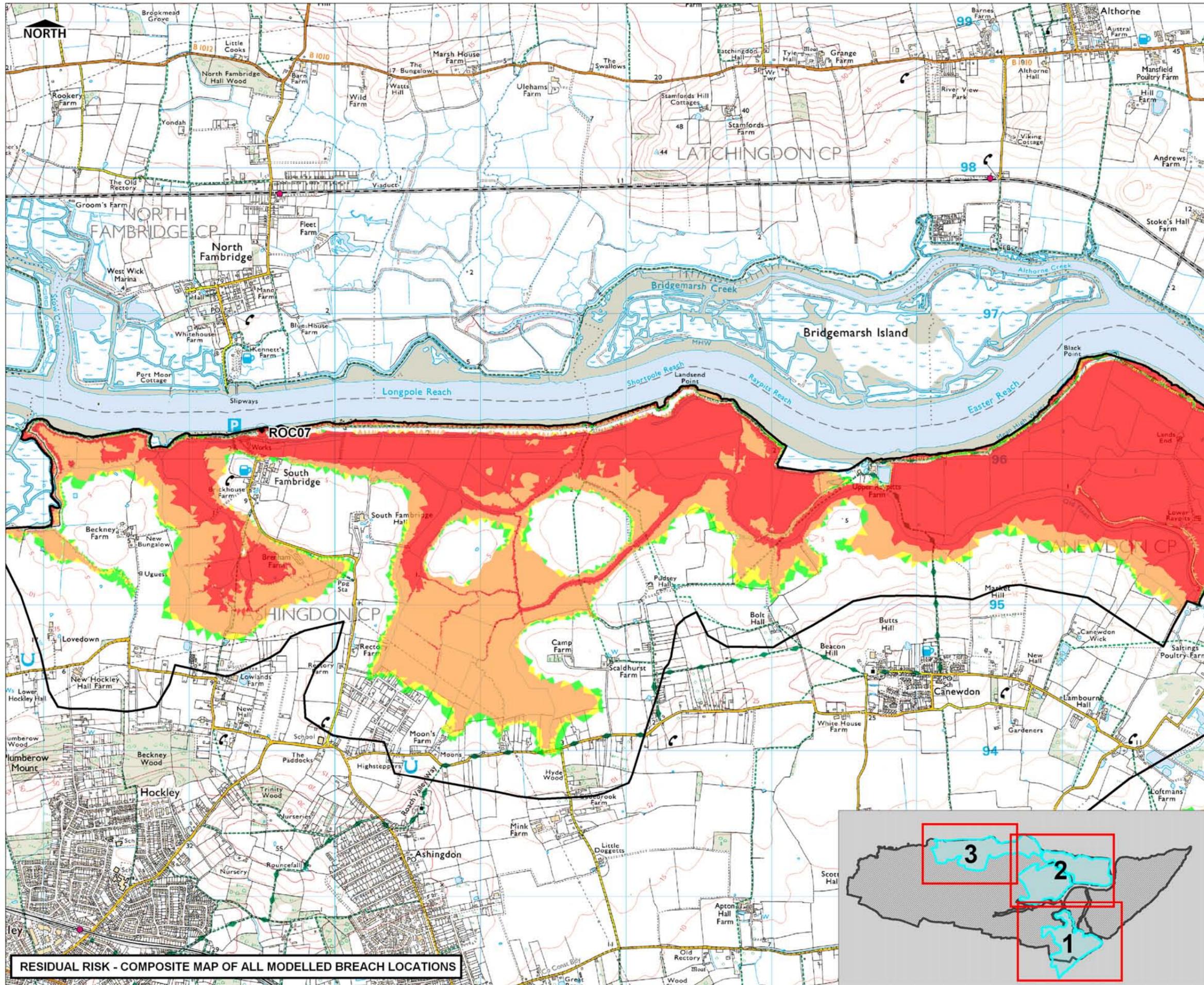


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DRAWING NUMBER
FIGURE C-2 (View 2)



RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS



RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS

KEY

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

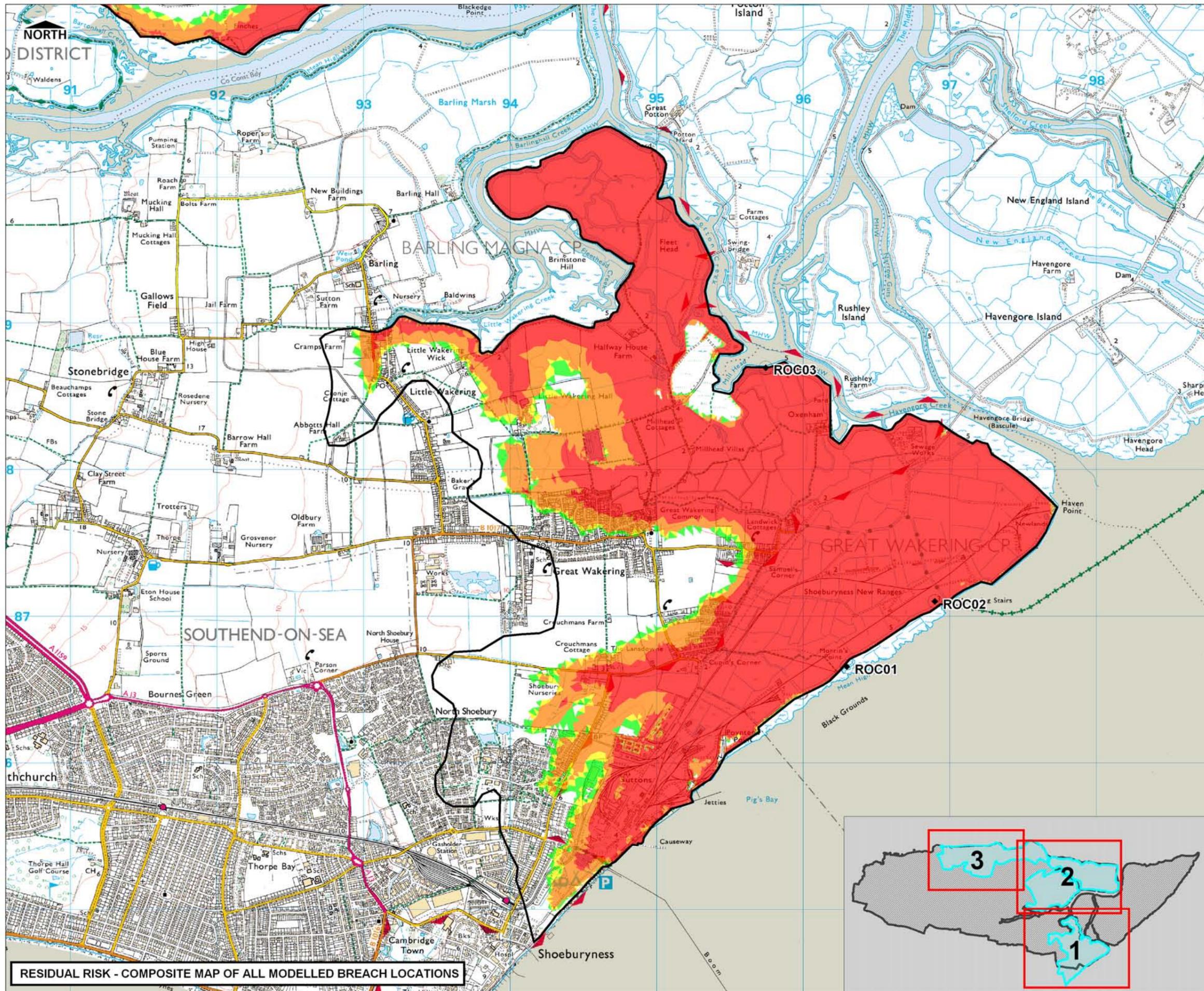
**COMPOSITE FLOOD HAZARD RATING
1000YR (2010)**

ALL BREACHES (ROC01-ROC07) & OVERTOPPING

Basildon Council castlepoint Rochford District Council

Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER
FIGURE C-2 (View 3)



KEY

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

**COMPOSITE FLOOD HAZARD RATING
0200YR (2110)**

ALL BREACHES (ROC01-ROC07) & OVERTOPPING

Basildon Council castlepoint Rochford District Council

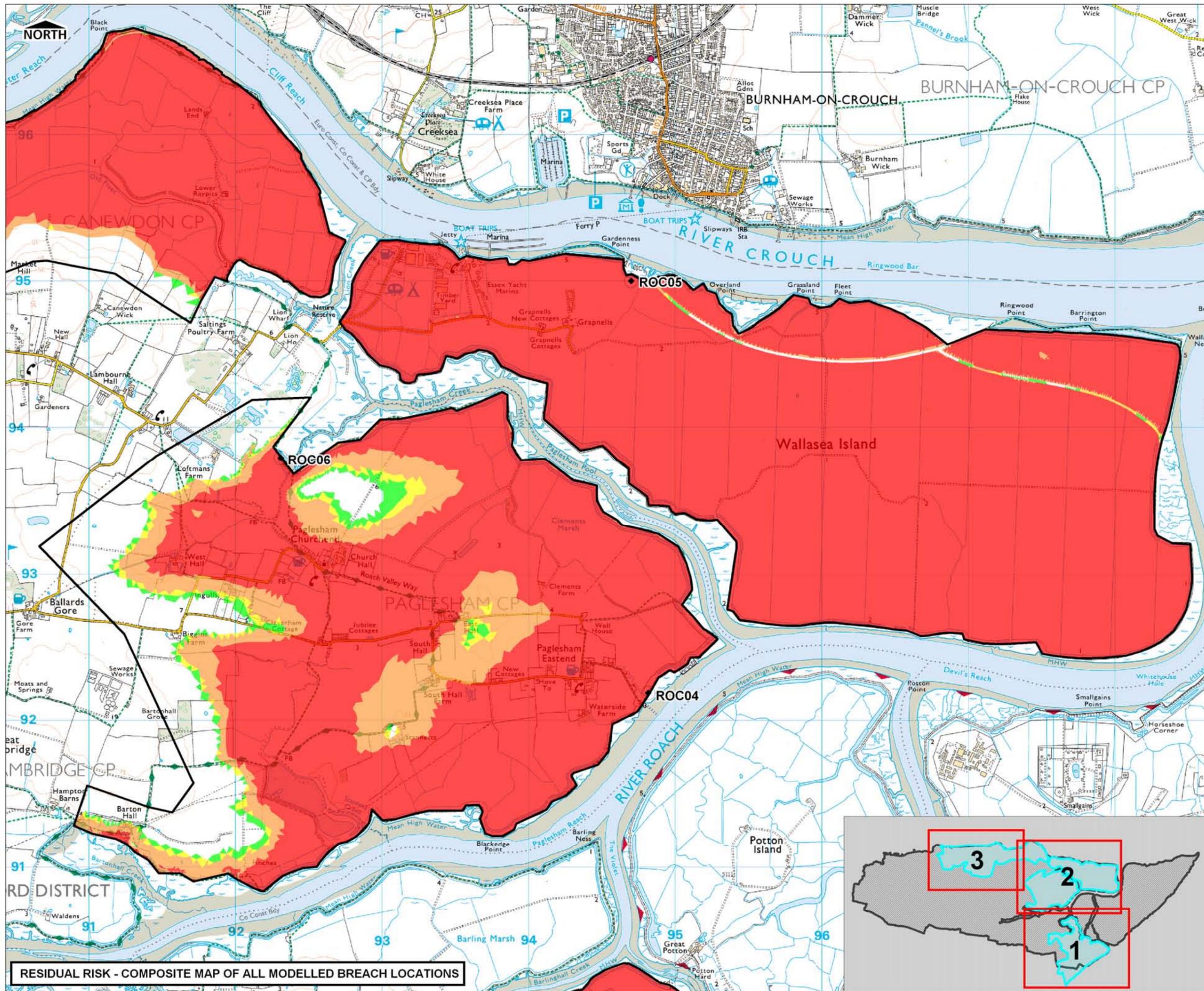
Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER

FIGURE C-3 (View 1)

REV 02

RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS



KEY

— Flood Cells ◆ Breach Location

Flood Hazard Rating

- Low Hazard
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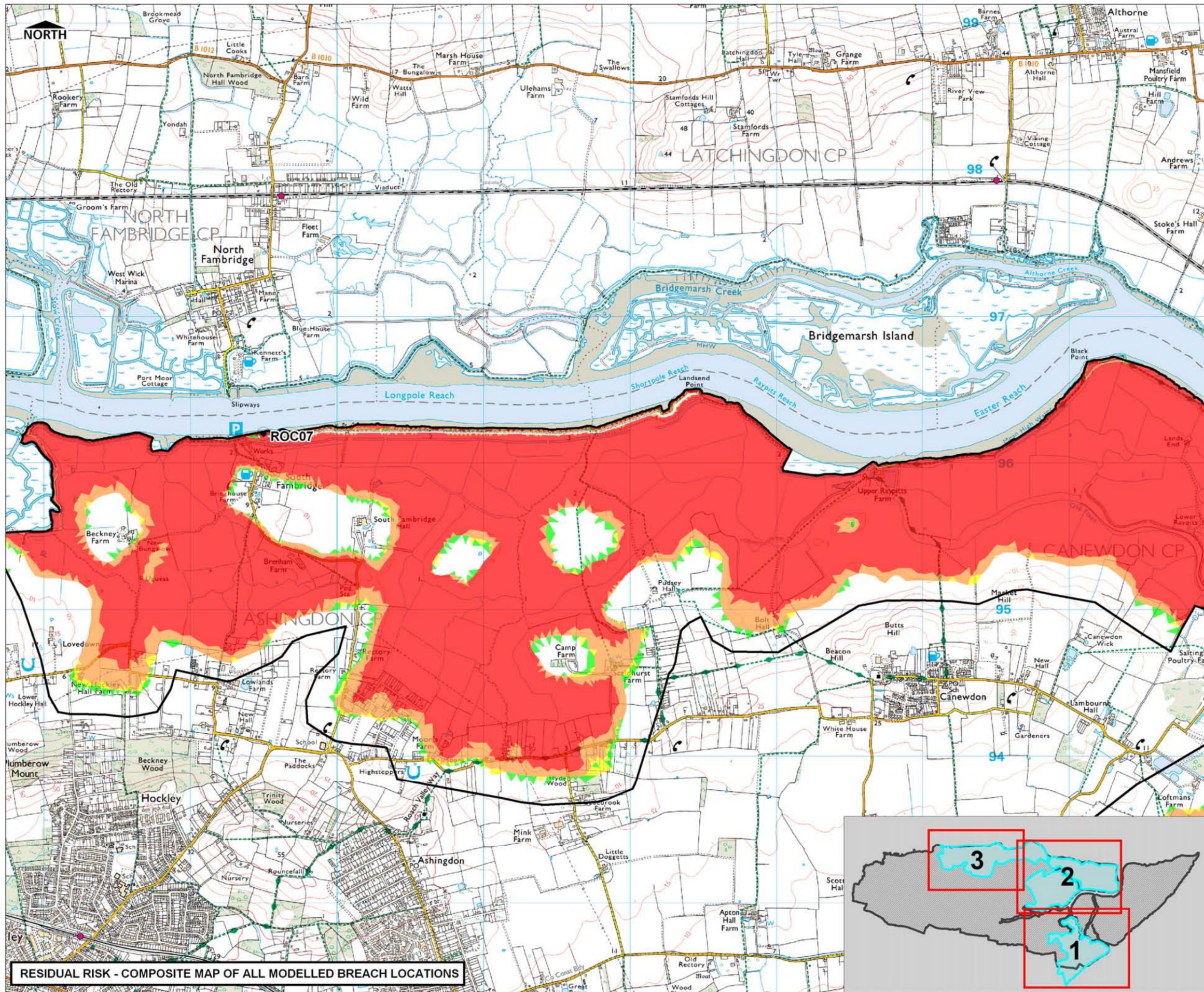
THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT

COMPOSITE FLOOD HAZARD RATING 0200YR (2110) ALL BREACHES (ROC01-ROC07) & OVERTOPPING



Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER
FIGURE C-3 (View 2)



KEY

— Flood Cells ◆ Breach Location

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

TECHNICAL NOTE

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

**COMPOSITE FLOOD HAZARD RATING
0200YR (2110)**

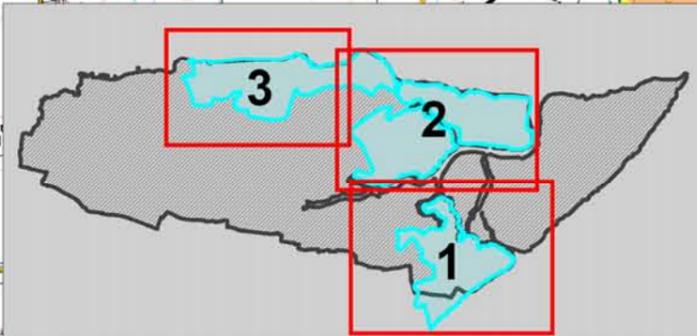
ALL BREACHES (ROC01-ROC07) & OVERTOPPING

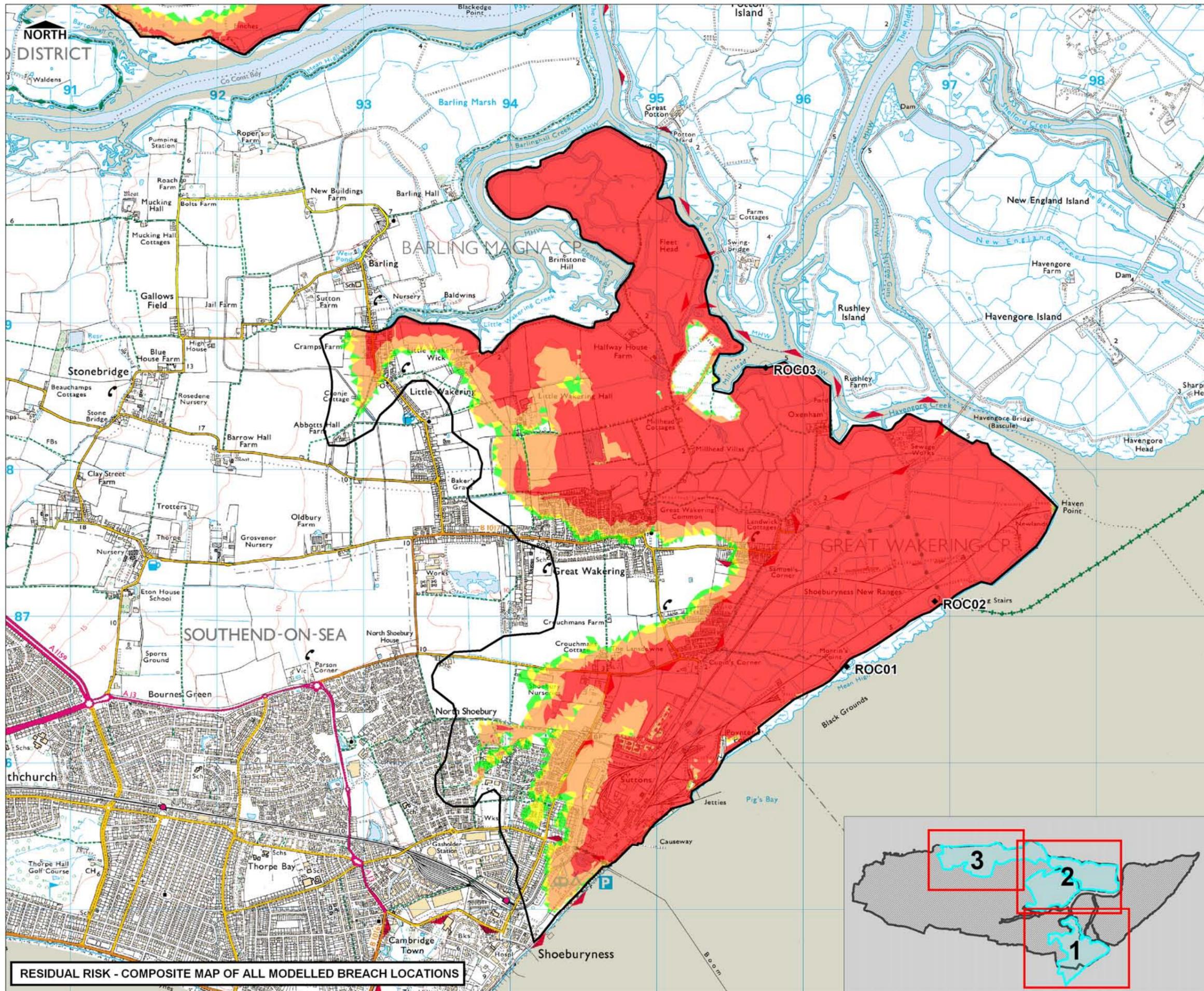
Basildon Council castlepoint Rochford District Council

Scott Wilson
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London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER
FIGURE C-3 (View 3)

RESIDUAL RISK - COMPOSITE MAP OF ALL MODELLED BREACH LOCATIONS





KEY

— Flood Cells ◆ Breach Location

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

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THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT

COMPOSITE FLOOD HAZARD RATING 1000YR (2110)

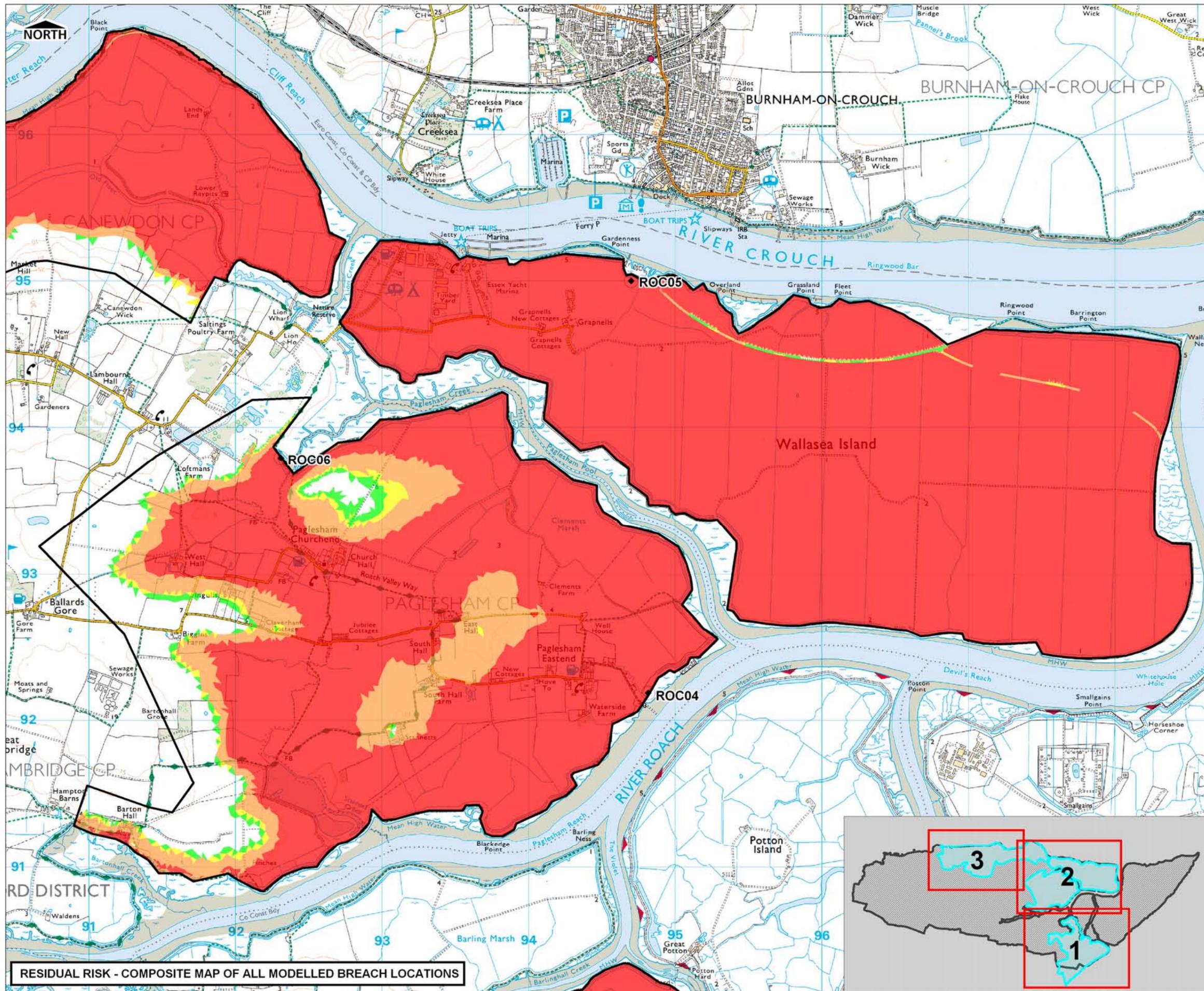
ALL BREACHES (ROC01-ROC07) & OVERTOPPING

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Tel: (020) 7798 5000

DRAWING NUMBER

FIGURE C-4 (View 1)



KEY

— Flood Cells ◆ Breach Location

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

TECHNICAL NOTE

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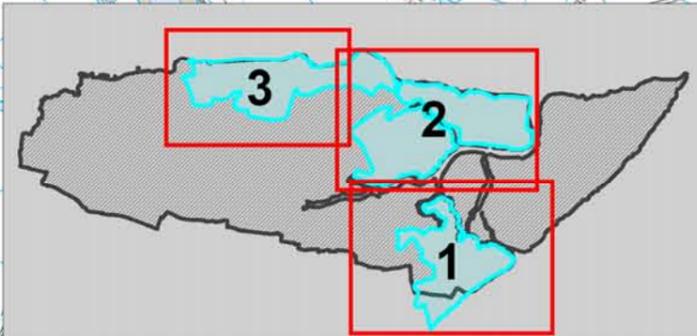
THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT

COMPOSITE FLOOD HAZARD RATING 1000YR (2110) ALL BREACHES (ROC01-ROC07) & OVERTOPPING

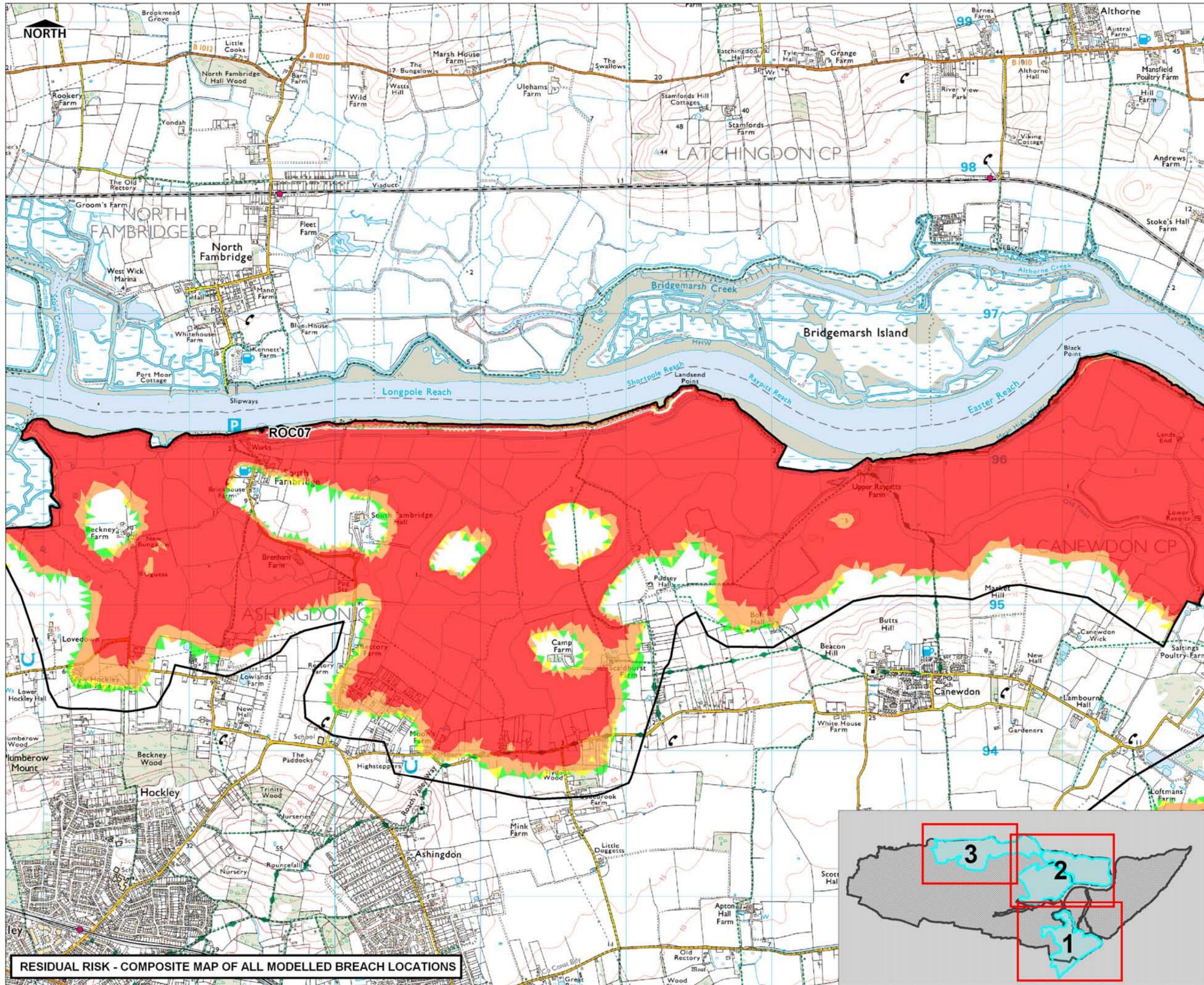


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FIGURE C-4 (View 2)



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**

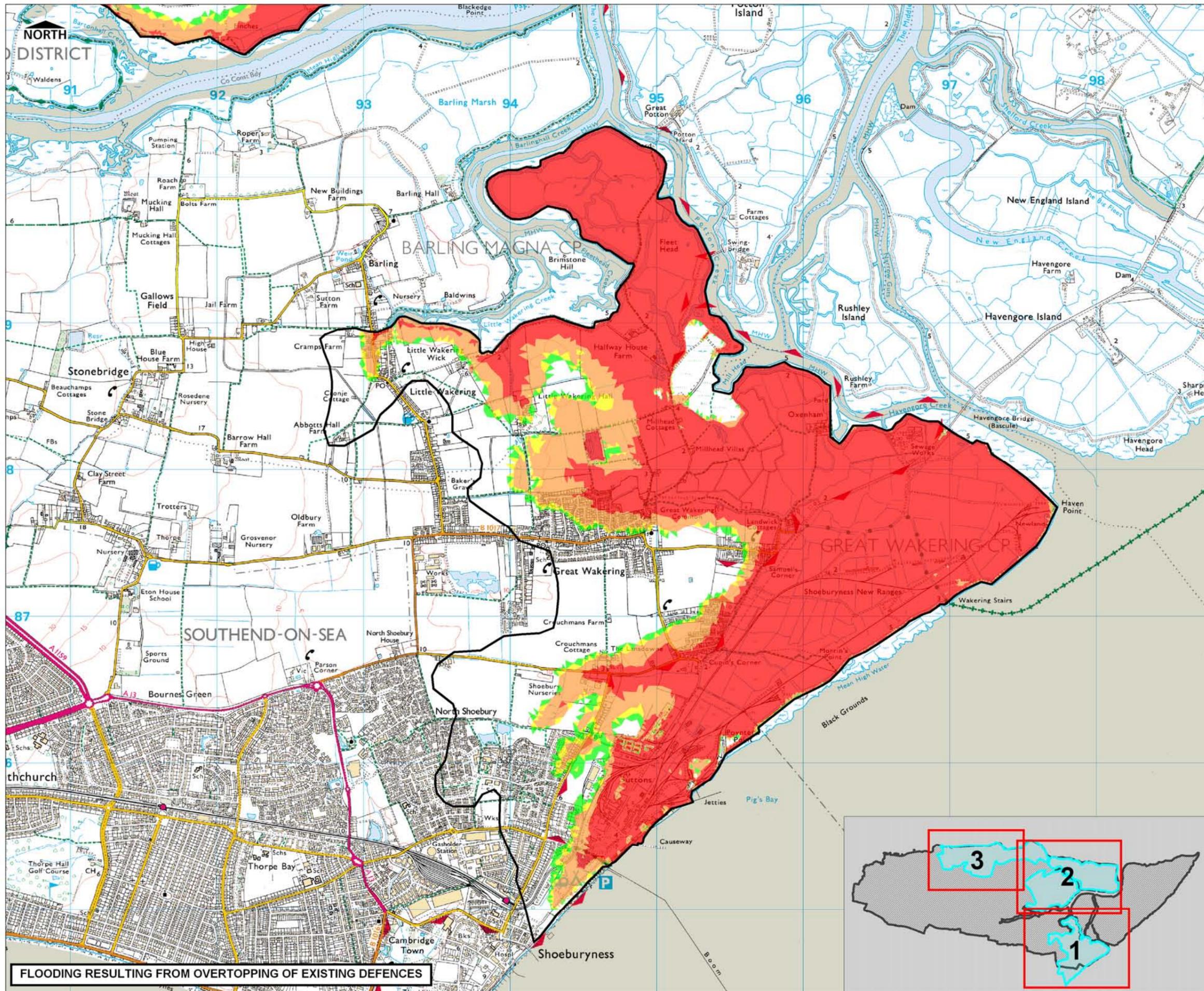
**COMPOSITE FLOOD HAZARD RATING
1000YR (2110)**

ALL BREACHES (ROC01-ROC07) & OVERTOPPING

Basildon Council castlepoint Rochford District Council

Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER
FIGURE C-4 (View 3)



KEY

- Flood Cells

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

TECHNICAL NOTE

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

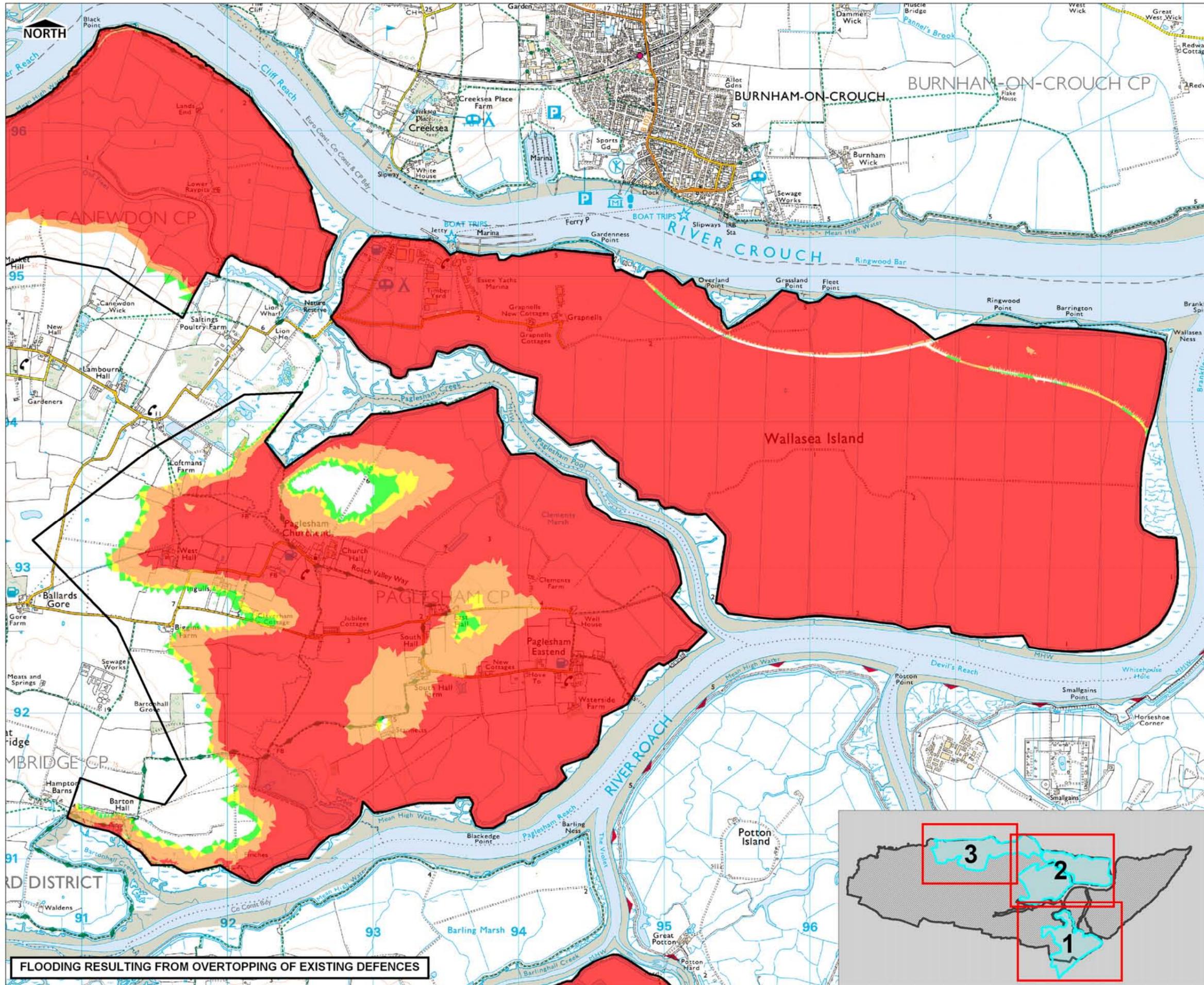
**COMPOSITE FLOOD HAZARD RATING
0200YR (2110)
OVERTOPPING**

Basildon Council castlepoint Rochford District Council

Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

FIGURE C-5 (View 1)

REV 02



KEY

— Flood Cells

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

TECHNICAL NOTE

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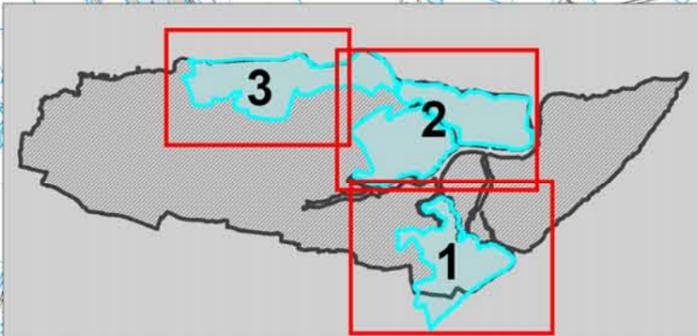
**THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE FLOOD HAZARD RATING
0200YR (2110)
OVERTOPPING**

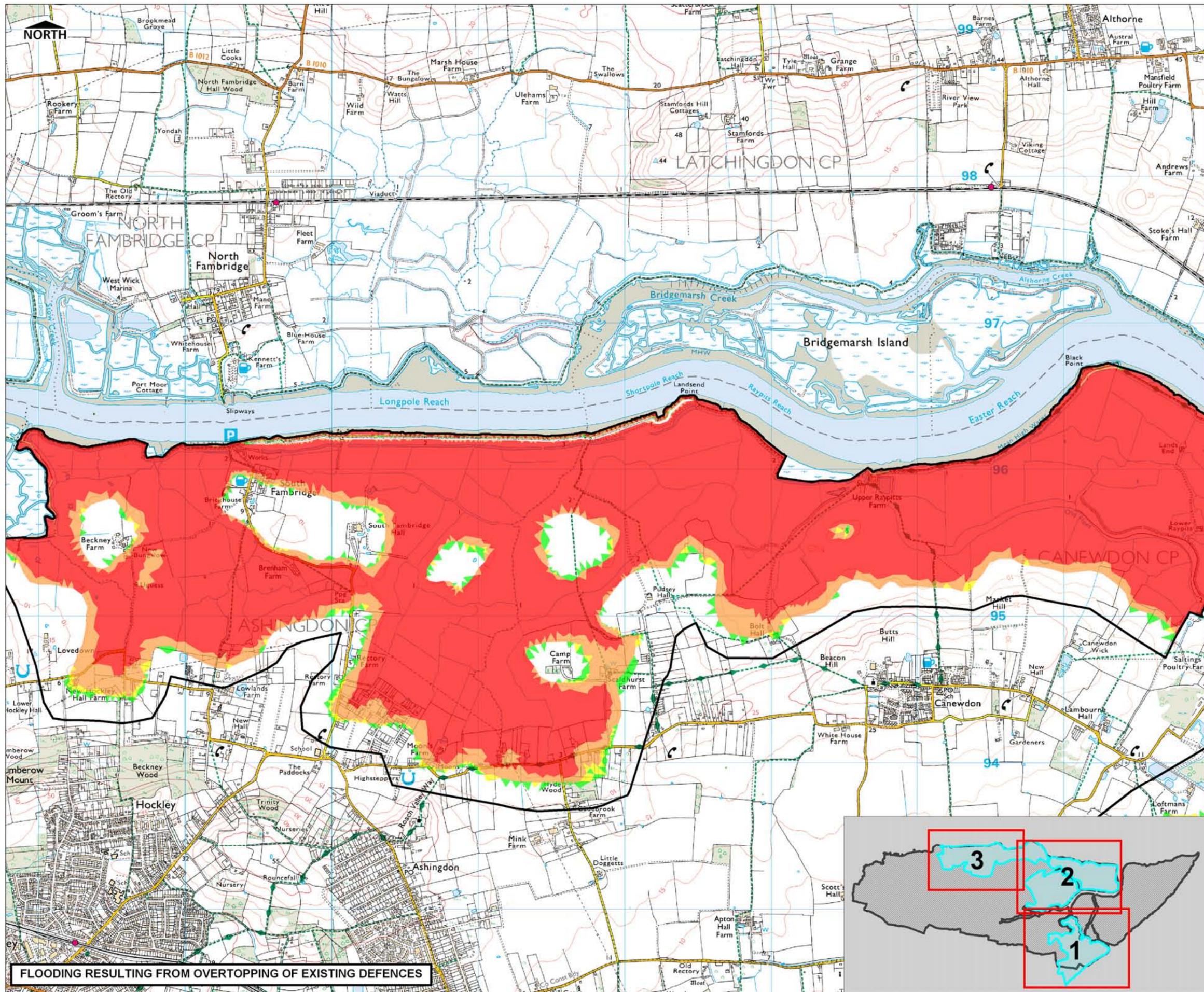


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DRAWING NUMBER
FIGURE C-5 (View 2)



FLOODING RESULTING FROM OVERTOPPING OF EXISTING DEFENCES



KEY

— Flood Cells

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
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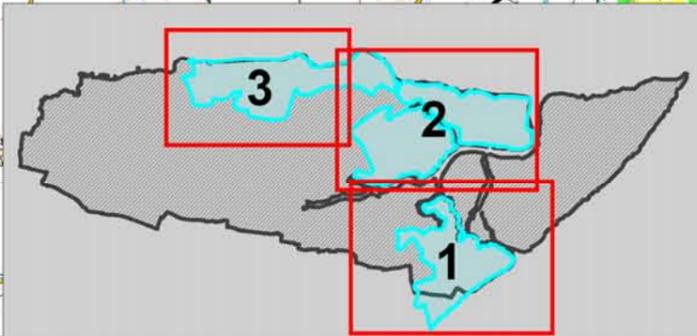
**THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE FLOOD HAZARD RATING
0200YR (2110)
OVERTOPPING**

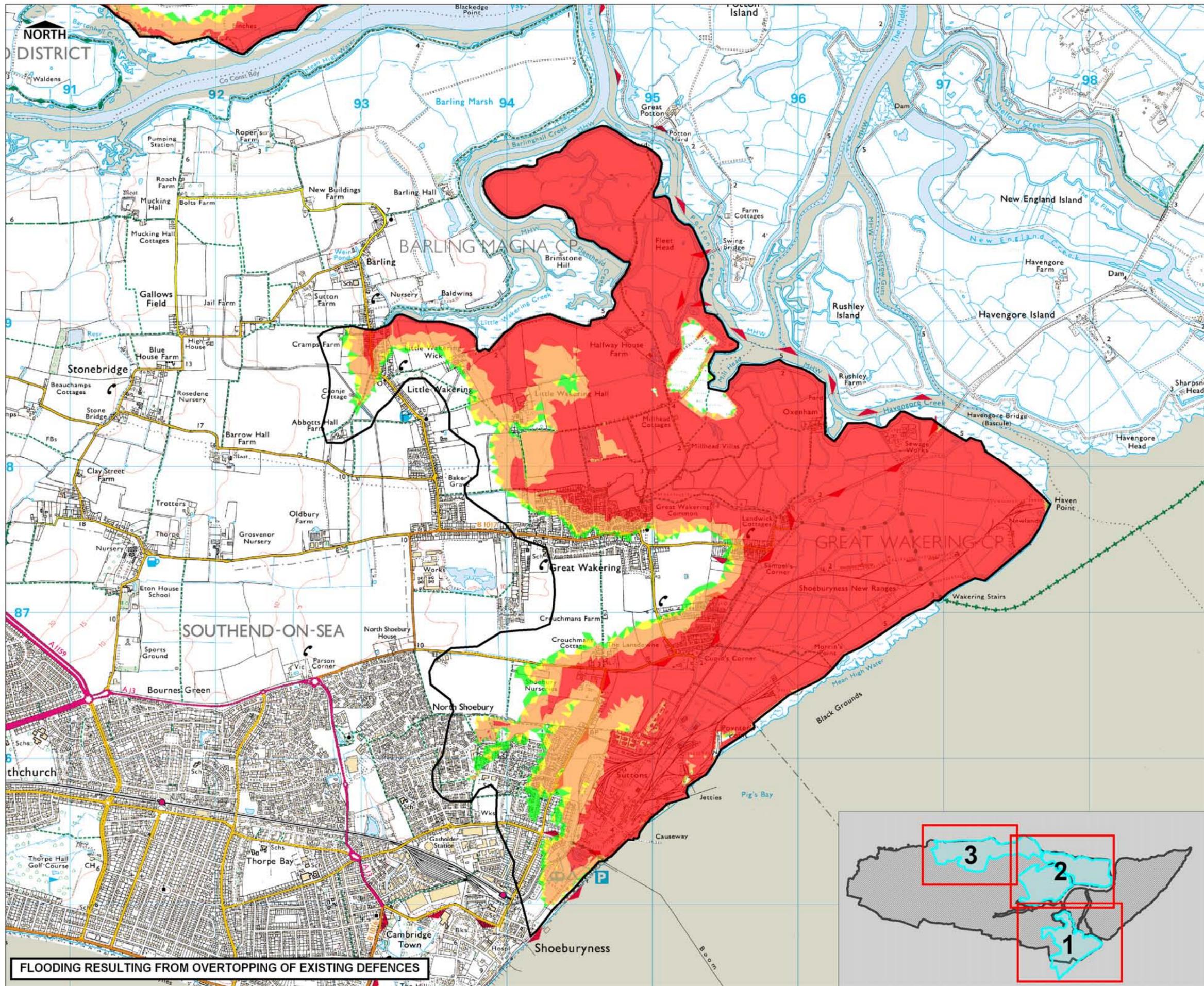


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DRAWING NUMBER
FIGURE C-5 (View 3)



FLOODING RESULTING FROM OVERTOPPING OF EXISTING DEFENCES



KEY

- Flood Cells

Flood Hazard Rating

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THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT

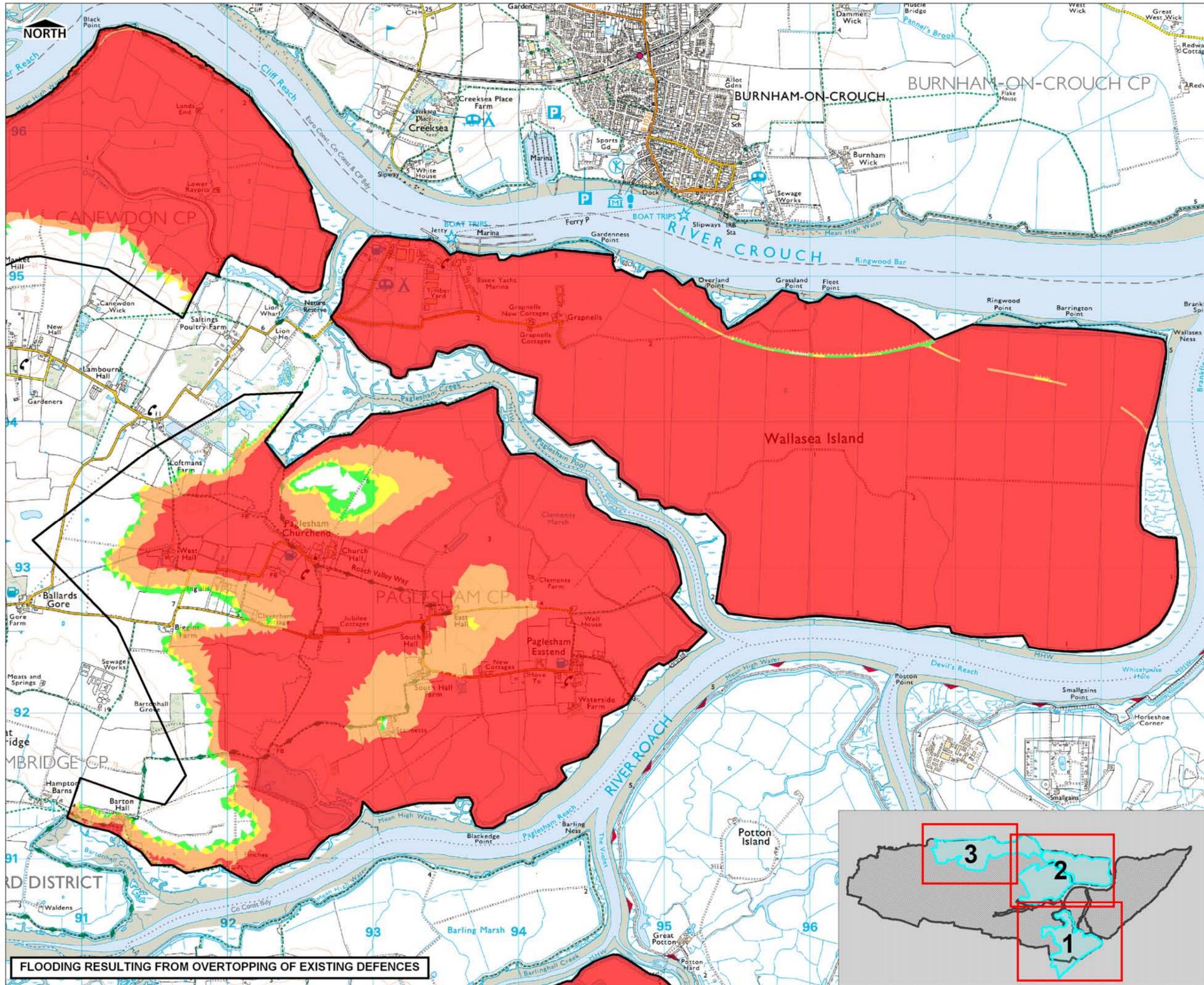
COMPOSITE FLOOD HAZARD RATING
1000YR (2110)
OVERTOPPING

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6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER

FIGURE C-6 (View 1)



KEY

— Flood Cells

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

TECHNICAL NOTE

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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.

DISCLAIMER

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THAMES GATEWAY SOUTH ESSEX STRATEGIC FLOOD RISK ASSESSMENT

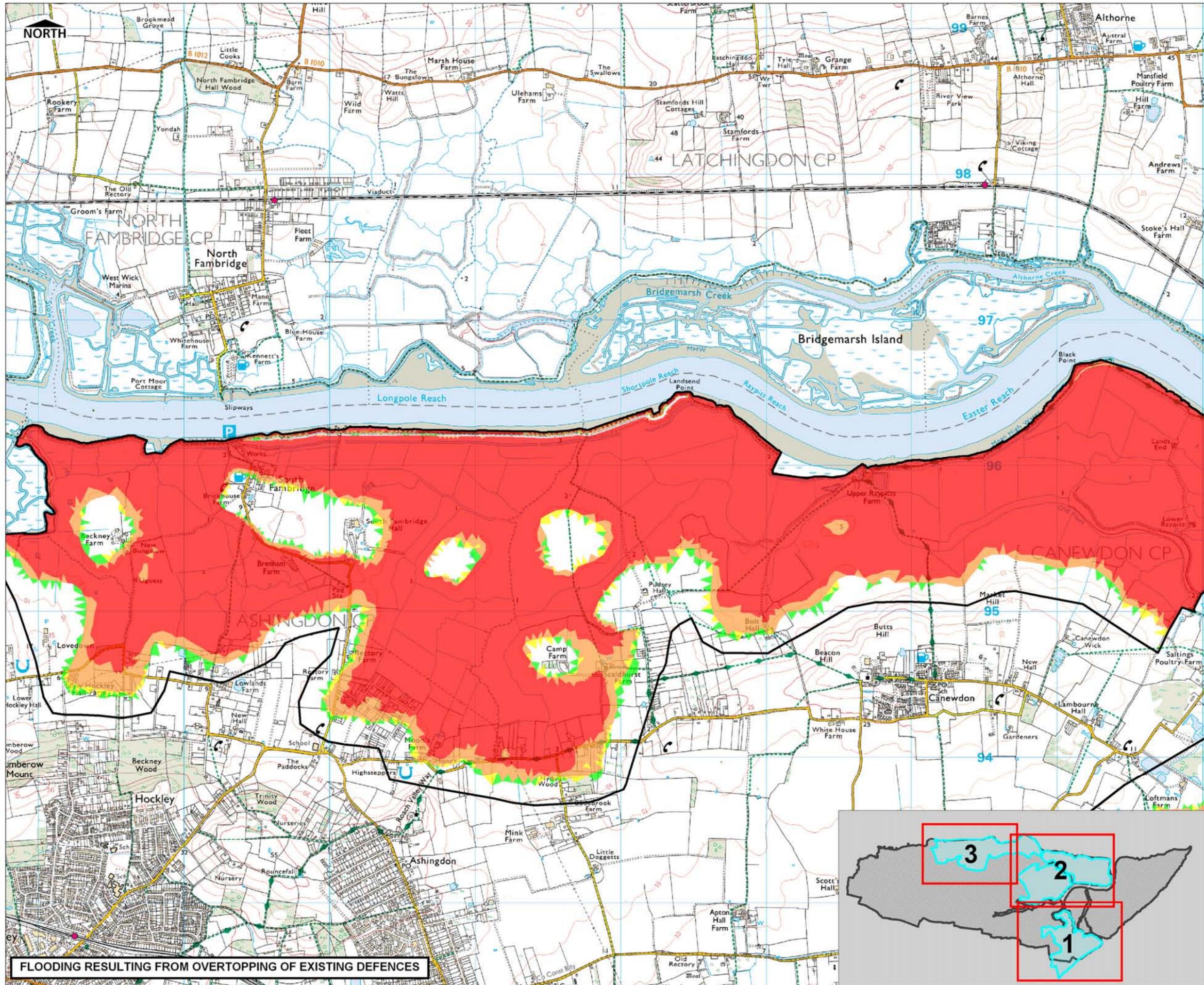
COMPOSITE FLOOD HAZARD RATING 1000YR (2110) OVERTOPPING



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FIGURE C-6 (View 2)

FLOODING RESULTING FROM OVERTOPPING OF EXISTING DEFENCES



KEY

- Flood Cells

Flood Hazard Rating

- Low Hazard
- Moderate Hazard (Danger for Some)
- Significant Hazard (Danger for Most)
- Extreme Hazard (Danger for All)

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.

Flood hazard is calculated as a function of the flood depth and flow velocity at a particular point in the floodplain, along with a suitable debris factor. Each element within the model is assigned one of 4 hazard categories based on the methodology from Flood Risks to People FD2320 (DEFRA & EA, 2005). These hazard classifications do not indicate a change in the flood probability.

USER NOTE

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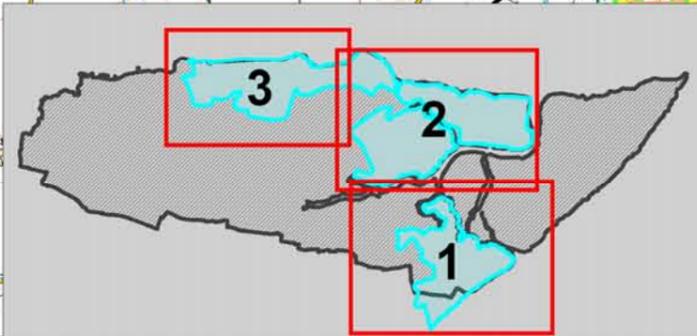
**THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT**

**COMPOSITE FLOOD HAZARD RATING
1000YR (2110)
OVERTOPPING**

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FIGURE C-6 (View 3)



FLOODING RESULTING FROM OVERTOPPING OF EXISTING DEFENCES