



Legend

- Surface water hotspots
- Areas Susceptible to Groundwater Flooding
 - >= 75% Proportion of each 1km square that is susceptible to groundwater emergence
 - >= 50% <75%
 - >= 25% <50%
 - < 25%

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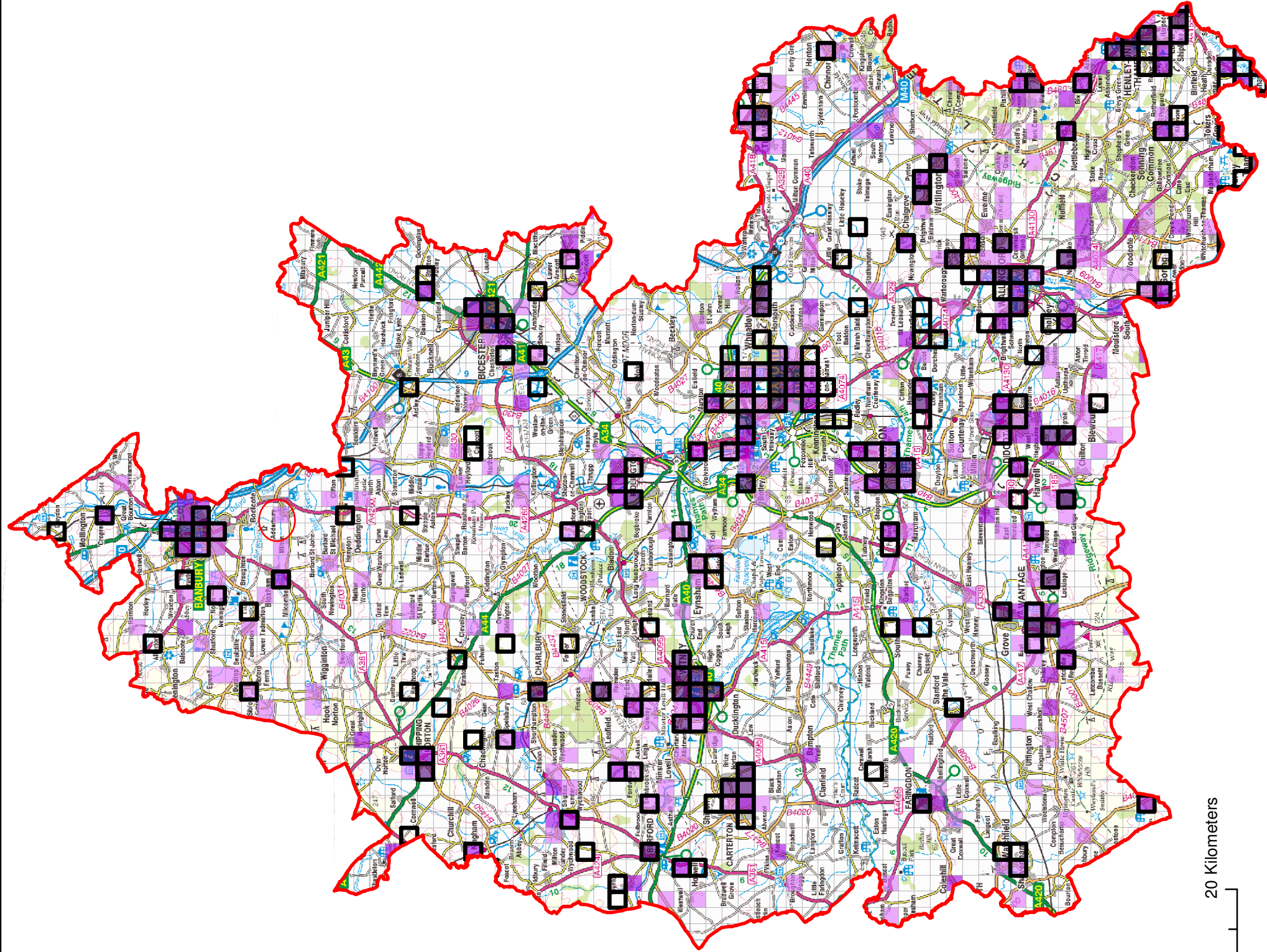
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for
OXFORDSHIRE COUNTY COUNCIL
PRELIMINARY FLOOD RISK ASSESSMENT
Map 7: Areas Susceptible to Groundwater Flooding

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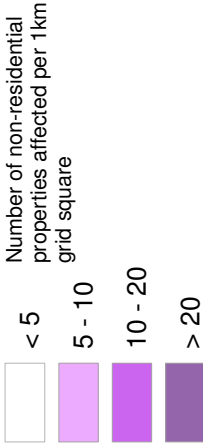


Explanatory note:
Maps 6a to 6c show the spatial distribution of three receptors (people, critical services and non-residential properties) that may be affected by future surface water flooding in an event with a 1 in 200 chance of occurring in any given year.
This map shows the number of non-residential properties affected, which can be considered an indicator of the consequences of flooding for economic activity. Non-residential properties are defined in the Environment Agency's PFRA and property count guidance, and include all industrial, commercial, retail, public buildings etc.
Calculations for each 1km square were carried out using the Flood Map for Surface Water (1 in 200 >0.3m), Environment Agency's detailed method of counting (based on property outlines) and the National Receptors Database v1.1.
The 1km squares are shaded from light to dark purple as the number of non-residential properties affected in each square increases.
Also overlaid on the map are surface water flooding 'hot spots', or areas where the consequences of a surface water event are likely to be more severe. These have been defined as 1km grid squares where at least one of the three indicators is above the threshold given below (thresholds defined by Defra guidance):
•One or more critical services affected
•More than 20 non-residential properties affected
The maps show that:
•The main hotspots are in more urban locations due to the concentration of population, industrial and commercial buildings, and critical services.
•Several more rural communities have less people affected but will still experience an adverse impact, particularly those where local critical services are affected.
More detail is given in the main report.

Legend



Non-residential properties



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Map 6c: Non-residential properties affected by
flooding in a rainfall event with a 1 in 200
chance of occurring in any given year

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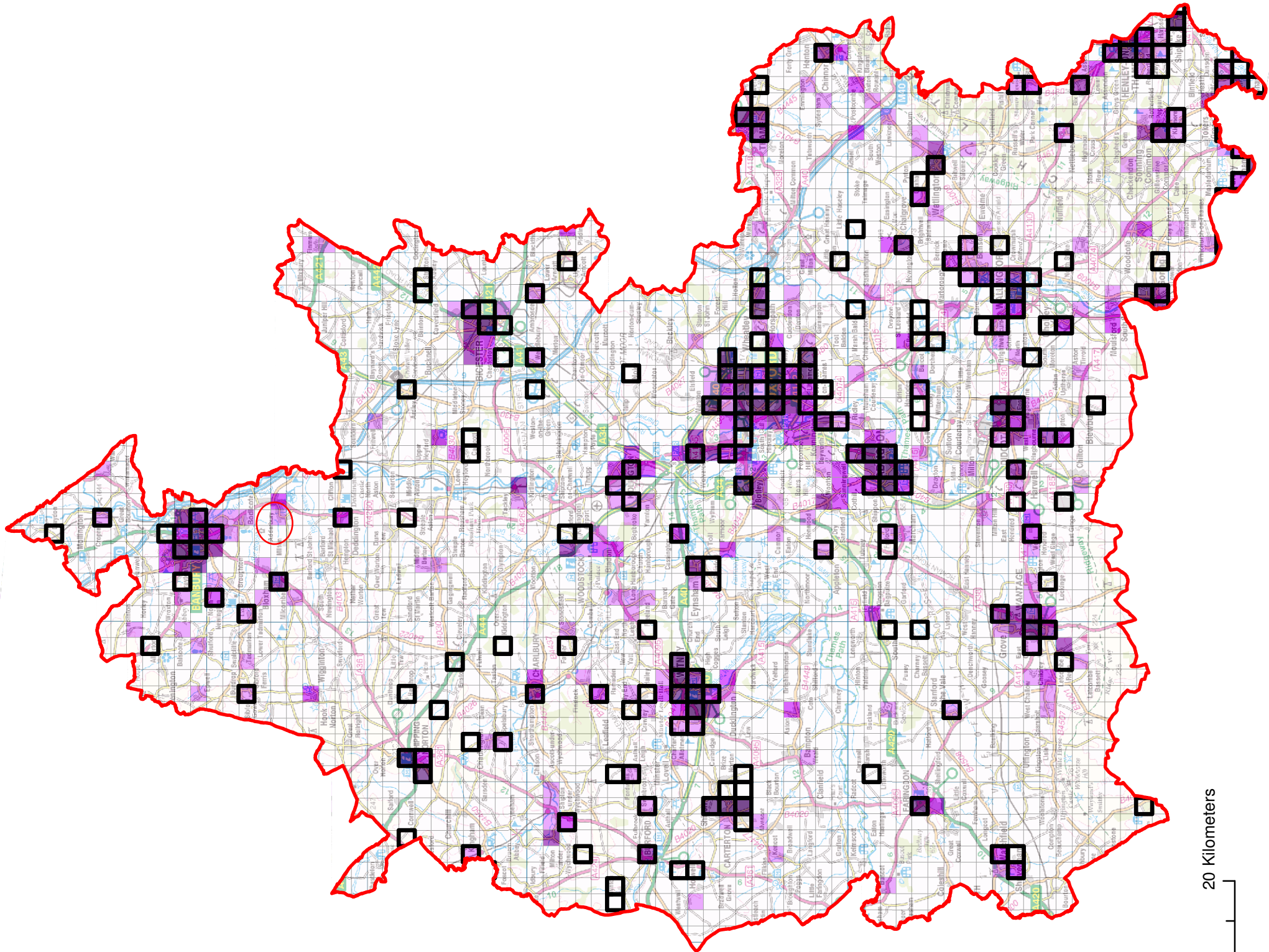
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0 5 10 20 Kilometers

Scale:

Not to scale

Drawing Number: Map 6c



Explanatory note:
Maps 6a to 6c show the spatial distribution of three receptors (people, critical services and non-residential properties) that may be affected by future surface water flooding in an event with a 1 in 200 chance of occurring in any given year.
This map shows the number of people affected, which can be considered an indicator of the consequences of flooding for human health. The number of people is defined by the Environment Agency guidance as the number of residential (housing) properties multiplied by 2.34.
Calculations for each 1km square were carried out using the Flood Map for Surface Water (1 in 200 >0.3m), Environment Agency's detailed method of counting (based on property outlines) and the National Receptors Database v1.1.
The 1km squares are shaded from light to dark purple as the number of people affected in each square increases. Also overlaid on the map are surface water flooding 'hot spots', or areas where the consequences of a surface water event are likely to be more severe. These have been defined as 1km grid squares where at least one of the three indicators is above the threshold given below (thresholds defined by Defra guidance):
•More than 200 people affected
•One or more critical services affected
•More than 20 non-residential properties affected
The maps show that:
•The main hotspots are in more urban locations due to the concentration of population, industrial and commercial buildings, and critical services.
•Several more rural communities have less people affected but will still experience an adverse impact, particularly those where local critical services are affected. More detail is given in the main report.

Legend

Hotspots

Number of people

< 20

20 - 50

50 - 100

100 - 200

> 200

Number of people affected per 1km grid square

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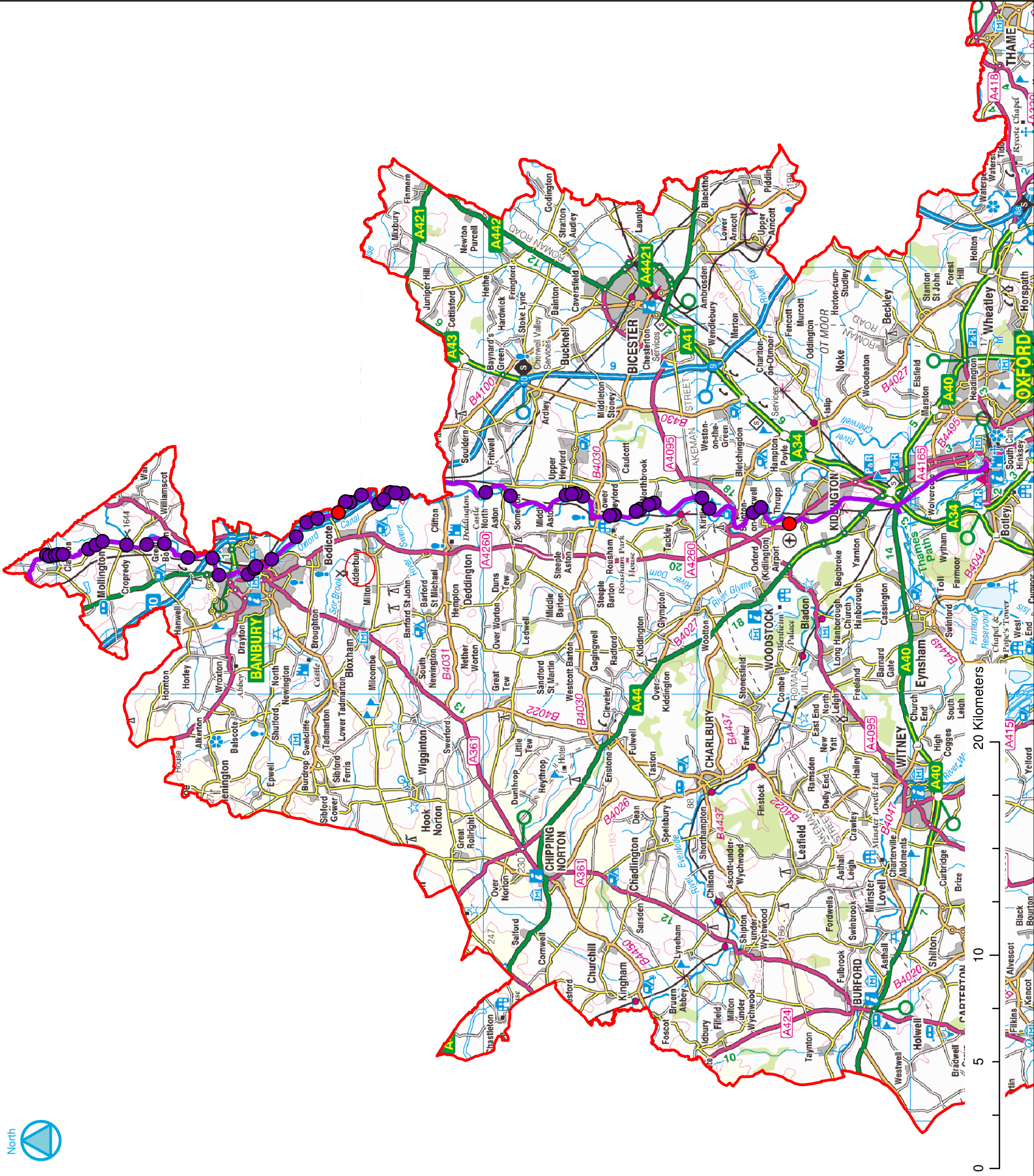
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Map 6a: People affected by flooding in a rainfall event with a 1 in 200 chance of occurring in any given year

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Drawing Number: Map 6a

Original @ A3



Legend

- Breach location
- Overflowing location
- Oxford Canal

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Map 4: Past flooding - Canal flooding in
July 2007

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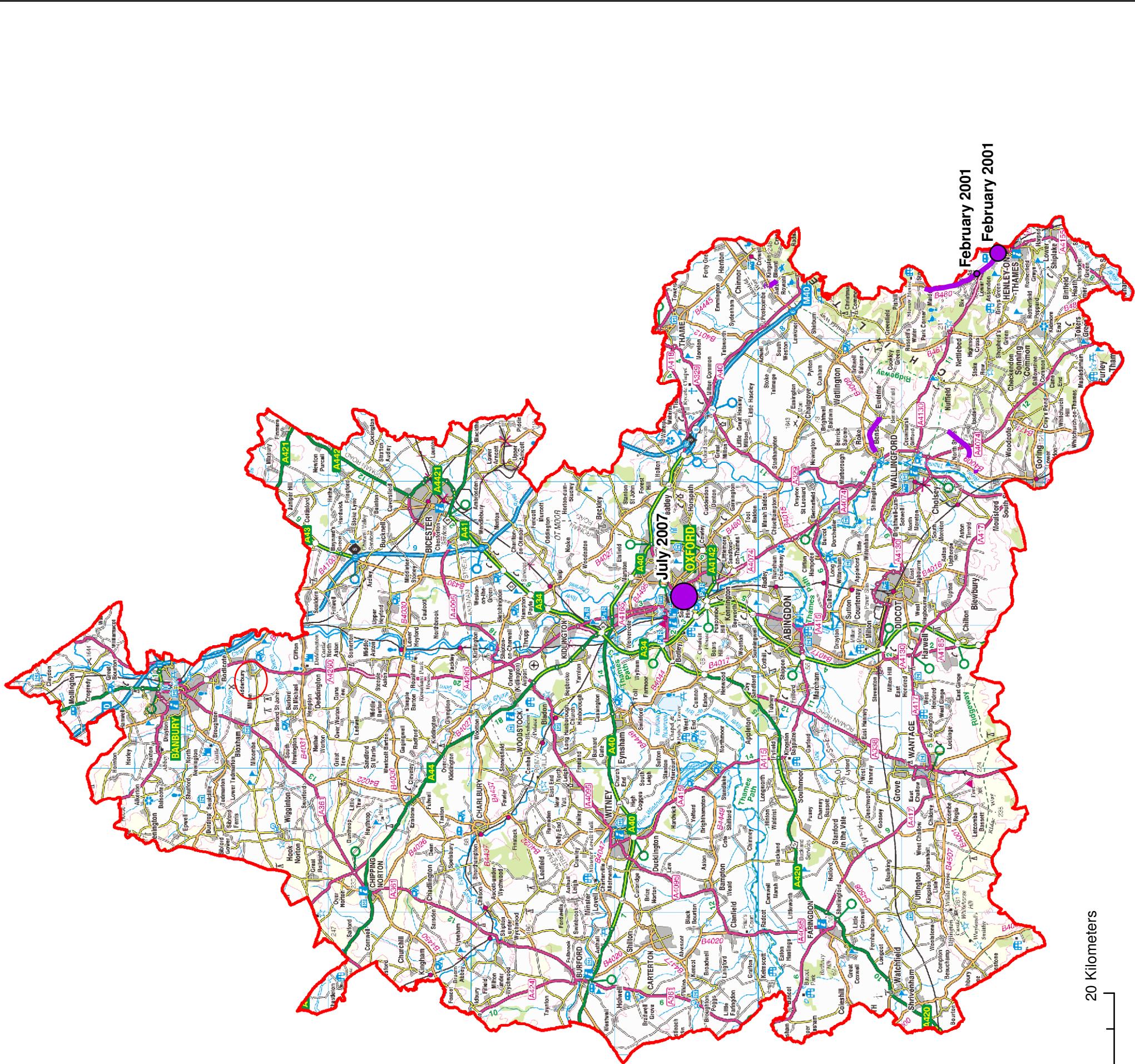
Drawing Number: Map 4

20 Kilometers

10

5

0



Legend

Past flooding from groundwater

Number of properties

• 0 to 10

• 11 to 20

• 21 to 200

Groundwater flooding locations (2001)

Note: Points are an indication of the approximate location of the settlement affected. NOT the location of individual properties flooded.

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Map 3: Past flooding - Ground water

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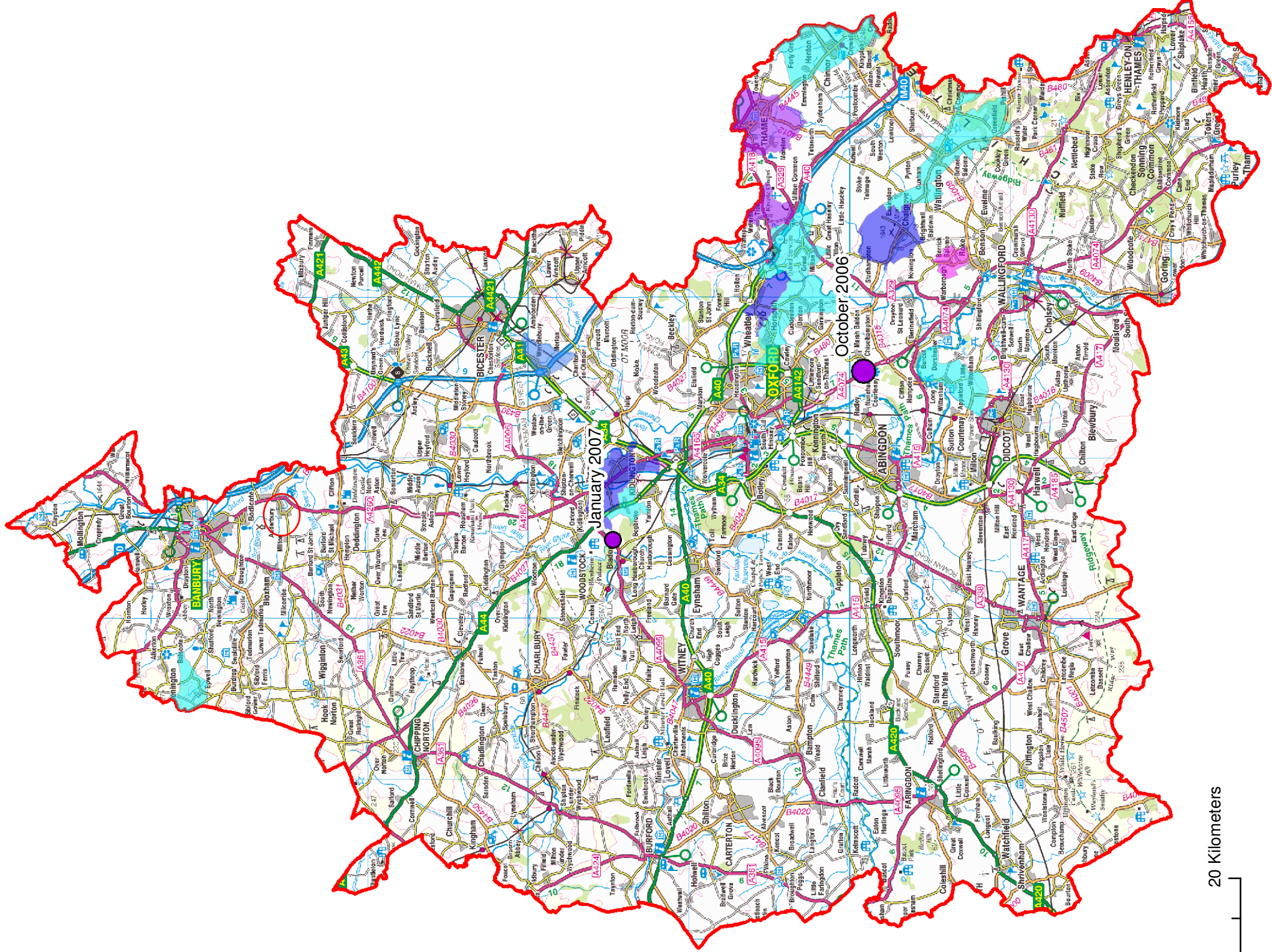
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File Name: N/A

Drawing Number: Map 3

Original @ A3



Legend

June 2008

Number of properties flooded by parish

- Less than 2
- 2 to 5
- 5 to 10
- 10 to 15
- 15 to 20

Number of properties flooded by other events

- 20
 - 25
- Note: Points are an indication of the approximate location of the settlement affected, NOT the location of individual properties flooded.

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Map 2: Past flooding - Surface water in other events

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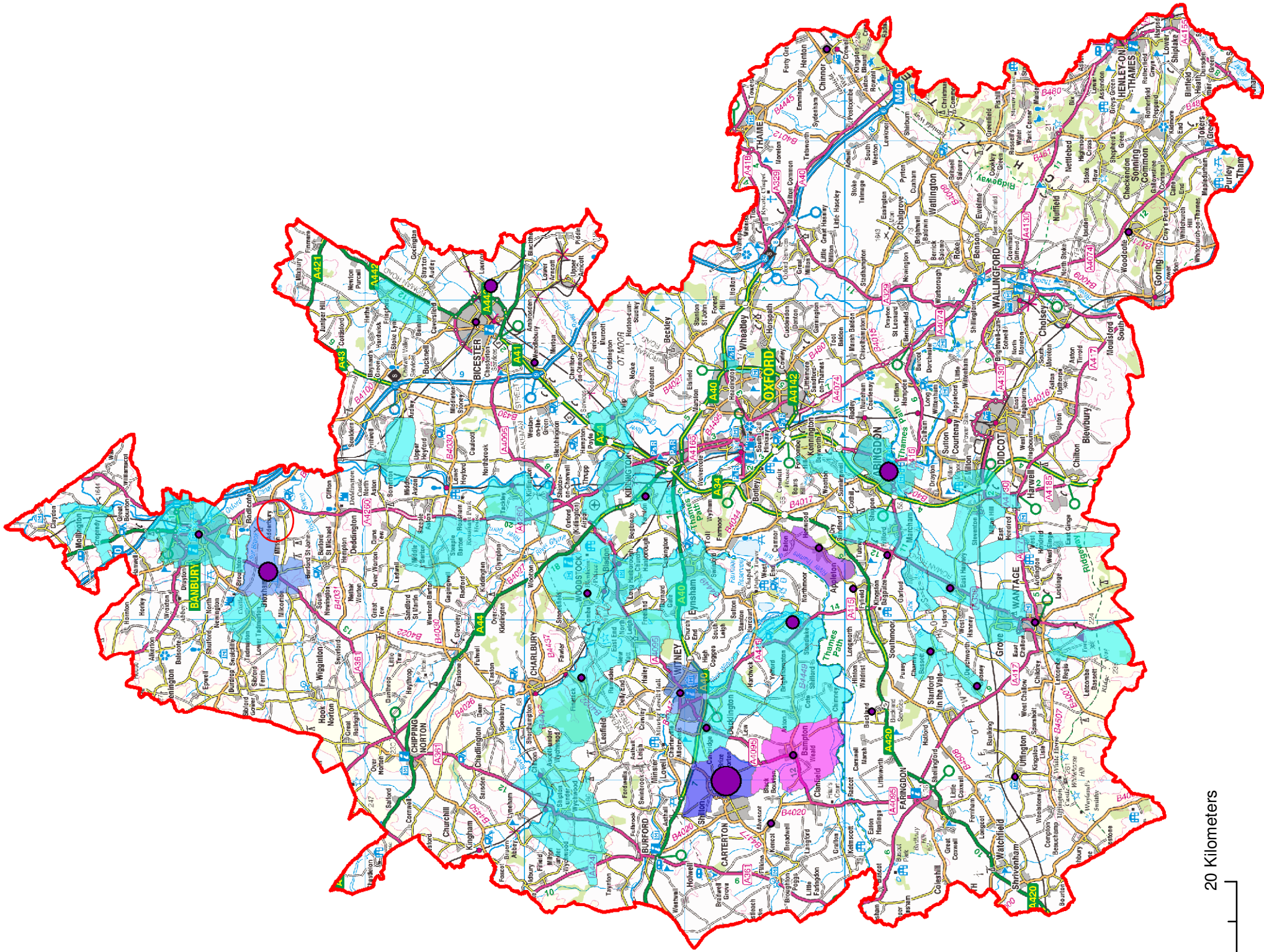
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Status: FINAL

File Name: N/A

Drawing Number: Map 2



Legend

July 2007 (Environment Agency)

- 1 - 5 Number of properties flooded internally by 'surface water'
- 6 - 10 (by settlement). Note: Points are an indication of the approximate location of the settlement affected
- 11 - 15 NOT the location of individual properties flooded.
- 16 - 20
- 21 - 24

July 2007 (Fire and Rescue Service)

- 1-5 Number of properties flooded internally by 'drainage' and 'ordinary watercourse' (by parish)
- 6-10
- 11-20
- 21-50
- 51-125

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Map 1: Past flooding - Surface water in July 2007

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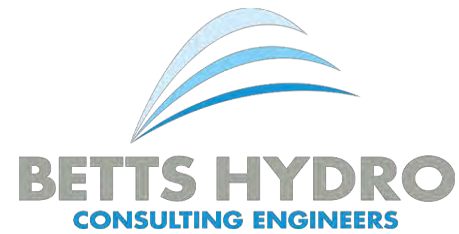
APPENDIX I: SURFACE WATER RUN-OFF CALCULATIONS

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SURFACE WATER RUN-OFF CALCULATION SHEET

Development	Berry Hill Road. Adderbury
Project No.	HYD250

Revision	A	Completed by	PT
Date	27.06.17	Checked by	KW



Areas		Catchment Characteristics	
Total Site	4.000 ha	SAAR	655 mm
Development Area (for SW Strategy)	1.970 ha	SPR	10 %
Existing Impermeable	0.110 ha	i ₁	14.1 mm/hr
Existing Impermeable (for SW Strategy)	0.000 ha	i ₃₀	31.1 mm/hr
Existing Pervious	3.890 ha	i ₁₀₀	40.4 mm/hr
Existing Pervious (for SW Strategy)	1.970 ha		
Proposed Impermeable (total)	0.886 ha		
Proposed Impermeable (domestic only)			

Run-off Rates				Volumes			
Pre-development				Pre-development			
Impermeable	1yr	0.0 l/s		Impermeable	1yr	0.0 cu.m	
	30yr	0.0 l/s			100yr	0.0 cu.m	
	100yr	0.0 l/s		Pervious	1yr	12.6 cu.m	
	50mm/hr	0.0 l/s			100yr	83.6 cu.m	
	QBar	0.7 l/s					
Pervious	1yr	0.6 l/s		Total	1yr	12.6 cu.m	
	30yr	1.7 l/s			100yr	83.6 cu.m	
	100yr	2.4 l/s					
	QBar	0.7 l/s					
Total	1yr	0.6 l/s					
	30yr	1.7 l/s					
	100yr	2.4 l/s					
	QBar	0.7 l/s					
Post-development							
Impermeable (total)	1yr	34.7 l/s					
	30yr	76.6 l/s					
	100yr+CC	129.3 l/s					
Impermeable (domestic only)	1yr	l/s					
	30yr	l/s					
	100yr+CC	l/s					

Quick storage Estimates		low	high	mean	Imp. Area (ha)	Max. Discharge (l/s)	Rainfall	CC
Return Period	1yr	82	131	106.5	0.886	5.0	FEH	0
Return Period	30yr	253	353	303	0.886	5.0	FEH	0
Return Period	100yr+CC	445	599	522	0.886	5.0	FEH	20%
Return Period	100yr+CC	541	724	632.5	0.886	5.0	FEH	40%