

Appendix D

1.1. Risk calculation

To give an overall perspective of flood risk in Peterborough, each type of flooding (referred to here as the hazard) has been rated according to the average likelihood and the expected impacts of that type. The results are set out in table C1 in the main report based on a risk matrix calculation. This appendix shows the categories for likelihood, impact and risk that were used for this calculation. The likelihood categories have been developed based on the Environment Agency's classification bands for flood risk. For each source of flood risk, where the risk in Peterborough from this source spans more than one band the highest likelihood band has been chosen.

1.2. Likelihood

After the hazard has been identified, the likelihood of it occurring each year is calculated. The following table outlines the five different probability categories ranging from very low to high.

Table C1: Likelihood score

Level	Descriptor	Likelihood, written as annual probability	
		Annual probability	Annual probability as a percentage chance
5	High	$1/30 \leq X < 1$	$3.3\% \leq X < 100\%$
4	Medium	$1/100 \leq X < 1/30$	$1\% \leq X < 3.3\%$
3	Medium-Low	$1/200 \leq X < 1/100$	$0.5\% \leq X < 1\%$
2	Low	$1/1000 \leq X < 1/200$	$0.01\% \leq X < 0.5\%$
1	Very Low	$1/10000 \leq X < 1/1000$	$0.001\% \leq X < 0.01\%$

1.3. Impact

The following table sets out the Health, Social, Economic and Environmental impact for each impact level. When scoring the overall impact level of a type of a flooding the highest relevant impact (health, social, economic or environmental) level was recorded.

Table C2: Impact explanation

Impact category	Meaning
Health – casualties	Injuries directly attributable to the emergency
Health – fatalities	Deaths directly attributable to the emergency
Social	The social consequences of an event, including availability of social welfare provision; disruption of facilities for transport; damage to property; disruption of a supply money, food, water, energy or fuel; disruption of an electronic or other system of communication; homelessness, evacuation and avoidance behaviour; and public disorder due to anger, fear, and/or lack of trust in the authorities
Economic	The net economic cost, including both direct (e.g. loss of or damage to goods, buildings, infrastructure) and indirect (e.g. loss of business, increased demand for public services) costs

Environmental	Disruption to or destruction of plant or animal life, contamination or pollution of land, water, or air, with harmful biological/chemical/radioactive matter or oil.
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Table C3: Impact scores

Level	Health – casualties	Health – fatalities	Social	Economic (£)	Environmental
1	0-5	0	Limited	Thousands	Insignificant
2	6-10	0	Some / local	Millions	Minor
3	11-50	1-20	Moderate / local – medium to long term	Tens of millions	Limited – long/short term
4	51-200	21-50	Significant local / local and regional	Hundreds of millions	Significant – medium/long term
5	200+	151	Severe local, regional and national	Billions	Serious long term

1.4. Risk calculation

The risk matrix combines both the score from impact and likelihood to give an overall score for the area from a particular known hazard. The numbers correspond to the overall risk rating given in the Peterborough Flood Risk Management Strategy.

Table C4: Risk matrix

Catastrophic 5	Impact	5	10	15	20	25
Significant 4		4	8	12	16	20
Moderate 3		3	6	9	12	15
Minor 2		2	4	6	8	10
Insignificant 1		1	2	3	4	5
		Likelihood				
		Very Low 1	Low 2	Medium - Low 3	Medium 4	High 5

Overall Risk Rating	Low 1-5	Medium 6-9	High 10-14	Very High 15+
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