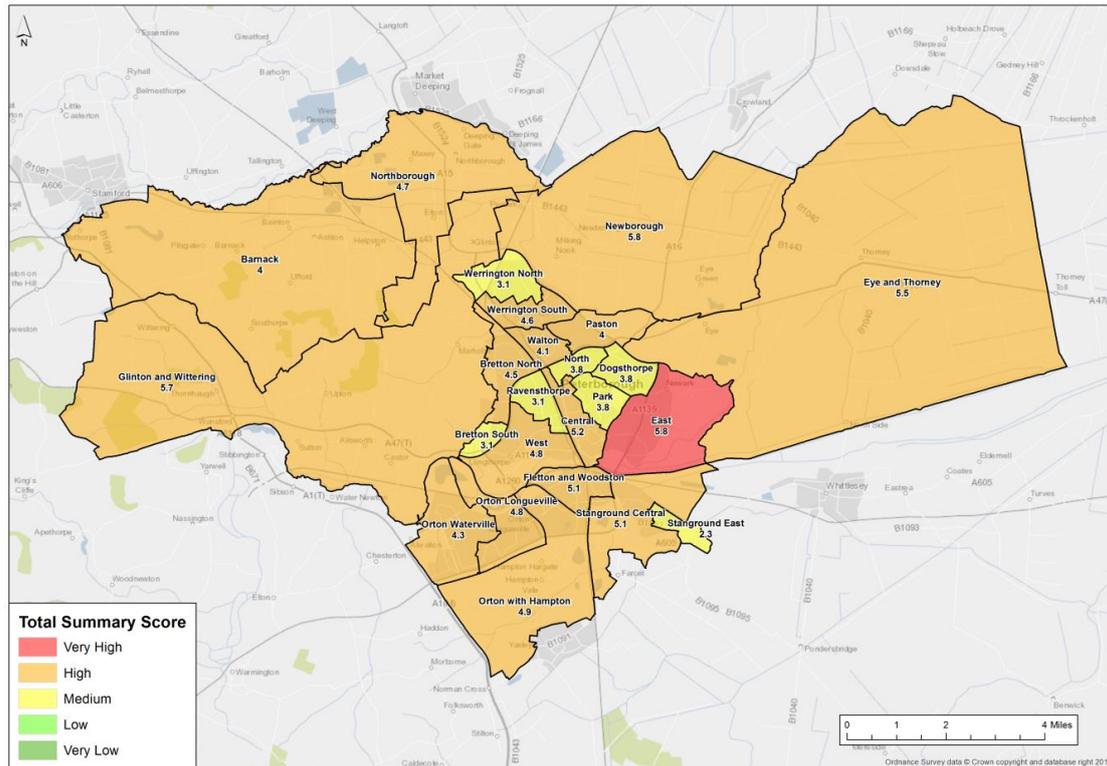


# APPENDIX E

## Peterborough Flood Risk and Climate Change Sensitivity

### Summary of Methodology



#### What is it?

The Peterborough flood risk and climate change sensitivity tool, combines local and national datasets of environment and infrastructure to help understand the risk of present-day and future flooding, based on climate change predictions, within the city.

#### Was does it do?

The tool produces a summary score per ward based on the risk of flooding from surface water, groundwater and fluvial flooding to people, infrastructure, economy and environment; for present day and future risk.

#### How does it work?

A list of infrastructure and environmental receptors were identified and split into impact categories (as presented in **Table 1**). For each of the receptors in a ward, an individual score from 0 (low number of receptors impacted) to 8 (high number of receptors impacted) is calculated based on how many receptors are at risk. This is undertaken for each of different flood events. These individual receptor scores are then combined to give an overall impact score and priority grading for each ward.

Results for future risk (climate change) are calculated using the change in impact scores between the modelled results. For fluvial this is the difference between flood zone 2 and flood zone 3 and for surface water this is the change in impact score between the 1 in 30 probability event and the 1 in 1:1,000 probability event. No climate change results have been derived for groundwater.

Impact Category	Receptor types	
Health	GP Surgeries	
	Hospitals	
	Nursing Homes (vulnerable people at risk)	
Social	Residential Properties in 40% Most Deprived Areas	
	Residential Properties in 40% to 80% Most Deprived Areas	
	Residential Properties in 20% Least Deprived Areas	
Economics	Residential Properties	
	Non-Residential Properties	
Environmental	Environmental Designations	
	Listed Buildings	
Infrastructure	Roads	Trunk Roads
		Strategic Routes
		Main Distributor Roads
		Secondary Distributor Roads
		Link Roads
		Local Access Roads
	Rail	Railway Lines
		Railway Stations
	Schools	Primary Schools
		Secondary Schools
	Emergency Services	
	Sewage Treatment Works	
	Power Network	Electricity Sub Stations
Gas Compression Sites		
Power Stations		

**Table 1 – List of Infrastructure and environmental receptors**

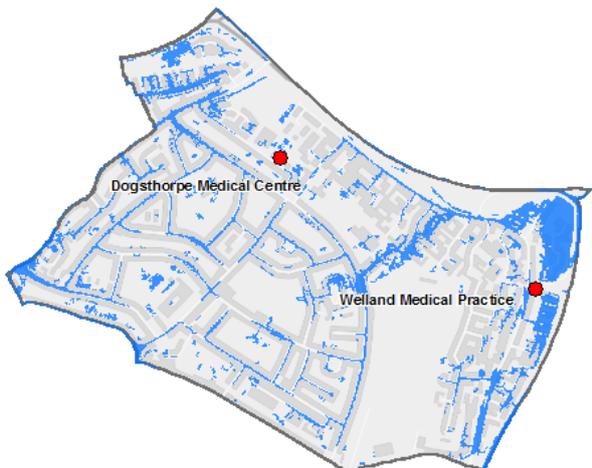
**Example of how the Peterborough flood risk and climate change sensitivity tool works**

For each ward the total number of a specific receptor (e.g. GP surgeries) are identified. The locations of these receptors are then reviewed against the risk of flooding.

The Dogsthorpe Ward has two GP surgeries located within its ward boundary, Dogsthorpe Medical Centre and Welland Medical Practice (red dots on the map to the right).



For a 1 in 30 probability surface water event (blue outline on the map below) only the Welland Medical Practice is affected.



The tool uses this information to determine the ‘GP capacity at risk score’ which is based on the percentage of GP surgeries within a ward that are at risk (**Table 2**). The score in Dogsthorpe Ward for GP risk is **5** (25% – 50% at risk) based on one of the two GP surgeries being affected. For a larger surface water event, the score increases to an **8**, as both the surgeries would be affected by flooding.

The overall health impact score is calculated for each type of flood risk by taking the **highest score** from the following health receptors:

- GP capacity at risk;
- Vulnerable people at risk; and
- Hospitals at risk.

Score	Criteria
1	None at risk
3	1% – 25% at risk
5	25% – 50% at risk
8	More than 50% at risk

**Table 2 – Scoring criteria for GP’s surgeries**

An impact score is then calculated for each of the five impact categories.

The impact scores are then combined and displayed as an average. The average impact score is then calculated and converted into a priority grading. The results for the 1 in 1000 probability surface water event are displayed below. Dogsthorpe is classed as being Very High.



**Flood Risk and Climate Change Sensitivity**  
Ward Summary for Surface Water (1,000 year RP) Flood Map

Ward	Health	Social	Economics	Environmental	Infrastructure	Average Score	Priority Grading
Barnack	3	5	3	8	8	5.4	High
Bretton North	8	8	5	5	8	6.8	Very High
Bretton South	8	5	3	2	8	5.2	High
Central	8	8	5	8	8	7.4	Very High
Dogsthorpe	8	8	5	2	8	6.2	Very High
East	8	8	5	8	8	7.4	Very High
Eye and Thorney	8	8	5	8	8	7.4	Very High
Fletton and Woodston	8	8	5	5	8	6.8	Very High
Glington and Wittering	8	5	5	8	8	6.8	Very High
Newborough	8	5	3	8	8	6.4	Very High
North	8	8	3	3	8	6.0	High
Northborough	8	5	3	8	8	6.4	Very High
Orton Longueville	8	8	5	8	8	7.4	Very High
Orton Waterville	8	5	5	8	8	6.8	Very High

**Table 3 – Results for the 1 in 1000 probability flood event**

The tool provides summary scores for different types of flood events along with a combined score for all the flood types.

### Further reading

A more detailed methodology report is available, outlining all the classifications, queries and scoring used within the tool.