

C.2 TIDAL MAPPING



C.2.1 INTRODUCTION

Maps were produced for each Local Authority boundary depicting the number of properties at risk from flooding for 2008, 2025, 2055 and 2102 (see maps below). The flood zones were used to identify the number of properties at risk, which were coloured red on the maps. Any wards affected by flooding were coloured yellow, regardless of whether any properties were at risk.

In addition, the number of properties at risk of flooding per ward for 2008, 2025, 2055 and 2102 are detailed in Tables 1-5.

C.2.2 DATA COLLECTION

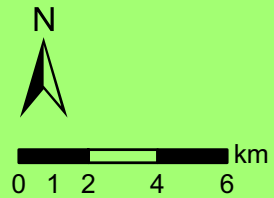
The following data were collected to depict the number of properties at risk from flooding:

- **2008 Flood Zone 3 shapefile** supplied by the Environment Agency (EA). Flood Zone 3 shapefiles produced by the EA represent a 1:200 year flood zone assuming no defences are present in 2008.
- **2025, 2055 and 2102 Floodplain 3 shapefiles** created by the Channel Coastal Observatory. The local authorities and the EA agreed a 2102 Floodplain 3 level for Poole Harbour, Christchurch Harbour and the Western Solent. The contours were then extracted from the 2008 Lidar for Christchurch Harbour, the Western Solent and Southampton Water, and the 2007 Lidar for Poole Harbour (see Annex 1 for method). This method was then followed for 2025 and 2055 epochs. Floodplain shapefiles produced by the Channel Coastal Observatory represent a 1:200 year floodplain assuming no defences are present in 2025, 2055 and 2102.
- **Address Point data** was obtained from the EA by the Channel Coastal Observatory (2008 dataset).



- Properties in Tidal Floodplain
- New Forest District Council
- Flood Zone 3 (1:200 Years) 2008
- Wards Affected by Tidal Flooding

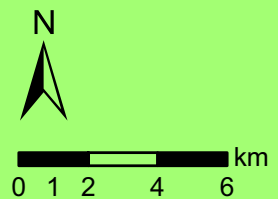
Local Authority	Number of Properties in Tidal Floodplain
New Forest District Council	1059

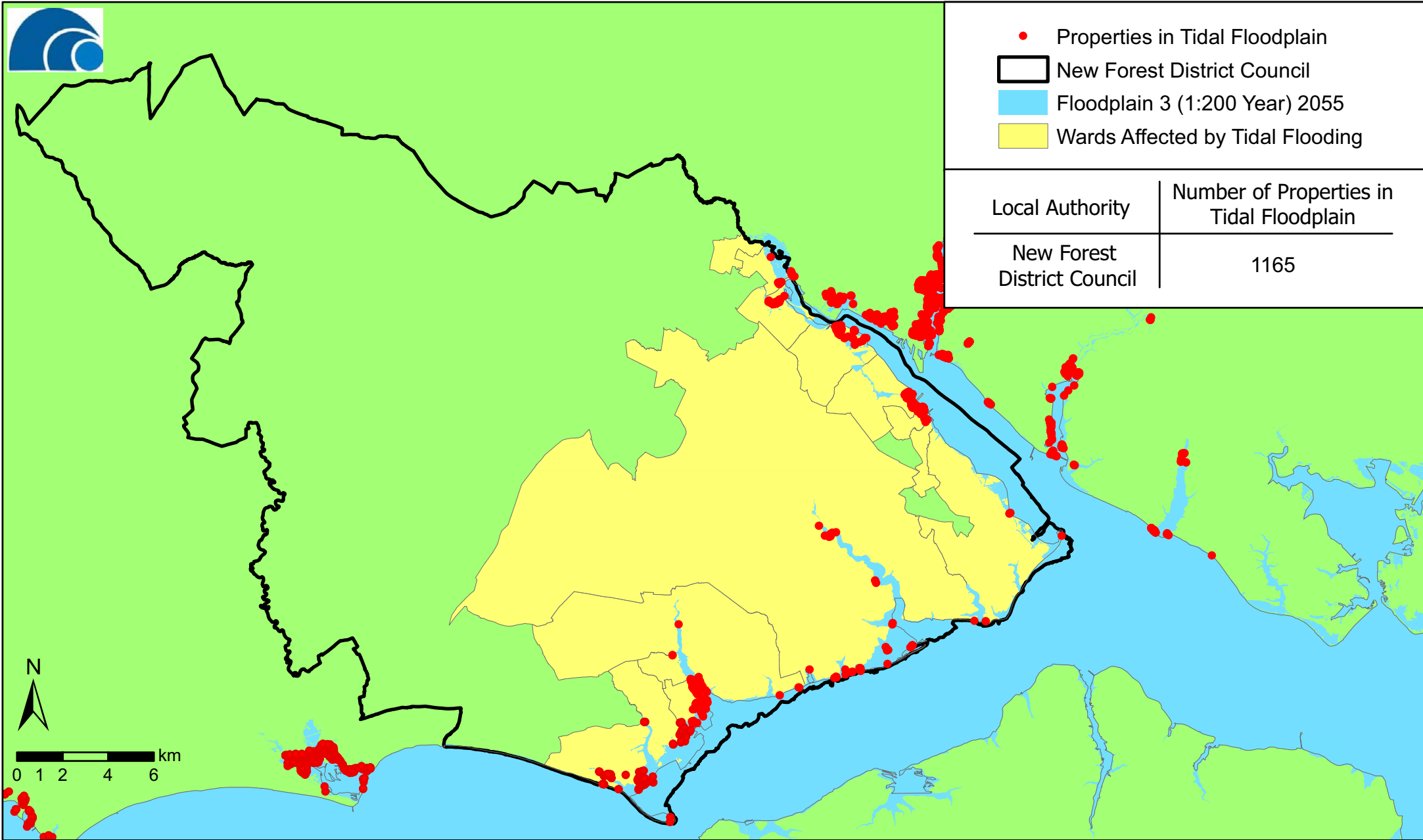




- Properties in Tidal Floodplain
- New Forest District Council
- Floodplain 3 (1:200 Year) 2025
- Wards Affected by Tidal Flooding

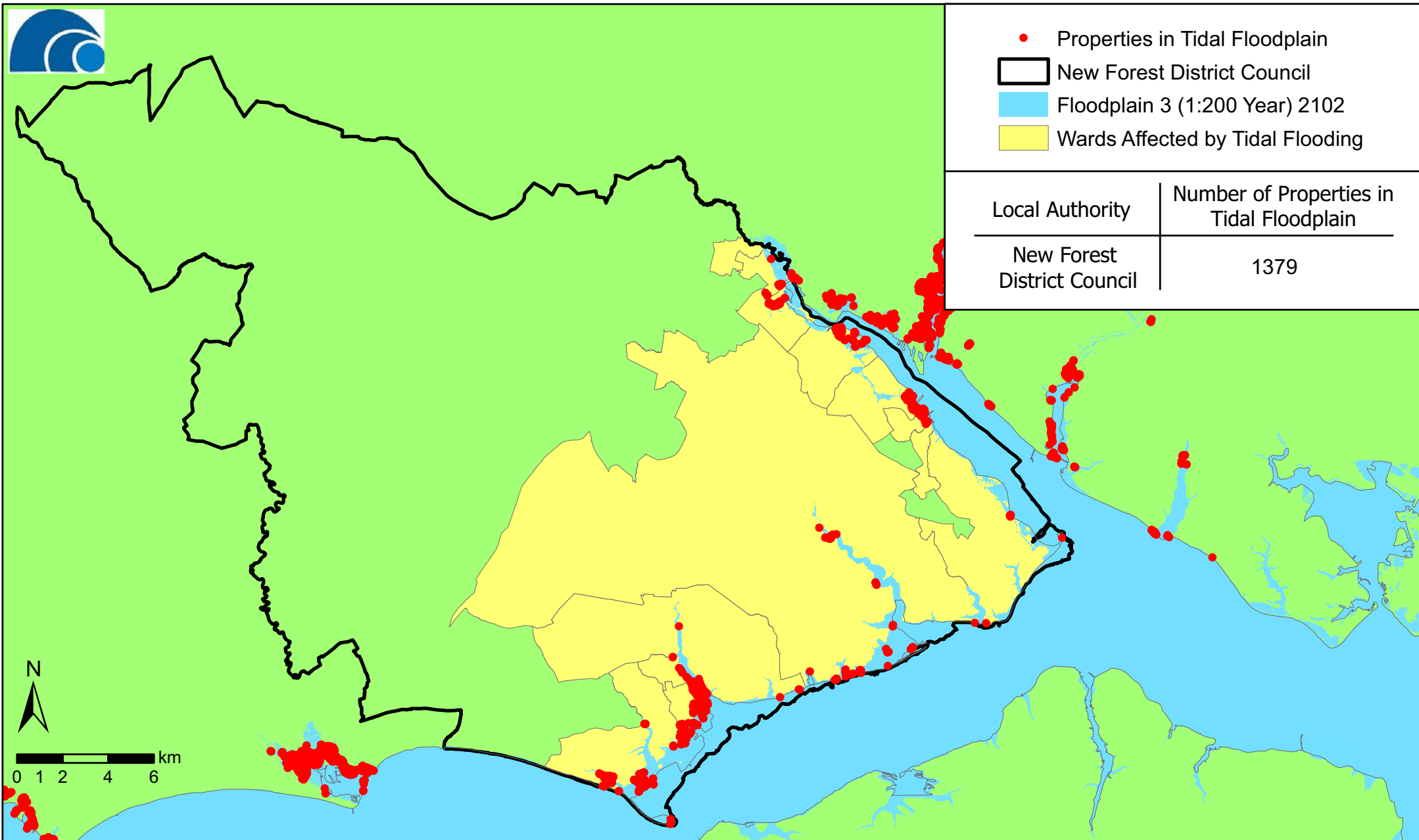
Local Authority	Number of Properties in Tidal Floodplain
New Forest District Council	1108





- Properties in Tidal Floodplain
- ▭ New Forest District Council
- ▭ Floodplain 3 (1:200 Year) 2055
- ▭ Wards Affected by Tidal Flooding

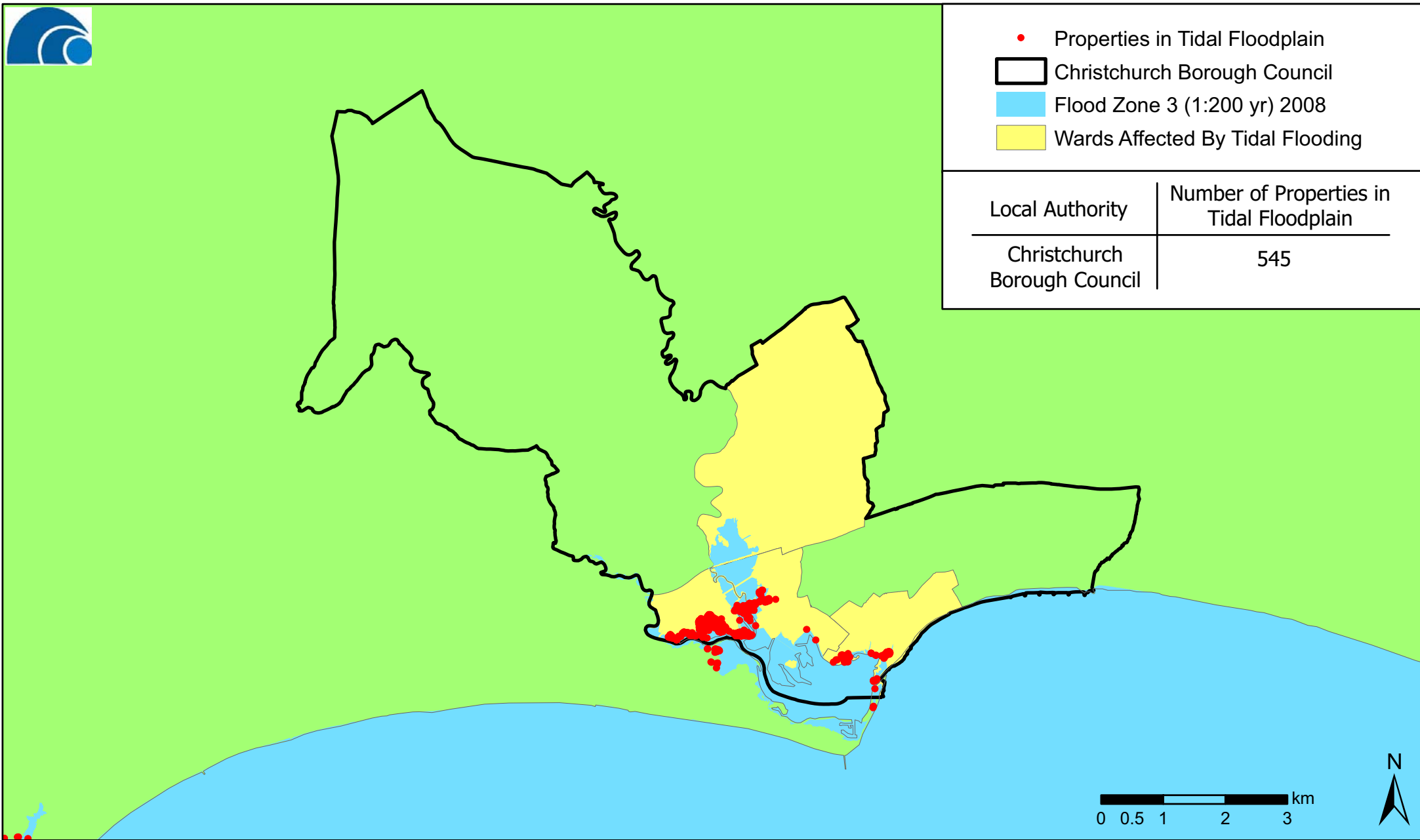
Local Authority	Number of Properties in Tidal Floodplain
New Forest District Council	1165





- Properties in Tidal Floodplain
- Christchurch Borough Council
- Flood Zone 3 (1:200 yr) 2008
- Wards Affected By Tidal Flooding

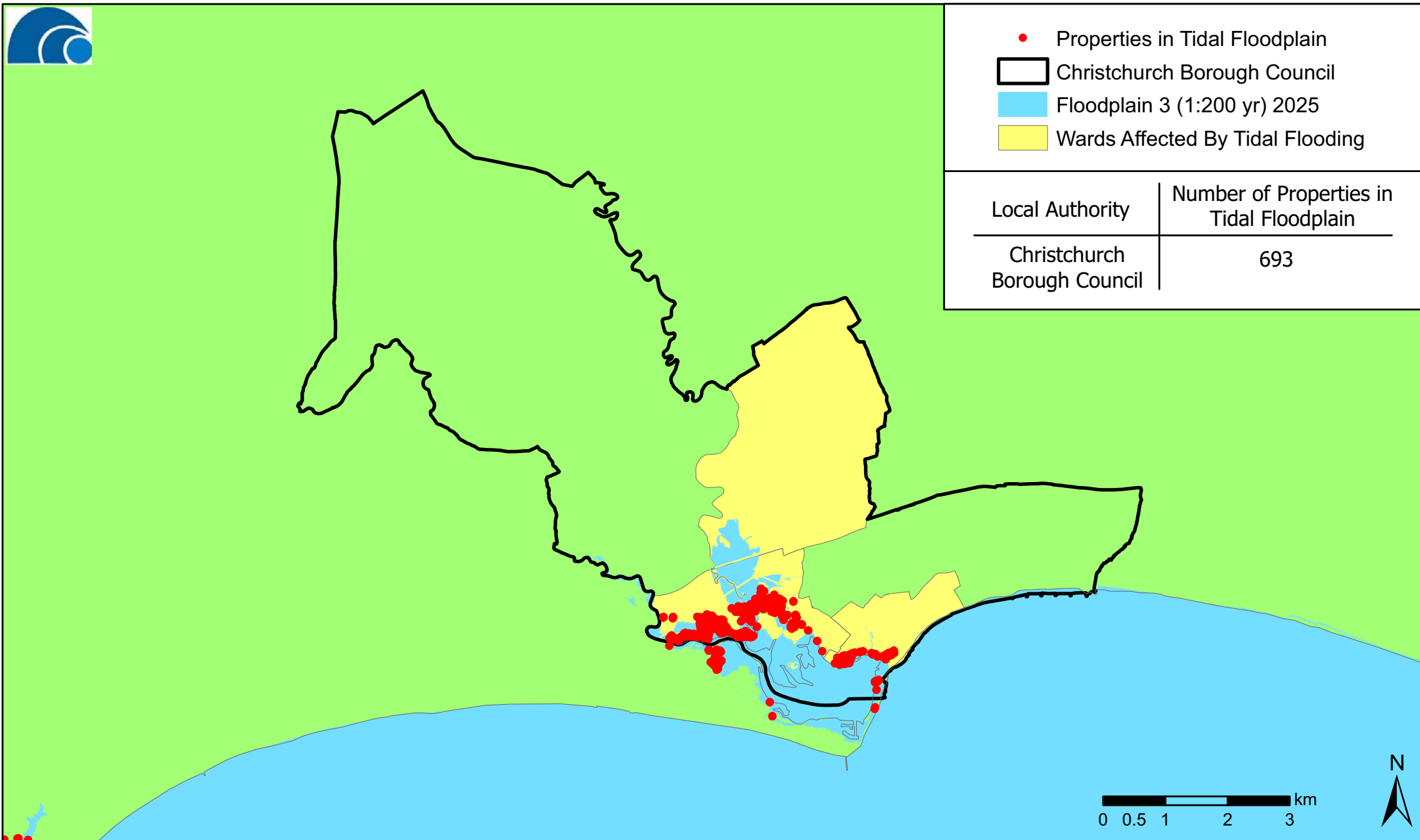
Local Authority	Number of Properties in Tidal Floodplain
Christchurch Borough Council	545





- Properties in Tidal Floodplain
- ▭ Christchurch Borough Council
- ▭ Floodplain 3 (1:200 yr) 2025
- ▭ Wards Affected By Tidal Flooding

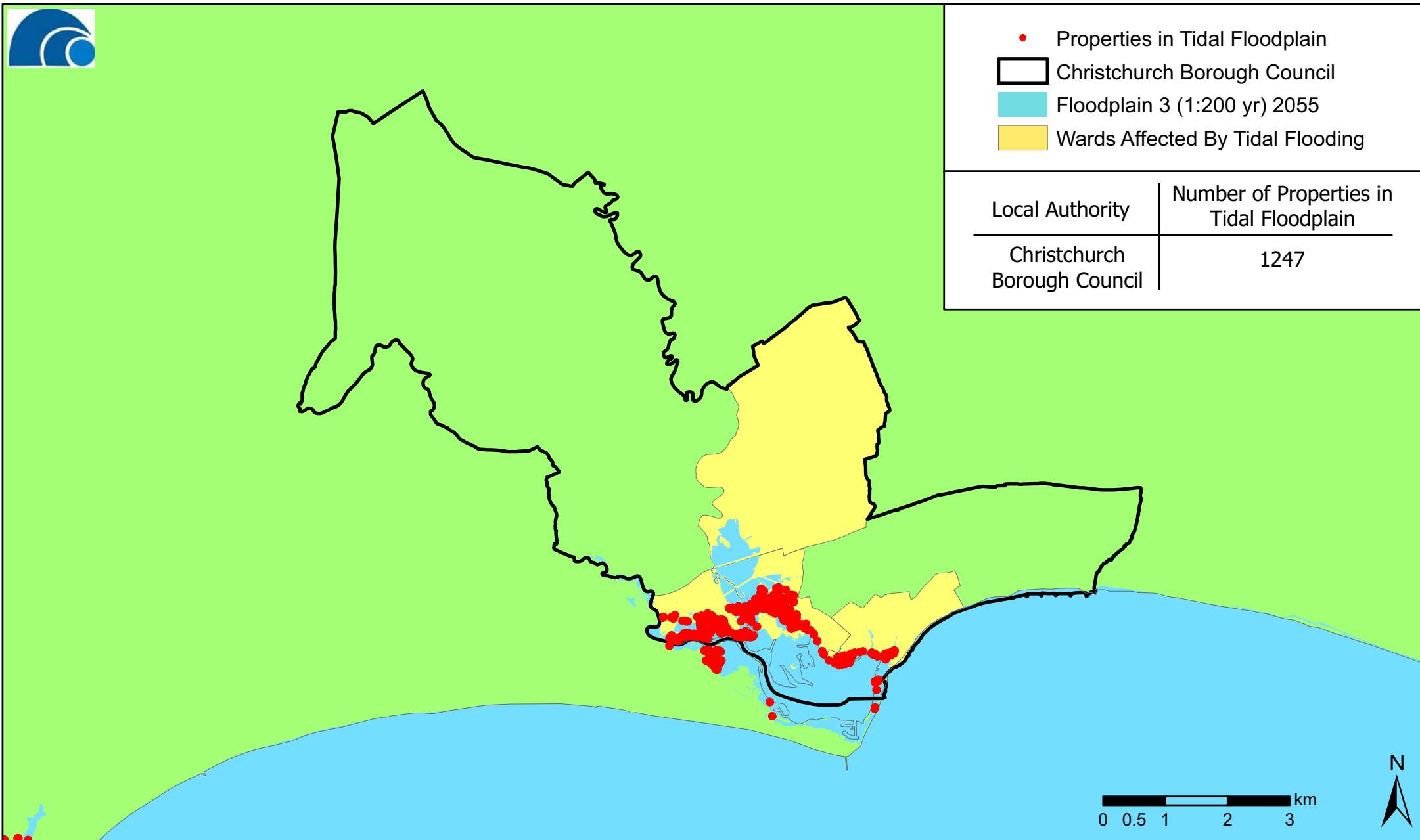
Local Authority	Number of Properties in Tidal Floodplain
Christchurch Borough Council	693





- Properties in Tidal Floodplain
- ▭ Christchurch Borough Council
- ▭ Floodplain 3 (1:200 yr) 2055
- ▭ Wards Affected By Tidal Flooding

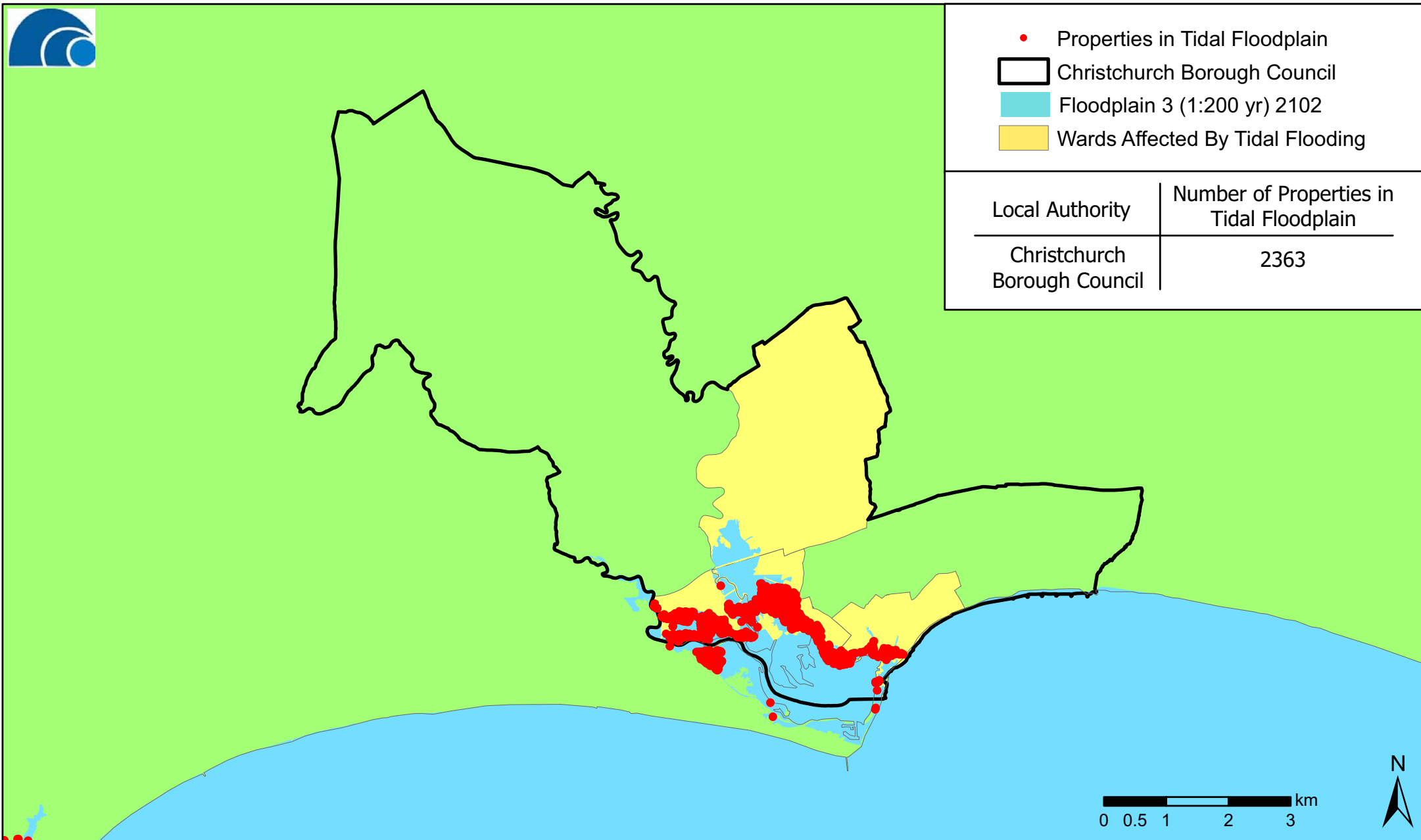
Local Authority	Number of Properties in Tidal Floodplain
Christchurch Borough Council	1247





- Properties in Tidal Floodplain
- ▭ Christchurch Borough Council
- ▭ Floodplain 3 (1:200 yr) 2102
- ▭ Wards Affected By Tidal Flooding

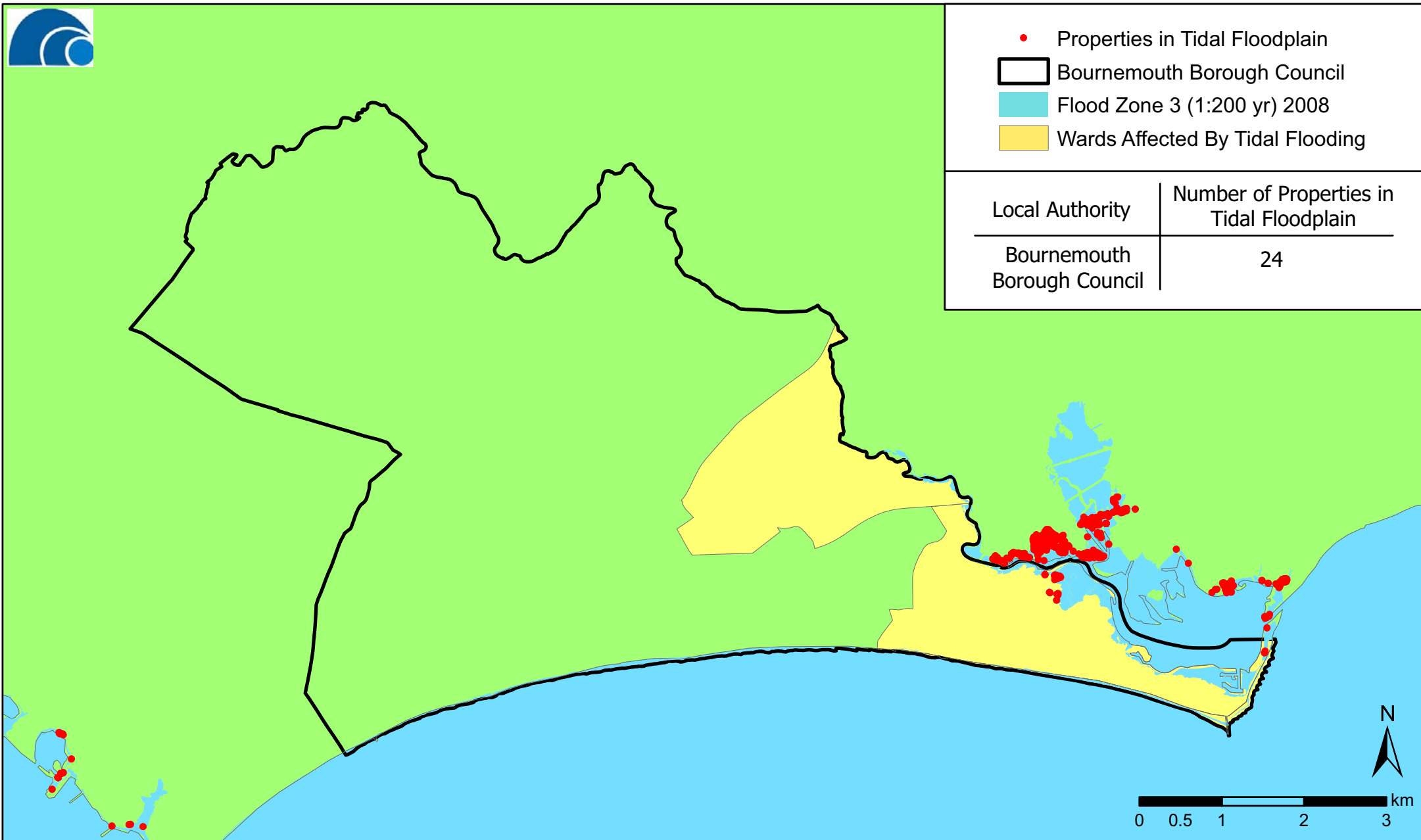
Local Authority	Number of Properties in Tidal Floodplain
Christchurch Borough Council	2363





- Properties in Tidal Floodplain
- ▭ Bournemouth Borough Council
- ▭ Flood Zone 3 (1:200 yr) 2008
- ▭ Wards Affected By Tidal Flooding

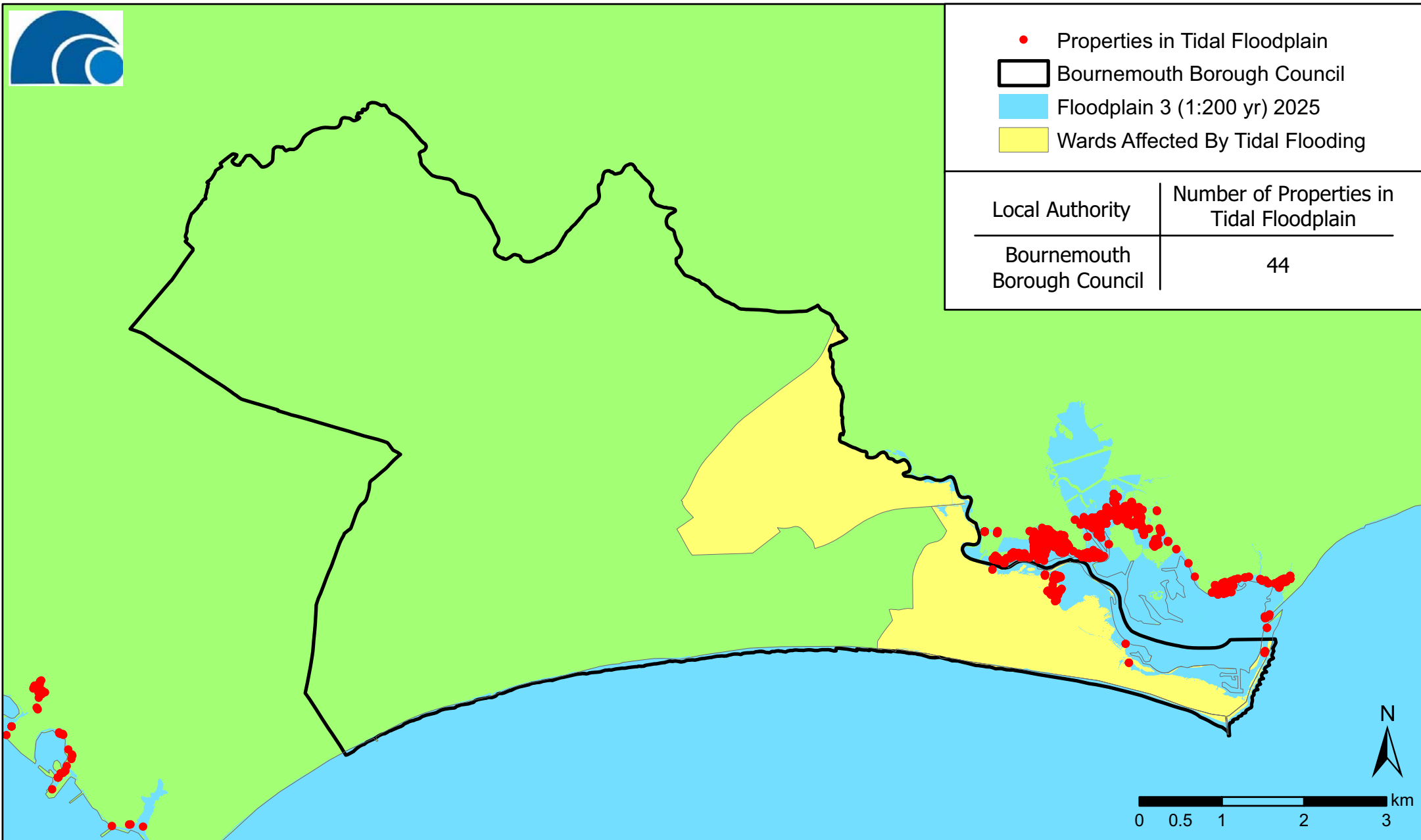
Local Authority	Number of Properties in Tidal Floodplain
Bournemouth Borough Council	24





- Properties in Tidal Floodplain
- ▭ Bournemouth Borough Council
- ▭ Floodplain 3 (1:200 yr) 2025
- ▭ Wards Affected By Tidal Flooding

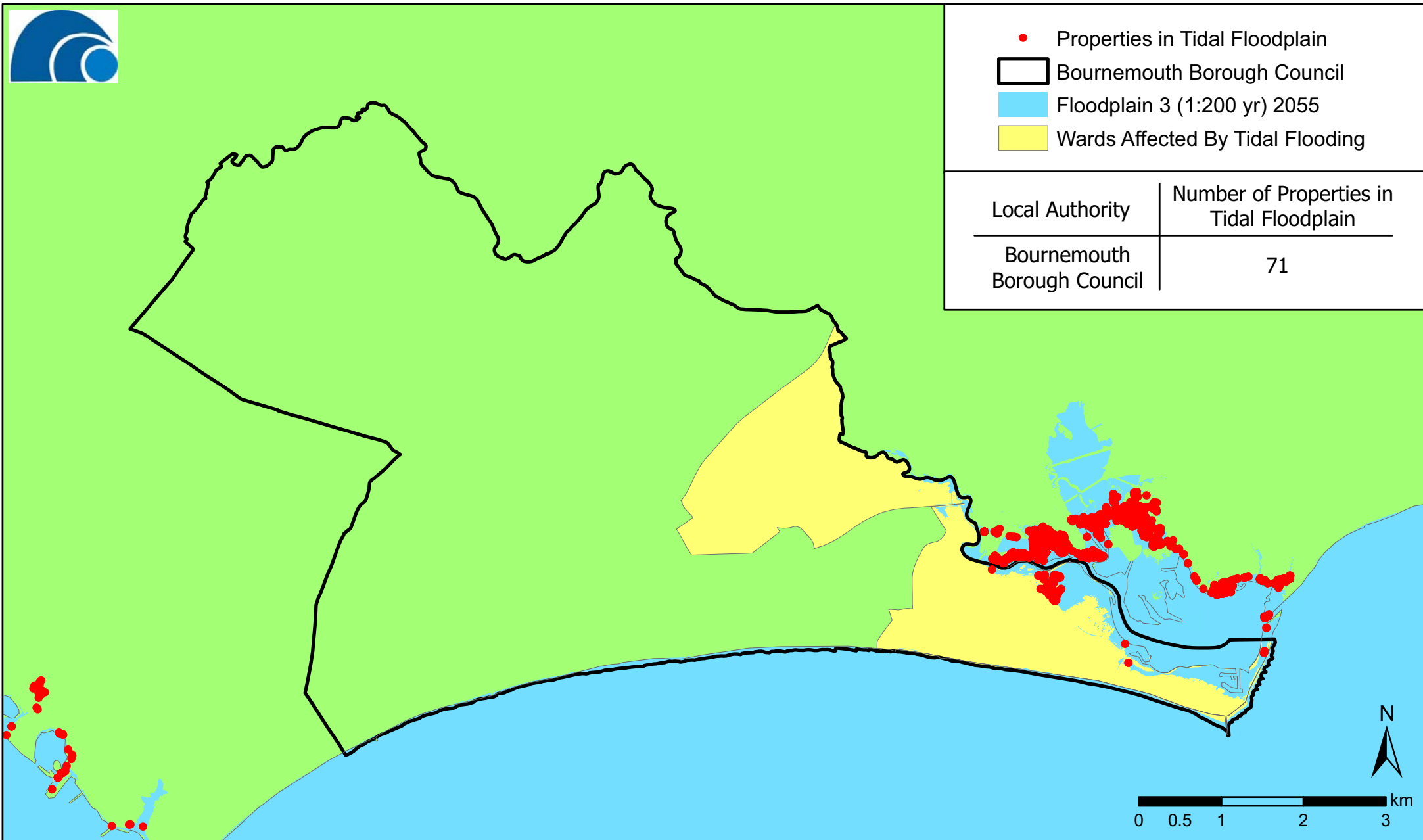
Local Authority	Number of Properties in Tidal Floodplain
Bournemouth Borough Council	44





- Properties in Tidal Floodplain
- Bournemouth Borough Council
- Floodplain 3 (1:200 yr) 2055
- Wards Affected By Tidal Flooding

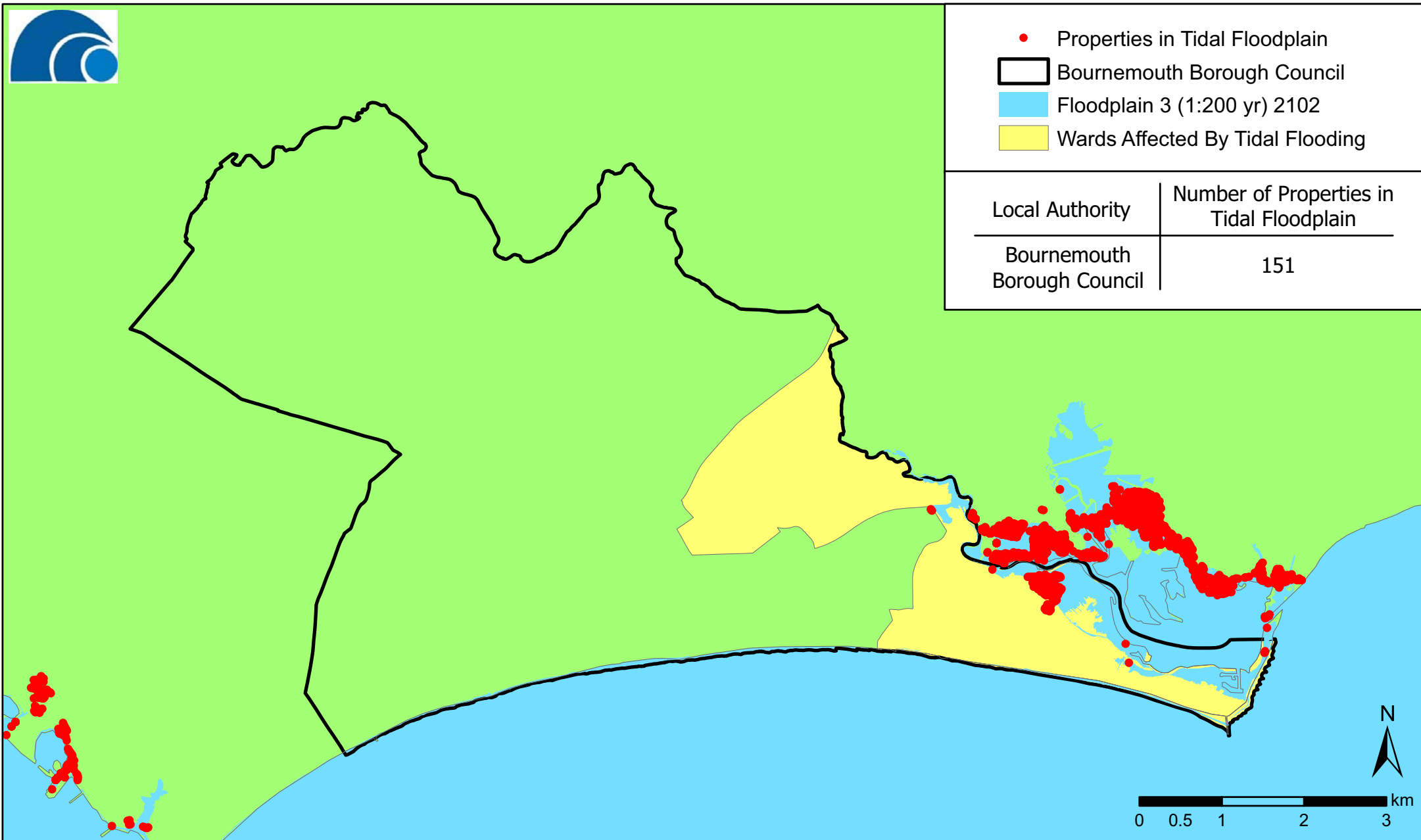
Local Authority	Number of Properties in Tidal Floodplain
Bournemouth Borough Council	71





- Properties in Tidal Floodplain
- ▭ Bournemouth Borough Council
- ▭ Floodplain 3 (1:200 yr) 2102
- ▭ Wards Affected By Tidal Flooding

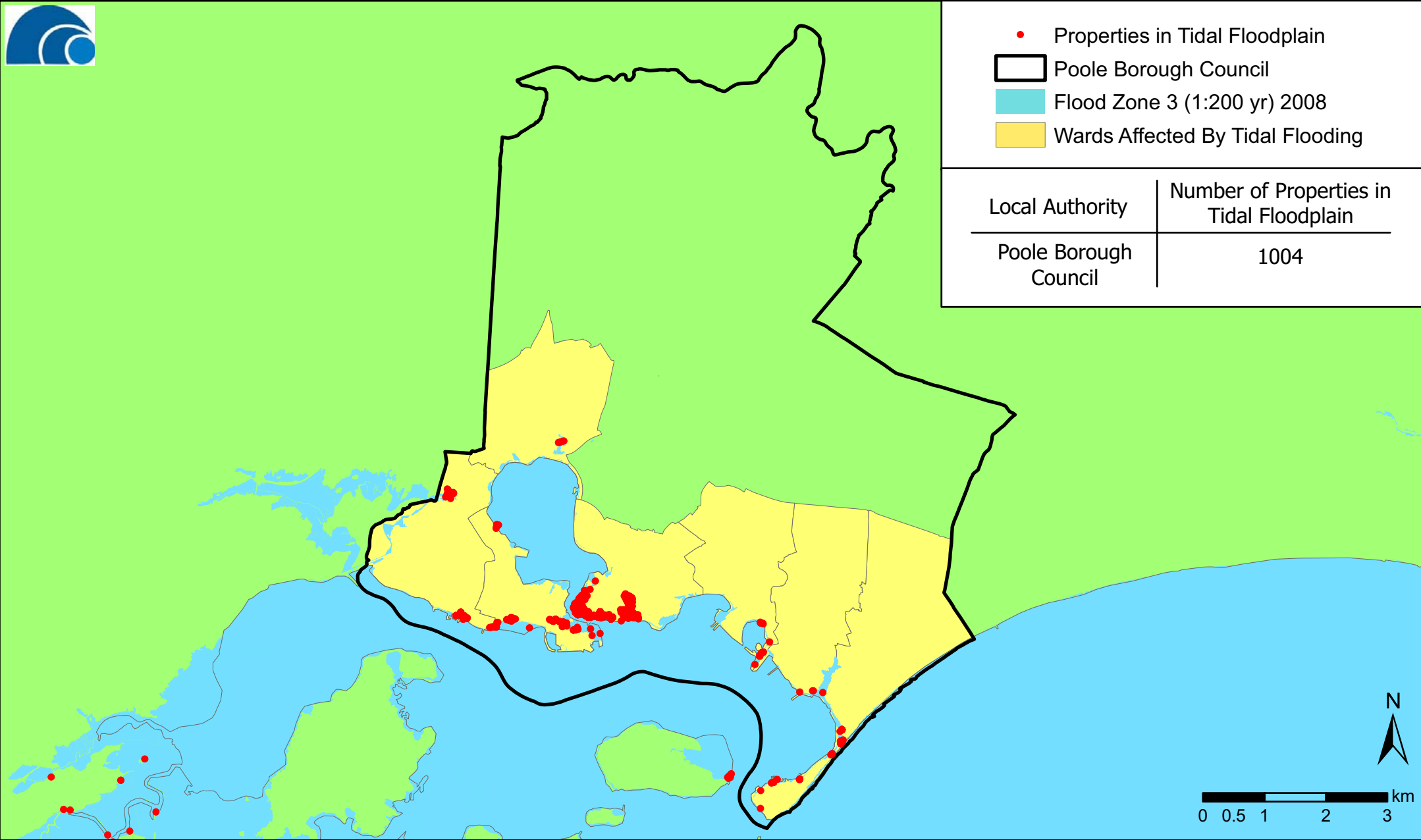
Local Authority	Number of Properties in Tidal Floodplain
Bournemouth Borough Council	151

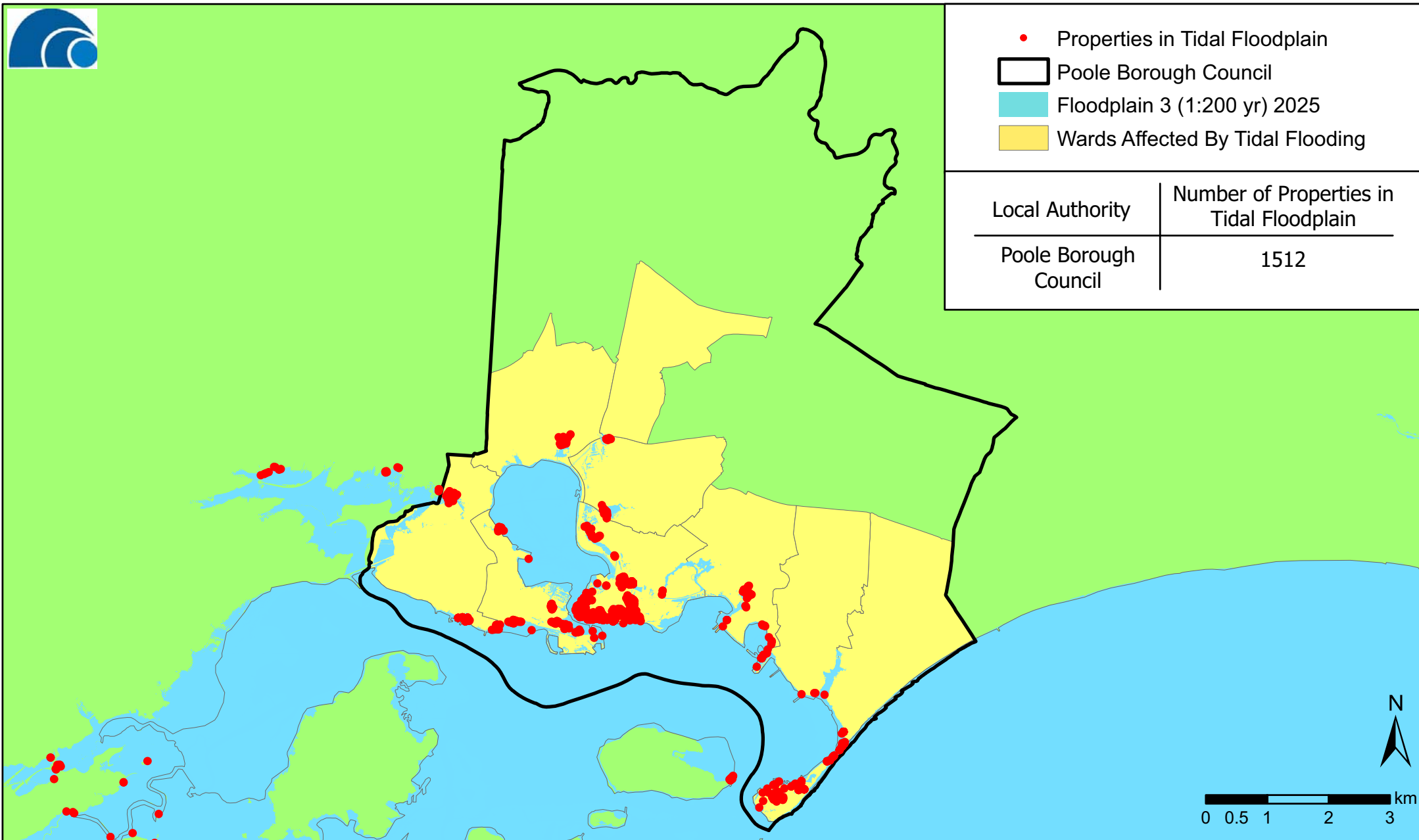


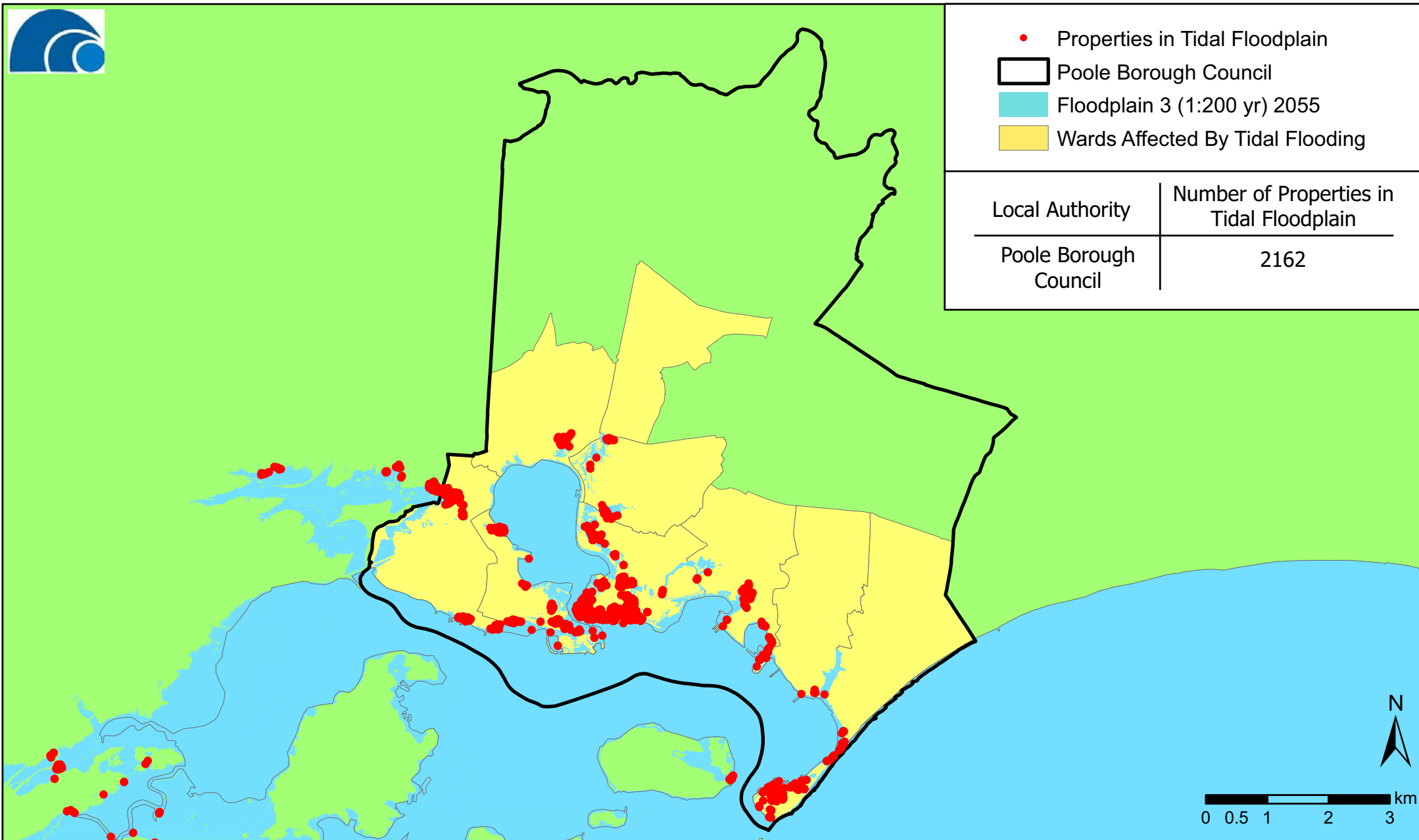


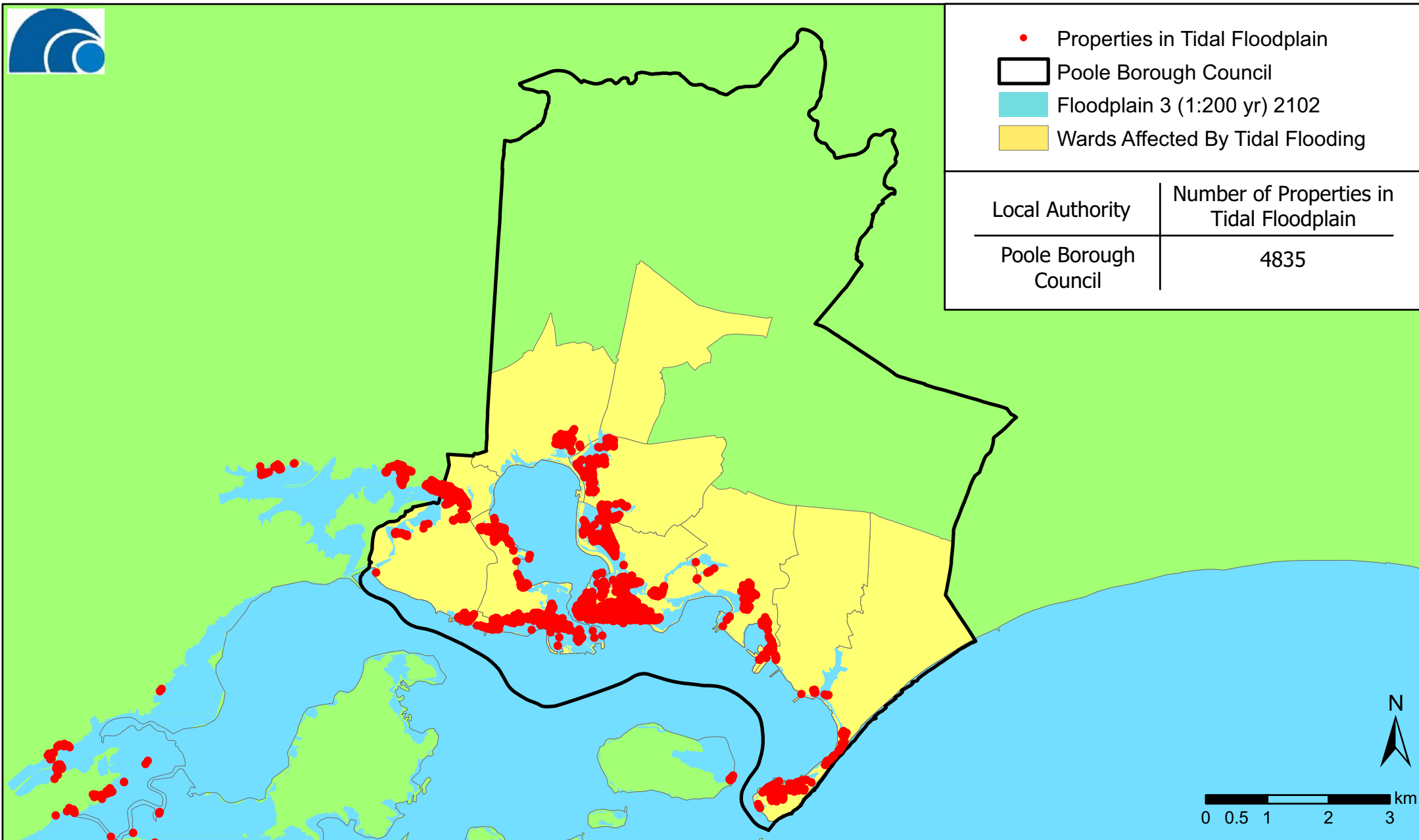
- Properties in Tidal Floodplain
- Poole Borough Council
- Flood Zone 3 (1:200 yr) 2008
- Wards Affected By Tidal Flooding

Local Authority	Number of Properties in Tidal Floodplain
Poole Borough Council	1004





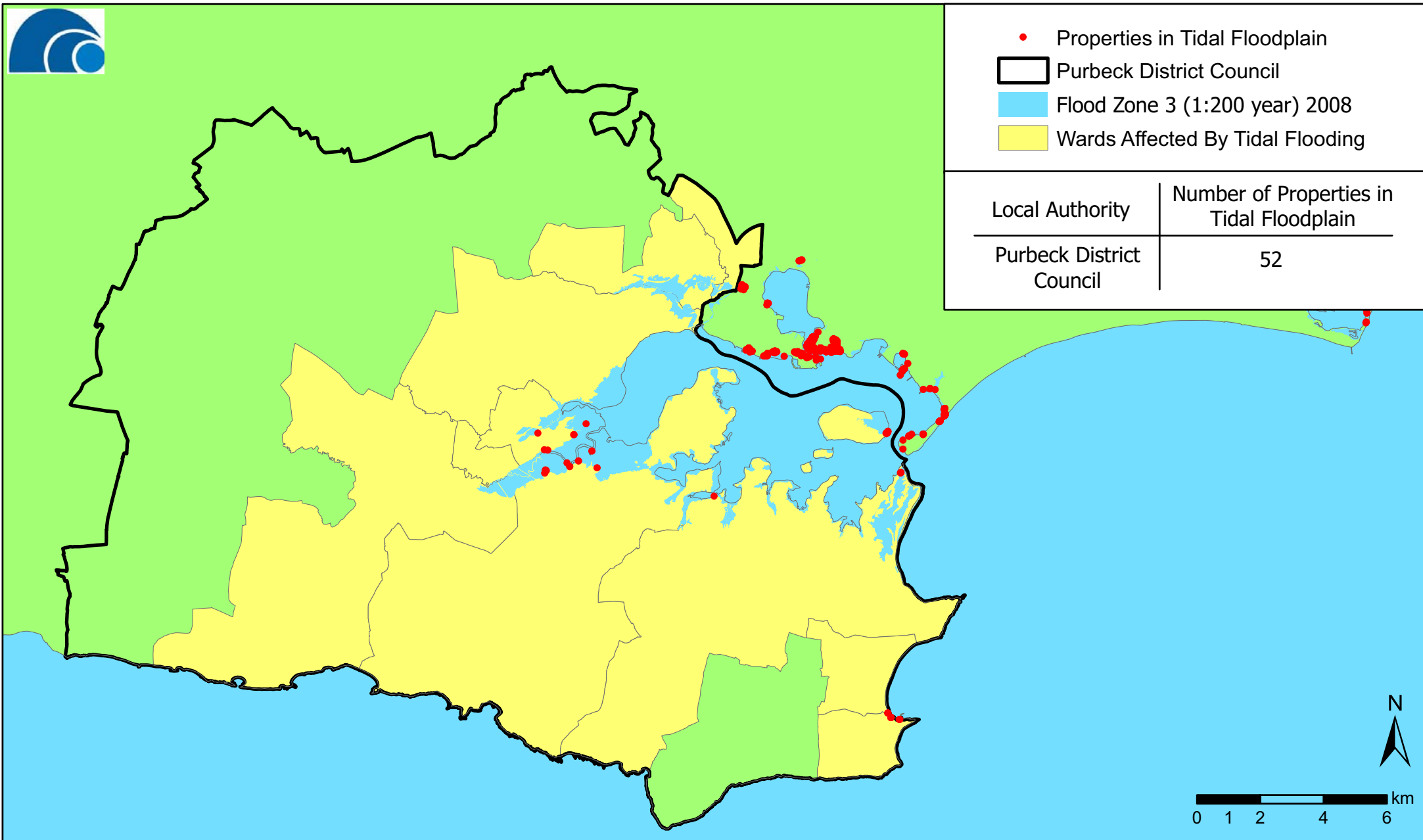






- Properties in Tidal Floodplain
- Purbeck District Council
- Flood Zone 3 (1:200 year) 2008
- Wards Affected By Tidal Flooding

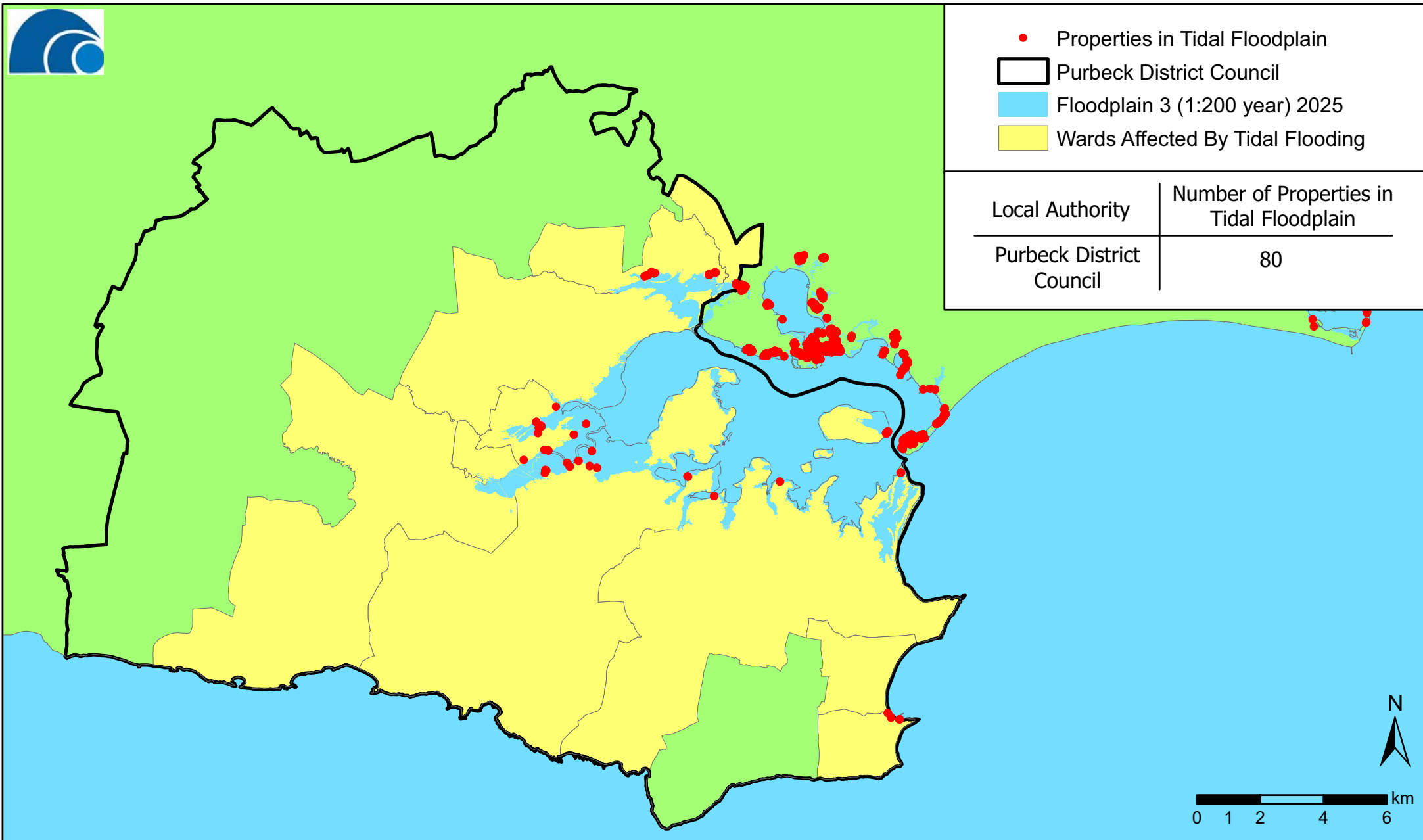
Local Authority	Number of Properties in Tidal Floodplain
Purbeck District Council	52





- Properties in Tidal Floodplain
- Purbeck District Council
- Floodplain 3 (1:200 year) 2025
- Wards Affected By Tidal Flooding

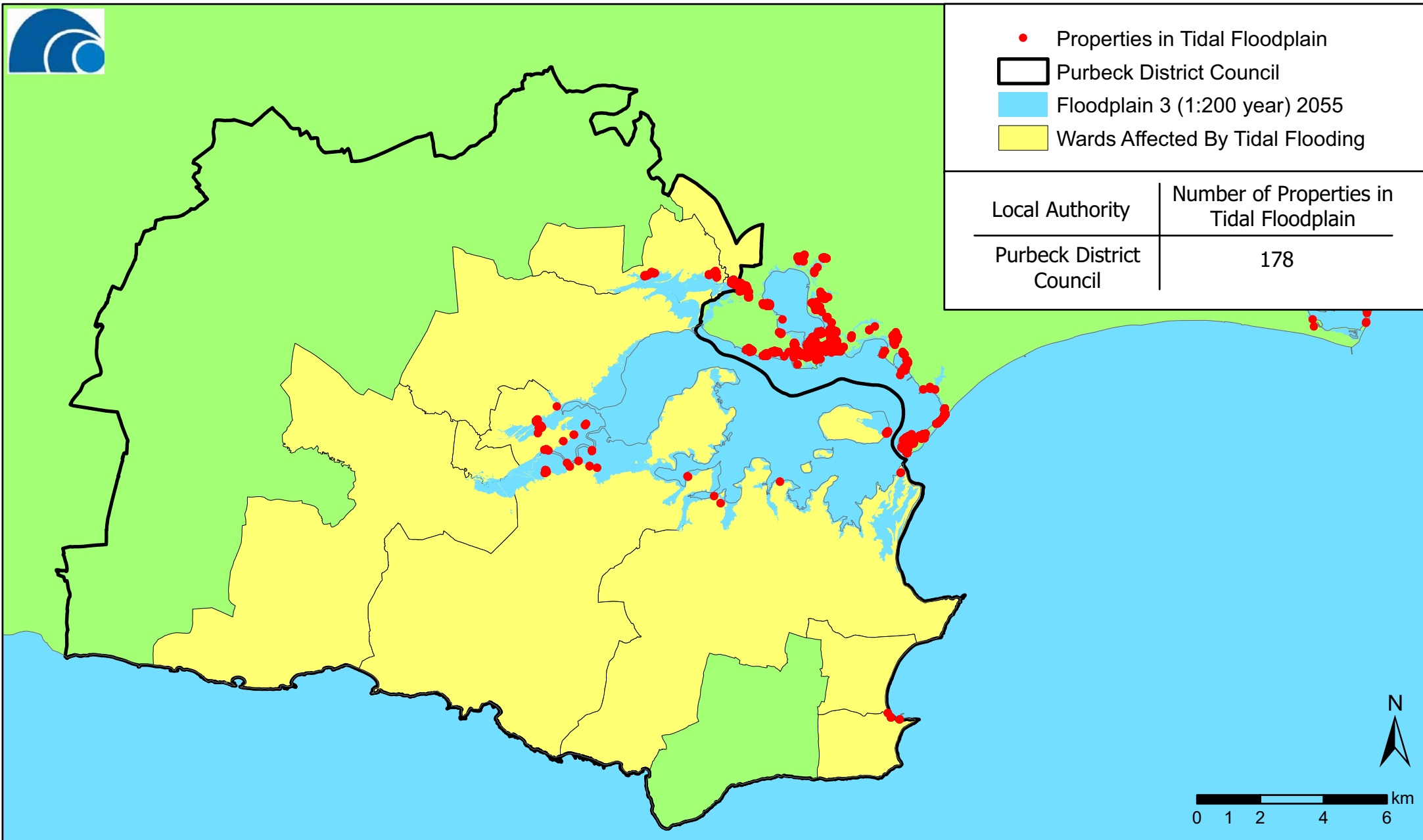
Local Authority	Number of Properties in Tidal Floodplain
Purbeck District Council	80

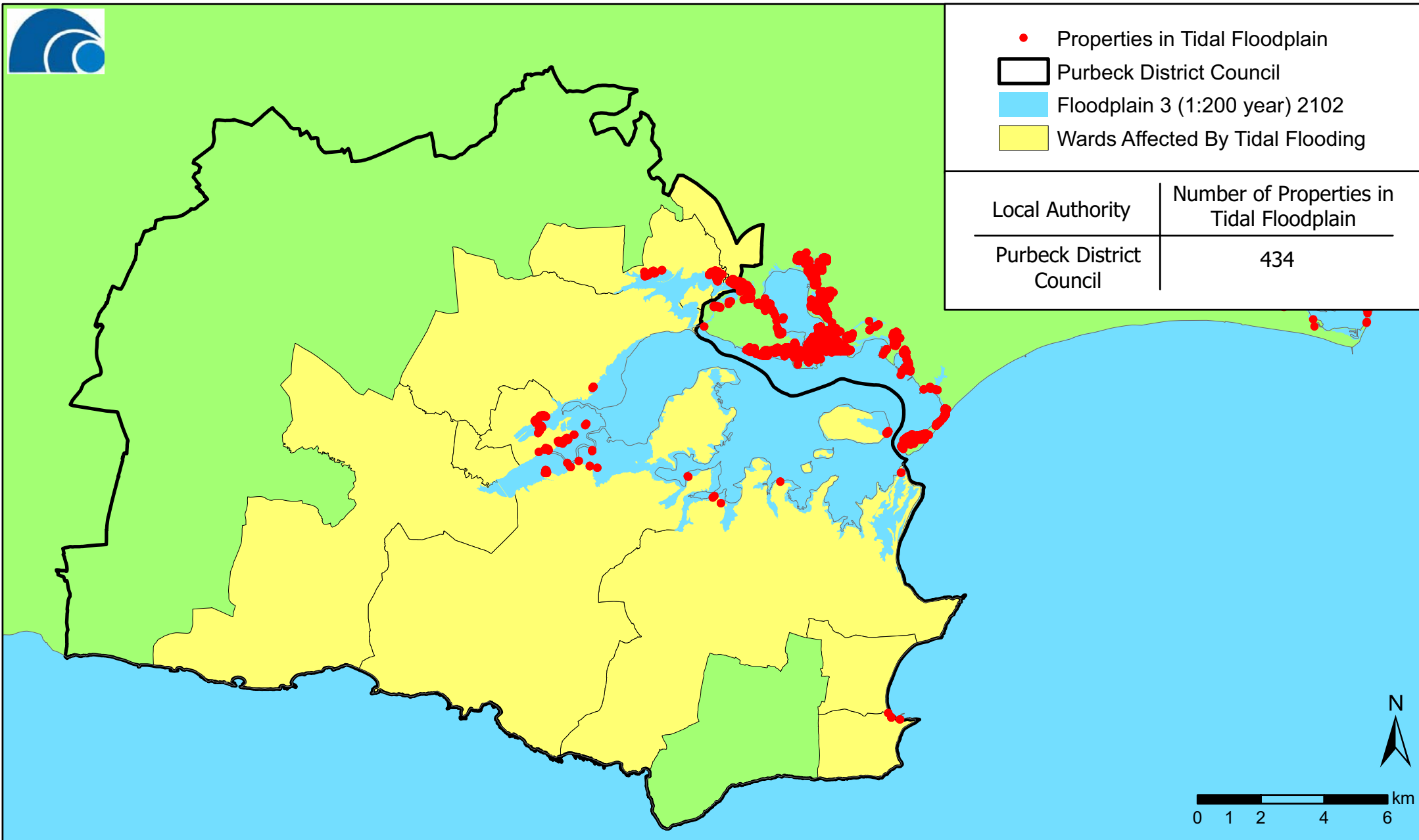




- Properties in Tidal Floodplain
- Purbeck District Council
- Floodplain 3 (1:200 year) 2055
- Wards Affected By Tidal Flooding

Local Authority	Number of Properties in Tidal Floodplain
Purbeck District Council	178





<ul style="list-style-type: none"> • Properties in Tidal Floodplain Purbeck District Council Floodplain 3 (1:200 year) 2102 Wards Affected By Tidal Flooding 	<table border="1"> <thead> <tr> <th>Local Authority</th> <th>Number of Properties in Tidal Floodplain</th> </tr> </thead> <tbody> <tr> <td>Purbeck District Council</td> <td>434</td> </tr> </tbody> </table>	Local Authority	Number of Properties in Tidal Floodplain	Purbeck District Council	434
Local Authority	Number of Properties in Tidal Floodplain				
Purbeck District Council	434				

Local Authority	Local Authority Wards at Risk from Flooding	Number of Properties at Risk from Flooding from a 1 in 200 year event (0.5% probability of occurrence)			
		2008	2025	2055	2102
New Forest DC	Boldre and Sway	19	22	24	26
	Brockenhurst & Forest South-East	44	45	46	48
	Buckland	2	2	2	9
	Dibden & Hythe East	190	192	192	220
	Fawley, Blackfield and Langley	3	5	5	5
	Hythe West and Langdown	167	167	167	167
	Lymington Town	164	190	239	372
	Marchwood	181	181	181	183
	Milford	155	167	171	204
	Pennington	9	12	13	15
	Totton East	20	20	20	23
	Totton South	105	105	105	107
	Total		1059	1108	1165

Table 1: Number of properties at risk from flooding per year, per ward for New Forest District Council

Local Authority	Local Authority Wards at Risk from Flooding	Number of Properties at Risk from Flooding from a 1 in 200 year event (0.5% probability of occurrence)			
		2008	2025	2055	2102
Christchurch DC	Purewell and Stanpit Ward	86	158	518	1105
	Town Centre Ward	369	423	555	892
	Mudford and Friars Cliff Ward	90	112	174	366
	Total	545	693	1247	2363

Table 2: Number of properties at risk from flooding per year, per ward for Christchurch District Council

Local Authority	Local Authority Wards at Risk from Flooding	Number of Properties at Risk from Flooding from a 1 in 200 year event (0.5% probability of occurrence)			
		2008	2025	2055	2102
Bournemouth BC	East Southbourne and Tuckton	24	44	71	151
	Total	24	44	71	151

Table 3: Number of properties at risk from flooding per year, per ward for Bournemouth Borough Council

Local Authority	Local Authority Wards at Risk from Flooding	Number of Properties at Risk from Flooding from a 1 in 200 year event (0.5% probability of occurrence)			
		2008	2025	2055	2102
Poole BC	Hamworthy West Ward	73	80	144	360
	Hamworthy East Ward	81	102	149	857
	Poole Town Ward	726	1026	1406	2773
	Parkstone Ward	51	90	159	229
	Canford Cliffs Ward	64	151	212	330
	Penn Hill Ward	3	3	5	16
	Creekmoor Ward	6	33	45	97
	Oakdale	0	27	42	173
	Total	1004	1512	2162	4835

Table 4: Number of properties at risk from flooding per year, per ward for Poole Borough Council

Local Authority	Local Authority Wards at Risk from Flooding	Number of Properties at Risk from Flooding from a 1 in 200 year event (0.5% probability of occurrence)			
		2008	2025	2055	2102
Purbeck DC	Castle Ward	18	14	14	18
	St Martin's Ward	0	0	0	3
	Creech Barrow Ward	15	16	22	30
	Wareham Ward	6	17	44	132
	Swanage South Ward	10	10	10	10
	Swanage North Ward	3	3	3	3
	Lychett Minster and Upton East Ward	0	4	60	121
	Lychett Minster and Upton West Ward	0	16	25	117
Total	52	80	178	434	

Table 5: Number of properties at risk from flooding per year, per ward for Purbeck District Council

ANNEX 1: CALCULATION OF 2025, 2055 AND 2102 FZ3 CONTOURS

1:200yr flood elevation (m) for floodzones 2025, 2055 and 2102 in Poole Harbour, Christchurch Harbour and the Western Solent.

Method:

(1:200yr 2002 still water level at site) + (relevant SLR by 2025, 2055 or 2102)

SLR used:

DEFRA	level mm/yr	m/yr
1990-2025	3.5	0.0035
2025-2055	8	0.0080
2055-2085	11.5	0.0115
2085-2115	14.5	0.0145

SLR by 2025 at Poole/Christchurch/Western Solent:

$$(23\text{yrs} * 0.0035) = \underline{0.081\text{m}}$$

SLR by 2055 at Poole/Christchurch/Western Solent:

$$(23\text{yrs} * 0.0035) + (30\text{yrs} * 0.0080) = \underline{0.321\text{m}}$$

SLR by 2102 at Poole/Christchurch/Western Solent:

$$(23\text{yrs} * 0.0035) + (30\text{yrs} * 0.0080) + (30\text{yrs} * 0.0115) + (17\text{yrs} * 0.0145) = \underline{0.912\text{m}}$$

2002 1:200yr Still water levels:

(from *Appendix A Table 1 pg 26* in South West Region Report on Regional Extreme Tide Levels (2003) Final Report (3H6382)

Poole/Wareham/Sandbanks – 1.95m O.D.

Hengistbury Head/Christchurch/Ilford Bridge – 1.99m O.D.

Barton – 2.04m O.D.

These levels were applied to Poole Harbour/Bay, Christchurch Harbour/Bay and the Western Solent areas respectively.

Final predictions:

2025:

Poole Harbour/Bay = 1.95m + 0.081m = **2.03m**

Christchurch Harbour/Bay = 1.99m + 0.081m = **2.07m**

Western Solent = 2.04m + 0.081m = **2.12m**

2055:

Poole Harbour = 1.95m + 0.321m = **2.25m**

Christchurch Bay = 1.99m + 0.321m = **2.29m**

Western Solent = 2.04m + 0.321m = **2.36m**

2102:

Poole Harbour = 1.95m + 0.912m = **2.86m**

Christchurch Bay = 1.99m + 0.912 = **2.90m**

Western Solent = 2.04m + 0.912 = **2.95m**