ENVIRONMENT
A STATES OF GUERNSEY GOVERNMENT DEPARTMENT

This Pack constitutes an Appendix to the Environment Department's States Report titled:

COASTAL DEFENCE FLOOD STUDIES

included in Billet D'État XV, July 2013

Contents

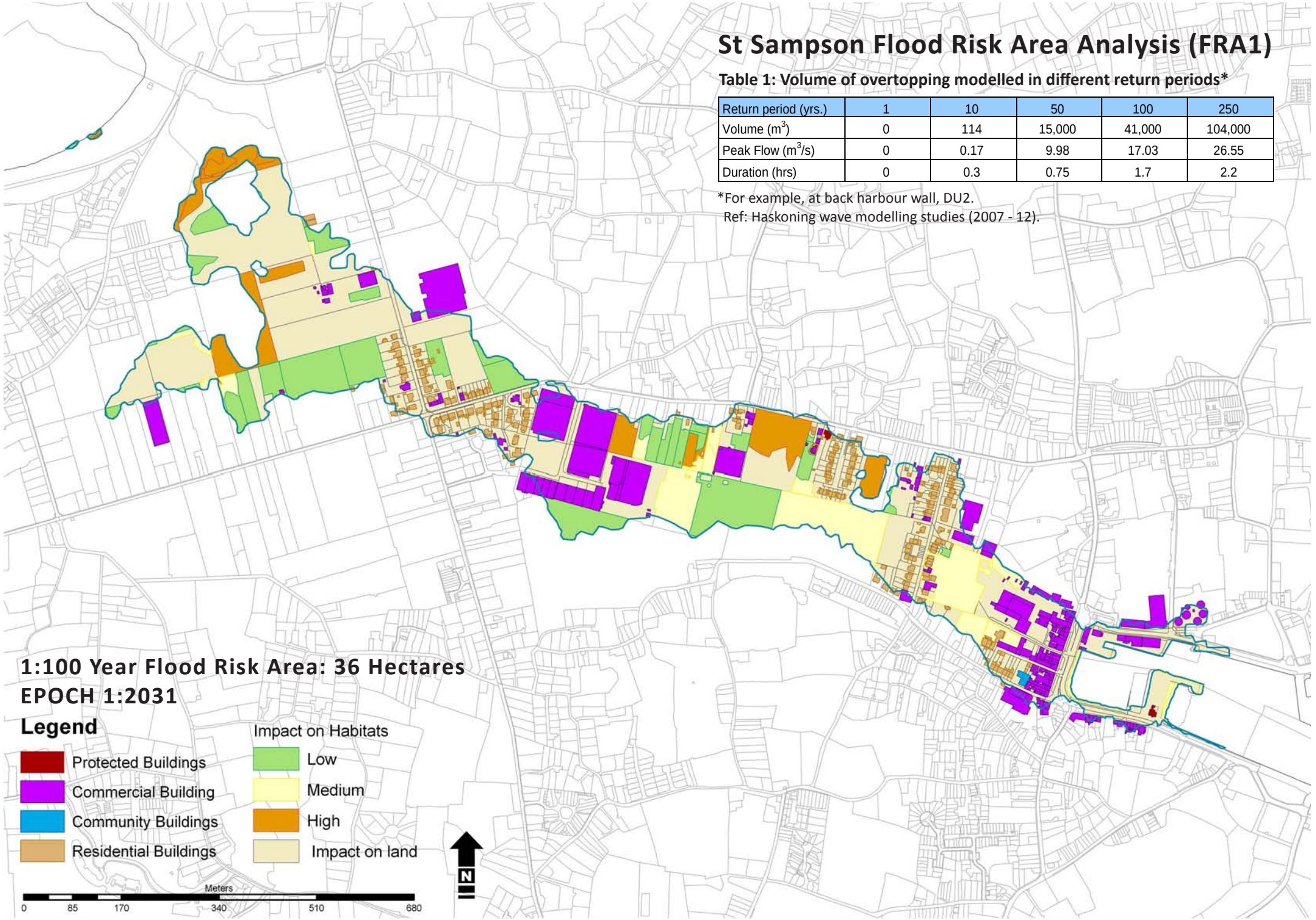
Coastal Defence Project Group, June 2013

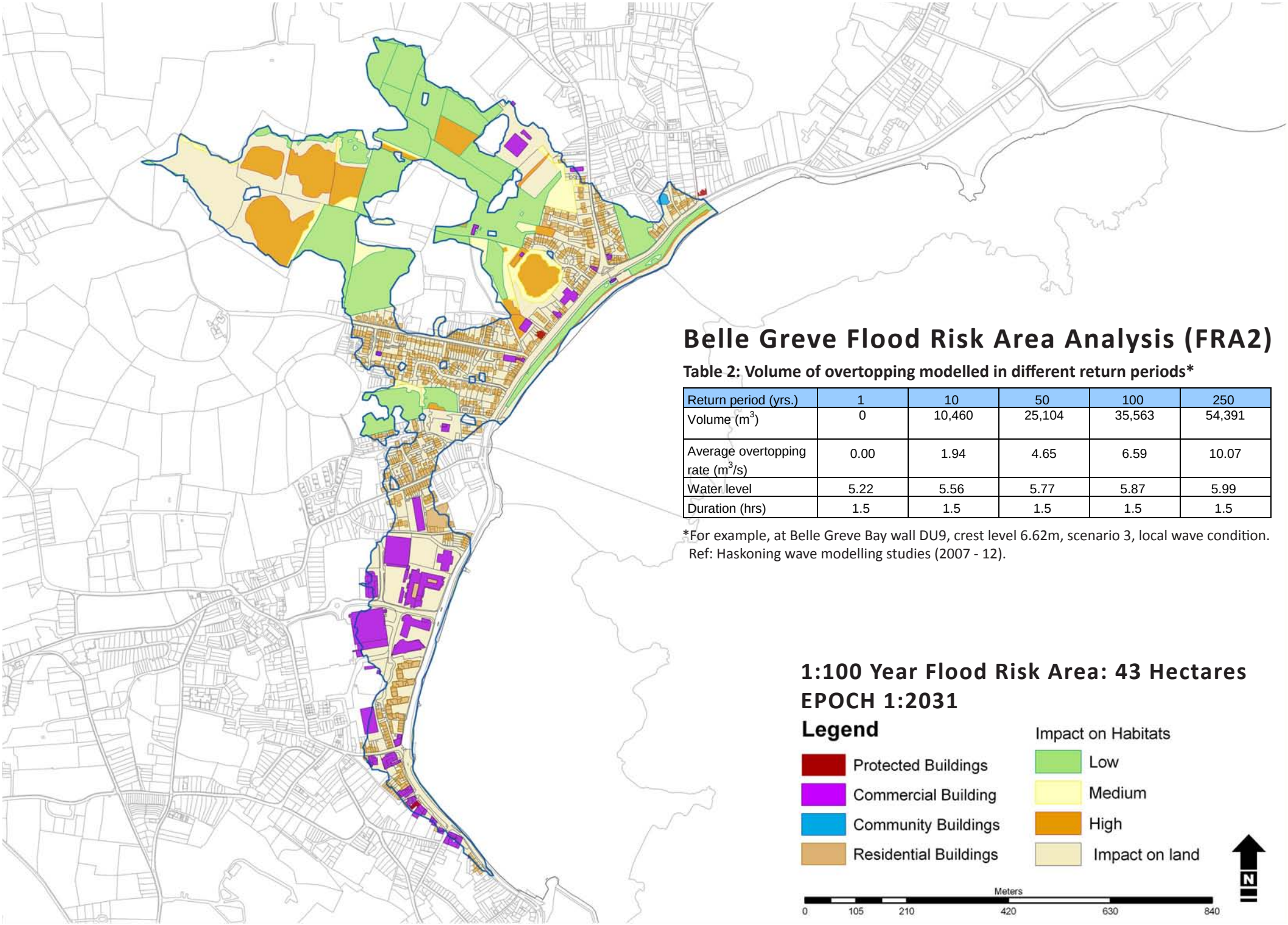
St Sampson Flood Risk Area Analysis (FRA1)

Table 1: Volume of overtopping modelled in different return periods*

Return period (yrs.)	1	10	50	100	250
Volume (m^3)	0	114	15,000	41,000	104,000
Peak Flow (m^3/s)	0	0.17	9.98	17.03	26.55
Duration (hrs)	0	0.3	0.75	1.7	2.2

*For example, at back harbour wall, DU2.
Ref: Haskoning wave modelling studies (2007 - 12).





Belle Greve Flood Risk Area Analysis (FRA2)

Table 2: Volume of overtopping modelled in different return periods*

Return period (yrs.)	1	10	50	100	250
Volume (m^3)	0	10,460	25,104	35,563	54,391
Average overtopping rate (m^3/s)	0.00	1.94	4.65	6.59	10.07
Water level	5.22	5.56	5.77	5.87	5.99
Duration (hrs)	1.5	1.5	1.5	1.5	1.5

*For example, at Belle Greve Bay wall DU9, crest level 6.62m, scenario 3, local wave condition. Ref: Haskoning wave modelling studies (2007 - 12).

1:100 Year Flood Risk Area: 43 Hectares
EPOCH 1:2031

Legend

- Protected Buildings
- Commercial Building
- Community Buildings
- Residential Buildings

Impact on Habitats

- Low
- Medium
- High

Impact on land

Meters

0 105 210 420 630 840

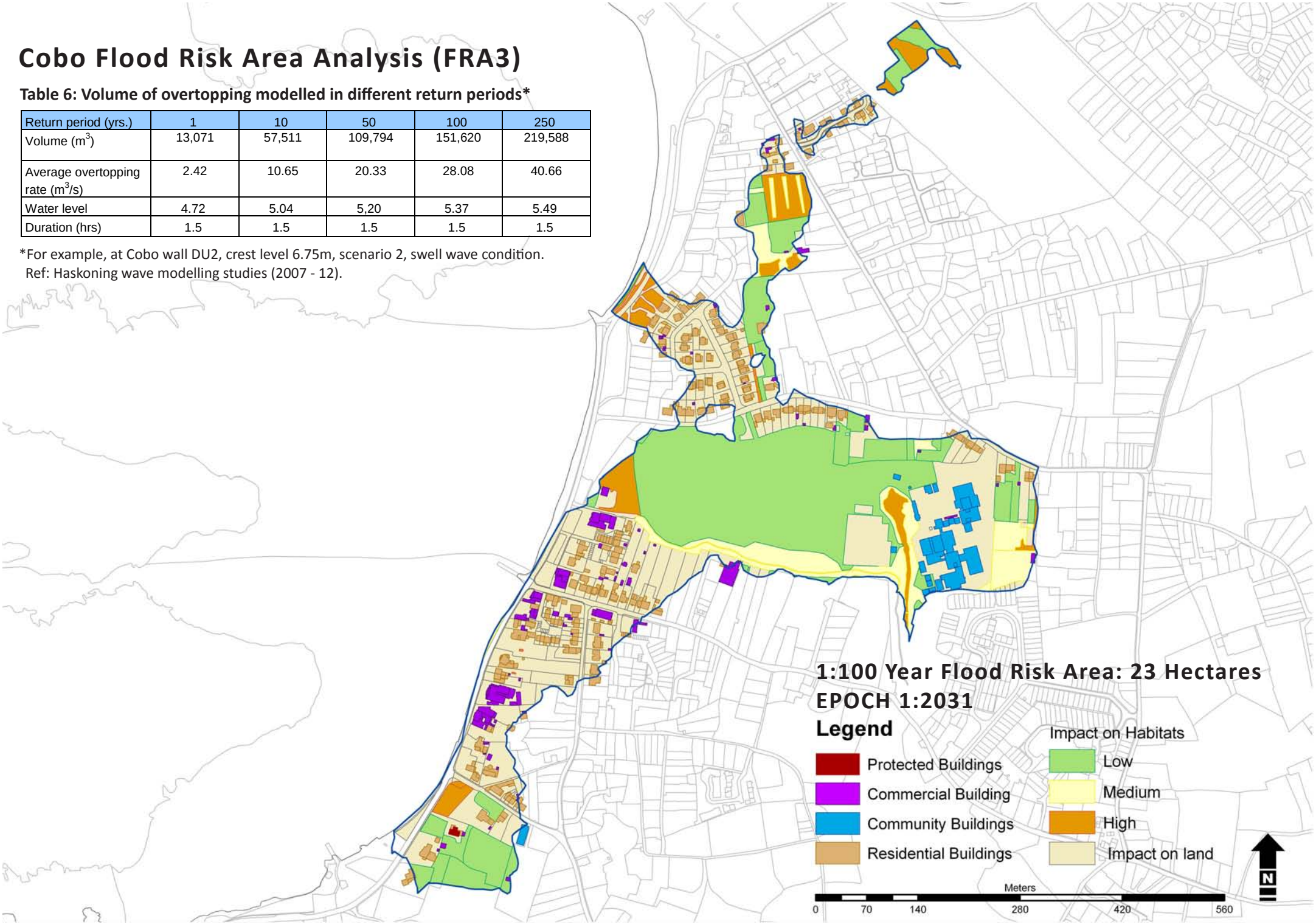
N

Cobo Flood Risk Area Analysis (FRA3)

Table 6: Volume of overtopping modelled in different return periods*

Return period (yrs.)	1	10	50	100	250
Volume (m^3)	13,071	57,511	109,794	151,620	219,588
Average overtopping rate (m^3/s)	2.42	10.65	20.33	28.08	40.66
Water level	4.72	5.04	5,20	5.37	5.49
Duration (hrs)	1.5	1.5	1.5	1.5	1.5

*For example, at Cobo wall DU2, crest level 6.75m, scenario 2, swell wave condition.
Ref: Haskoning wave modelling studies (2007 - 12).

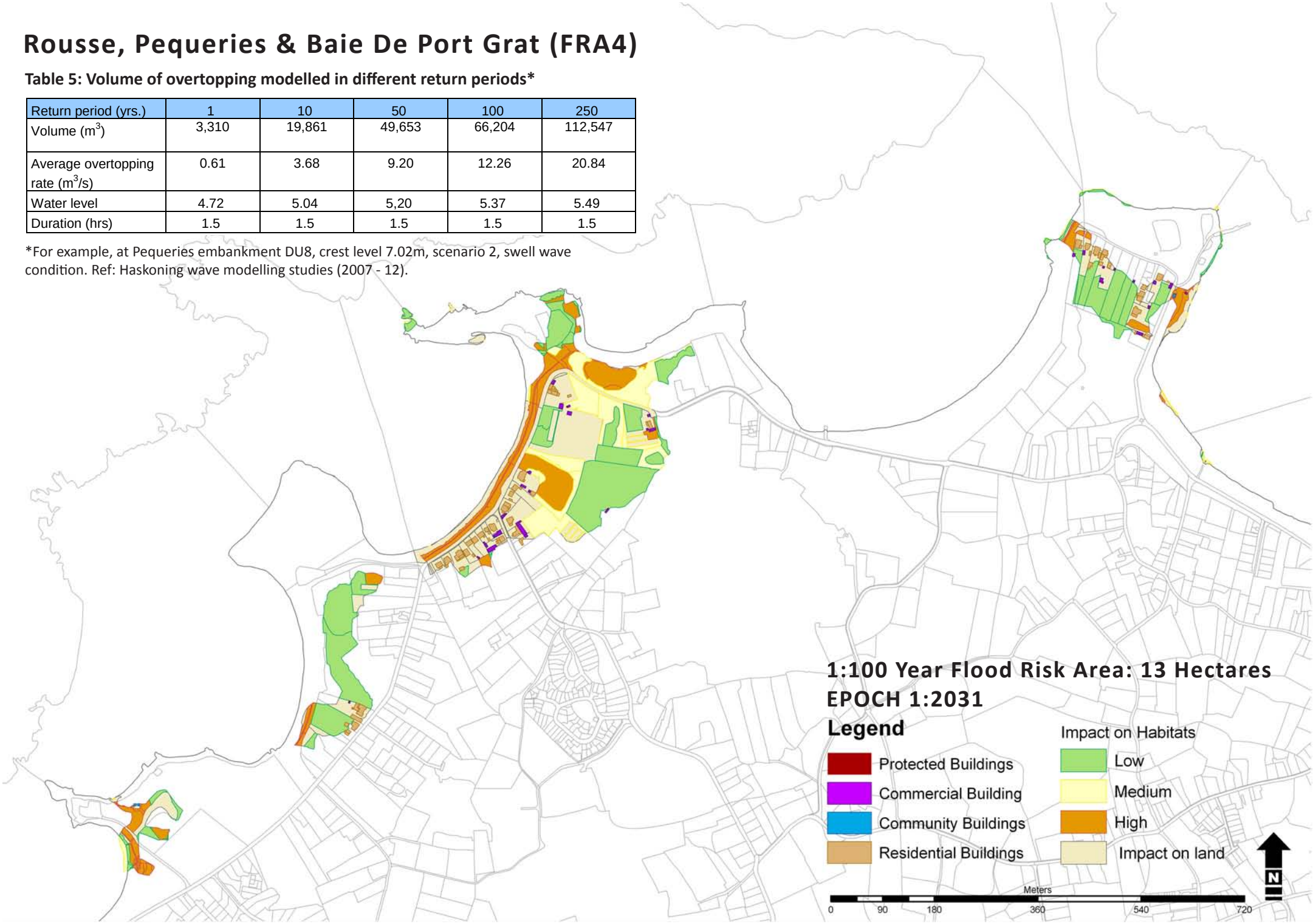


Rousse, Pequeries & Baie De Port Grat (FRA4)

Table 5: Volume of overtopping modelled in different return periods*

Return period (yrs.)	1	10	50	100	250
Volume (m^3)	3,310	19,861	49,653	66,204	112,547
Average overtopping rate (m^3/s)	0.61	3.68	9.20	12.26	20.84
Water level	4.72	5.04	5,20	5.37	5.49
Duration (hrs)	1.5	1.5	1.5	1.5	1.5

*For example, at Pequeries embankment DU8, crest level 7.02m, scenario 2, swell wave condition. Ref: Haskoning wave modelling studies (2007 - 12).

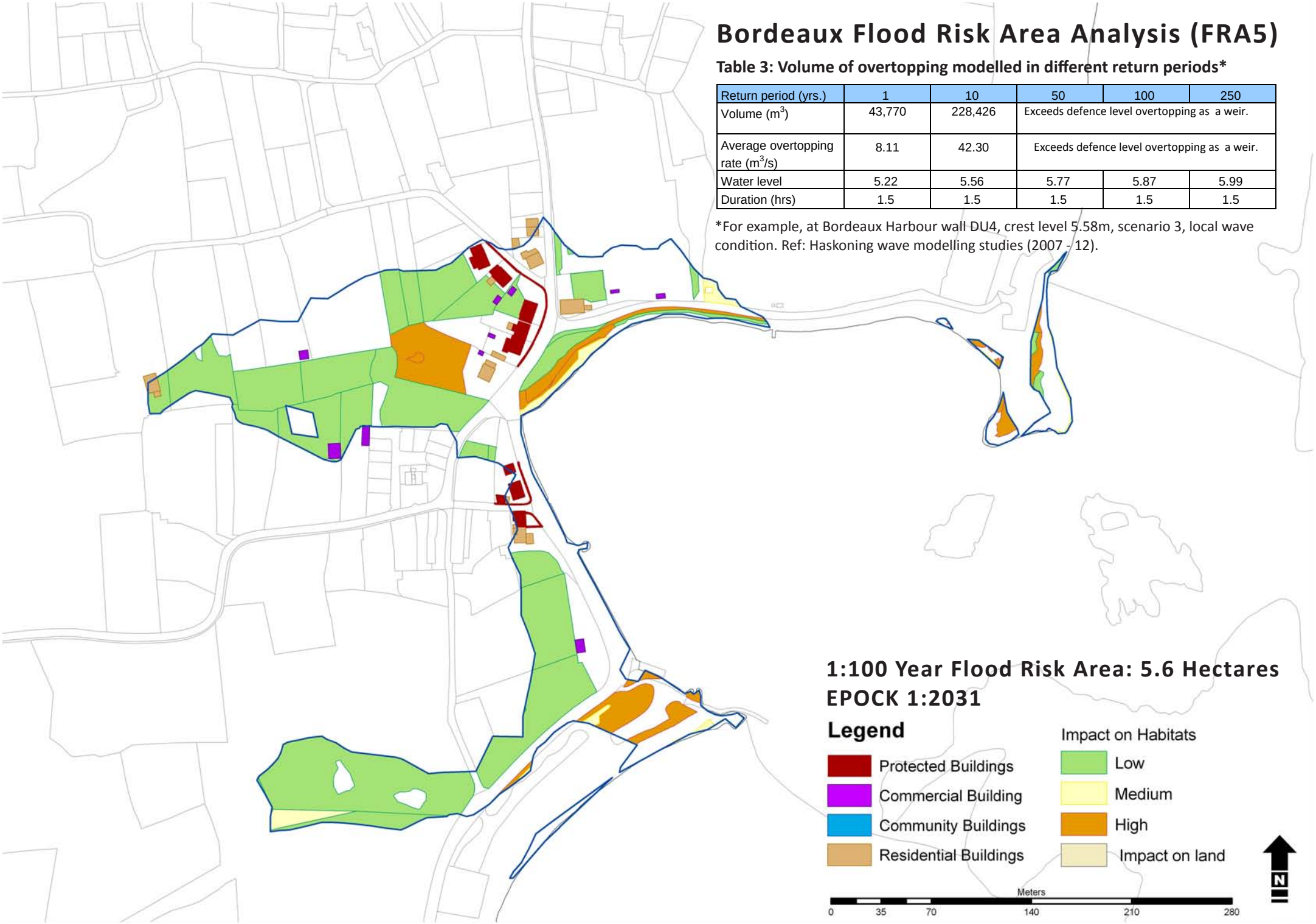


Bordeaux Flood Risk Area Analysis (FRA5)

Table 3: Volume of overtopping modelled in different return periods*

Return period (yrs.)	1	10	50	100	250
Volume (m^3)	43,770	228,426	Exceeds defence level overtopping as a weir.		
Average overtopping rate (m^3/s)	8.11	42.30	Exceeds defence level overtopping as a weir.		
Water level	5.22	5.56	5.77	5.87	5.99
Duration (hrs)	1.5	1.5	1.5	1.5	1.5

*For example, at Bordeaux Harbour wall DU4, crest level 5.58m, scenario 3, local wave condition. Ref: Haskoning wave modelling studies (2007 - 12).

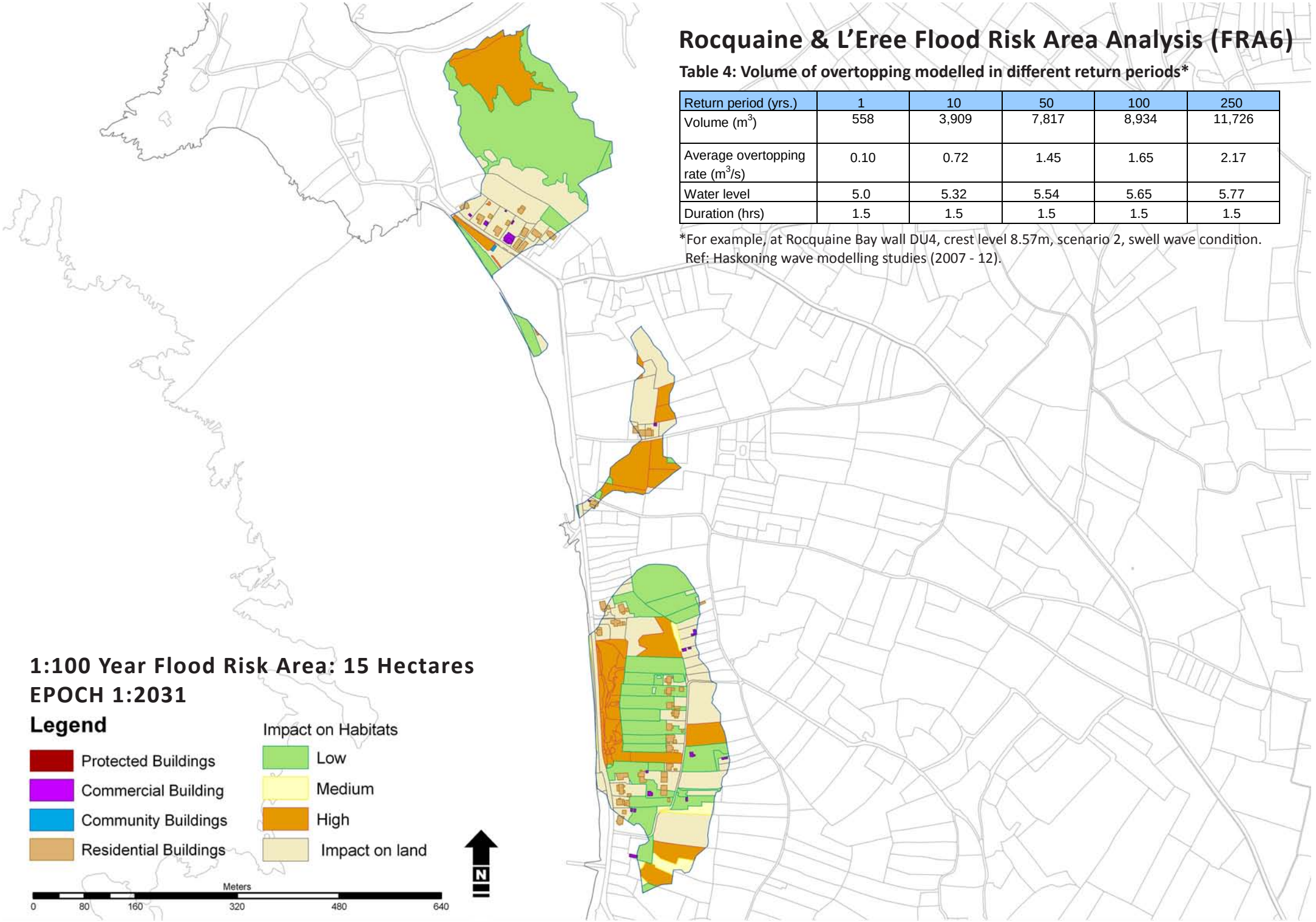


Rocquaine & L'Eree Flood Risk Area Analysis (FRA6)

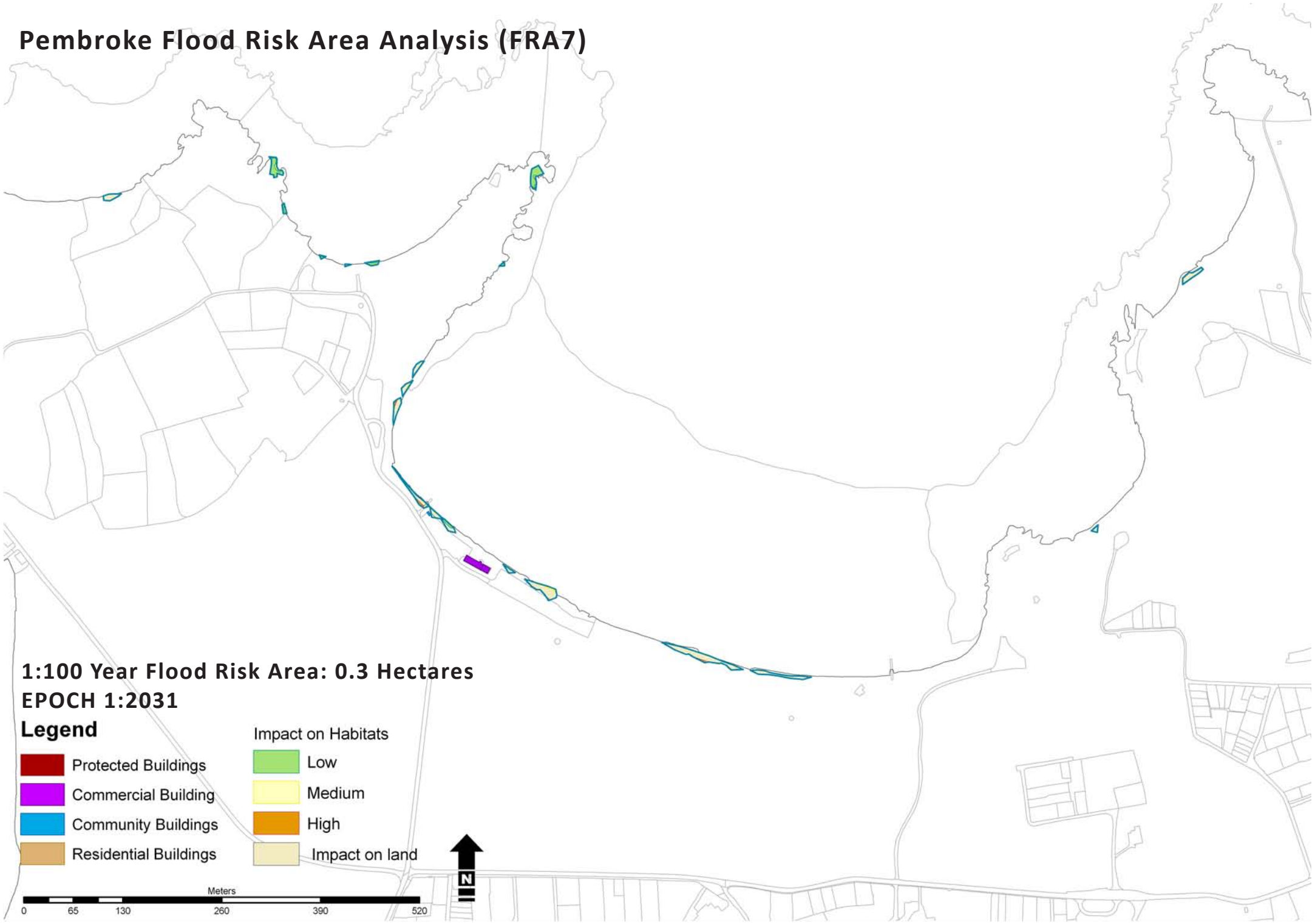
Table 4: Volume of overtopping modelled in different return periods*

Return period (yrs.)	1	10	50	100	250
Volume (m^3)	558	3,909	7,817	8,934	11,726
Average overtopping rate (m^3/s)	0.10	0.72	1.45	1.65	2.17
Water level	5.0	5.32	5.54	5.65	5.77
Duration (hrs)	1.5	1.5	1.5	1.5	1.5

*For example, at Rocquaine Bay wall DU4, crest level 8.57m, scenario 2, swell wave condition. Ref: Haskoning wave modelling studies (2007 - 12).



Pembroke Flood Risk Area Analysis (FRA7)



Guernsey Coastal Units and Constructed (Man-Made) Coastal Defence Units.

(Where no constructed unit is shown, there is a natural defence unit)