RPS

OPW

Irish Coastal Protection Strategy Study, Phase 3 - South Coast

Work Packages 9A - Appendix 1 - Flood Mapping for Mid Range Future Scenario

IBE0071/ November 2013

Office of Public Works

Irish Coastal Protection Strategy Study - Phase 3

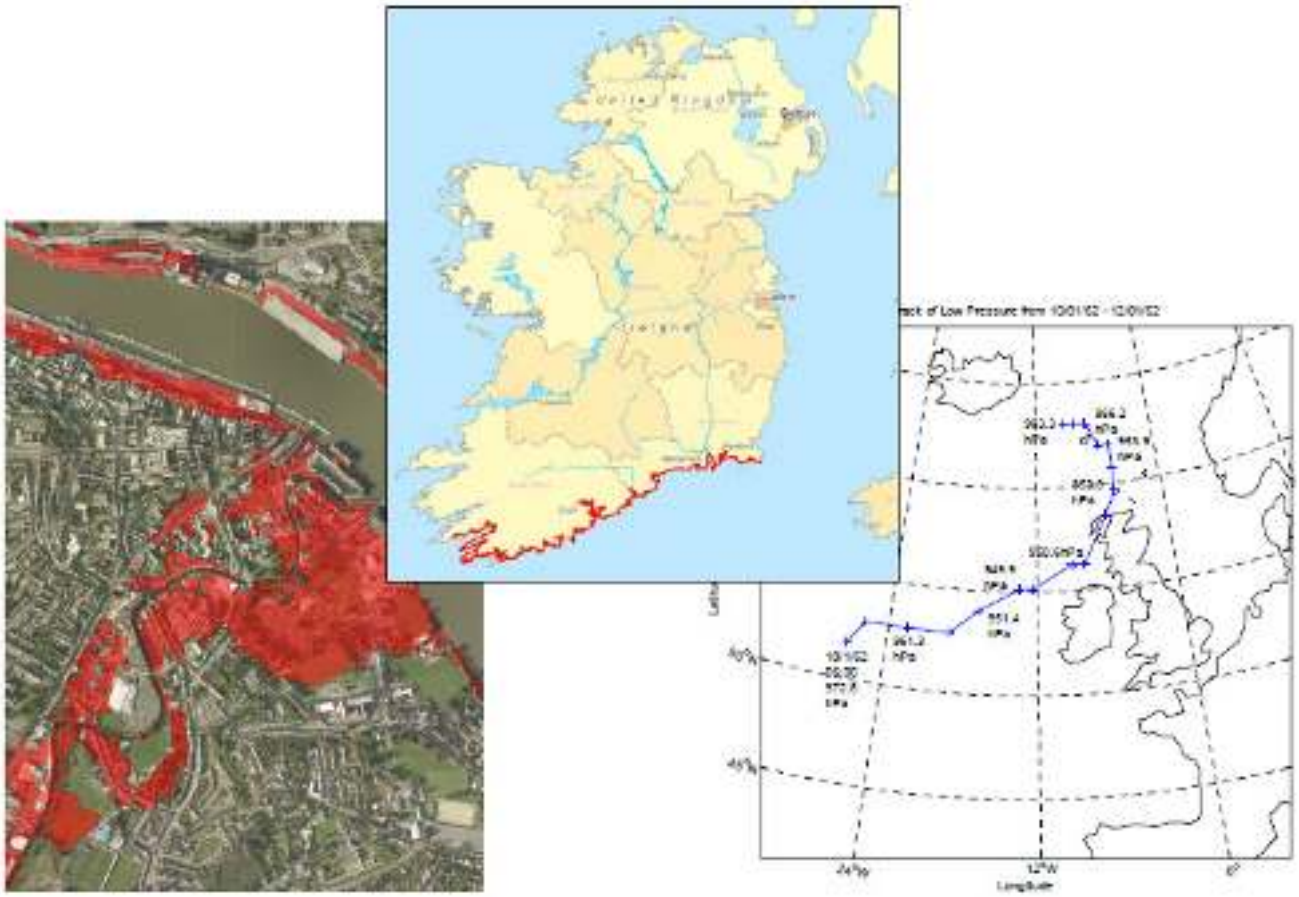
Work Package 9A

Strategic Assessment of Coastal Flooding Extents – Future Scenario

South Coast – Carnsore Point to Bantry Bay

Appendix 1 - Flood Mapping for Mid Range Future Scenario

November 2013



Office of Public Works

Irish Coastal Protection Strategy Study - Phase 3

Work Package 9A

Strategic Assessment of Coastal Flooding Extents – Future Scenario

South Coast - Carnsore Point to Bantry Bay

Appendix 1 - Flood Mapping for Mid Range Future Scenario

November 2013

DOCUMENT CONTROL SHEET

Client	Office of Public Works
Project Title	Irish Coastal Protection Strategy Study, Phase 3, Work Package 9A
Document Title	Strategic Assessment of Coastal Flooding Extents – Future Scenario
Document No.	IBE0071/ FS_App9A_R01
Document Date	November 2013

IMPORTANT DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE FOR FLOOD MAPS

COASTAL FLOOD MAPS FOR MID RANGE FUTURE SCENARIO FOR SOUTH COAST

Please read the disclaimer, guidance notes and conditions of use below carefully to avoid incorrect interpretation of the information and data provided on the maps contained in this volume. The maps must be used only in conjunction with these notes, and must not be used in isolation.

PURPOSE OF THE MAPS

The maps contained within this bound volume were prepared under the following project:

- ***Project Name: Irish Coastal Protection Strategy Study (ICPSS)***
- ***Project Period: 2005 – 2013***

The maps were prepared for the purpose of assessing the degree of flood hazard and risk to assist in the identification and development of measures for managing the flood risk. They may, however, also be of use to the public, Local Authorities and other parties as indicative maps of flood-prone areas for a range of purposes, including raising awareness of flood hazard and risk, preparedness and response planning for flood events, assisting in planning and development decisions, adaptation to climate change etc.

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GUIDANCE NOTES

This bound volume contains future scenario flood maps. How these maps have been derived, and what they do and do not present, is described below.

Derivation of Maps

The maps included within this bound volume are 'predictive' flood maps, as they provide predicted flood extent and other information for a future scenario 'design' flood event (Mid-Range to 2100) that has an estimated probability of occurrence (e.g., the 0.5% AEP event – see below), rather than information for floods that have occurred in the past (which is presented on 'historic' flood maps).

The predicted extents are based on analysis and modelling. This includes:

- Numerical Modelling of combined storm surges and tide levels which was used to estimate extreme water levels along the coastline

- Statistical extreme value analysis and joint probability analysis to both historic recorded tide gauge data and data generated by numerical modelling, which allowed an estimation of the extreme water levels of defined annual exceedance probability (AEP) to be established along the coastline

- Definition of the plan extent of the predictive floodplain, by use of a Digital Terrain Model (DTM) commissioned by the Office of Public Works. The predictive flood outlines shown on these maps were calculated by combining the results of the surge and tide level modelling, the statistical analysis, the DTM using GIS technology and incorporating future allowances for both mean sea level rise and glacial isostatic adjustment (GIA).

The maps have been produced at a strategic level to provide an overview of coastal flood hazard and risk in Ireland, and minor or local features may not have been included in their preparation. A DTM is used to generate the maps, which is a 'bare earth' model of the ground surface with the digital removal of man-made and natural landscape features such as vegetation, buildings, bridges and embankments. The mapping process can show some of these man-made features, such as bridges and embankments, as flooded on the flood maps, when in reality they do not flood. In addition, 'cleansing' is undertaken during flood map production, which involves various processes such as the removal of very small areas of flooding that is remote and isolated, the removal of very small islands within the flooded area, etc. Therefore, the maps should not be used to assess the flood hazard and risk associated with individual properties or point locations, or to replace a detailed local flood risk assessment. Local factors such as flood defence schemes, structures in or

around river channels (e.g. bridges), buildings and other local influences, which might affect a coastal flood, have not been accounted for.

The maps were produced based on survey data captured prior to, and during the early part of the project. They do not account for changes in development, infrastructure or topography that occurred after the date of survey data capture (except for GIA).

The DTM is derived from airborne survey data. The majority of this data is Light Detection and Ranging (LiDAR) data. Where LiDAR data was not available, Interferometric Synthetic Aperture Radar (IfSAR) data has been used to derive the DTM.

Detailed explanations of the methods of derivation, survey data used, etc. are provided in the relevant reports produced for the project under which the maps were prepared. **Users of the maps should familiarise themselves fully with the contents of these reports in advance of the use of the maps.**

Flood Event Probabilities

The maps refer to flood event probabilities in terms of a percentage Annual Exceedance Probability, or 'AEP'. This represents the probability of an event of this, or greater, severity occurring in any given year. These probabilities may also be expressed as odds (e.g., 100 to 1) of the event occurring in any given year. They are also commonly referred to in terms of a return period (e.g., the 100-year flood), although it should be understood that this does not mean the length of time that will elapse between two such events occurring, as, although unlikely, two very severe events may occur within a very short space of time.

Table 1 below sets out a range of flood event probabilities expressed in terms of AEP, and identifies their parallels under other forms of expression.

Table 1: Flood Event Probabilities

Annual Exceedance Probability (%)	Odds of Occurrence in any Given Year	Return Period (yrs)
50	2 : 1	2
20	5 : 1	5
10	10 : 1	10
5	20 : 1	20
2	50 : 1	50
1	100 : 1	100
0.5	200 : 1	200
0.2	500 : 1	500
0.1	1000 : 1	1000

Uncertainty

Although great care and modern, widely-accepted methods have been used to prepare the maps, there is a range of inherent uncertainties within the process of preparing the predicted flood extents maps. These include:

– Uncertainty in Flood Levels: This can arise due to uncertainties in topographic, bathymetric and other survey data, meteorological data, assumptions and / or approximations in the hydraulic / hydrodynamic models in representing physical reality, assumptions in the hydraulic / hydrodynamic modelling, and datum conversions, etc.

– Uncertainty in Flood Extents: This can arise due to uncertainties in flood levels, topographic and other survey data, assumptions and / or approximations in the way that flooding spreads over a floodplain, etc.

The flood maps are therefore only indicative, and the potential for inaccuracy should be recognised if these maps are to be used for any purpose.

Types of Flood Map

This volume contains only flood extent maps as outlined below. Further details on this type of map, including the methods of derivation, assumptions made, data used, etc. are provided in the relevant project reports.

Flood Extent Maps

Flood extent maps contained in this volume show the predicted extents of flooding for future scenario flood events of two estimated probabilities of occurrence:

– 0.5% AEP flood event
– 0.1% AEP flood event

It should be noted that the flood extent maps indicate the predicted maximum extent of flooding (subject to limitations referred to herein), and flooding in some areas, such as near the edge of the flooded area, might be very shallow.

Due to the various uncertainties within the process of preparing the maps (see 'Uncertainty' above), it is not possible to state that the maps are absolutely accurate.

Consideration of Projected Future Changes in Climate

The maps produced in this bound volume represent a projected future scenario for the year 2100 and include allowances for projected future changes in climate and glacial isostatic adjustment (GIA). The maps represent a Mid-Range Future Scenario (MRFS) reflecting changes that are within the typical range projected.

The allowances used for this Mid-Range Future Scenario are as follows:-

Mean Sea Level Rise: + 500 mm (to 2100)
Land Movement (GIA): Varies - 0.1 to - 0.5 mm/year (South Coast)

This volume includes maps that show the predicted extents of (tidal/coastal) flooding for the MRFS for flood events of two estimated probabilities of occurrence:-

0.5 % AEP
0.1% AEP

The future scenario water levels shown on the maps are relative to Ordnance Datum Malin and include the above mean sea level rise allowance (+ 500mm) but have not been adjusted for GIA.

Sources of Flooding Not Mapped

The maps indicate only the extents associated with flooding from coastal areas and the sea. There are however many other possible sources of flooding, such as fluvial flooding from rivers, surcharged urban drainage systems, ponding rainwater, groundwater, overtopping or breaching of water retaining structures (such as embankments and reservoirs), etc. Flooding from these other sources have not been mapped, and so areas that are not shown as being within a flood extent may therefore be at risk from flooding from one of these other sources.

CONDITIONS OF USE

Please read the following statements and conditions of use of the maps in this bound volume carefully. Use of these maps is conditional upon the following:-

The user of these maps shall be deemed to have agreed to, and unconditionally accepted all of these statements and conditions.

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CONTACTS REGARDING MAP INFORMATION

Any user who has reason to believe that these maps contain an error, or who wishes to contribute additional information, is requested to contact the Office of Public Works Engineering Services Section at the following address:

Flood Mapping Queries
Engineering Services
Office of Public Works
17-19 Lower Hatch Street
Dublin 2

ICPSS PHASE III - SOUTH COAST - MRFS

Predicted Extreme Water Levels Associated with Combined Tide and Surge

PREDICTION POINT ID	ANNUAL EXCEEDANCE PROBABILITY (AEP)								CO-ORDINATES OF PREDICTION POINTS	
	50%	20%	10%	5%	2%	1%	0.5%	0.1%	EASTINGS	NORTHINGS
S_1	2.52	2.64	2.74	2.83	2.94	3.03	3.12	3.33	47518	37498
S_2	2.49	2.59	2.66	2.73	2.82	2.89	2.96	3.12	61323	34874
S_3	2.49	2.59	2.66	2.72	2.81	2.88	2.95	3.10	68403	40252
S_4	2.56	2.68	2.77	2.85	2.96	3.05	3.13	3.32	78156	42234
S_5	2.67	2.76	2.82	2.88	2.96	3.02	3.09	3.23	89346	46985
S_6	2.64	2.75	2.83	2.92	3.02	3.10	3.18	3.36	94294	51888
S_7	2.47	2.57	2.64	2.71	2.79	2.86	2.93	3.08	71586	29038
S_8	2.58	2.70	2.79	2.87	2.98	3.06	3.14	3.33	78289	33325
S_9	2.59	2.70	2.78	2.86	2.96	3.04	3.12	3.29	88471	38657
S_10	2.40	2.50	2.57	2.64	2.74	2.80	2.87	3.03	76230	20017
S_11	2.39	2.49	2.57	2.64	2.73	2.80	2.87	3.03	85398	25368
S_12	2.41	2.50	2.57	2.64	2.73	2.80	2.86	3.02	92346	25216
S_13	2.41	2.50	2.57	2.63	2.72	2.78	2.85	2.99	98600	25088
S_14	2.40	2.51	2.58	2.65	2.74	2.81	2.88	3.04	102726	22781
S_15	2.41	2.51	2.59	2.66	2.75	2.82	2.89	3.05	109697	23766
S_16	2.40	2.50	2.58	2.65	2.74	2.81	2.88	3.04	116684	25872
S_17	2.43	2.53	2.60	2.68	2.77	2.84	2.91	3.07	123697	30213
S_18	2.45	2.55	2.62	2.69	2.78	2.85	2.92	3.08	132056	32320
S_19	2.46	2.56	2.63	2.70	2.79	2.85	2.92	3.08	137579	30024
S_20	2.47	2.57	2.64	2.71	2.81	2.88	2.95	3.11	141114	35545
S_21	2.47	2.57	2.64	2.71	2.79	2.86	2.93	3.08	146649	34371
S_22	2.51	2.61	2.68	2.75	2.85	2.92	2.99	3.15	153646	40979
S_23	2.53	2.62	2.69	2.76	2.84	2.91	2.97	3.13	159879	40925
S_24	2.55	2.64	2.71	2.77	2.86	2.93	2.99	3.14	165450	45335
S_25	2.57	2.66	2.73	2.80	2.89	2.95	3.02	3.17	172382	47518
S_26	2.59	2.68	2.75	2.82	2.90	2.97	3.03	3.18	179317	51935
S_27	2.62	2.72	2.79	2.86	2.94	3.01	3.07	3.23	181760	58602
S_28	2.62	2.71	2.77	2.84	2.92	2.98	3.04	3.19	188312	56357
S_29	2.63	2.72	2.78	2.84	2.92	2.99	3.05	3.19	196599	58570
S_30	2.68	2.77	2.84	2.91	2.99	3.06	3.12	3.27	203495	66359
S_31	2.69	2.78	2.86	2.92	3.02	3.08	3.15	3.31	211746	74160
S_32	2.63	2.72	2.78	2.84	2.92	2.98	3.04	3.18	222739	77536
S_33	2.63	2.71	2.77	2.83	2.91	2.97	3.03	3.16	229602	79797
S_34	2.64	2.73	2.79	2.86	2.94	3.00	3.06	3.20	234351	88730
S_35	2.69	2.78	2.85	2.91	3.00	3.06	3.12	3.27	229742	90926
S_36	2.64	2.73	2.80	2.86	2.94	3.00	3.06	3.21	242536	94357
S_37	2.62	2.70	2.77	2.83	2.91	2.97	3.03	3.17	253489	95575
S_38	2.58	2.67	2.73	2.79	2.88	2.94	3.00	3.14	261696	96783
S_39	2.56	2.65	2.71	2.76	2.84	2.90	2.96	3.09	267206	94629
S_40	2.56	2.64	2.70	2.76	2.84	2.90	2.96	3.09	270584	98014
S_41	2.49	2.57	2.63	2.69	2.77	2.83	2.88	3.02	275412	95859
S_42	2.53	2.62	2.68	2.74	2.82	2.88	2.93	3.07	278767	100363
S_43	2.58	2.67	2.73	2.79	2.87	2.94	3.00	3.14	282115	104869
S_44	2.58	2.66	2.71	2.76	2.83	2.87	2.91	3.00	288954	104987
S_45	2.45	2.54	2.59	2.65	2.72	2.78	2.84	2.96	295878	100664
S_46	2.32	2.40	2.47	2.53	2.62	2.68	2.74	2.89	302677	103026
S_47	2.23	2.33	2.40	2.47	2.56	2.63	2.70	2.86	309543	102059
S_48	2.05	2.15	2.23	2.30	2.40	2.48	2.56	2.73	314966	104408
C_1	2.69	2.78	2.85	2.91	3.00	3.06	3.13	3.28	179706	62504
C_2	2.78	2.88	2.95	3.01	3.10	3.16	3.23	3.38	177923	64960
C_3	2.93	3.03	3.10	3.17	3.26	3.32	3.39	3.54	174916	70092
C_4	2.77	2.86	2.93	2.99	3.08	3.14	3.20	3.35	182133	66389
C_5	2.79	2.88	2.95	3.02	3.10	3.16	3.23	3.37	186061	66377
C_6	2.71	2.81	2.87	2.94	3.02	3.09	3.15	3.30	183023	64606
W_1	2.62	2.71	2.77	2.83	2.91	2.97	3.03	3.16	269520	100670
W_2	2.66	2.75	2.81	2.87	2.96	3.02	3.08	3.22	274443	105639
W_3	2.73	2.82	2.88	2.95	3.03	3.09	3.16	3.30	271184	108707
W_4	2.79	2.88	2.94	3.01	3.09	3.16	3.22	3.37	268168	114340
W_5	2.83	2.92	2.99	3.05	3.13	3.19	3.26	3.40	258756	113663

Notes

1 - All water levels shown are in metres and referenced to Ordnance Datum Malin

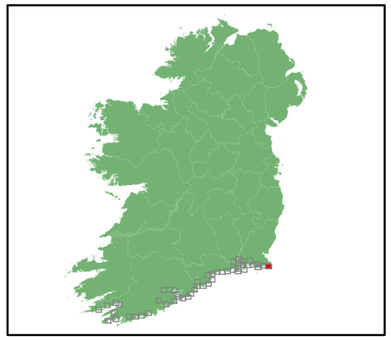
2 - All co-ordinates shown are in Irish Grid (TM65)

3 - AEP denotes Annual Exceedance Probability

Prepared By:	RPS	Date:	June 2012
Checked By:	JMC & JR	Date:	June 2012
Table No.:	S/MRFS/WL/1	Revision:	1

N

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label (refer to table)

	Water Level (mOD Malin) per AEP		
Node Label	WL 10%	WL 0.5%	WL 0.1%
S_47	2.40	2.70	2.86
S_48	2.23	2.56	2.73

0.5 0.25 0 0.5 1 1.5 2 Kilometers

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Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

Map :
SOUTH COAST FLOOD EXTENT MAP

Map Type : FLOOD EXTENT
Source : TIDAL FLOODING
Map area : RURAL AREA
Scenario : MID RANGE FUTURE SCENARIO
Figure By : PJW Date : Aug 2011
Checked By : JMC & JR Date : Aug 2011

Figure No. : S / RA / EXT / MRFS / 1
Revision 0

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3

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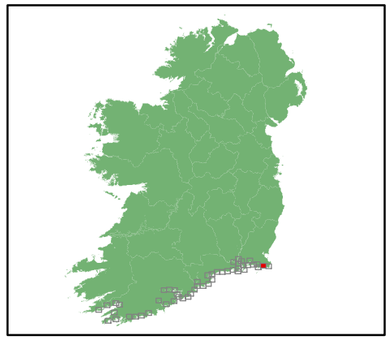
Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 — Node Label (refer to table)

	Water Level (mOD Malin) per AEP		
Node Label	WL 10%	WL 0.5%	WL 0.1%
S_46	2.47	2.74	2.89

S_46

0.5 0.25 0 0.5 1 1.5 2 Kilometers

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Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

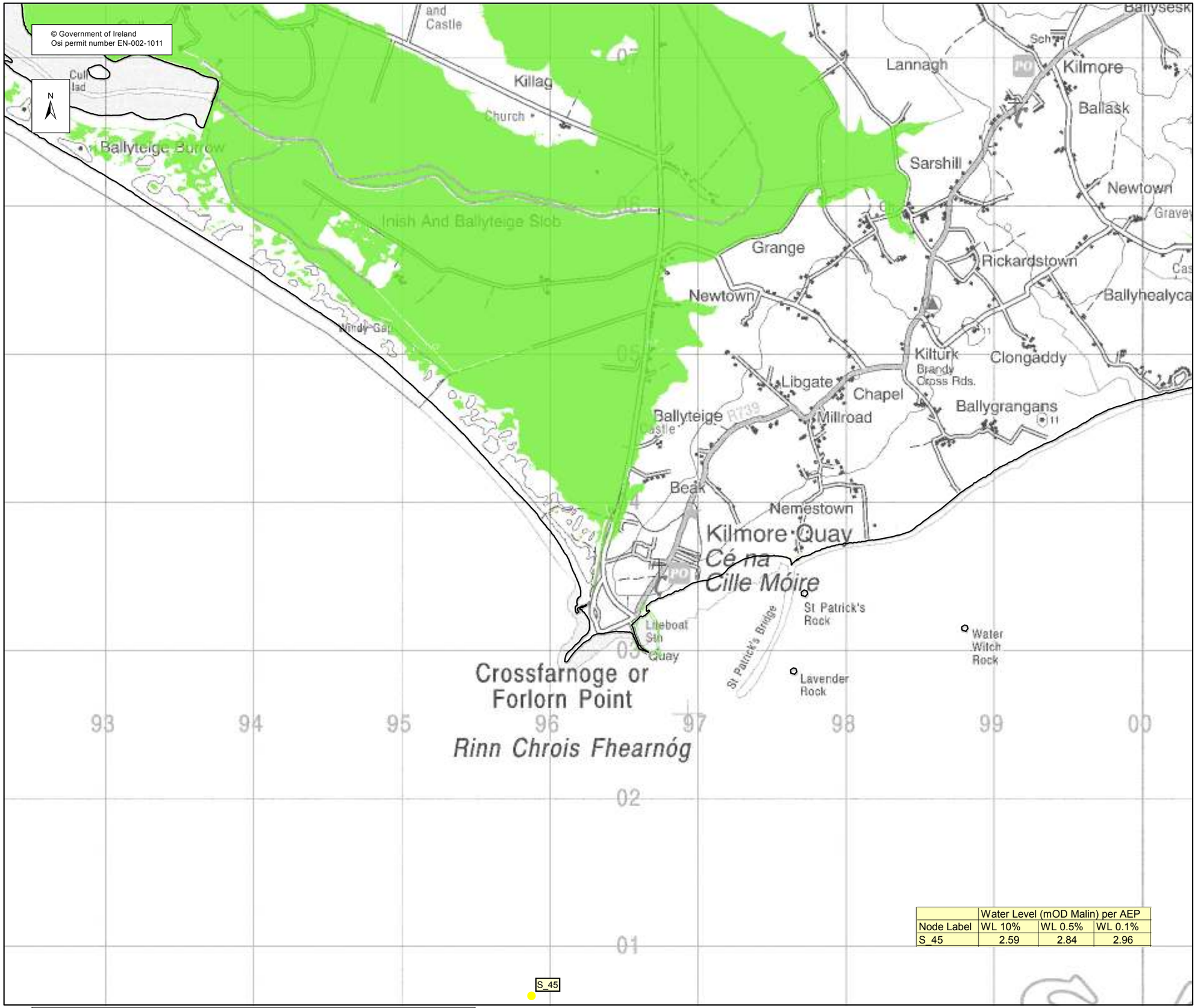
Map :
SOUTH COAST FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT		
Source :	TIDAL FLOODING		
Map area :	RURAL AREA		
Scenario :	MID RANGE FUTURE SCENARIO		
Figure By :	PJW	Date :	Aug 2011
Checked By :	JMC & JR	Date :	Aug 2011

Figure No. : S / RA / EXT / MRFS / 2

Revision 0

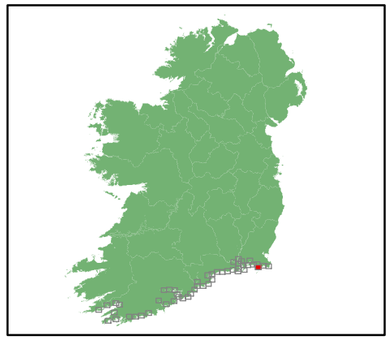
Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3



	Water Level (mOD Malin) per AEP		
Node Label	WL 10%	WL 0.5%	WL 0.1%
S_45	2.59	2.84	2.96

0.5 0.25 0 0.5 1 1.5 2 Kilometers

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label (refer to table)

USER NOTE :

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Ireland

Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

Map :
SOUTH COAST FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT		
Source :	TIDAL FLOODING		
Map area :	RURAL AREA		
Scenario :	MID RANGE FUTURE SCENARIO		
Figure By :	PJW	Date :	Aug 2011
Checked By :	JMC & JR	Date :	Aug 2011

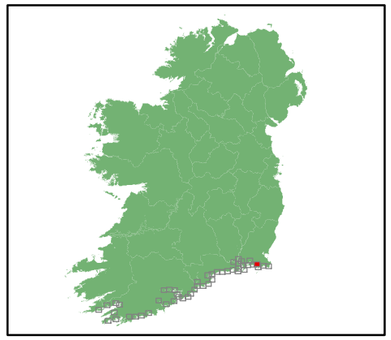
Figure No. : S / RA / EXT / MRFS / 3

Revision 0

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3

N

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label (refer to table)

USER NOTE :

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RPS
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OPW
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17-19 Lower Hatch Street
Dublin 2
Ireland

Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

Map :
SOUTH COAST FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT		
Source :	TIDAL FLOODING		
Map area :	RURAL AREA		
Scenario :	MID RANGE FUTURE SCENARIO		
Figure By :	PJW	Date :	Aug 2011
Checked By :	JMC & JR	Date :	Aug 2011

Figure No. : S / RA / EXT / MRFS / 4

Revision 0

Drawing Scale : 1:25,000

Plot Scale : 1:1 @ A3

0.5 0.25 0 0.5 1 1.5 2 Kilometers

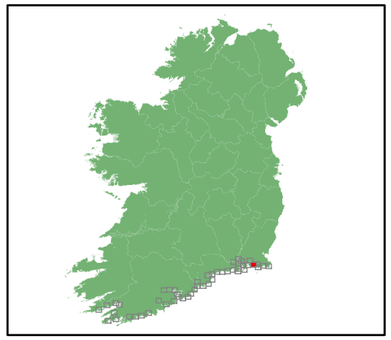
N

Standing Stone
Danescastle
Carrick
An Charraig
Coolishal
Ballyfrory
97 MP
Fannystown
Gortins
Graigueasalla
Bellgrove
Gurlins
98 MP
99 MP
LC
Bellgrovecross
Nicharee
Johnstown
Commons
Duncormick
Dún Chormaic
Castle
Coolhull
Church
Craigue Little
△31
Weneytown
Motte
Scotsland
Sheil Br.
Ballygow
King's Bar
Holy Well
Bellary
Rath
Gibberwell
Seafield
Graveyard
Castle
Coolseskin
Lough
Duncormick Hill
Cullenstown
Lacken
Riverstown
Ballymadder
Blackstone
Reahouse
Cull
Cull Isd
Ballymadder Point
Keeragh Islands
S_44

	Water Level (mOD Malin) per AEP		
Node Label	WL 10%	WL 0.5%	WL 0.1%
S_44	2.71	2.91	3.00

0.5 0.25 0 0.5 1 1.5 2 Kilometers

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label (refer to table)

USER NOTE :

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IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

Map :
SOUTH COAST FLOOD EXTENT MAP

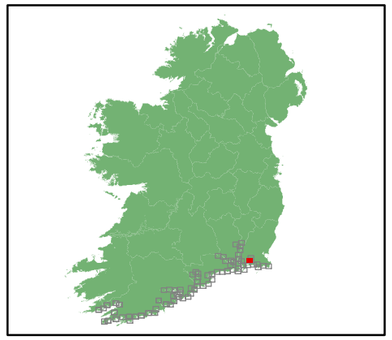
Map Type :	FLOOD EXTENT		
Source :	TIDAL FLOODING		
Map area :	RURAL AREA		
Scenario :	MID RANGE FUTURE SCENARIO		
Figure By :	PJW	Date :	Aug 2011
Checked By :	JMC & JR	Date :	Aug 2011

Figure No. : S / RA / EXT / MRFS / 5
Revision 0

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3

N

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label (refer to table)

USER NOTE :

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Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

Map :
SOUTH COAST FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT
Source :	TIDAL FLOODING
Map area :	RURAL AREA
Scenario :	MID RANGE FUTURE SCENARIO
Figure By :	PJW Date : Dec 2011
Checked By :	JMC & JR Date : Dec 2011

Figure No. : S / RA / EXT / MRFS / 6

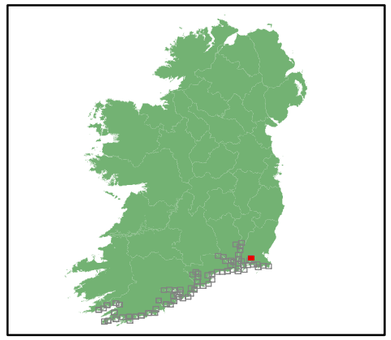
Revision 1

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3

0.5 0.25 0 0.5 1 1.5 2 Kilometers

N

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label (refer to table)

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Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

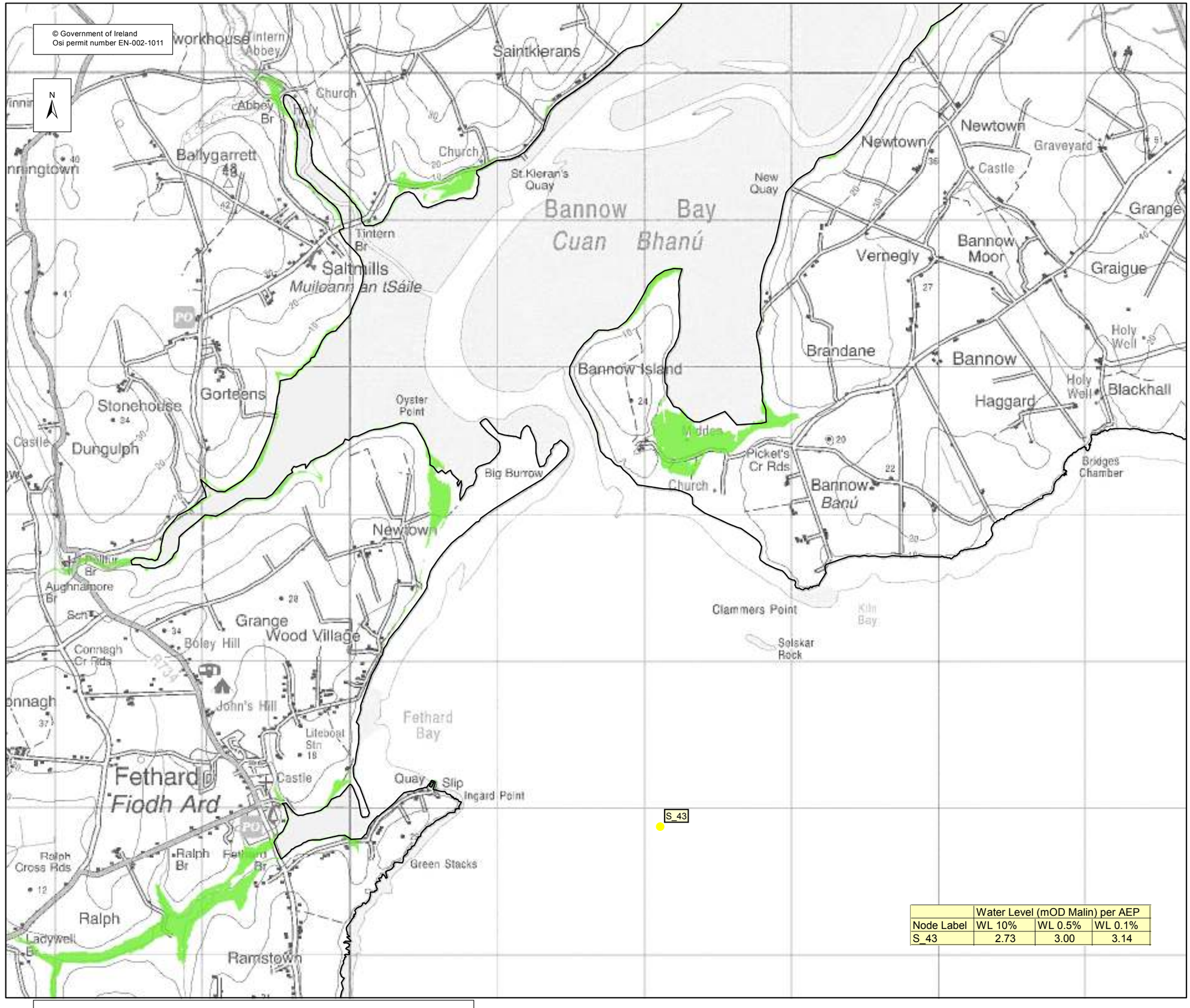
Map :
SOUTH COAST FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT
Source :	TIDAL FLOODING
Map area :	RURAL AREA
Scenario :	MID RANGE FUTURE SCENARIO
Figure By :	PJW Date : Dec 2011
Checked By :	JMC & JR Date : Dec 2011

Figure No. : S / RA / EXT / MRFS / 6A
Revision 1

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3

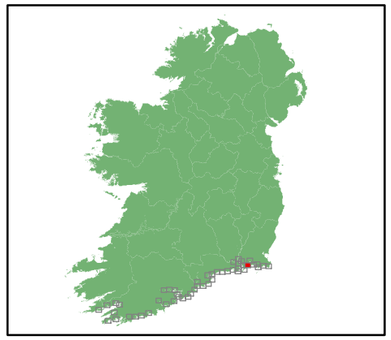
0.5 0.25 0 0.5 1 1.5 2 Kilometers



	Water Level (mOD Malin) per AEP		
Node Label	WL 10%	WL 0.5%	WL 0.1%
S_43	2.73	3.00	3.14

0.5 0.25 0 0.5 1 1.5 2 Kilometers

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- High Water Mark (HWM)
- Node Point
- S 34 Node Label (refer to table)

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Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

Map :
SOUTH COAST FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT		
Source :	TIDAL FLOODING		
Map area :	RURAL AREA		
Scenario :	MID RANGE FUTURE SCENARIO		
Figure By :	PJW	Date :	Aug 2011
Checked By :	JMC & JR	Date :	Aug 2011

Figure No. : S / RA / EXT / MRFS / 7

Revision 0

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3