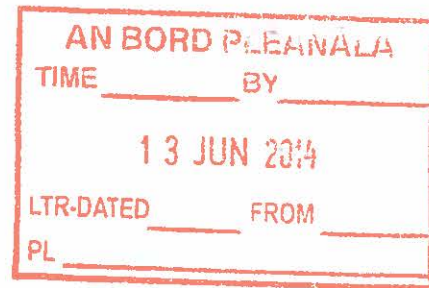




Engineers' Branch,  
OPW,  
Jonathan Swift St.,  
Trim, Co. Meath

**Your Ref: 61.PA0033**  
**Our Ref: 0588-2014**

Mr. Kieran Doherty,  
Executive Officer,  
An Bord Pleanála,  
64 Marlborough Street,  
DUBLIN 1.



Re: Galway Harbour Extension  
Renmore and Townparks Townlands, Galway.

Dear Kieran,

I refer to correspondence dated 4th April 2014 and also further correspondence dated 27th May 2014 requesting observations from the OPW in relation to the proposed Galway Harbour Extension development and in particular comments on the following matters:-

1. The content and conclusions reached in Section 8.4.7 of the EIS in relation to flood risk assessment, and
2. How the specific hydrology and hydraulic modelling contained in the EIS compares with any similar exercises carried out by the OPW as part of the Galway Bay and Galway City CFRAMs project.

In relation to item 1 above the following observations/comments are given:

1.1 The OPW have reviewed the content and conclusions of Sections 8.4.7 and 8.4.6 relating to flood risk assessment (FRA).

1.2 The overall conclusion of Section 8.4.7 is that *.....the proposed development is appropriate development for Flood Zone A being a harbour extension and that it will not increase flood risk to adjacent lands and developments from sea levels, wave climate and river flows.* Whilst the first part of this conclusion is accepted (the proposed harbour extension being water-compatible development) the conclusion that it will not increase flood risk to adjacent lands and development etc is not clear from the model results as presented. Whereas very detailed and advanced modelling has been undertaken the most critical model output in relation to flood risk assessment is that of **water level change (WLC)** associated with the proposed development. This

WLC model output has only been shown for 6 point locations (see Figure 8.4.184) and should also be presented in plan (as opposed to time series) for the entire model domain shown in Figure 8.4.151 and especially in close proximity to the landward boundary of this model. This would clarify whether there is likely to be any increase in water levels elsewhere (*at adjacent lands and developments*) and therefore any associated increase in flood risk.

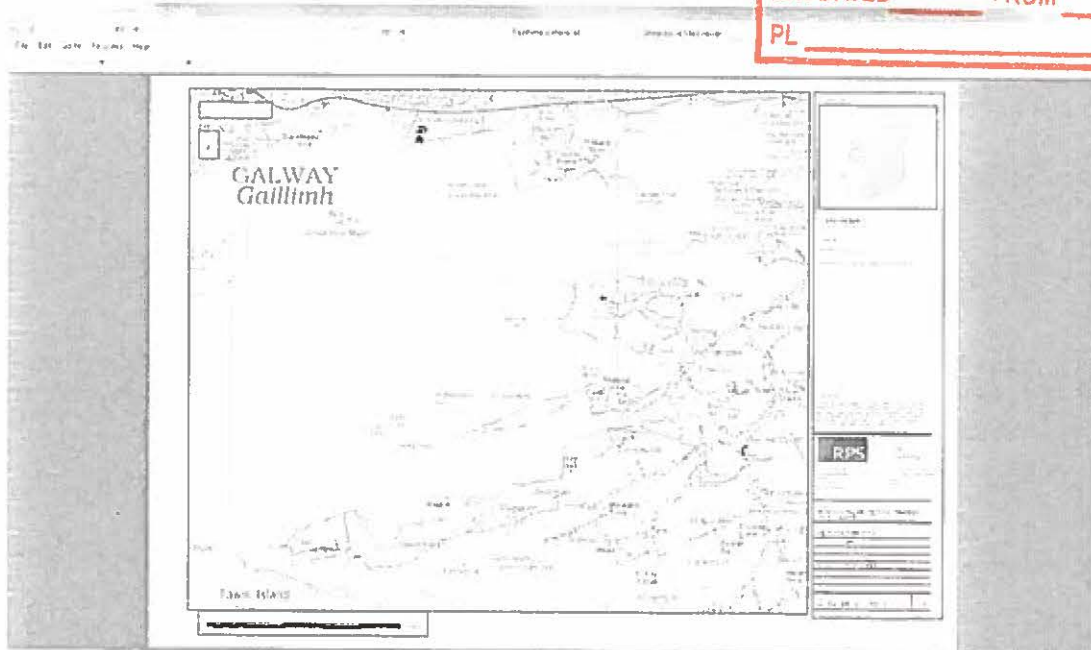
1.3 The model output and results presented in Figures 8.4.152 to 8.4.183 have been truncated along their southern boundary and do not therefore show all of the model predictions.

1.4 Fluvial flooding has generally been ignored in the FRA and assumed not to be relevant. This source of flooding should be considered in the FRA/EIS e.g by a review of the Preliminary Flood Risk Assessment (PFRA) flood mapping outputs (refer [www.cfram.ie](http://www.cfram.ie)) and the draft CFRAM flood mapping outputs for the Corrib catchment and it should be clearly demonstrated that the proposed development will not impact on this source of flooding.

1.5 Whilst the proposed design quay level of 4.7 m OD Malin is likely to be adequate, the basis for selecting this finished level should be reviewed having regard to the following considerations: simply adding 500mm of sea level rise allowance (for mid range future scenario) to the 200 year extreme sea level does not take account of additional considerations e.g. (a) glacial isostatic adjustment (b) subsidence of reclaimed fill over time (c) potential for wave overtopping. It would be normal practice to allow an additional freeboard to account for such considerations.

1.6 Parts of the coastline to the east of the proposed development have been identified under the ICPSS as being at risk from coastal erosion (see map extract below available on the OPW website - red lines denoting the 2050 coastline). The EIS, whilst modelling sediment movement, does not present the results in a form that demonstrates clearly that there are no changes in coastal morphology, arising from the proposed development, which are likely to increase the rate of erosion at these locations or indeed give rise to increased erosion at other adjacent coastal locations.

AN BORD PLEANÁLA	
TIME _____	BY _____
13 JUN 2014	
LTR-DATED _____	FROM _____
PL _____	



1.7 Wave climate modelling has been undertaken to assess the impact of the proposed development on the local wave climate and the results are presented in Section 8.4.6 of the EIS. It has been concluded from this modelling that there will be an increase in wave heights in the vicinity of Nimmo's Pier and to the west of this location (see Figure 8.4.141) from the proposed development. The potential impact of this increased wave climate condition on flood risk has not been addresses in detail in the FRA and should be.

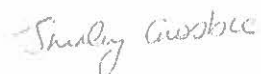
In relation to item 2 above the following observations/comments are given:

2.1 The CFRAM Programme does not involve coastal modelling, as the extreme sea levels and wave climate conditions required to support the CFRAM flood hazard and risk assessments are being modelled under the Irish Coastal Protection Strategy Study (ICPSS) and the Irish Coastal Wave and Water Level Study (ICWWS) with the CFRAM Programme and Projects just making use of the relevant outputs of these studies. Therefore direct comparisons with the coastal / hydraulic modelling done in the EIS relating to the proposed development would not be appropriate.

2.2 The coastal modelling outputs undertaken as part of the ICPSS (extreme sea levels and flood maps) and ICWWS (coastal areas potentially vulnerable to wave overtopping and associated wave climate conditions) do not appear to have been reviewed in any detail in the preparation of this flood risk assessment (at least have not been commented on) and there are therefore inevitable differences between the modelled outputs for the existing situation. An example of this would be the extreme water levels predicted in the vicinity of the site/location.

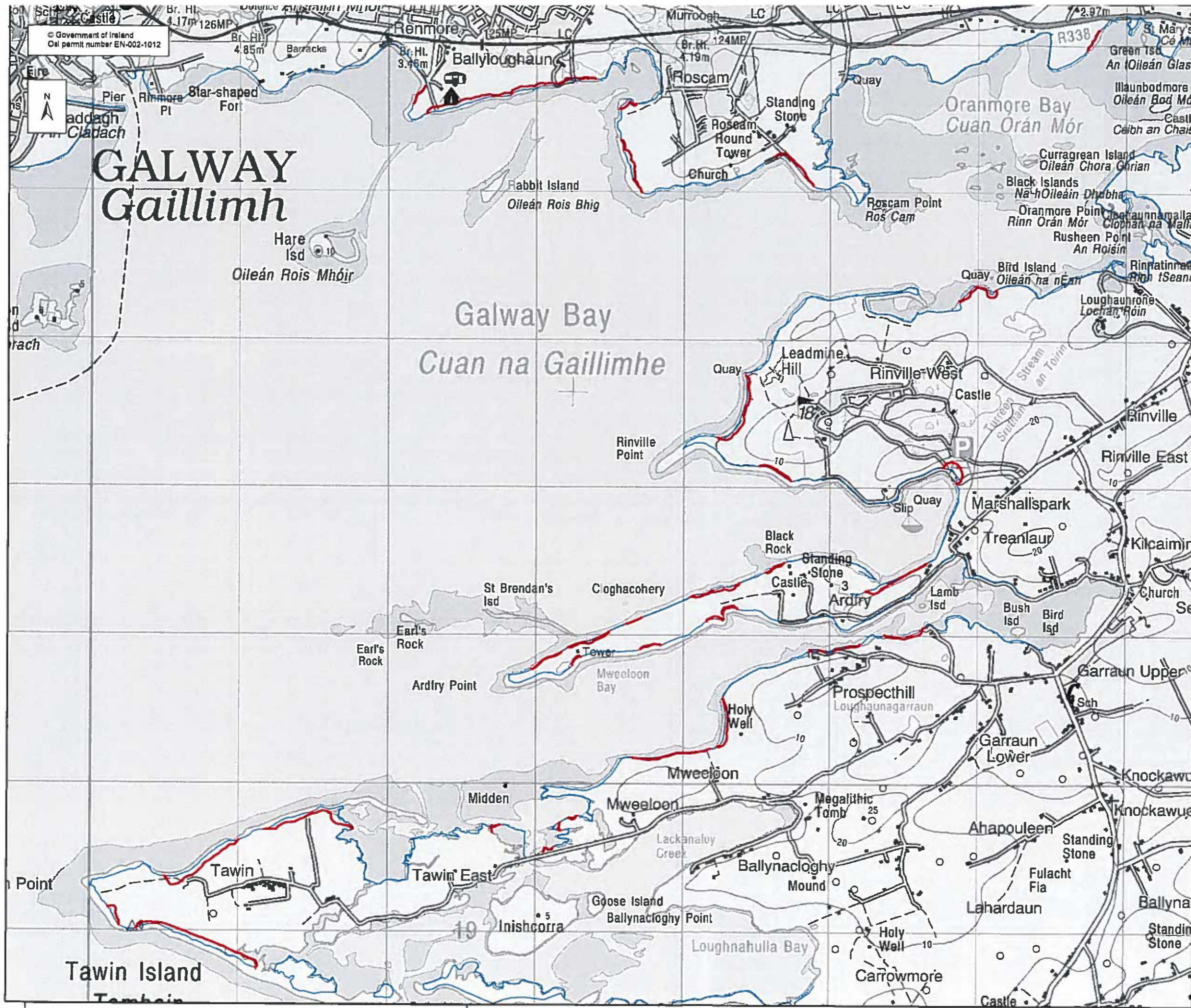
2.3 Different types of coastal models were used in each case and different modelling methodologies were adopted consistent with the different objectives of the respective studies/assessments which will inevitably account for differences in the model outputs. Modelling comparisons between the ICPSS/ICWWS and EIS are not considered appropriate as the ICPSS/ICWWS did not seek to model the impact or changes in coastal processes associated with this proposed new development.

Yours sincerely,



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Shirley Crosbie,  
Engineering Services Administration Unit.  
13th June 2014.



**EROSION MAP**

- Legend**
- Denotes 2050 Erosion Line
  - Denotes 2000 Baseline / Vegetation Line

AN BORD PLEANÁLA  
 TIME BY 13 JUN 2014 FROM  
 LTR-DATED FROM PL

**USER NOTE:**  
 USERS OF THESE MAPS SHOULD REFER TO THE DETAILED DESCRIPTION OF THEIR DERIVATION, LIMITATIONS IN ACCURACY AND GUIDANCE AND CONDITIONS OF USE PROVIDED AT THE FRONT OF THIS BOUND VOLUME. IF THIS MAP DOES NOT FORM PART OF A BOUND VOLUME, IT SHOULD NOT BE USED FOR ANY PURPOSE.

**RPS**

Elmwood House  
 74 Boucher Road  
 Belfast  
 BT 12 6RZ  
 Northern Ireland

**OPW**

Office of Public Works  
 17-19 Lower Hatch Street  
 Dublin 2  
 Ireland

<b>Project:</b>	
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE IV	
<b>Map:</b>	
WEST COAST EROSION	
<b>Map Type:</b>	EROSION
<b>Prediction Year:</b>	2050
<b>Source:</b>	COASTAL
<b>Map area:</b>	RURAL AREA
<b>Scenario:</b>	2050
<b>Figure By:</b>	PJW
<b>Date:</b>	Dec 2012
<b>Checked By:</b>	JMC
<b>Date:</b>	Dec 2012
<b>Figure No.:</b>	W / RA / EROS / 2050 / 3
<b>Revision:</b>	0
<b>Drawing Scale:</b>	1:25,000
<b>Plot Scale:</b>	1:1 @ A3

## Kieran Doherty

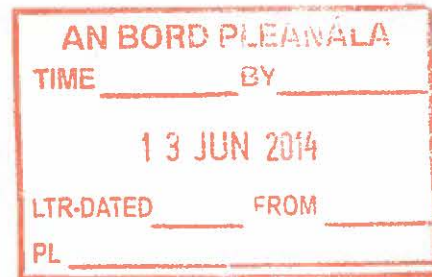
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**From:** Shirley Crosbie <shirley.crosbie@opw.ie>  
**Sent:** 13 June 2014 16:15  
**To:** Kieran Doherty  
**Subject:** Re: Galway Harbour Extension  
**Attachments:** 0588-2014 Galway Harbour Extension Comments.doc; 0588-2014 Galway Harbour Extension.doc

Dear Kieran,

Attached please find comments on the Galway Harbour Extension which are due for submission today Friday 13th June 2014. These comments have been forwarded on to me from Mr. Jim Casey, Chartered Engineer, Hydrology & Coastal Section, Office of Public Works.

Kind Regards  
Shirley Crosbie



*Jim Casey*  
*Chartered Engineer*  
*Engineer Grade 1*  
*Hydrology & Coastal Section*  
*Office of Public Works*  
*17-19 Lower Hatch Street*  
*Dublin 2*  
*p +353 1 647 6572*  
*f +353 1 676 1714*  
*e [jim.casev@opw.ie](mailto:jim.casev@opw.ie)*

On 13/06/2014 13:24, Kieran Doherty wrote:

Hello Shirley,

I note that today is the date that we had requested your response by.

Regards,  
Kieran

FÓGRA RÚIN: Tá an ríomhphost seo agus aon chomhaid atá nasctha leis faoi rún agus dirithe amháin don seolaí. Má bhfuair tú an ríomhphost seo trí earráid, déan teagmháil le bainisteoir an chórais.

Tabhair faoi deara led thoil: aon tuairimí nochtaithe san ríomhphost seo is iad tuairimí an tseoltóra féin agus níl sé intuigthe gurb iad tuairimí An Bhoird Pleanála nó go gcloíonn siad le polasaithe ráite an Bhoird.

## Kieran Doherty

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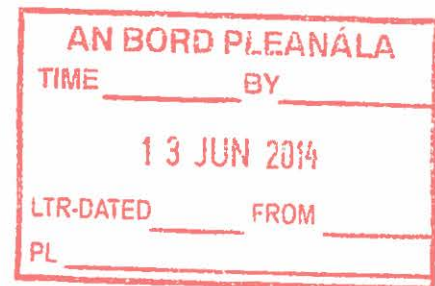
**From:** Jim Casey <jim.casey@opw.ie>  
**Sent:** 13 June 2014 18:43  
**To:** Kieran Doherty  
**Cc:** shirley.crosbie@opw.ie  
**Subject:** Fwd: Re: Fwd: RE: Galway Harbour Extension

Kieran,

As Shirley is on leave early next week, see my response below to your request.

Regards

Jim



----- Original Message -----

**Subject:** Re: Fwd: RE: Galway Harbour Extension  
**Date:** Fri, 13 Jun 2014 18:39:11 +0100  
**From:** Jim Casey <jim.casey@opw.ie>  
**Reply-To:** jim.casey@opw.ie  
**To:** shirley.crosbie@opw.ie  
**CC:** Tom.Bolger@opw.ie, adamsonm <mark.adamson@opw.ie>

Shirley,

This map is published on the OPW website. It can be downloaded at full size directly from the following web url:

<http://www.opw.ie/en/media/West%20Coast%20Technical%20Report%20Appendix%204%20-%20Predictive%20Erosion%20Maps%202050%20Part%201%20of%204.pdf>

Following download go to page 3 of 7 of pdf document.

Regards

Jim

On 13/06/2014 17:44, Shirley Crosbie wrote:

Hi Jim

Apologies for late email but Kieran Doherty has just got back to me requesting a full size version of map from the Galway Harbour Extension comments today.

Would it be possible to post him the full size version Kieran Doherty, An Bord Pleanala, 64 Marlborough Street, Dublin 1 Ref 61.PA0033.

He would greatly appreciate it.

Kind Regards,  
Apologies for late email again.  
Shirley

----- Original Message -----

**Subject:**RE: Galway Harbour Extension  
**Date:**Fri, 13 Jun 2014 16:36:38 +0000  
**From:**Kieran Doherty <K.Doherty@pleanala.ie>  
**To:**shirley.crosbie@opw.ie <shirley.crosbie@opw.ie>

Thanks for that Shirley.

On 13/06/2014 17:17, Kieran Doherty wrote:  
Shirley,

Are you sending in a hard copy of your comments, especially a full size version of the map?

Thanks,  
Kieran

---

**From:** Shirley Crosbie [<mailto:shirley.crosbie@opw.ie>]  
**Sent:** 13 June 2014 16:15  
**To:** Kieran Doherty  
**Subject:** Re: Galway Harbour Extension

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Kieran