

## Response to queries for licence BUML1472

The below provides information from the email from 01/04/2015

- 1. Previous hydrodynamic and sediment regime assessments for the Foryd Harbour project concluded that the project would not have a significant impact on local sediment transport regimes within the harbour or along the coastal frontage. Therefore it is unclear why it is necessary to undertake additional maintenance dredging of the Harbour.**

The modelling that was undertaken for the original ES for the West Rhyl scheme and also the Foryd Harbour ES identified that there would most likely be a reduction in sediment deposition within the harbour entrance as a result of the dredging.

The maintenance dredging for the scheme was proposed to be covered in the Harbour Empowerment Order that DCC have applied for and therefore was not considered in the previous ES for the various phases of works.

The various areas that require dredging under this variation are:

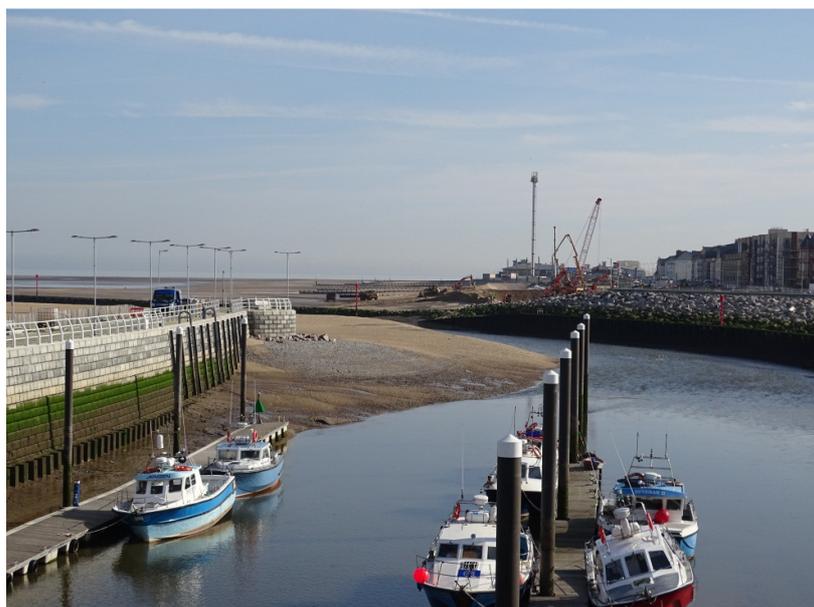
**Area 1** - Around the existing pontoons – this has an average volume of 1000m<sup>3</sup>. The reasoning for this removal is that sand is building up around the pontoons. The levels proposed for excavation are -0.5mAOD where required in order for the boats to rest level in the harbor at low tide (please see drawing H3/14409/D/05 attached).



**Area 2** – Area under the footbridge and central pontoon – this has an average volume of 3,081m<sup>3</sup>. This area requires a level of -1.5mAOD to allow access to the main navigation channel and pontoon areas.



**Area 3** – the turning circle – this has an average volume of sand to be removed of 6,000m<sup>3</sup>. This volume of material is required to be removed to allow access to the navigation channel and the fenders on the quay wall. Without this removal of sand the harbour is not fulfilling its requirements.



**Area 4** – the navigation channel – this has an average volume of 250m<sup>3</sup> to be removed. The removal of this sand is required for the navigation of the vessels using the harbour.



The material to be dredged is predominantly building up around the turning circle which accounts for approximately 6000m<sup>3</sup> of material to be removed. The previous modelling indicated that the material was likely to build up in this area however not to the extent that has been observed recently. This is explained further In our response to question 2.

**2. Have investigations been done into the potential causes and sources of increased siltation/accretion within the Harbour? If so, please provide evidence of this. If not, please provide justification as to why.**

There has been no additional modelling undertaken on the scheme following the modelling that was done in 2011 for the Foryd Harbour work and 2010 for the West Rhyl Scheme. The previous modelling indicated that material was expected to build up against the turning circle however the current extent is greater than proposed. The modelling undertaken for the scheme identified that the flows from the River Clwyd was have a positive impact on reducing the sediment deposition occurring within the harbour. Over the last few months these river flows have not been experienced owing to the reduced rainfall. Without these higher river flows the material within the harbour is not being transported out of the harbour. Instead it is being deposited within the harbour.

This increase accretion of material is resulting in the siltation of the harbour and therefore the reduction in channel depth and mooring locations for the vessel users. This in turn is reducing the availability of vessel movement in the harbour affecting the local economy.

At this stage of the project it is considered that additional modelling will not identify the conditions currently being experienced. This is owing to these conditions of reduced rainfall and therefore flow speeds as being an unforeseeable localised event which could not be observed in the models.

**3. Is it necessary to undertake a design alteration to the completed harbour works to remediate the increase accretion rates within the harbour?**

The current design of the harbour will remain. At present there are no identified changes that could be implemented to reduce the accretion rates. Ongoing monitoring and where required excavation will be undertaken on the current scheme and if required a re-design could be considered. However this is dependent on available funding and grants.

**4. The proposed dredge area extends upstream of Wellington Road Bridge, however it is unclear how the dredging operation will alter the channel profiles.**

**Please provide existing and proposed crossing sections to show how the dredging operation will affect the bed profiles within the dredged area.**

Please see attached cross sections of the existing and proposed levels. The levels in this vicinity will be to -0.5m AOD. The volume of material will be up to 1000m<sup>3</sup> in this area to level out the bed in the location of the mooring buoys. (Please see H3/14409/D/05 attached)

**5. The dredging operation will be in close proximity to the Clwyd Flood Embankments at Marine Lake. There is concern that the operation could destabilise the critical flood embankments and hence result in deterioration of the flood defence leading to increased flood risk.**

- **How will this be addressed during the operation?**
- **Could the proposed dredging operations mobilise additional materials from the upstream Clwyd / Elwy catchments and increase erosion upstream of the**

**harbour? This could threaten and/or destabilise the Clwyd Flood embankments upstream of the harbour.**

Dredging was carried out in the harbor under X, an emergency licence to dredge in 2013.

Where the embankment slope is to be excavated it will be undertaken to a 1 in 3 slope from the edge of the boundary, where required, with land based plant. Owing to the locations and slopes of the dredging this is not proposed to have an impact on the stability of the Marine Lake site or the Clwyd Flood Embankments also due to the fact we are taking only 1000m<sup>3</sup> from the inner harbor area.

The additional removal of material is not proposed to have any impact on the additional materials upstream of the harbour.

**6. In addition to the queries outlined above please can you also confirm the following in relation to this application:**

**This dredging activity is a standalone project and not part of the projects licenced under Marine Licence CRML1436 or 11/78/ML (now expired).**

The dredging activity is a standalone project and will not be combined with the CRML 1436. The material will be used as part of construction material for schemes above MHWS or as beach replenishment. Where it is to be used for beach replenishment the appropriate licences will be obtained prior to use.

- **Will all the dredged material be removed? i.e. not re-distributed or used for beach replenishment.**

Please see response above.

- **What will be done with the dredged material?**

Please see response above.

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