

1. Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended), Regulation 22 - EIA Consent Decision

- 1.1 Title:** Marine Aggregate Extraction in Area 526 – Culver Extension
- 1.2 Regulatory Approval:** Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended)
- 1.3 Operators:** Hanson Aggregates Marine Ltd., Cemex UK Marine Ltd., and Tarmac Marine Ltd.
- 1.4 Marine Licence Application No:** MMML1670
- 1.5 Location:** Area 526, Severn Estuary

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3. Introduction

- 3.1** This document constitutes an EIA consent decision under Regulation 22 of the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (MWR), in respect of an application for marine aggregate removal at Area 526 (Culver

Extension) (Marine Licence ref: MMML1670), submitted by Hanson Aggregates Marine Ltd., Cemex UK Marine Ltd., and Tarmac Marine Ltd. as a joint application. The application was supported by an Environmental Statement. NRW Permitting Service (NRW PS) has considered the application and information provided in support of the application and is now in a position to make an EIA consent decision to Hanson Aggregates Marine Ltd., Cemex UK Marine Ltd., and Tarmac Marine Ltd.

- 3.2** In accordance with Regulation 22 of the MWR, the NRW PS, as appropriate authority has considered the application, Environmental Statement (ES), representations of consultation bodies and members of the public and have had regard to the relevant legislation. Following the conclusion of a Transboundary Screening Assessment it was determined that consultation with other EEA states was not necessary.
- 3.3** In making the EIA Consent Decision, the NRW PS has considered all relevant environmental information, in particular, the marine licence application (MMML1670), the ES and submissions made by consultation bodies, the applicant and members of the public.

4. Project Description and Regulating Regimes

- 4.1** Hanson Aggregates Marine Ltd., Cemex UK Marine Ltd., and Tarmac Marine Ltd. are applying for Marine Licences to continue to extract marine aggregates from Area 526 Culver Extension, Severn Estuary.
- 4.2** The Project overlaps between two consenting main regimes.
- 4.3** A Marine Licence under the Marine and Coastal Access Act 2009, administered by Natural Resources Wales acting on behalf of the Licensing Authority, Welsh Ministers, for all activity taking place in Welsh waters.
- 4.4** A Marine Licence under the Marine and Coastal Access Act 2009, administered by the Marine Management Organisation (MMO), for all activity taking place in English waters.
- 4.5** The Project comprises:
- Trailer suction hopper dredging, at all times of year
 - Total extraction of 30 million tonnes over 15 years; maximum of 2 million tonnes per year across total area
 - Penetration depth 1.5 to 3 metres; variable total depth to leave 0.5 metres capping layer across dredged area.
 - Hopper washing of 20 to 50 m³ material per washout
 - Grab and core sampling as required for monitoring purposes
- 4.6** The Environmental Statement (ES) submitted with the marine licence application covers the full project extent in both English and Welsh regions. NRW PS acting as Appropriate Authority for the Welsh Marine Licence has considered the

Environmental Impact Assessment for the entirety of Culver Extension site (Area 526) including the tonnage applied for at both sites.

5. The Environmental Statement (ES) – MWR 12 (1)(d)

5.1 The Environmental Statement outlined the possible impacts of the proposed project organised under the following topic headings

5.2 Technical chapters:

- Physical Processes
- Water and Sediment Quality
- Nature Conservation
- Benthic Habitats and Species
- Fish and Shellfish
- Marine and Coastal Ornithology
- Marine Mammals and Turtles
- Commercial and Recreational Fisheries
- Commercial and Recreational Navigation
- Marine Archaeology
- Coastal Protection and Flood Defence
- Air Quality
- Human Health
- Infrastructure and Other Existing Marine Users
- Cumulative and In-combination Effects
- Mitigation and Monitoring
- Conclusions

5.3. The ES is considered to satisfy the requirements of Regulation 12 (1)(d) and Schedule 3 of the MWR. Specific comments pertinent to each ES chapter can be found in section 12.

6. Any further information provided by the applicant pursuant to a notification under regulation 14(1)

6.1 Further information was requested from the applicant pursuant to a notification under Regulation 14 (1) on 25th April 2017.

6.2 An addendum to the Environmental Statement was submitted by the applicant on 22nd June 2017. This included additional modelling scenarios and further information on fish and fisheries.

7. Public Notices – MWR Regulations 16(2)(g)

- 7.1** These were advertised to notify interested parties of the proposed works and give any interested parties or members of the public an opportunity to make representation on the application as necessary.
- 7.2** The application documents were made available as follows:
- A translated (Welsh and English) public notice was placed in the Barry and District News on 9 March 2017 & 16 March 2017
 - An English public notice was placed in the Bristol Post on 10 March 2017 and 17 March 2017
 - An English public notice was published in the Fishing News on 16 March 2017
 - The application documents were made available to the public at: Barry Library and Bristol Central Library for 49 days following the publication of the first public notice.
- 7.3** The Further Information pursuant to a notification under Regulation 14 (1) were made available as follows:
- A translated (Welsh and English) public notice was placed in the Barry and District News on 27 July and 3 August 2017
 - An English public notice was placed in the Bristol Post on 20 July and 27 July 2017
 - An English public notice was published in the Fishing News on 27 July 2017
 - The application documents were made available to the public at: Barry Library and Bristol Central Library for 49 days following the publication of the first public notice.
- 7.4** No public representations were received.

8. Representations in response to consultation made by consultation bodies – MWR Regulations 17(1)(a)(iv) and were relevant consideration of public responses

- 8.1** The Marine Licence application was consulted upon on 31 January 2017 for a period of 42 days. It was sent to the following consultation bodies:
- 8.2** Natural Resources Wales Technical Experts (NRW TE); The Centre for Environment, Fisheries and Aquaculture Science (Cefas); Ministry of Defence (MoD); Maritime and Coastguard Agency (MCA); The Crown Estate (TCE); Local Planning Authorities (LPA) for Cardiff, Vale of Glamorgan, Newport, Monmouthshire, Bristol, and North Somerset; Local Harbour Authorities, Associated British Ports (Barry, Penarth & Newport), Gloucester Harbour Trustees, Bristol Port, Local Biodiversity Officers (LBO) for Cardiff, Vale of Glamorgan, Newport, Monmouthshire, Bristol, and North Somerset, Royal Yachting Association (RYA), Royal Society for the Protection of Birds (RSPB), Trinity House (TH), Welsh Government Fisheries Branch, Marine Enforcement Officers (MEO) Natural England (NE), The Environment Agency (EA), The Royal Commission of Historic Monuments Wales, Department for Transport (DfT), The Wildlife Trust, UK Hydrographic Office, Historic England, UK Chamber of

Shipping, Department of Business Energy and Infrastructure Strategy, British Sub-Aqua Club (BSAC), Shellfish Association of Great Britain (SAGB), the National Federation of Fishermen's Organisations (NFFO), New Under Ten Fishermens Association (NUTFA), NERL safeguarding, Devon and Severn IFCA (D&S IFCA), Welsh Government Planning.

- 8.3** The following organisations submitted comments: Natural Resources Wales Technical Experts (NRW); The Centre for Environment, Fisheries and Aquaculture Science (Cefas); Ministry of Defence (MoD); Maritime and Coastguard Agency (MCA); Local Planning Authorities (LPA) for Cardiff, Vale of Glamorgan, and North Somerset; Royal Yachting Association (RYA), Trinity House (TH), Natural England (NE), the Environment Agency (EA), Historic England, Porlock Bay Oysters (referred by Shellfish Association of Great Britain), NERL safeguarding, Devon and Severn IFCA (D&S IFCA).
- 8.4** Details of the issues raised by the Consultation Bodies and how they have been addressed is set out in section 12
- 8.5** Consultees who did not provide a response were assumed to have no comment

9. Consultation of EEA States – MWR Regulation 20

- 9.1** A Transboundary Screening Assessment identified potential for effects to another EEA State (Ireland) via impacts to coastal process. However, the assessment concluded there would be no significant effect to these member states.
- 9.2** Consequently, no material was provided to other EEA member States in relation to the application

10. European Protected Sites

- 10.1** The proposal is partially located within a European Protected Site.
- 10.2** The effects of proposal on the following European Sites, their features and conservation objectives have been considered by NRW during the licence determination:
- Severn Estuary SAC
 - Severn Estuary SPA
 - Severn Estuary RAMSAR
- 10.3** A test of likely significant effect (TLSE) was undertaken and potential significant effects on features of the European Sites listed above could be ruled out. It was concluded that the proposal, when considered alone and in-combination, will not adversely affect the integrity of the European site(s) concerned.

10.4 Further details are described within the Habitats Regulations Assessment.

11. Water Framework Directive Compliance Assessment

11.1 The Potential effect of the Project was also screened against the Water Framework Directive objectives for the following Water Bodies:

- Bristol Channel Inner North
- Bristol Channel Inner South

11.2 A Waterframework Directive Compliance Assessment concluded that the proposal, when considered alone and in-combination, will not pose a risk to deterioration of the above listed waterbodies

11.3 Further details are described within the Water Framework Directive Compliance assessment, completed by the NRW PS.

12. Issues arising for consideration of the Environmental Statement, Marine Licence application and representations received

12.1 In taking a Regulation 22 EIA consent decision, we have considered the issues that have been identified following consideration of the ES, representations from consultation bodies, and members of the public and any resultant supplementary information provided in response by the applicant.

12.2 The material issues that were highlighted by the ES and consultation process and the extent to which they have been addressed are detailed in this section

12.3 General comments

12.3.1. NRW TE requested clarification on whether the licence for Area 472 would be relinquished if the licence for Area 526 was granted, or whether both licences were to operate simultaneously.

12.3.2. The applicant has clarified that it is anticipated that both areas will be initially dredged, with a transition from Area 472 to Area 526 as resource in Area 472 becomes reduced, with dredging in Area 472 to cease within 3 to 5 years. NRW PS considers that this issue is resolved, without the need for specific conditions within any marine licence. This information has been passed to the regulator for the English area (MMO).

12.3.3. NRW TE commented that the ES does not comment on compliance with the relevant strategic policy within Welsh Government, the Interim Marine Aggregates Dredging Policy (iMADP) and that there is little justification for the tonnage requested.

- 12.3.4. The applicant has clarified that additional aggregate extraction is required to meet ongoing construction demand, to meet predicted future demand. NRW PS considers the ES has made adequate description of the need for the activity.
- 12.3.5. NE also noted that the current Welsh Government policy on dredging in the Severn Estuary, iMADP caps the annual extraction rate of aggregates in the Severn Estuary/ Inner Bristol Channel at 1 million tonnes per annum. NE would welcome a high-level (plan-level) assessment of the total tonnage of marine aggregate that the system can sustainably support.
- 12.3.6. NRW PS recognises that the application is not compliant with the iMADP for dredging in the Welsh region. The application for 30 million tonnes of extracted aggregate at a rate of 2 million tonnes per annum is in excess of the tonnage cap for the total aggregate removal from the Severn Estuary and Inner Bristol channel in Wales (800,000 tonnes per annum). At the present time, 750,000 of this 800,000 tonnes is allocated to other consented projects.
- 12.3.7. The NRW PS understands that the Welsh Government are considering potential revisions to the iMADP. NRW PS considers it appropriate to assess the impacts of the full application for the purpose of the determination of the EIA consent. However, NRW PS considers that any Marine Licence granted for the Welsh region must contain a restricted tonnage in compatible with the tonnage cap within the iMADP. NRW PS notes that such a tonnage cap does not apply in the English region.

12.4 Physical Processes

- 12.4.1. NRW TE welcomed the proposal to include zoning, and noted that areas which are less than 0.5m resource thickness would be subject to exclusion based on current information. NE also commented that areas with a resource of less than 0.5m should be excluded from the extraction area for as long as the resource remains below 0.5m.
- 12.4.2. Cefas noted the importance of the 0.5m capping layer to create recolonization opportunities. Cefas consider this to be an appropriate mitigation measure for benthic and fish species, but that this must be left across the whole area. Cefas queried the use of an 'average' of 0.5m, rather than an absolute minimum capping layer of 0.5m in all locations. In addition, Cefas noted that this requirement could be problematic in the event of sediment migration away from the area.
- 12.4.3. NRW PS asked the applicant for clarification on the use of the 0.5m capping layer, with respect to the use of an 'average' 0.5m. The applicant clarified that the term 'average' is used to describe the blocks of seabed measured by bathymetric survey. NRW PS is satisfied that the ES describes an effective minimum capping layer of 0.5m at all locations of the dredge zone, and that any locations containing less than 0.5m sand resource will not be subject to dredging activity.

- 12.4.4. NRW PS acknowledge the potential for resource migration away from previously dredged areas. However, NRW PS considers that the proposed dredging methodology using zoning and monitoring mitigates against the risk of this occurring. Therefore, NRW PS is satisfied that this is appropriately considered, providing appropriate monitoring conditions are included in any Marine Licence issued.
- 12.4.5. NRW TE requested that further consideration should be given to the sustainability associated with the exploitation of the finite resource of this area.
- 12.4.6. The applicant provided information that the sustainability considerations have been considered in the economic and social benefits from the activity. NRW PS considers that the environmental considerations have been documented within the ES.
- 12.4.7. NRW TE noted that the ES discussed sea-level rise, but does not model or assess sea-level rise as part of the effects on hydrodynamic regime. NRW TE requested that the longer-term effects in relation to sea-level rise from removing this resource should be discussed in more detail.
- 12.4.8. The applicant supplied further clarification on this point, that consideration of sea level rise was not necessary due to the small projected sea level rise in the area over the proposed licence period, in comparison to large wave heights. NRW TE and Cefas were satisfied with this response. NRW PS considers that this matter has been sufficiently addressed.
- 12.4.9. NRW TE requested more information regarding the significance of sediment movement under storm conditions and the effect on sediment supply on the Severn Estuary, as it was felt that this was not adequately addressed in the ES, as there is the potential to have impacts on the Severn Estuary SAC.
- 12.4.10. The applicant has supplied further information to suggest that the divergence in transport pathways results in no transport pathway between Area 526 and the sedimentary features of the Severn Estuary. NRW PS considers this issue resolved.
- 12.4.11. NE deferred comments on physical processes to Cefas, but commented that the Active Dredge Zones (ADZ) must be in place prior to dredging, and that sediment movements under storm conditions had not been adequately addressed in the ES.
- 12.4.12. NRW PS considers it appropriate to include conditions in any Marine Licence issued to ensure that ADZs are designated prior to dredging taking place. The NE comments on storm conditions are discussed further in sections 12.4.13 to 12.4.14.
- 12.4.13. Cefas commented that the ES is generally well evidenced, but requested that the impact modelling includes a wider range of wave event frequencies, suggesting a 1-in-1 year and a 1-in-5 year case, in addition to the 1-in-200 year and 10-in-1 year wave events. A range of intermediate storm cases was also requested, to demonstrate that there are no significant changes to the potentially geomorphically significant waves reaching the exposed shoreline at Berrow.

12.4.14. The applicant supplied further information in the ES addendum to include a 1-in-5 year case. This data also supports the conclusion that the effect of dredging activity is restricted to the area within, or very close to, Area 526. Cefas noted that they are satisfied with this response. NRW PS therefore considers the impact modelling adequately assesses the potential impacts.

12.4.15. Cefas noted that the sandbank in the region is migrating to deeper water. Cefas suggested that the data provided do not allow the separation of natural from consequential impacts. Consequently, monitoring and mitigation measures for the site require the differentiation of manageable from unmanageable change, which may not be possible.

12.4.16. The applicant provided clarification in the ES addendum to further describe the migration of the sandbank, and the subsequent effect of the removal of material on the sandbank migration. NRW PS considers that sandbank migration and subsequent effects have been adequately assessed.

12.5 Water and Sediment Quality

12.5.1. Comments made on water and sediment quality have been addressed in section 12.4 (Physical Processes). Therefore, the NRW PS concluded that the potential impacts to water and sediment quality due to the project has been adequately addressed in the ES.

12.6. Nature Conservation

12.6.1. North Somerset LPA noted that a habitats assessment would be required.

12.6.2. NE commented that the assertion in the ES that the small easterly section of sandsheet within the extraction area is not part of the SAC Sandbank feature is incorrect. NE stated that there is no up to date evidence to suggest that this is not part of the SAC feature. However, NE commented that this does not change the conclusion of the HRA (no likely significant effect), as described in Section 10. NRW PS notes this comment, but consider that as it results in no change to the EIA assessment that no further action is required.

12.7. Benthic Habitats and Species

12.7.1. Devon & Severn IFCA (D&S IFCA) noted the importance of *Sabellaria spp.* in the region as a habitat for fish species. D&S IFCA noted concerns that the non-designated sandbank does not appear to have been scrutinised to the level that would be afforded a similar habitat when designated as a feature of a European Site.

12.7.2. NRW PS notes this comment. NRW PS considers it appropriate to consider this species in terms of the ecosystem services provided in pre-dredge surveys. NRW PS considers it appropriate to include conditions in any Marine Licence to

require pre-dredge surveying, which will identify areas of *Sabellaria* reef and to include these areas in any exclusion zones required

- 12.7.3. NRW TE noted that the hopper washing proposals described in the ES may involve the flushing of material that has not arisen from Area 526. NRW TE raised concerns that this could lead to the introduction of non-native species from other areas. NRW TE advised that a Biosecurity Risk Assessment should be drafted to address this concern.
- 12.7.4. The applicant has indicated that they intend to discuss and agree an approach to managing biosecurity risks with NRW TE. NRW PS consider it appropriate to include conditions on any marine licence to ensure that an appropriate biosecurity protocol is implemented.
- 12.7.5. NRW TE welcomed that the commitment to undertake a benthic characterisation survey in line with the Regional Seabed Monitoring Programme (RSMP) approach prescribed by Cefas. However, NRW TE noted that it was unclear if the survey results would be reported prior to the commencement of dredging. NRW TE stated that it would be preferable for NRW to be able to approve the results and monitoring protocols ahead of dredging commencement.
- 12.7.6. NE also welcomed the use of the RSMP approached, but noted that a baseline should be established via survey in consultation with Cefas to ensure consistency between agreed regional RSMPs.
- 12.7.7. Cefas noted agreement with the ES on the impact to benthic assemblages (insignificant to minor adverse impact), but also agree that the proposal to include a pre-dredge survey to finalise the impact assessment was necessary. Cefas also noted the proposal to follow the RMSP for future monitoring, and the use of industry best practice to mitigate impacts. Cefas noted that this is considered sufficient.
- 12.7.8. NRW PS understand that the specifics of the monitoring programme have not yet been determined, but consider it appropriate to include conditions in any Marine Licence issued to ensure that pre-dredge characterisation is undertaken, with methodology agreed by the appropriate regulators.

12.8. Fish and Shellfish

- 12.8.1. D&S IFCA highlighted concerns about the adequacy of the Environmental Statement with regard to the interpretation of existing evidence and the lack of critical review of data/sampling bias. D&S IFCA have highlighted that they are aware of species present in the inner Bristol Channel and outer Severn Estuary that are not described in the ES.
- 12.8.2. D&S IFCA also highlighted that the trawl survey data from 2008 and 2012 is insufficient to describe the Culver Sands fish community adequately due to the use of a 2m beam trawl, which is unsuitable for targeting small and medium sized fish.

- 12.8.3. NRW PS requested information from the applicant to address deficiencies in the ES regarding fish information. The applicant submitted a clarification note providing further information arising from telephone interviews with fishers to provide additional baseline information.
- 12.8.4. The clarification note provided information with respect to site specific fish ecology and commercial and recreational fisheries. The addition of this information did not change the conclusions of the ES regarding fish ecology.
- 12.8.5. D&S IFCA acknowledged that the information supplied in the clarification note more adequately describes the fish assemblage. However, D&S IFCA noted remaining concerns regarding the importance of the site with regard to elasmobranchs.
- 12.8.6. The applicant responded in the ES addendum to note that assessment of these species was considered in the ES, although data availability was poor. However, the applicant noted that only a small area of the Culver Sands area would be impacted at any one time, resulting in a low magnitude of time, with a resultant insignificant to minor adverse effect to elasmobranchs. NRW PS considers this assessment to be sufficient.
- 12.8.7. Cefas noted that generally the description of the environmental and potential impacts to processes in the ES is accurate, in that the ES identifies the ecologically and commercially important species in the area, including designated features of the Severn Estuary SAC.
- 12.8.8. NE commented that the evidence submitted with respect to sandeels is insufficient to support the conclusion that sandeels can survive entrainment, but agree with the conclusion of the assessment that impact on sandeels will be insignificant to minor adverse impact.
- 12.8.9. The applicant provided additional information regarding entrainment survival for sandeels. NRW PS considers the information submitted to be sufficient for assessment.
- 12.8.10. Cefas commented that the sandeel assessment in the ES is sufficient, but noted that it would be beneficial for the ES to include a map of sandeel habitat to compare with future information determined via future monitoring.
- 12.8.11. The applicant provided a map of sandeel habitat in the ES addendum. Cefas noted this and considered it appropriate. NRW PS consider that the assessment is unchanged and is sufficient.
- 12.8.12. Cefas noted that whilst there is some evidence provided by D&S IFCA that local herring spawning may take place, this spawning activity is likely to be restricted to the coast and intertidal area. Cefas noted that the consideration of herring in the ES is appropriate.

12.8.13. Cefas requested clarification of the ICES data in Table 12.1 of the ES, as the data for 2009 appears to be erroneous. The applicant provided an amended table, as the 2009 data was incorrect. The conclusions of the assessment remain unchanged; therefore, NRW PS considers the assessment to be sufficient.

12.9. Marine and Coastal Ornithology

12.9.1. No representations were made on the subject of ornithology. Therefore, the NRW PS concluded that the potential impacts to birds due to the project has been adequately addressed in the ES.

12.10. Marine Mammals and Turtles

12.10.1. NE noted that the impact of the use of sub-bottom profilers on Harbour Porpoise in the Bristol Channel Approaches pSAC has not been addressed.

12.10.2. The applicant provided additional information in the ES addendum to describe the impact of sub-bottom profilers on marine mammals. NRW PS considers that this has been sufficiently assessed, and note that effects on marine mammals have been considered in the HRA conducted by NRW PS. NRW PS consider it appropriate to include conditions in any Marine Licence issued to ensure marine noise is recorded on the JNCC Noise Registry.

12.11. Commercial and Recreational Fisheries

12.11.1. The Porlock Futures Community Interest Company (Porlock Bay) made a representation that the ES did not address potential impacts to the developing oyster fishery in Porlock Bay, but noted that their lack of scientific knowledge precluded them from fully assessing the ES. Porlock Bay expressed a desire to defer further comment to Devon & Severn IFCA (D&S IFCA) .

12.11.2. D&S IFCA also noted the presence of Porlock Bay Oysters, which is dependent on good water quality. D&S IFCA noted the current high classification of the oyster bed ('A' classification). D&S IFCA requested further information to specifically include the potential impact on this new commercial fishery.

12.11.3. Cefas also commented that the oyster fishery in Porlock Bay had not been assessed in the ES. However, Cefas note that suspended sediment concentration is not expected to be widespread, and that the oyster bed is unlikely to be impacted.

12.11.4. D&S IFCA also noted that there was little information presented regarding the impact on commercial fisheries or sea anglers in the area.

12.11.5. NRW PS requested further information from the applicant to ensure that the oyster fishery in Porlock Bay and the interests of commercial and recreational sea

fishers have been adequately assessed in the ES. The applicant submitted a clarification note to address these issues.

- 12.11.6. The clarification note summarised that potential impacts on the oyster fishery would only arise from increased suspended sediment concentrations, which modelling data shows would be highly localised to within 250m of the dredge area boundary. As the oyster fishery is 23 km downstream, the clarification note concludes that the fishery will not be impacted. D&S IFCA are satisfied with the information submitted in the clarification note
- 12.11.7. NRW PS considers that impacts to the oyster fishery at Porlock Bay have been sufficiently addressed by the ES and clarification note.
- 12.11.8. The clarification note also provided further information arising from telephone interviews with local fishers to provide additional baseline information.
- 12.11.9. The clarification note provided additional information with respect to site specific fish ecology and commercial and recreational fisheries. The addition of this information changes the conclusion of the ES regarding impact on recreational fishing. The clarification note concluded that dredging in Area 526 could have a minor adverse effect on recreational angling charters, as these would be displaced out of parts of Area 526.
- 12.11.10. D&S IFCA acknowledged that the information supplied in the clarification note more adequately describes the fish assemblage. However, D&S IFCA noted remaining concerns regarding the importance of the site with regard to elasmobranchs, which are of importance to the charter fleets.
- 12.11.11. The applicant responded in the ES addendum to note that assessment of these species was considered in the ES, although data availability was poor. However, the applicant noted that only a small area of the Culver Sands area would be impacted at any one time, resulting in a low magnitude of time, with a resultant insignificant to minor adverse effect to elasmobranchs. NRW PS considers this assessment to be sufficient.

12.12. Commercial and Recreational Navigation

- 12.12.1. Trinity House (TH) commented that any dredging vessel must take additional precautions when working in the vicinity of the West and East Culver buoys.
- 12.12.2. NRW PS considers it appropriate to advise the applicants of this information, and that it is not necessary to use a condition in a Marine Licence.
- 12.12.3. The Maritime and Coastguard Agency (MCA) commented that they had no objection to the works, provided licence conditions were included to ensure mariners and fishermen's organisations were aware of the activity and the HM Coastguard and UKHO were notified prior to dredging.

12.12.4. NRW PS considers that the comments in 12.12.3 can be sufficiently addressed through the use of appropriate conditions in any Marine Licence issued.

12.13. Marine Archaeology

12.13.1. Historic England (HE) noted that there is a clear need for archaeological reporting through baseline survey and monitoring programme. HE acknowledged that the desk based assessment presented in the ES was a good standard, and that up to date references and data have been used.

12.13.2. HE noted that the side scan sonar and multibeam bathymetry did not provide 100% coverage of the area. The ES has concluded that the possibility for future archaeological discovery is high. However, HE note that the proposal for baseline data will fill the gaps to provide full coverage.

12.13.3. HE consider the proposed baseline survey and operational monitoring to be appropriate, but request that the raw survey data (ungridded) is reviewed by an accredited archaeological contractor and reported to the regulator for curatorial advice and comments.

12.13.4. HE also consider the proposed mitigation measures (use of archaeological exclusion zones) to be appropriate. HE make recommendations for conditions to any licence issued the ensure that archaeological exclusion zones are notified to the regulator prior to the commencement of dredging, and that appropriate mitigation measures are developed in line with the guidance note 'Marine Aggregate Dredging and the Historic Environment' (British Marine Aggregate Producers Association (BMAPA) and English Heritage, 2003).

12.13.5. HE also recommended conditions to any licence issued to ensure recognised best practice is followed, and that previously unreported archaeological finds must be reported and subsequently be subject to archaeological exclusion zones.

12.13.6. NRW PS consider that the ES has sufficiently described the historical environment and required mitigation. NRW PS considers it appropriate to include conditions in any licence issued by the regulator to ensure that appropriate mitigation is in place for previously unreported wrecks.

12.14. Coastal Protection and Flood Defence

12.14.1. No representations were made specifically on the subject of coastal protection and flood defence. However, some coastal protection comments have been raised and dealt with in section 12.4 (Physical Processes). Therefore, the NRW PS concluded that the potential impacts to coastal protection and flood defence due to the project has been adequately addressed in the ES.

12.15. Air Quality

12.15.1. No representations were made on the subject of air quality. Therefore, the NRW PS concluded that the potential impacts due to the project has been adequately addressed in the ES.

12.16. Human Health

12.16.1. No representations were made on the subject of human health. Therefore, the NRW PS concluded that the potential impacts due to the project has been adequately addressed in the ES.

12.17. Infrastructure and Other Existing Marine Users

12.17.1. No representations were made on the subject of infrastructure and other existing marine users. Therefore, the NRW PS concluded that the potential impacts due to the project has been adequately addressed in the ES.

12.18. Cumulative and In-combination Effects

12.18.1. NRW TE noted that the maximum annual tonnage allowable for Nobel Banks is incorrect.

12.18.2. NRW PS has checked the licence issued to Llanelli Sand Dredging, and confirm that the tonnage stated in the ES is correct.

12.18.3. NE noted that the current Welsh Government policy on dredging in the Severn Estuary, iMADP caps the annual extraction rate of aggregates in the Severn Estuary / Inner Bristol Channel at 1 million tonnes per annum. NE would welcome a high-level assessment of the total tonnage of marine aggregate that the system can sustainably support.

12.18.4. NRW PS consider that this comment has been dealt with in 12.3.

12.18.5. Cefas noted that cumulative impacts have been assessed using a 'present day' baseline. Cefas suggested that a pre-dredge area 472 bathymetry baseline may be more appropriate to reasonably assess the cumulative impact.

12.18.6. Further discussion between the applicant, regulators (NRW PS and MMO) and coastal processes consultation bodies (Cefas and NRW TE), it was confirmed that the approach taken by the applicant to describe the present day baseline is correct, but that consideration should be made of the potential lag time of the geomorphic response. The applicant provided clarification in the ES addendum that the understanding of the sediment transport pathways in the Severn Estuary indicate that the risk of lag in the geomorphic response of the coastline to aggregate extraction is low, due to the restriction of impacts to the specific dredge areas. Therefore, the NRW PS considers that cumulative impacts have been adequately assessed.

12.19. Mitigation and Monitoring

12.19.1. Comments made regarding specific chapters of the ES have been addressed in the relevant section of this consent decision. Therefore, NRW PS considers these matters described elsewhere.

13. Measures that must be taken in consequence of the EIA consent MWR 23 (2)(c)

13.1 MWR 23(2)(c) requires that if the EIA consent decision involves giving EIA consent, a description of the measures that must be taken in consequence of the EIA consent decision to avoid, reduce and, if possible, offset the principal adverse effects of the regulated activity.

13.2 The above section (12) sets out where we consider that measures are necessary in order to address potential impacts identified through the EIA process.

14. Conclusion of EIA Consent Decision

14.1 In considering the application for the removal of aggregate from Area 526 (Culver Extension) the following has been considered:

- the application;
- the Environmental Statement;
- any further information provided by the applicant pursuant to a notification under Regulation 14(1);
- the outcome of the process set out in Schedule 5 in relation to any representations received pursuant to the statement referred to in Regulation 16(2)(g);
- any representations in response to consultation made by the consultation bodies pursuant to the letter referred to in Regulation 17(1)(a)(iv); and
- the outcome of any consultations of the authorities of other EEA States carried out in accordance with Regulation 20;
- have regard to the relevant legislation; and
- take into account the direct and indirect effects of the project on—
 - human beings, fauna and flora;
 - soil, water, air, climate and the landscape;
 - material assets and the cultural heritage; and
 - the interaction between any two or more of the things mentioned in the preceding sub-paragraphs.

14.2 Accordingly, we conclude that the environmental impacts of the marine aggregates dredge have been adequately identified, described and assessed and that mitigation can be secured.

14.3 As such we grant EIA consent to Hanson Aggregates Marine Ltd., Cemex UK Marine Ltd., and Tarmac Marine Ltd.

15. Sign off

Produced By: Jasmine Sharp (Senior Permitting Officer, Marine Licensing Team)

Signed:



Date: 20 September 2017

Approved by: Eleanor Ellick, Senior Permitting Team leader – Marine Licensing

Signed:



Date: 31 October 2017