

# Milford Haven Port Authority PEMBROKE DOCK INFRASTRUCTURE / META PHASE 1 PONTOON MARINE LICENCE VARIATIONS

## SUMMARY OF IMPLICATIONS FOR ASSESSMENT

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MILFORD HAVEN PORT AUTHORITY | PDI / META PHASE 1 PONTOON ML VARIATIONS - SUMMARY OF IMPLICATIONS FOR ASSESSMENT

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# 1 INTRODUCTION

RPS is providing support to Milford Haven Port Authority (MHPA) on applications to vary the existing Marine Licences for the Marine Energy Test Areas (META) Phase 1 pontoon installation works and the Pembroke Dock Infrastructure mega-slipway works.

A meeting was held with Natural Resources Wales (NRW) Marine Licensing Team on 15<sup>th</sup> October 2021 to discuss the two projects and the proposed consenting routes. During this meeting, NRW requested a table clarifying the proposed changes to the project description for each project and the implications for the assessments.

This note has been drafted by RPS in response to this request to inform further discussions with NRW-MLT and their advisory team.

## 1.1 META Phase 1 Pontoon Marine Licence Variation

On 10 June 2019, Pembrokeshire Coastal Forum (PCF) was awarded a Marine Licence (DEML 1875) under the Marine and Coastal Act (2009) by the NRW Marine Licensing Team, on behalf of the Welsh Ministers, for the META Phase 1 project. The META Phase 1 project was submitted as a Band 2 application and included the installation of a permanent floating pontoon (comprising four pontoons A-D) adjacent to META Ferryside (Site 3), to support the META testing activities at this site. It was assumed that no piling would be required for the pontoon as it would be tethered to the existing moorings.

MHPA, who is undertaking the upgrades to the pontoon, has recently undertaken the early contractor design process with their consultant engineers. This process has resulted in a recommendation to increase the pontoon size from the current licenced sizes of 2 m x 26m to 5m x 25 m per pontoon (133 m total length allowing for gangways between pontoons). There is also the requirement for 10 new monopiles to be installed to the south of the existing dolphins, to accommodate the new Irish Ferries vessel forces and to future proof for changes to ferry vessel type/power. The new monopiles will be installed via rotary bored piling or top drive drilling.

Table 1.1 below tabulates the existing activities licensed under the Marine Licence DEML 1875 and the proposed variations to these activities. The table also summarises the conclusions of the original Environmental Assessment that supported the Marine Licence application and the implications of the proposed changes on the conclusions of these assessments, drawing upon the project specific noise assessment that has been undertaken.

Table 1.1: META Phase 1 Marine Licence (DEML 1875) Variation Application – Comparison Table.

Parameter	Currently Licenced Activities under DEML 1875	Receptor	Impact assessment in the original supporting environmental information	Proposed Variation to Activities	Revised Assessment of Impacts
Pontoon Installation	<p>The existing Marine Licence includes: A series of pre-consented, non-grid connected, marine energy test areas that will allow for the deployment and testing of devices, components and subassemblies, ancillary activities, and equipment, in support of marine energy testing.</p> <p>The licence included for four pontoons (at the META Phase 1 Site 3 - Ferryside.</p> <p>The floating pontoons will be tethered to the existing dolphins.</p>	Physical Processes	<p><b>Increases in suspended sediment concentrations.</b> Up to five vessels could be used during each deployment of marine energy testing device (with up to one deployment per month). Some disturbance and mobilisation to soft sediments was predicted from the action of vessel propellers and dynamic positioning. Sediment plumes generated from propeller wash were highlighted as a daily occurrence within Pembroke Dock therefore SSC increase from were deemed unlikely to exceed the baseline. The potential effect of increased SSC was considered to be <b>negligible</b></p>	<p>The variation to the proposed activities assumes that the pontoons at the META Phase 1 Site 3 - Ferryside are to be tethered to 10 new monopiles rather than then existing dolphins. The installation of the new monopiles and the pontoons may involve up to ten vessels on site at any one time. Pile installation will take up to one hour per pile over up to 60 days.</p>	<p><b>Increases in suspended sediment concentrations.</b> The additional ten vessels required during pontoon installation will be an increase from the number of licenced vessels however it represents a very small increase from the number of vessels that use Pembroke Dock every day. Furthermore, the uplift will only be temporary (up to 60 days) and short term. Sediment plumes generated from propeller wash are likely to be a daily occurrence within Pembroke Dock. The effect of the licensable activities on suspended sediment concentration is considered to be <b>negligible</b>, and therefore no greater than that concluded for the original META Phase1 Marine Licence assessment.</p>
		Benthic Ecology / Fish and Shellfish	<p><b>Habitat disturbance/loss – original</b> assessment assumed the pontoons would be tethered to the existing dolphins and so no habitat loss/disturbance.</p> <p>Habitat disturbance was predicted to occur as a result of placement of marine energy components and associated vessel anchoring. A total disturbance area of 656.5 m<sup>2</sup> at the META Phase 1 Site 3 - Ferryside was assessed resulting from the installation of up to two devices. Anchor placements were predicted to create up to 144 m<sup>2</sup> of habitat disturbance per event. The potential effect of temporary habitat loss on benthic communities as a result of component/subassembly placement in</p>	<p>The variation to the proposed activities assumes that a jack up drill rig will deploy a casing of 1,800 mm which will then be filled with the 1,200 mm monopiles via rotary drilling or pile top drilling.</p> <p>Long term habitat loss will occur within the footprint of the ten new monopiles which will be installed to support the pontoons. Each monopile will have a seabed footprint of 1.16 m<sup>2</sup> with a total seabed footprint of 11.6 m<sup>2</sup>.</p>	<p><b>Habitat disturbance/loss.</b> The area predicted to be lost within the monopile footprint is small. The area of temporary habitat disturbance is also small and roughly equivalent to the area of one anchor deployment (144 m<sup>2</sup>) as assessed in the original Marine Licence application. This therefore represents a very small increase in habitat disturbance from what is currently licenced.</p> <p>The effect of the licensable activities on benthic/ fish habitat loss/disturbance is considered to be <b>minor</b>, and therefore no greater than that concluded for the original META Phase 1 Marine Licence assessment.</p>

Parameter	Currently Licenced Activities under DEML 1875	Receptor	Impact assessment in the original supporting environmental information	Proposed Variation to Activities	Revised Assessment of Impacts
			META Phase 1 sites was predicted to be <b>minor</b> .	The potential area of temporary habitat disturbance associated with this activity will be approximately 137.64 m <sup>2</sup> .	
		Fish and Shellfish	<p><b>Underwater noise from vessel movement</b> – original assessment assumed the pontoons would be tethered to the existing dolphins and so there would be no generation of noise via pile installation.</p> <p>The original assessment assumed up to five vessels could be used during each deployment of marine energy testing devices (with up to one deployment per month). The potential effect of underwater noise from vessels on fish and shellfish was considered to be <b>negligible</b>.</p>	The variation to the proposed activities assumes that the 10 new monopiles (1,200 mm diameter) are to be installed via rotary drilling, but should the sediment be harder than expected top drive drilled piling may be necessary.	<b>Underwater noise from monopile installation.</b> Noise from both piling methods has the potential to disturb or cause localised behavioural change in fish. The risk is high risk in the near field (tens of metres) and moderate in the intermediate field (hundreds of metres). Injury is not expected for any species. The noise from the port also makes it unlikely that fish will venture close to the site and other activities are unlikely to exceed the background noise made by the port. The effect of underwater noise from the licensable activities on fish and shellfish is considered to be <b>negligible</b> , and therefore no greater than that concluded for the original META Phase 1 Marine Licence assessment.
		Marine Mammals	<p><b>Underwater noise from vessel movement</b> – original assessment assumed the pontoons would be tethered to the existing dolphins and so there would be no generation of noise via pile installation.</p> <p>The original assessment assumed up to five vessels could be used during each deployment of marine energy testing device (with up to one deployment per month). The potential effect of underwater noise from vessels on marine mammals was considered to be <b>negligible</b>.</p>	The variation to the proposed activities assumes that the 10 new monopiles (1,200 mm diameter) are to be installed via rotary drilling, but should the sediment be harder than expected top drive drilled piling may be necessary.	<b>Underwater noise from monopile installation.</b> There is little potential for PTS or TTS to any species of marine mammals from the pile installation works, Noise from both piling methods has the potential to disturb or cause behavioural change in marine mammals but only at a maximum distance of up to 275 m. The noise from the port makes it unlikely that marine mammals will venture close to the works and other activities are unlikely to exceed the background noise made by the port. The effect of underwater noise from the licensable activities on marine mammals is considered to be <b>negligible</b> , and

Parameter	Currently Licenced Activities under DEML 1875	Receptor	Impact assessment in the original supporting environmental information	Proposed Variation to Activities	Revised Assessment of Impacts
			<p><b>Collision risk from vessel movement</b> – original assessment assumed that up to five vessels could be used during each deployment of marine energy testing device (with up to one deployment per month). The potential for collision risk associated with increased vessel traffic associated with META Phase 1 deployment and retrieval or operation and maintenance activities was considered to be negligible. The potential for collision risk associated with increased vessel traffic associated with META Phase 1 deployment and retrieval or operation and maintenance activities was therefore considered to be <b>negligible</b>.</p>	<p>The variation to the proposed activities assumes that the pontoon installation work at the META Phase 1 Site 3 - Ferryside may involve up to ten vessels on site at any one time to both install and support the installation of the new monopiles.</p>	<p>therefore no greater than that concluded for the original META Phase1 Marine Licence assessment.</p> <p><b>Collision risk from vessel movement.</b> The increase in the number of vessels working in the vicinity of the pontoon has the potential to increase collision risk. The slow speed of vessels as well as the unlikely presence of marine mammals within the docks makes the potential risk of collision from these activities <b>negligible</b> and therefore no greater than that concluded for the original META Phase1 Marine Licence assessment.</p>
		Shipping and Navigation	<p><b>Shipping restrictions</b> - original assessment assumed that up to five vessels could be used during deployment of each marine energy testing device (with up to one deployment per month). Restrictions to shipping and navigation from the presence of the pontoon were not predicted to arise and the impact was considered to be <b>negligible</b>.</p>	<p>The variation to the proposed activities assumes that the pontoon installation work at the META Phase 1 Site 3 - Ferryside may involve up to ten vessels on site at any one time to support the installation of the new monopiles.</p>	<p><b>Shipping restrictions.</b> The increase in the number of vessels working in the vicinity of the pontoon represents a very small increase in the number of vessels that use Pembroke Dock every day. During pontoon installation, all vessel movements will be controlled by MHPA in accordance with existing navigation and safety protocols in place for Pembroke Dock. The impact of META Phase 1 Site 3 - Ferryside pontoon installation on shipping and navigation is therefore considered to be <b>negligible</b> and therefore no greater than that concluded for the original META Phase1 Marine Licence assessment.</p>
<b>Pontoon operation</b>	The existing Marine Licence includes:	Physical Processes	<p><b>Changes to wave conditions</b>- original assessment assumed that the pontoon would be moored on the lee side of the</p>	<p>The variation to the proposed activities assumes that an additional pontoon will be</p>	<p><b>Change in wave conditions.</b> The pontoons are located where wave energy will already be dissipated by</p>

Parameter	Currently Licenced Activities under DEML 1875	Receptor	Impact assessment in the original supporting environmental information	Proposed Variation to Activities	Revised Assessment of Impacts
Additional works	<p>Four pontoons, each of 2 m x up to 26 m, which will be installed on the south side of the Pembroke Dock Ferry Terminal Ro-Ro Berth and along the northern edge of META Phase 1 Site 3 – Ferryside. In total the pontoons will cover an area of 278 m<sup>2</sup>. Pontoons to be in-situ all year round with removals for maintenance every five years.</p>		<p>existing Ro-Ro berth where wave energy will already be dissipated by existing dolphins and the presence of moored vessels. The potential impact of the installation of the pontoon on wave conditions within the Waterway was considered to be <b>negligible</b>.</p>	<p>required, taking the total number of pontoons to five. The size of each of the pontoon is also to be increased to 5 m x 25 m, covering a total area of 625 m<sup>2</sup>. Any maintenance works that fall outside those included in the original licence will be consented via additional Marine Licence applications in the future.</p> <p>The works will also include improving the existing access onto the dolphins and providing a new access brow to the work boat pontoons. The new access system between the T-head pontoon and the Dolphins will comprise a combination of new steps, walkway, and access gangway.</p>	<p>existing dolphins and the presence of moored vessels. Furthermore, wave conditions at the META Phase 1 Site 3 - Ferryside are already influenced by existing infrastructure, such as a pier west of the site and ferry docking stations. The piles themselves will be a relatively small disturbance compared to other infrastructure in the area. Therefore, the impact of adding ten new monopiles alongside the pontoon on wave condition is <b>negligible</b> and therefore no greater than that concluded for the original META Phase1 ML assessment.</p> <p>These are non-marine based activities therefore have been scoped out of the assessment and will be considered within the associated planning application.</p>

## 1.2 Pembroke Dock Infrastructure Marine Licence (CML2057) Marine Licence Variation

MHPA is redeveloping Pembroke Port in Pembroke Dock, located in Milford Haven, to support development of the offshore renewables industry in Wales. An application for a Marine Licence for the Project was submitted to Natural Resources Wales Permitting Service (NRW PS) on 18 December 2020, accompanied by an Environmental Statement (ES). The Project was subsequently granted a Marine Licence in June 2021.

Consent was granted for the following key elements of the project:

- Capital dredging around the slipways and within the Graving Dock;
- The creation of a single 'mega' slipway by combining the two existing westernmost slipways and extending the slipway into the Milford Haven Waterway into deeper water; and
- The infilling of the Graving Dock.

The licensed activities associated with the removal of sediment/rock around the slipways include only for the excavation of material above the water mark at the time of excavation (in the dry), by backhoe excavator. Any rock identified within this area was to be removed using a larger backhoe excavator or a hydraulic breaker. In areas below the existing water mark (in the wet) the only activities currently licensed are the removal of material by backhoe excavator with a closed bucket attachment positioned on a barge.

MHPA have recently progressed with the detailed design of the slipway, and their contractors have highlighted a requirement for the use of a hydraulic rock breaker, such as a vibro-ripper, below the existing water mark (i.e. in the wet) for the removal of areas of harder rock. In addition, it has been determined that the secant piled walls at the existing flank walls of the slipways will need to be extended to the end of the slipway on both sides to retain the superficial deposits. It is understood that the piles will be installed using rotary techniques.

The current Marine Licence (granted June 2021) does not permit the use of hydraulic breakers in the wet or any type of piling, such as that required for the new secant piled walls, and no assessment of these activities was made within the ES. MHPA are, therefore, seeking a variation to the Marine Licence to incorporate these additional activities. In addition, MHPA are also seeking to revise the consent to include for the temporary installation of a stank across the entrance of the eastern slipway to facilitate the consented works to this part of the project.

Table 1.2 below tabulates the existing activities licensed under the Marine Licence CML2057 and the proposed variations to these activities. The table also summarises the conclusions of the original Environmental Impact Assessment (EIA) and the implications of the proposed changes on the conclusions of these assessments, drawing upon the project specific noise assessment that has been undertaken.

Table 1.2: Pembroke Dock Infrastructure Marine Licence (CML2057) Variation Application – Comparison Table.

Parameter	Currently Licenced Activities under CML2057	Receptor	Impact assessment in the original EIA	Proposed Variation to Activities	Revised Assessment of Impacts
<b>Mega slipway installation</b>	<p>The creation of a single ‘mega’ slipway by combining the two existing westernmost slipways and extending the slipway into the Milford Haven Waterway into deeper water.</p> <p>Excavation of material above the water mark at the time of excavation (in the dry), will be undertaken by backhoe excavator. If rock is identified within this area and is considered sufficiently weak a larger backhoe excavator will be used to remove the rock. If the rock is deemed not suitable to be removed using a backhoe excavator a hydraulic breaker will be used.</p> <p>In areas below the existing water mark (in the wet) material will be removed by backhoe excavator with a closed bucket attachment positioned on a barge.</p>	Physical processes	<p><b>Increases in suspended sediment concentrations</b> - original assessment assumed that increases in suspended sediments may occur as a result of dredging of a total volume of up to 45,840 m<sup>3</sup>. Suspended sediments were expected to remain in the immediate vicinity of the works with sedimentation only occurring in the order of 2-3mm. The potential impacts of suspended sediments were assessed to be of <b>minor</b> significance.</p>	<p>In addition to the currently licensed activities, a temporary stank will also be installed across the entrance of the eastern slipway (within the footprint of the consented slipway extension). It will comprise up of two rows of three, double stacked 20 ft shipping containers which will be placed on the existing slipway floor to prevent water flow up the slipway while works are being carried out.</p> <p>Piling will also be required to extend the secant piled walls, at the existing flank walls, to the end of the slipway on both sides to retain the superficial deposits. The primary infill piles will be located at 1 m centres and will have a diameter of 600 mm.</p>	<p><b>Increases in suspended sediment concentrations.</b> The installation and removal of the stank as well as the piling works may result in localised increases in suspended sediments. Only very small volumes of sediment are expected to be released as a result of these updated activities and would be rapidly diluted and dispersed. These will be a negligible increase on the already consented increases associated with the dredging works. Baseline levels of suspended sediment concentrations in the Pembroke Dock are already high due to anthropogenic activities. The potential impacts of suspended sediments are therefore likely to be <b>negligible</b> and therefore no greater than that concluded for the original Pembroke Dock redevelopment assessment.</p>
		Benthic Ecology	<p><b>Habitat Loss/Disturbance</b> - original assessment assumed that the maximum habitat loss around the slipway will be within an area of 5,669 m<sup>2</sup>. The potential impacts of habitat loss/disturbance were assessed to be of <b>minor</b> significance.</p>	<p>The temporary stank will be installed across the entrance of the eastern slipway and will be made up of two rows of double stacked 20 ft shipping containers. The footprint of the container is 6.06 m long and 2.44 m wide therefore the total seabed footprint of the temporary stank will be 88.74 m<sup>2</sup>.</p>	<p><b>Habitat Loss/Disturbance.</b> The installation of the stank is likely to cause the disturbance or loss of benthic habitat. The area of loss is however small as well as temporary in nature, and any damaged sessile species are like to recruit and recover quickly with an overall low sensitivity to disturbance. Furthermore, the stank will be installed within the footprint of the slipway, therefore not causing any extra habitat damage beyond the original licence</p>

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					area. Overall, the potential impact of temporary habitat disturbance on benthic invertebrates is likely to be <b>negligible</b> and therefore no greater than that concluded for the original Pembroke Dock redevelopment assessment.
	The slipway will be of concrete construction with structural steel members.	Benthic Ecology	No explicit assessment undertaken however it was considered indirectly as part of the assessment of the accidental release of pollutants during construction. The potential impacts of accidental pollution during construction were assessed to be of <b>minor</b> significance.	No change from the originally licenced activity, but a more detailed assessment has been provided to cover the licensed activity of pumping concrete underwater.	<b>Effects on benthic ecology associated with pumping grout and/or cement underwater.</b> Cement may increase the pH of the water making it more alkaline. This change will be minor, temporary, and localised. The tidal current of the waterway will enhance dispersion and prevent impact on the wider waterway. The potential impact on benthic invertebrate is therefore <b>minor</b> and therefore no greater than that concluded for the original Pembroke Dock redevelopment assessment.
	Capital dredging around the slipways. Installation of reinforced concrete slipway walls. The licenced activities associated with the removal of sediment/rock around the slipways include only for the excavation of material above the water mark at the time of excavation (in the dry), by backhoe excavator. Any rock identified within this area was to be removed using a larger backhoe excavator or a hydraulic breaker. In areas below the existing water mark (in the wet) the only activities currently	Fish and Shellfish and	<b>Underwater noise</b> - original assessment assumed considered underwater noise arising from the dredging activities and vessel movements. Modelling showed that recoverable injury may occur in some species of fish if dredging operation continued for 48 hours and fish remained within a few meters of the source for this period. Modelling also predicted disturbance effects at intermediate distances (100's m) from the source during dredging. The overall effect of noise on fish was assessed to be of <b>negligible to minor</b> significance.	The secant piled walls at the existing flank walls will be extended to the end of the slipway on both sides to retain the superficial deposits, to the extent required to protect the existing structures and satisfy consent requirements. Pile installation through rotor drilling will take place over 83 days. There may be hard substrate under the footprint of the extended slipway. Therefore, it may be required to use a hydraulic rock breaker, such as a vibro-ripper, below the	<b>Underwater noise.</b> Based on the noise assessment undertaken, there is little potential for PTS/TTS to be experienced by any species of fish as a results of the rotary drilled piling for the secant wall, or from the hydraulic rock breaking for the construction of the mega slipway. Noise sensitive fish are not likely to frequent this area due to port noise. The potential impacts of underwater noise on fish are expected to be <b>negligible</b> and therefore no greater than that concluded for the original Pembroke Dock redevelopment assessment.
		Marine Mammals	<b>Underwater noise</b> - original assessment assumed considered underwater noise arising from the		<b>Underwater noise.</b> Based on the noise assessment undertaken, there is little potential for PTS/TTS to be experienced

<i>Parameter</i>	<i>Currently Licenced Activities under CML2057</i>	<i>Receptor</i>	<i>Impact assessment in the original EIA</i>	<i>Proposed Variation to Activities</i>	<i>Revised Assessment of Impacts</i>
	licensed are the removal of material by backhoe excavator with a closed bucket attachment positioned on a barge.		dredging activities and vessel movements. Modelling showed that injury was not predicted except at a range of 25 m or less for vessel movements for high frequency cetaceans such as harbour porpoise and 4 m for pinnipeds (grey seal). No injury was predicted from dredging activities except at a range of 2 m for high frequency cetaceans. These estimates were however considered to be over precautionary. Disturbance to marine mammals was predicted to occur within 1.6 km. The overall effect of noise on marine mammals was assessed to be of <b>negligible to minor</b> significance.	existing water mark (i.e., in the wet) for the removal of areas of harder rock.	by any species of marine mammals as a result of the rotary drilled piling for the secant wall, or from the hydraulic rock breaking for the construction of the mega slipway. Disturbance to marine mammals could occur within 295 m of rotary drilled piling activities and 1.7 km of rock breaking. These distances are consistent with those assessed in the original EIA and will not be dissimilar to those already experienced in the area which is already heavily trafficked. Furthermore, the waters near Pembroke Port are not a key area for marine mammal species. Any marine mammals disturbed are predicted to quickly return to the area. The potential impacts of underwater noise are expected to be <b>negligible to minor</b> and therefore no greater than that concluded for the original Pembroke Dock redevelopment assessment.