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Department for Economy and Infrastructure



Llywodraeth Cymru
Welsh Government

The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East of Magor) Connecting Road) Scheme 201-

The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East of Magor) Connecting Road) (Amendment) Scheme 201-

The London to Fishguard Trunk Road (East of Magor to Castleton) Order 201-

The M4 Motorway (West of Magor to East of Castleton) and the A48(M) Motorway (West of Castleton to St Mellons)(Variation of Various Schemes) Scheme 201-

The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and the M48 Motorway (Junction 23 (East of Magor) Connecting Road) and The London to Fishguard Trunk Road (east of Magor to Castleton) (Side Roads) Order 201-

The Welsh Ministers (The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and the M48 Motorway (Junction 23 (East of Magor) Connecting Road) and the London to Fishguard Trunk Road (East of Magor to Castleton)) Compulsory Purchase Order 201-

The M4 Motorway (Junction 23 (East Of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East Of Magor) Connecting Road) (Supplementary) Scheme 201-

The Welsh Ministers (The M4 Motorway (Junction 23 (East Of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East Of Magor) Connecting Road) and The London to Fishguard Trunk Road (East of Magor to Castleton)) Supplementary Compulsory Purchase Order 201-

Summary of Shipping Proof of Evidence

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Welsh Government, Shipping

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1. Introduction

1.1 Personal Details

- 1.1.1 My name is Jonathan Paul Vine. I am employed by Global Maritime Consultancy Ltd as manager of the Ports and Shipping department (Eagle Lyon Pope).
- 1.1.2 I am a Master Mariner holding a valid Masters (unlimited) certificate of competency. I have over 27 years of experience in the shipping and offshore industries, serving in various roles such as marine consultant, marine pilot, marine specialist, marine warranty surveyor, tow master and deck officer.
- 1.1.3 I am a freeman of the Honourable Company of Master Mariners (HCMM) and a member of the Nautical Institute (MNI).
- 1.1.4 My role in the proposed Scheme has been to provide expertise on matters relating to shipping and the potential impact on shipping within the port of Newport as a result of the Scheme. I was not involved in the design of either of the proposed bridges spanning the Newport Docks and the River Usk, nor was I involved with the selection of the route for the Scheme. I was not involved in previous shipping analysis carried out by Global Maritime / Eagle Lyon Pope for the Welsh Government.

1.2 Overview

- 1.2.1 The Port of Newport is situated on the north side of the Bristol Channel and comprises the enclosed Newport Docks, which are owned and operated by ABP, they are also the Statutory and Competent Harbour Authority for the Docks. The Port also includes the berths, docks and wharves on the River Usk, which fall into the jurisdiction of Newport Harbour Commissioners.
- 1.2.2 The Docks comprise of the North and South Dock. Under the Scheme it is proposed to construct a road bridge crossing the access point between the North and South Docks known as the Junction Cut. The bridge would also

cross the River Usk at a position just south of Dallimore's Wharf on the eastern side of the river.

2. Restrictions Imposed by the Scheme

2.1 Restrictions on North Dock Traffic

- 2.1.1 The height of the bridge is currently set at 34.60 m (AOD) as it crosses the Newport Docks at the Junction Cut, rising to a height of 40.03 m (AOD) where it crosses the River Usk.
- 2.1.2 The construction of a bridge over the Junction Cut will introduce a restriction on the air draft of vessels transiting the Junction Cut. Based on the present normal dock water level of 7.74 m (AOD), the height of the bridge at the Junction Cut would be 26.86 m above the Dock water level. Allowing for a reasonable 1.0 m safety clearance (in line with DNV guidance) the maximum air draft for vessels passing under the bridge would be 25.86 m.
- 2.1.3 Should ABP increase the height of the inner, middle and outer lock gates and carry out repairs to the coping stones within the Dock, then it would be possible to raise the Dock level to a maximum of 8.40 m (AOD). Allowing for a reasonable safety clearance of 1.0 m, the maximum air draft for vessels passing under the bridge at the Junction Cut would be restricted to 25.2 m.
- 2.1.4 To assess the potential impact that the Scheme may have on vessels visiting the North Dock, ABP historical data of vessel visits to the Port from 9th December 2004 to 31st December 2015 has been used. The vessel data provides, amongst other things, the vessel berth location and the particulars of the vessel, including air draft at the time when the record was made. My initial assessment of the vessel data indicated several anomalies in the recorded vessel air drafts, which prompted me to verify the dimensions provided.
- 2.1.5 My research concluded that in 47 cases, the unloaded vessel air draft was more than the value reported by ABP. In 176 cases, the values reported by ABP exceeded the actual air drafts of the unloaded vessels. I therefore used

the verified air draft data to more accurately assess the number of vessels that would be potentially restricted from entering the North Dock.

- 2.1.6 Based on a maximum air draft of 25.2 m my analysis of the historical vessel data showed that 24% of vessels visits to/from the North Dock would have been restricted by the proposed bridge following a rise in dock level. Using a maximum air draft of 25.86 m this figure falls to 17% of vessel movements to/from the North Dock.
- 2.1.7 Considering unique vessels that have visited the North Dock, the analysis showed that for a raised dock level, 23% of these vessels would be impeded. With the present dock water level, this figure falls to 19%.
- 2.1.8 In order to assess the restriction in terms of cargo carrying capacity, I have examined the impeded vessels in more detail. In particular, I have examined a breakdown of the vessels calling at the North Dock by their deadweight tonnage.
- 2.1.9 Between the deadweight ranges 0 – 4000 tonnes, it is clear that the majority of vessels would be unimpeded by the proposed Scheme. For vessels between the deadweight range of 4000 tonnes and 5000 tonnes, the analysis showed an approximately equal split between unimpeded and impeded vessels, which suggests that there are alternative vessels with low air drafts available for charter within this deadweight category.
- 2.1.10 As the historical data on vessels over 5,000 tonnes is limited, I have conservatively concluded that vessels of this deadweight and over would be restricted from entering the North Dock. The ability of the North Dock to handle vessels of up to 5,000 tonnes will be unchanged. Historically, only 5.6% of visits to the North Dock were made by vessel of more than this deadweight.

2.2 South Dock Berth Occupancy

- 2.2.1 I have conducted an assessment of the occupancy of the ABP Common User Berths within the Docks to assess whether vessels that may be precluded

from entering the North Dock by the Scheme, could be reasonably accommodated within the South Dock. My assessment considers the availability of berth space only and does not cover onshore considerations such as storage requirements and crane availability.

2.2.2 I have carried out my assessment using three approaches using the historical ABP vessel movement data and estimating the length of time a vessel spent alongside at each of the common user berths in the South Dock. I then quantified the length of unused berth space within the South Dock and expressed this in terms of the number of vessels ‘typical’ to the North Dock that can be relocated to the free space, I have also estimated the historical demand for the free berth space. Lastly, I have tested whether vessels of 5,000 tonnes and over, potentially impeded by the Scheme, can be accommodated within the South Dock.

2.2.3 In determining the length of quayside required to accommodate a vessel ‘typical’ of those entering the North Dock, the longest vessel to visit the North Dock was used (Sormovskiy 3052, length 119.2 m). I also allowed an extra 20% of the vessel’s length overall to account for moorings.

2.2.4 The results of the above assessment show that within the South Dock, there was available berth space to accommodate any vessel potentially unable to access the North Dock for 96% of the eleven-year period. However, throughout the eleven-year period, the analysis shows that this would only be a requirement for 3% of the time. Further analysis shows that over the period 2005 to 2015 there were only 5 days on which it would not have been possible to relocate ships of 5,000 tonnes and over from the North to South Dock.

2.3 Restrictions on River Usk Traffic

2.3.1 Allowing a reasonable air draft clearance of 1.5 m for vessels travelling upstream of the proposed River Usk crossing, the maximum allowable air draft of a vessel would be 32.04 m. The ABP historical data highlights one vessel recorded to have travelled to Lysaght’s Wharf, situated up river of the proposed bridge, the vessel was the ‘Goldmar’ with a recorded air draft of

31.0 m on 1st November 2006. However, further enquiries with the berth's operators at that time, show that the berth was occupied on this date by a vessel called the 'Douwent' (air draft with main mast down 6.3 m), discharging a cargo of steel coils. None of the ships travelling upstream of the River Usk crossing during 2005 to 2015 would have been impeded by the bridge. In short, I do not expect the bridge to impose any practical restriction on River Usk traffic.

3. Conclusion

- 3.1.1 With the proposed Scheme in place, assuming the Dock water level is raised, vessels transiting the Junction Cut would be restricted to a maximum air draft of 25.2 m. My analysis showed that this air draft restriction equates approximately to a deadweight of 5,000 tonnes.
- 3.1.2 This maximum air draft considers a potential rise in Dock water level resulting from the replacement of all the lock gates and a reasonable 1.0 m safety clearance. Because of this air draft restriction and based on the verified ABP data, it was found that 24% of vessel visits would have been impeded by the proposed Scheme.
- 3.1.3 Further analysis of the vessels entering the North Dock, showed that up to 5,000 tonnes deadweight, there are vessels specifically designed and built with low air drafts for transiting rivers and docks with draught and air draft restrictions in place. Such vessels regularly visit ports within the UK, including Newport and are available for charter. Historically, only 5.6% of visits to the North Dock exceeded this deadweight, i.e. only a small proportion of vessels may be impeded by the Scheme.
- 3.1.4 Analysis of the historical data provided by ABP showed that there is spare berthing capacity within the South Dock most of the time to accommodate vessels that may need to be relocated from the North Dock. In the unlikely event that vessels bound for the North Dock are unable to berth anywhere within the Docks, they would time their arrival and/or go to anchor until a berth becomes available. Therefore, in my view, the impact of the Scheme post-

construction on the marine operations at Newport Docks would be very limited.

- 3.1.5 No impact is anticipated on shipping traffic on the River Usk. During the 11 year data period analysed, only one vessel which would have been impeded by the Scheme was erroneously recorded to have berthed at Lysaght's Wharf. Lysaght's Wharf is no longer in use and the only active wharf up river of the proposed bridge is Dallimore's Wharf.