NOTE TO FILE

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1 Introduction

Following the completion of the Outline Business Case (OBC), JBA Consulting (JBA) have been commissioned to develop the Full Business Case (FBC) for the Cardiff Coastal Defence Scheme, on behalf of Cardiff City Council (CCC).

1.1 Project background

This project has been funded through Welsh Government's (WG) Coastal Risk Management Programme (CRMP). An Outline Business Case (OBC) was submitted to WG in March 2018 and achieved funding through to FBC in October 2018.

1.2 Location

The proposed Cardiff Coastal Defence scheme is located to the south east of Cardiff at the mouth of the Rhymney River. The site extent starts at the Welsh Water Cardiff Wastewater Treatment and Green Energy Facility to the west and extends up the River Rhymney to the railway bridge and finishes at the eastern extent of the landfill site. The site consists of numerous existing structures such as flood embankments, rock revetments and gabion walls.

Figure 1: Extents of Cardiff Coastal Defence Scheme

1.3 Purpose

This note to file will provide additional information to the previously carried out Preliminary Ecological Assessment (PEA) (JBA Consulting, 2017). To inform this a further survey was undertaken on the 21st March 2019 to collect the data required to provide the additional information needed.

The survey had two main goals, to collect data to determine if the ecology of the site had changed since the last ecological survey and to survey some areas that it was not possible to gain access to during the previous visit. Specifically, the east coast of the river had previously only been recorded using binoculars from the west bank of the river. The current survey included the east coast of the river within its scope.

2 Extended Phase 1 Habitat Survey

The ecological survey was based upon an extended Phase 1 habitat survey, conducted following the JNCC survey method (JNCC, 2010) and extended to include consideration of notable / protected habitats and species such as Badger *Meles meles*, Otter, Dormouse, reptiles, Great Crested Newt and invertebrates (CIEEM, 2013). The Phase 1 habitat survey is a standard technique for classifying and mapping British habitats where the dominant plant species are recorded and habitats are classified according to their vegetation types.

Following the visit, the ecological baseline described in the original PEA survey is still considered to be correct. The following descriptions provide more detail for the habitats found along the eastern bank of the Rhymney.

2.1 Intertidal mudflats

As described in the original PEA, the intertidal mudflats were recorded along the east coast of the Rhymney River, with large areas exposed at meanders in the river at low tide.

Mudflats are considered highly productive areas, which help support large numbers of fish and birds. They provide feeding and resting areas for internationally important populations of migrant and wintering waterfowl are also important nursery areas for fish.

The mudflats are predominantly littoral sandy mud that, for the most part, support a community of Ragworm *Hediste diversicolor*, salt water clams *Limecola balthica* and bivalve *Scrobicularia plana* (European Marine Observation Data Network (EMODnet)). However, within close proximity of the scheme a range mudflats of varying sediment sizes provide opportunities for other invertebrate assemblages. The muddy sandy shores at the western extent of the scheme are dominated by polychaete worms and bivalves. Whilst further out into the estuary littoral gravelly sandy mud support assemblages of *Hediste diversicolor* and polychaete worm *Streblospio shrubsolii.*

2.2 Saltmarsh

This survey confirmed the presence of Atlantic salt marsh meadow on the eastern bank of the Rhymney Estuary and fringing the existing flood defence along the Severn Estuary to the east of the Rhymney.

These sections did not appear to be grazed in the same way as the western bank and consisted of dense swards of Cord-grasses *Spartina* sp. In areas where this thinned out the plant community was similar to the western bank with species indicative of mid to upper saltmarsh communities with Common Saltmarsh Grass *Puccinellia maritima* and Red Fescue *Festuca rubra* locally common.

Similar to the western bank a number of drainage channels provided opportunities for salt marsh herb species with Sea Beet *Beta vulgaris* subsp. *maritima* most common. Within the saltmarsh, the saline reed-beds identified from the western bank were still present and largely of equal size to the previous survey, they consisted predominantly of Common Reed *Phragmites australis*.

2.3 Dense Scrub

Above the saltmarsh dense Scrub is present along the fence line separating the foreshore area from the landscaped area of Lamby Way tip, it is dominated by Bramble *Rubus fruticosus* agg., with Hawthorn *Crataegus monogyna*, Dog Rose *Rosa canina* and Sycamore *Acer pseudoplatanus* saplings. Buddleia *Buddleia davidii* is also abundant.

2.4 Semi-natural broad-leaved woodland

As part of the landscaping of the former tip a number of areas of native broadleaved trees have been planted on the western facing slope of the site. These are separated from the estuary and foreshore by the fence line and access track that runs along the base of the slope.

2.5 Coastal Grassland

Towards the southern extent of the scheme there are areas of coastal grassland present in transitional areas behind areas of saltmarsh.

Grassland indicative of the coastal environment is also present on the landscaped areas located to the east of the River Rhymney.

3 Conclusion

This survey concludes that the baseline described in the original PEA is still current and that all recommendations made in that report with regards to statutory protected sites, habitats and protected species are valid and should be considered.

It should also be noted that further stands of Japanese Knotweed were recorded along the western bank of the river. As previously identified, it is anticipated that the risk of the spread of this species will be limited to any access tracks constructed along the western bank of the River Rhymney.

It is therefore recommended that the extent of Japanese Knotweed is mapped prior to works being carried out in this area. To avoid the spread of Japanese Knotweed as a result of the construction works in this area, a Japanese Knotweed Management Plan should be produced to include removal and/or treatment of Japanese knotweed through excavation/disposal or herbicidal treatment.