Screening Assessment; Test of Likely Significant Impacts

Test 1 of 2

Project Name:	Colwyn Bay Waterfront Project Phase 1c	
Natura 2000 Site under Consideration:	Y Fenai a Bae Conwy/Menai Strait and Conwy Bay Special Area of Conservation (SAC)	
Date:	Author (Name/Organisation):	Verified (Name/Organisation):
10.12.13	Rebecca Purslow Mott MacDonald Limited	
Description of Project Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans and projects) on the European Site by virtue of:		
▪ Size and scale	The proposed works comprise the Colwyn Bay Waterfront Project which in its entirety will provide coastal defences along the frontage of Colwyn Bay between Rhos-on-Sea and Old Colwyn. The works will be carried out in three phases, as funding is released. Phase 1, the advance package, covers up to 35 hectares and comprises the prioritised coastal defences within the central section of the frontage either side of the Victoria Pier from the section of seafront in the vicinity of Maine Road to the west, to the section of seafront parallel to the J22 eastbound slip road of the A55 to the east. Phase 1c works involve the following: Beach recharge will involve the importation and placements of approximately 170,000m³ to 270,000m³ of dredged sand material to the west Porth Eirias, which will bring levels up to the full design profile of the Phase 1 works. Extension of the existing 900mm diameter water outfall, situated east of the Pier, by approximately up to 250m (subject to budget); Extension of the existing twin 500mm diameter watercourse outfall, situated west of Phase 1b boundary, by approximately 100m; Local works to a 300mm diameter high level outfall adjacent to Phase 1b coastal defence; Removal of the existing rock toe west of Victoria Pier;	

	Removal of the existing rock groyne adjacent to the slipway on the western boundary of the Phase 1b coastal defence works, to be reused for scour protection to watercourse outfall extension; Re-pointing works to existing masonry wall along Phase 1b length; Provision of mesh reinforcement to railings in vicinity of the Pier; Re-facing of spray concrete facing to sea wall at the western end of the Phase 1b coastal defence length; Removal of rock toe in the recharge extension area, (subsequent to recharge); and Use of excavated rock armour from existing toe works to provide improved toe to sea wall along Llandrillo-yn-Rhos frontage
▪ Land-take	The entire phase 1 covers 35ha at Colwyn Bay waterfront.
▪ Distance from the European Site or key features of the site (*from edge of the project assessment corridor*);	At its nearest the SAC is 5km from the works
▪ Resource requirements (*from the* European Site *or from areas in proximity to the site, where of relevance to consideration of impacts*);	There are no resource requirements from the SAC or any areas that may be associated with the site of works.
▪ Emissions (*e.g. polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution*);	Construction phase impacts will include emissions from plant and vehicles and particularly dust impacts from construction activities – specific impacts depend on the type and duration of each construction activity. Dust impacts are generally no longer significant beyond 200m. There may be temporary adverse impacts on water quality during the construction phase with the disturbance of sediment (and potential release of contaminants to seawaters) and due to general construction processes, however this can be mitigated through the use of best practice construction methods and by having a Site Environmental Management Plan (SEMP) in place to minimise the risk of accidental spillage. Disturbance of sediment into the water column during excavation and placing of materials on the beach may lead to a reduction in water quality. In addition, there is potential of pollutants to be introduced in the new beach material being placed at the site. In general, the operational impacts of the scheme are anticipated to be largely beneficial. Several sections

	of the waterfront are in high flood risk zones and the improved coastal defences will act to decrease the risk of flooding. The temporary adverse impacts on water quality will be more local; coastal modelling has shown that there will be no sediment transport to the SAC.
▪ Excavation requirements (*e.g. impacts of local hydrogeology*);	Impacts on geology and soils are anticipated to be minor given the proposals are predominantly concerned with raising levels via beach recharge rather than excavating both on the shore and on the promenade. Some localised excavation may be required for construction of new section of rock revetment which will result in the generation of waste materials.
▪ Transportation requirements;	During the construction phase, the transport of some materials to the site (e.g. new rock armour) will have an environmental impact from the numbers of lorries using the road network. Locally the impact will be relatively low. Recharge sand is anticipated to be delivered by boat and applied to the beach via a pipe with land based plant positioned on the beach to distribute the recharge material.
▪ Duration of construction, operation etc;	Phase 1c will commence January 2014, construction phases for 1b and 1c will overlap.
▪ Other	The construction of coastal protection structures is likely to have an impact on local near shore dynamics; though coastal process modelling has shown that any sediment transport will occur to the east, away from the SAC and will be localised to the area of construction.
Characteristics of European Site (s) A brief description of the European Site should be produced, including information on:	
▪ Name of European Site and its EU code;	Y Fenai a Bae Conwy/Menai Strait and Conwy Bay Special Area of Conservation (SAC) UK0030202
▪ Location and distance of the European Site from the proposed works;	At nearest, 5km from proposed works site
▪ European Site size;	26482.67
Key features of the European Site including the primary reasons for selection and any other qualifying interests;	*Annex I habitats that are a primary reason for selection of this site* 1110 <u>Sandbanks which are slightly covered by sea water all the time</u> Menai Strait and Conwy Bay between mainland Wales and Anglesey includes the Four Fathom Banks complex, which is a relatively rare type of subtidal sandbank in Wales, in that it is comparatively

	large, and is fairly sheltered from wave action but situated in an area of open coast. The sandbanks vary from stable muddy sands in areas that experience weak tidal streams to relatively clean well-sorted and rippled sand in the outer area of the bank where tidal streams are stronger. In very shallow waters, particularly in the inner shore areas, relatively species-rich sandy communities are dominated by polychaetes such as *Spio filicornis*. In some years when numbers of bivalves are high, internationally important flocks of common scoter *Melanitta nigra* have been observed to congregate in the area of the Four Fathom Banks complex to feed. 1140 Mudflats and sandflats not covered by seawater at low tide The intertidal mudflats and sandflats of the Menai Strait and Conwy Bay on the north Wales coast include Traeth Lafan, the shores of the Menai Strait, and the Foryd estuary. Traeth Lafan is an example of an almost fully marine extensive mud and sandflat that experiences a broad range of wave exposure, providing a range of sediment types with typical associated communities. For example, the shrimps *Haustorius arenarius* and *Bathyporeia sarsi* are found in mobile clean sand, whilst bivalves such as the cockle *Cerastoderma edule*, the gaper *Mya arenaria* and Baltic tellin *Macoma balthica* are common in more sheltered fine and muddy sand. The sand-mason worm *Lanice conchilega* is found in more tide-swept areas. The mixed sediment shores between Beaumaris and Lleiniog are highly productive shores that are rich in animal and plant species. These shores include a nationally important biotope that is rare in the UK. The nationally scarce dwarf eelgrass *Zostera noltei* is also found at this site. 1170 Reefs The reefs of the Menai Strait and Conwy Bay between mainland Wales and Anglesey include the tidal rapids of the Menai Strait, and limestone reefs along the south-east Anglesey coast and around Puffin Island and the Great and Little Ormes. The environmental conditions of the Menai Strait are unusual. The water is relatively turbid, containing a relatively high level of suspended material, and although the area is largely sheltered from wave action tidal streams are strong, reaching up to 8 knots (4 m s^{-1}) in places during spring tides. As a result, the rocky reefs of the Strait are dominated by a diverse and unusual mixture of animals that feed mainly by filtering their food from the seawater. For example, colonies of sponges, such as the breadcrumb sponge *Halichondria panicea*, grow to unusually large sizes, with single colonies covering areas of over 1 m^2. The limestone reefs are home to several species that bore into rock, and some limestone specialists are restricted to this relatively rare habitat. Species include the rock-boring sponge *Cliona celata*, piddocks *Hiatella arctica*, polychaete worms *Polydora* sp., and acorn worms *Phoronis hippocrepia*.

	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site 1160 Large shallow inlets and bays 8330 Submerged or partially submerged sea caves
▪ Vulnerability of the European Site – any information available from the standard data forms on potential effect pathways;	Beach replenishment and rock revetment construction are listed as operations which possibly or probably could have the following impacts on the SAC: Smothering Suspended sediment Desiccation Changes in emergence regime Changes in water flow rate Changes in temperature Changes in turbidity Changes in wave exposure Noise disturbance Visual presence Abrasion / Physical disturbance Displacement Synthetic compound contamination Heavy metal contamination Hydrocarbon contamination Radionuclide contamination Changes in nutrient levels Changes in salinity Changes in oxygenation
▪ European Site conservation objectives – where these are readily available	Conservation objectives have been set for this site. See ADVICE PROVIDED BY THE COUNTRYSIDE COUNCIL FOR WALES IN FULFILMENT OF REGULATION 33 OF THE CONSERVATION (NATURAL HABITATS, &c.) REGULATIONS 1994 http://www.ccgc.gov.uk/landscape--wildlife/protecting-our-landscape/special-sites-project/regulation-35-advice.aspx

Assessment Criteria

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Site.

Initial Assessment

The key characteristics of the site and the details of the European Site should be considered in identifying potential impacts.
Describe any likely changes to the site arising as a result of:

▪ Reduction of habitat area;	There will be no reduction in the SAC habitat area resulting from this project or any other project in combination. The works are not involving any land take or potential effects on the SAC concerned.
▪ Disturbance to key species;	No key species listed.

▪ Habitat or species fragmentation;	There will be no habitat fragmentation resulting from this project.
▪ Reduction in species density;	No qualifying species are listed.
▪ Changes in key indicators of conservation value (water quality etc.)	Coastal processes modelling has shown sediment transport will be in the opposite direction that there will be no sediment transport to the SAC and therefore water quality will not be impacted due to the beach recharge or other works undertaken in Phase 1c.
▪ Climate change	The works are being undertaken to combat the effects of future climate change. Negligible effects on climate change are anticipated.
Describe any likely impacts on the European Site as a whole in terms of:	
▪ Interference with the key relationships that define the structure of the site;	There should be no effects on the SAC as a whole resulting from this project that will affect the key relationships of the site.
▪ Interference with the key relationships that define the function of the site;	There should be no effects on the SAC as a whole resulting from this project that will affect the functions of the site.
Indicate the significance as a result of the identification of impacts set out above in terms of:	
▪ Reduction of habitat area;	There will be no reduction in the habitat area as a result of the works.
▪ Disturbance to key species;	Not applicable.
▪ Habitat or species fragmentation;	There will be no habitat fragmentation due to the proposed works.
▪ Loss;	There will be no loss of any feature of the SAC as a result of the works.
▪ Fragmentation;	There will be no fragmentation of the SAC as a result of the works.

▪ Disruption;	There will be no disruption of the SAC as a result of the works.
▪ Disturbance;	There will be no disturbance to the SAC as a result of the works.
▪ Change to key elements of the site (e.g. water quality, hydrological regime etc).	Whilst there is likely to be a local change in water quality and sedimentation due to the works, this will not extend to the SAC or impact significantly on any of the SAC features. No change to any key elements of the SAC is anticipated.
Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	
It is considered that Phase 1c will not have a significant effect on the SAC or on its conservation objectives. There is not sufficient information to adequately assess Phases 2 and 3 of the Conway Waterfront Project. As it is not possible to rule out significant effects on the SAC from Phases 2 and 3, this assessment should be revisited once the final design for these Phases is completed.	
Outcome of screening stage (*delete as appropriate*).	~~Significant Effects are Likely/~~ ~~Sufficient Uncertainty Remains/~~ **Not Likely to be Significant Effects**
Are the appropriate statutory environmental bodies in agreement with this conclusion *(delete as appropriate and attach relevant correspondence).*	No consultations have been sought at this stage.

Test 2 of 2

Project Name:	Colwyn Bay Waterfront Project Phase 1	
Natura 2000 Site under Consideration:	Liverpool Bay / Bae Lerpwl Special Protection Area (SPA)	
Date:	Author (Name/Organisation):	Verified (Name/Organisation):
10.12.13	Rebecca Purslow Mott MacDonald Limited	
Description of Project Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans and projects) on the European Site by virtue of:		

▪ Size and scale	Phase 1c works involve the following: Beach recharge will involve the importation and placements of approximately 170,000m³ to 270,000m³ of dredged sand material to the west Porth Eirias, which will bring levels up to the full design profile of the Phase 1 works. Extension of the existing 900mm diameter water outfall, situated east of the Pier, by approximately up to 250m (subject to budget); Extension of the existing twin 500mm diameter watercourse outfall, situated west of Phase 1b boundary, by approximately 100m; Local works to a 300mm diameter high level outfall adjacent to Phase 1b coastal defence; Removal of the existing rock toe west of Victoria Pier; Removal of the existing rock groyne adjacent to the slipway on the western boundary of the Phase 1b coastal defence works, to be reused for scour protection to watercourse outfall extension; Re-pointing works to existing masonry wall along Phase 1b length; Provision of mesh reinforcement to railings in vicinity of the Pier; Re-facing of spray concrete facing to sea wall at the western end of the Phase 1b coastal defence length; Removal of rock toe in the recharge extension area, (subsequent to recharge); and Use of excavated rock armour from existing toe works to provide improved toe to sea wall along Llandrillo-yn-Rhos frontage

▪ Land-take	Phase 1 covers 35ha at Colwyn Bay waterfront.
▪ Distance from the European Site or key features of the site (*from edge of the project assessment corridor*);	The works will take place adjacent to the SPA
▪ Resource requirements (*from the* European Site *or from areas in proximity to the site, where of relevance to consideration of impacts*);	There are no resource requirements from within the SPA. Beach recharge will be sourced from outside the SPA.
▪ Emissions (*e.g. polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution*);	Construction phase impacts will include emissions from plant and vehicles and particularly dust impacts from construction activities – specific impacts depend on the type and duration of each construction activity. Dust impacts are generally no longer significant beyond 200m. There may be temporary adverse impacts on water quality during the construction phase with the disturbance of sediment (and potential release of contaminants to seawaters) and due to general construction processes, this can be mitigated through the use of best practice construction methods and by having a Site Environmental Management Plan (SEMP) in place to minimise the risk of accidental spillage. Disturbance of sediment into the water column during excavation and placing of materials on the beach may lead to a reduction in water quality. In addition, there is potential of pollutants to be introduced in the new beach material being placed at the site. In general, the operational impacts of the scheme are anticipated to be largely beneficial. Several sections of the waterfront are in high flood risk zones and the improved coastal defences will act to decrease the risk of flooding.
▪ Excavation requirements (*e.g. impacts of local hydrogeology*);	Impacts on geology and soils are anticipated to be minor given the proposals are predominantly concerned with raising levels rather than excavating both on the shore and on the promenade. Some localised excavation may be required for new rock revetment which will result in the generation of waste materials.
▪ Transportation requirements;	During the construction phase, the transport of materials to the site (e.g. new rock armour) will have an environmental impact from the numbers of lorries using the road network. Locally the impact will be relatively low. Recharge sand is anticipated to be delivered by boat

	and applied to the beach via a pipe with land based plant used to distribute the recharge material.
▪ Duration of construction, operation etc;	Phase 1c will commence after January 2014, construction phases for 1b and 1c will overlap.
▪ Other	The construction of coastal protection structures is likely to have an impact on local near shore dynamics; coastal process modelling has shown that sediment transport will occur to the east, localised within the area of works.
Characteristics of European Site (s) A brief description of the European Site should be produced, including information on:	
▪ Name of European Site and its EU code;	Liverpool Bay / Bae Lerpwl SPA UK9020294
▪ Location and distance of the European Site from the proposed works;	The works are located adjacent to the SPA
▪ European Site size;	170292.94
Key features of the European Site including the primary reasons for selection and any other qualifying interests;	Annex I birds and regularly occurring migratory birds not listed on Annex I Red-throated diver *Gavia stellata* Common scoter *Melanitta nigra* (over wintering populations)
▪ Vulnerability of the European Site – any information available from the standard data forms on potential effect pathways;	The site is subject to commercial fishing. The sandbanks of Liverpool Bay support the nursery and feeding grounds for many fish species. The distribution and concentrations of red-throated divers will at least partly be determined by the presence, abundance, and availability of their prey species. The site holds various fish of commercial importance, and extraction of the red-throated diver's main fish prey, as either target and/or bycatch species, or through recreational fishing could impact the population. Entanglement in static fishing nets is an important cause of death for red-throated divers in the UK waters however the extent of this impact in Liverpool Bay is not known. Commercial and recreational fishing could directly affect both the food source and feeding grounds used by common scoters and in addition a number of ports undertake navigational dredging and disposal both in, and adjacent to, the site. Dredging for bivalves has

	been shown to have significant negative effects on their benthic habitat. Red throated divers and common scoters are sensitive to non-physical, (noise and visual) disturbance by both commercial and recreational activities, for example disturbance by moving vessels - the larger the vessel, the greater disturbance distance expected. Aggregate extraction presents some risks of disturbance and also changes to sediment structures which may, in particular, impact on common scoter through changes to their benthic feeding grounds. However, aggregrate extraction tends to be temporary and localised and so is not anticipated that moderate and targeted extraction will present a significant risk to either of the qualifying species. Liverpool Bay is an attractive location for the off-shore renewal energy industry and there is evidence that red-throated divers and common scoters are displaced by the presence of the turbines and the associated activities of construction and maintenance vessels. There are a number of areas along the coast where marine tourism and leisure activities are common, with existing marinas and partially completed and proposed marina developments. As a result of these leisure users of the area, in combination with the whole suite of commercial activities, including those outlined above, the site is a very active boating and shipping site. However, most vessel activity is restricted to well-established areas which the birds already tend to avoid.
▪ European Site conservation objectives – where these are readily available	The conservation objective is to maintain the waterfowl assemblage and its supporting habitat in favourable condition: The interest feature waterfowl assemblage will be considered to be in favourable condition when all of the following conditions are met: (i) The peak mean population size for the waterfowl assemblage is no less than 55,597 (ie the five-year peak mean between 2001/02 – 2006/07); (ii) Aggregations of waterfowl and seabirds at feeding and resting sites are not subject to significant disturbance. The draft conservation objective is to maintain the common scoter population and its supporting habitats in favourable condition. The interest feature common scoter will be considered to be in favourable condition only when all of the following conditions are met: (i) The 5 year peak mean population size for the

	common scoter population is no less than 54,675 individuals (ie the five-year peak mean between 2001/02 – 2006/07); (ii) The overall presence and abundance of benthic prey species within the site is maintained, along with its associated features; (iii) Common scoters are not exposed to significant human-induced mortality, and their aggregations are not subject to significant disturbance; (iv) The movement of common scoters between feeding and resting areas is not significantly impeded.
Assessment Criteria Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Site.	
Initial Assessment The key characteristics of the site and the details of the European Site should be considered in identifying potential impacts. Describe any likely changes to the site arising as a result of:	
▪ Reduction of habitat area;	There will be no reduction of habitat within the SPA, there will be a temporary reduction of habitat adjacent to the SPA during the construction phase. The Phase 1 construction footprint is 35ha.
▪ Disturbance to key species;	Common scoters are sensitive to disturbance by moving vessels. Large flocks of the birds were observed being put to flight at a distance of 2km from a 35m vessel, though smaller flocks were less sensitive and put to flight at a distance of 1km (Kaiser *et al*., 2005). Larger vessels would be expected to have an even greater disturbance distance (Kaiser *et al*., 2005). However the works are localised and the vessel used to for the beach recharge will require repositioning only 2-3 times during the works. The extension of the outfalls, removal of the groyne, rock toe and other enginerring works will also cause noise and visual disturbance. All works will be taking place on shore; given that Colwyn bay is a built up area, common scoter should be habituated to movement onshore, in the area of works; common scoter are commonly found 500m to two kilometres from land, therefore the activities on shore should not significantly impact the scoter. An increase in water turbidity as a result of increased suspended sediment may adversely impact upon fish eating birds as the detection of prey by pursuit-diving bird species such red-throated diver becomes more difficult, especially considering the limited visual capabilities of these species. This is likely to result in a moderate adverse temporary impact during the construction period. The beach recharge operation will not commence until March 2014, when red-throated divers will still be over-wintering in the area.

	Following construction of the rock revetments there could be some scouring/erosion effects on biotopes (foraging habitats for birds) to the east of the new groyne. However, modelling indicates that scouring effects will be negligible. Sediment erosion will be limited to the very far end of the Bay, beyond the Phase 3 boundary. The works will be timed to avoid overnight roosting. Periodic topping-up of beach recharge is likely to be required. During this time, disturbance to species for which the SPA is designated would reoccur, as above.
▪ Habitat or species fragmentation;	There will be no habitat or species fragmentation resulting from this project.
▪ Reduction in species density;	There will be no reduction in the species density as the works are not thought to result in a significant effect on the qualifying species.
▪ Changes in key indicators of conservation value (water quality etc.)	The proposed beach recharge may result in a moderate negative impact on the water quality of the bay. If material used is finer than the beach sediment, wave and tidal action will result in more sediment being carried along or offshore and will cause increased turbidity. In addition, there is potential for pollutants to be introduced through the new beach material being placed at the site and if mobilised, this material may release contamination into the water column. Regular topping-up of beach recharge and re-profiling activities will be required throughout the lifetime of the works, involving the operation of machinery on the beach which may lead to localised pollution incidents from fuel or lubricant spillage. The increased use of vehicles and boats in the area by the general public due to the works may result in an increase in the number of potential sources of pollution on the beach and in the water.
▪ Climate change	The works are being undertaken to combat the effects of future climate change. Negligible effects on climate change are anticipated.
Describe any likely impacts on the European Site as a whole in terms of:	
▪ Interference with the key relationships that define the structure of the site;	There should be no effects on the SPA as a whole resulting from this project that will affect the key relationships of the site.
▪ Interference with the key relationships that define the function of the site;	There should be no effects on the SPA as a whole resulting from this project that will affect the functions of the site.

Indicate the significance as a result of the identification of impacts set out above in terms of:	
▪ Reduction of habitat area;	There will be no reduction of habitat within the SPA, there will be a temporary reduction of habitat adjacent to the SPA, during the construction phase. The Phase 1 construction footprint is 35ha.
▪ Disturbance to key species;	It is considered that disturbance to key species of the SPA may occur, though this is will not be at significant levels as a result of the proposed works.
▪ Habitat or species fragmentation;	There will be no habitat or species fragmentation due to the proposed works.
▪ Loss;	There will be no loss of any feature of the SPA as a result of the works.
▪ Fragmentation;	There will be no fragmentation of the SPA as a result of the works.
▪ Disruption;	There will be some disruption to the species for which the SPA is designated, within the construction period of the works, however this is not considered to be significant.
▪ Disturbance;	There will be some disturbance to the species for which the SPA is designated, within the construction period of the works, however this is not considered to be significant.
▪ Change to key elements of the site (e.g. water quality, hydrological regime etc).	Whilst there is likely to be a local change in water quality and sedimentation during the works, this will be temporary and considered not have a significant effect.
Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	
It is considered that Phase 1c will not have a significant effect on the SPA or on its conservation objectives. There is not sufficient information to adequately assess Phases 2 and 3 of the Colwyn Waterfront Project. As it is not possible to rule out significant effects on the SPA from Phases 2 and 3, this assessment should be revisited once the final design for these Phases is completed.	
Outcome of screening stage (*delete as appropriate*).	~~Significant Effects are Likely/~~ ~~Sufficient Uncertainty Remains/~~ **Not Likely to be Significant Effects**
Are the appropriate statutory environmental bodies in agreement with this conclusion *(delete as appropriate and attach relevant correspondence).*	No consultations have been sought at this stage.