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A487 CAERNARFON AND BONTNEWYDD BYPASS

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Appendix L.2 – Draft Register of Commitments



A487 CAERNARFON AND BONTNEWYDD BYPASS

Ref No.	Commitment	Source	Action Document	When required	Date of action	Date of completion	Objectives / Actions / Notes
Air Quality							
AQ1	Production of a dust management plan for implementation throughout construction	ES Section 5.5.1	Dust Management Plan (DMP), Air Qual MS				
AQ2	Additional mitigation measures where construction occurs within 50m of sensitive receptors: Morogoro, Glan Gwna Holiday Park, Tyddyn Hen, all access points, all plant crossing points.	ES Section 5.5.1	DMP, Air qual MS				
Construction mitigation							
AQ3	Records of dust and air quality complaints to be kept, including likely causes and mitigation measures to reduce impacts if appropriate	ES Section 5.5.1	DMP, CEMP				
AQ4	Keep site perimeter, fences etc. clean	ES Section 5.5.1	DMP, CEMP				
AQ5	Consideration of weather conditions	ES Section 5.5.1	DMP, CEMP				
AQ6	Consideration of dust generating potential of material to be excavated prior to commencement of works	ES Section 5.5.1	DMP, CEMP				
AQ7	Plan site layout to maximise distance from plant/stockpiles etc. to sensitive receptors	ES Section 5.5.1	DMP, CEMP				
AQ8	Dusty materials should be removed from site as soon as possible	ES Section 5.5.1	DMP, CEMP				
Construction traffic							
AQ9	Loads entering and leaving the site with dust generating potential should be covered and wheel washing facilities made available	ES Section 5.5.1	DMP, CEMP				
AQ10	Vehicles to comply with site speed limits (15mph on hard surfaces, 10mph of unconsolidated surfaces)	ES Section 5.5.1	DMP, CEMP				
AQ11	Water assisted sweeping of local roads to be undertaken if material tracked out of site	ES Section 5.5.1	DMP, CEMP				
AQ12	Install hard surfacing as soon as practicable on site and ensure that they are maintained in good condition	ES Section 5.5.1	DMP, CEMP				
Site activities							
AQ13	Exposed soils should be re-vegetated as soon as practicable. Near residential properties or sensitive ecosystems (<50m), use hessian/mulches etc. where not possible to re-vegetate or cover with topsoil	ES Section 5.5.1	PCP, DMP, CEMP				
AQ14	Ensure an adequate water supply to site and use water as dust suppressant where applicable	ES Section 5.5.1	DMP, CEMP				
AQ15	Ensure equipment available for cleaning spills etc. Available at all times	ES Section 5.5.1	PCP, DMP, CEMP				
AQ16	Sand and aggregates should be stored away from sensitive receptors and screened/shielded. Similarly concrete batching should take place away from receptors	ES Section 5.5.1	PCP, DMP, CEMP				
AQ17	Undertake daily dust inspections near receptors	ES Section 5.5.1	DMP				
AQ18	Erect solid screens adjacent to receptors that are as high as stockpiles and ensure covert/ seeded to prevent wind whipping	ES Section 5.5.1	DMP, Method statements				
Cultural Heritage							
CH1	Relocation of listed milestone 22047	ES Section 6.5.2					
CH2	Roman road 17831 and sites/areas denoted by geophysical feature Types 1-4 would be subject to a full open-area excavation. Excavations carried out will be accompanied by a full post-excavation analysis and reporting phase.	ES Section 6.5.2	Written Scheme of Investigation (WSI), Method statements				
CH3	Strip, map and record: If archaeological remains are revealed, these would be subject to appropriate investigation, preservation & recording. If of sufficient importance or complexity, investigation would extend to a full-open area excavation.	ES Section 6.5.2	WSI, Method statements				
CH4	All boundary features would be recorded prior to the start of construction and results submitted to GAT HER	ES Section 6.5.2	Archaeological Reports				
Landscape							
LS1	Undertake measures to reduce adverse landscape and visual effects during operational phase, as stated in the Landscape Strategy	ES Vol 1, Sec 7.5.2/ ES Vol 3, Appendix D.3	CEMP				
Construction mitigation							
LS2	Careful positioning of site offices, compounds and car parks, with grass seeded bunds around sensitive perimeters to provide appropriate screening and integration	ES Vol 1 Sec 7.5.1	CEMP				
LS3	Consideration of material and colours for temporary fencing	ES Vol 1 Sec 7.5.1	CEMP				
LS4	Sensitive design and placing of site signage, in order to provide the required information whilst limiting wider landscape and visual impacts	ES Vol 1 Sec 7.5.1	CEMP				
LS5	Retained existing vegetation, in particular mature vegetation, wherever possible. Effective and robust tree protection measures to be put in place wherever necessary	ES Vol 1 Sec 7.5.1	CEMP				
LS6	Programme planning to ensure exposed earthworks are re-vegetated as soon as possible to accelerate landscape integration	ES Vol 1 Sec 7.5.1	CEMP				
LS7	Offsite planting on individual land owners land by agreement where localised visual benefits would be achieved	ES Vol 1 Sec 7.5.1	CEMP				
Operational mitigation:							
<i>Planting & veg retention</i>							
LS8	Goat Roundabout (Chainage 0) - Chainage 600 (Figure 7.11a): Planting on east-facing embankment slopes around culvert at Ch180 and underbridge Ch420. Lower scrub edge provided along top of slopes. New hedgerows along Scheme boundary. Existing hedgerow & trees at Ch360-410 LHS retained. Attenuation ponds adjacent to Goat Roundabout & Ch450 RHS bounded by native hedgerows, tying in with existing field patterns.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS9	Chainage 600 - Chainage 1100 (Figure 7.11a): New hedgerows provided along scheme boundaries. Cutting the slopes would be species-rich grassland with scattered groups of individual trees particularly around overbridge. Section of mature hedgerow & trees retained and reinforced with block of new broadleaf woodland. On Scheme boundary with Morogoro property a stone wall would be provided to integrate with existing garden walls.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS10	Chainage 1100 - Chainage 1800 (Figure 7.11a-b): Broadleaf woodland to cover western faces with mixture of woodland and open slopes on the eastern faces. Hedgerows provided along Scheme boundaries and tying in to existing mature hedgerows. Attenuation pond at Ch1350 LHS would be enclosed through combination of existing hedgerows, new hedgerows and the planted Scheme embankment. Pond at Ch1600 LHS bounded by existing riverside vegetation and Scheme hedgerow, separated from adjacent PMA by fence boundary. Section of hedgerow at Ch1450-1550 LHS retained alongside PMA and reinforced with woodland block. Abutments to Gwyrfa viaduct at Ch1800 planted in woodland with an existing mature tree retained and incorporated within Scheme boundary to the east.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS11	Ch1800 - Ch2050 (Gwyrfa Viaduct): No opportunity for landscape mitigation beyond approach embankments.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS12	Ch2050 - Ch 2890: Woodland planting to enclose both sides of the road corridor. Attenuation pond at Ch2100 RHS would be separated from adjacent fields by new native hedgerow.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS13	Ch2890-Ch2990: Where overbridge would divert existing lane over mainline, larger embankment sections would be planted in woodland. Lower scrub species along top of slopes and with new hedgerow boundaries. Along existing lane to north, existing hedges and mature trees would be retained and reinforced with additional planting.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS14	Ch 2990 - Ch 3550 (Meifod Roundabout): Northern side of existing streamside, scrub and trees retained and reinforced with woodland planting in corridor between watercourse and road. To south, planting provision limited to a native hedgerow on Scheme boundary, which would also enclose a narrow attenuation pond at Ch3170-3300. At Meifod Roundabout, small blocks of woodland planting would reinforce existing field and roadside hedgerows. Trees alongside A487 would be retained within verge on southern approach to roundabout. To southeast, planting limited to new hedgerow boundaries. Part of existing highway retained with redundant width broken out, soiled and seeded.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS15	Ch 3550-Ch4000: Woodland planting on embankment slopes with scrub species along highway edge and with boundary hedgerows. To south, area of woodland and streamside vegetation would be retained and reinforced with additional woodland. Attenuation pond at Ch3600-3700 RHS enclosed by hedgerows. At Ch3930, required cutting slopes would be partially planted in woodland and with outer hedgerow boundaries.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS16	Ch 4000 - Ch4800: Small embankment near quarry would have mixture of woodland blocks, grassed slopes, hedgerow boundaries and retained vegetation. New planting mainly on eastern slopes with western faces being largely grass combined with hedgerow boundaries. Top edge of new quarry slope would be planted in woodland. At Ch4350 RHS an attenuation pond would be enclosed by a retained hedgerow and separated from road corridor by new hedgerow and woodland planting.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS17	Ch4800-Ch 5000: Edges of cutting would be bounded by new hedgerows, tied in to surrounding field pattern.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS18	Ch5000-Ch 5330: Embankment slopes planted in broadleaf woodland with lower shrub planting at top of slopes and with hedgerow boundaries.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS19	Ch5330-Ch5450: Additional woodland planting either side of Scheme. A native hedgerow would create a linear feature along woodland edge. Attenuation pond would be located within mitigation woodland, with open grassland in its immediate surroundings.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS20	Ch5600- Ch 6500 (Cibyn Roundabout): In 3m deep cutting with predominately grassed slopes bounded by new hedgerows. Ponds at Ch5650 LHS and CH5950 RHS would be separated both surrounding landscape and highway corridor by combination of hedgerow planting and topography. Woodland planting would reinforce the existing vegetation. Woodland blocks to north of new roundabout. Attenuation ponds to east and west of junction would be enclosed by woodland and hedgerows. Redundant existing carriageway broken up, soiled and seeded.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS21	Ch6500-Ch8100: Small slopes and highway verges mainly grassed and bounded by new hedgerows. Woodland planting only provided for integration in to existing. Elsewhere, landscape treatment to reflect open fieldscape, avoiding inappropriate linear woodland. At Ch7200 RHS a small pond would be located in adjacent field but bounded by only a field to avoid creation of an incongruous field pattern.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS22	Ch 8100-Ch8900: Mixture of open grass, small woodland blocks and hedgerows with planting areas associated with embankment section. Cutting largely unplanted with only boundary hedgerows. At Ch8100 LHS an attenuation pond would be enclosed between existing roadside hedges and the Scheme boundary hedgerow, with further reinforcing woodland.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS23	Realigned Crug Lane unclassified road and Bethel Road Roundabout: Highest embankment areas and the roundabout would be enclosed by woodland planting on the slopes. Beyond roundabout approaches, eastern embankment faces would be open grassland with hedgerow at its base. Hedgerow and woodland would provide separation between mainline and side roads. Attenuation pond located in open grassland and bounded by hedges and woodland planting.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS24	Ch8900-Ch9600: Cutting slopes largely in open, species-rich grassland with scattered groups of trees and localised rock outcrops. Broadleaf woodland planting on slopes at northern end. Line of standard trees along top edge of cutting slope.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
LS25	Ch9600-Ch9750 (Pias Menai Roundabout): Hedgerow planting around existing roundabout, realigned side roads and an attenuation pond. Existing vegetation on roundabout island would be retained and protected.	ES Vol 1, Sec 7.5.2/ Vol2 Figure 11a-i	Planting plans and schedules				
Nature Conservation							
Bats							
NCB1	Provision of bat boxes to provide alternative bat roost sites if required during operation. Three bat boxes would be provided for each of the retained roosts that may be impacted. Wherever possible, this should be done in advance of construction and operation.	ES Vol 1 Sec 8.5.14	ELEAMP				
NCB2	Structures S101, 104, 109A, 110, 110A, 112A, 112B, 102, 113A, 105 are increased in size from the minimum required cross section in order to improve bat permeability. S111A (Bryn Mafon Culvert 1) would be built specifically as a bat crossing		Bat mitigation strategy				
NCB3	Culverts would not be fitted with grilles or screens	ES Vol 1 Sec 8.5.14	CEMP, detailed design				
NCB4	Hedgerow and vegetation translocation and planting will be employed to maintain connectivity where practicable (ref LS8-LS25) as described in NCHV1-4.	ES Vol 1 Sec 7.5.2					
NCB5	Temporary bat fencing will be used to maintain flightlines during construction and up to the 5 year aftercare period whilst vegetation is established	ES Vol 1 Sec 2.1.1	CEMP, Aftercare Management Plan				
Surveys							

NCS1	Activity surveys at the 14 existing transects in May, July (dusk only) & September (dusk & dawn) in 2016, 2017 (pre-construction), 2018-2019 (construction) and 2020-2024 (post construction). During construction transect surveys will change to crossing point surveys as and when structures are installed on the transect line. Post construction surveys will consist of crossing point surveys where structures have been installed with transects continuing where structures have not been installed (i.e. transects 1, 2 and 6).					
NCS2	Further climbing inspection surveys identified as a future requirement for all trees categorised a 1 or 1* with those categorised as 2 identified to be soft felled only. Inspections and any subsequent emergence/ re-entry surveys or further climbing inspections undertaken as part of the pre-construction works (2017).	ES Vol 1 Sec 8.2.5	CEMP			
	Badgers					
NCB3	Care will be taken to avoid positioning site compounds or welfare units, generators for traffic management etc., in close proximity to watercourses or wooded areas which may be used by badgers.	ES Vol 1 Sec 8.5.5	CEMP, Badger MS			
NCB4	Best practice measures applied to ensure that animals cannot enter the construction area and/or the site is made safe overnight.	ES Vol 1 Sec 8.5.5	CEMP, Badger MS			
NCB5	Otter fencing installed at various locations would also act to prevent badgers crossing the Scheme.		CEMP			
	Dormice					
NCD1	Vegetation clearance would not be undertaken between June and September	ES Vol 1 Sec 8.5.6	CEMP, Dormice MS			
NCD2	Loss of dormouse habitat would be mitigated by planting of hedgerows and woodland	ES Vol 1 Sec 8.5.6	CEMP			
NCD3	Where oversized culverts provide an opportunity to do so, habitat connections beneath these structures would be created using either 'dead hedges' (brush from vegetation clearance stacked in a row connecting live hedgerows on each side of the structure), or by using hurdle fencing or a similar feature	ES Vol 1 Sec 8.5.6	CEMP			
NCD4	Trimming of hedgerows and scrub would take place during winter months to avoid disturbing or mortality of dormice in summer nests.	ES Vol 1 Sec 8.5.6	MEMP, ELEAMP			
	Breeding birds					
NCBB1	Clearance of vegetation can only take place once checked by a suitably experienced ecologist	ES Vol 1 Sec 8.5.7	CEMP			
NCBB2	Should active nests be found within or adjacent to the clearance area, a suitable no working zone would be established and clearance work postponed until the young have fledged.	ES Vol 1 Sec 8.5.7	CEMP, Breeding bird MS			
	Otters and water voles					
NCOW1	No excavations will be left open overnight or when this is necessary, at least one means of escape provide.	Vol 1 Sec 8.5.6	CEMP, Otters MS, Water Voles MS			
	Reptiles					
NCR1	Watching brief to be kept during clearance works with small scale capture and relocation if required	Vol 1 Sec 8.5.8	Watching brief, Reptile MS			
NCR2	Open grassland areas: During operation in the summer months a cutting height of no less than 50mm would be set to minimise the risk of reptiles being harmed.	Vol 1 Sec 8.5.19	MEMP, ELEAMP			
	Fisheries and aquatic invertebrates					
NCFA1	Where in-water working is necessary during construction, sensitive periods such as spawning periods will be avoided	Vol 1 Sec 8.5.9	CEMP, Method statements			
NCFA2	Passage will be provided for fish along affected watercourses at all times or an alternative passage will be provided.	Vol 1 Sec 8.5.9	CEMP, Method statements			
NCFA3	S102 Rhyd Culvert will be constructed to allow the passage of migratory fish. Structure design currently being discussed.					
	Hedgerows & Vegetation					
NCHV1	Sections of hedgerow that require removal during construction and support well-established coppice stools of hazel or other shrubs would be coppiced and translocated to the alignment of proposed new hedgerows. Any stools which are temporarily translocated should still be replanted with all roots covered by soil until it's possible to move them into their final destination.	ES Vol 1 Sec 8.5.3	CEMP, Method statements			
NCHV2	Hedgerow would be planted using a range of locally native tree and shrub species (refer to the habitat survey target notes in Volume 3.	ES Vol 1 Sec 8.5.3				
NCHV3	Any hedgerows removed to permit the construction works will be either be translocated and replanted as soon as possible following the completion of works in each area if feasible and practical to do so. If this is not possible, new hedgerow planting of a similar species composition will be undertaken.	ES Vol 1 Sec 8.5.3	CEMP, Method statement			
NCHV4	Temporary loss would be mitigated on a short-term basis through the use of moveable windrows or similar features wherever possible to maintain connectivity during construction.	ES Vol 1 Sec 8.5.3	CEMP, Method statements			
NCHV5	Japanese knotweed and Himalayan balsam would be treated and handled in accordance with the Environment Agency's best practice guidelines to treat and prevent spread.	ES Vol 1 Sec 8.5.3	CEMP, Method statements			
NCHV6	Where significant vegetation disruption takes place, temporary measure would be used to maintain vegetation edges. These would include either debris netting attached to moveable fencing or brush windows that can be removed and replaced on a daily basis.	ES Vol 1 Sec 8.5.4	CEMP, Method statements			
NCHV7	Hedgerows should be trimmed no more than one year in three except in areas where more regular management is required	ES Vol 1 Sec 8.5.22				
NCHV8	Provision of species-rich grassland within 2m of the carriageway should be avoided	ES Vol 1 Sec 8.5.18				
	Fencing and Crossings					
NCFC1	Mammal-resistant fencing to be provided along the Scheme where shown on the EMPs	ES Vol 2 Fig 16.1	Fencing design			
NCFC2	Mammal crossings provided at the following locations as shown in the structures location plan and EMPs	ES Vol 2 Fig 2.5 & Fig 16.1	Drainage design			
	Geology and Soils					
	Construction mitigation					
GS1	Careful stripping of topsoils using suitable soil handling equipment	ES Vol 1 Sec 9.5.1	CEMP, Method statements			
GS2	Storage of soils in temporary low stockpiles, protected from contamination by other materials and sown with grass if being stored for more than 6 months	ES Vol 1 Sec 9.5.1	CEMP, Method statements			
GS3	Use of bunds to prevent run-off, including silt, entering watercourses	ES Vol 1 Sec 9.5.1	CEMP, Method statements			
GS4	Design of runoff control features to minimise soil erosion	ES Vol 1 Sec 9.5.1	CEMP, Method statements			
GS5	Spreading of topsoils only on subsoils that have been de-compacted	ES Vol 1 Sec 9.5.1	CEMP, Method statements			
GS6	The use of appropriate structures at culvert outlets to prevent erosion	ES Vol 1 Sec 9.5.1	CEMP, MEMP, Method statements			
GS7	Cleaning and maintenance of drainage ditches and culverts on a regular basis	ES Vol 1 Sec 9.5.1	CEMP, MEMP, Method statements			
GS8	Use of regular inspection to assess effectiveness of and the maintenance requirements for erosion and sediment control systems	ES Vol 1 Sec 9.5.1	CEMP, MEMP, Aftercare Management Plan, Method statements			
	Monitoring					
GS9	Monitoring of 33 locations with the potential to be affected by the Scheme should continue beyond construction, on a quarterly basis to include three rounds post-construction. Quarterly monitoring to include:	ES Vol 1 Sec 9.5.2	CEMP, MEMP			
GS10	A visual inspection and estimation where possible of spring flow rates;	ES Vol 1 Sec 9.5.2				
GS11	A visual inspection and comments on the quality of abstracted water or spring water;					
GS12	Groundwater sampling where there is sufficient flow to allow samples to be retrieved; and					
GS13	Photographs of each source will also be collected during each monitoring round.					
GS14	In-situ testing of physiochemical properties including:					
	Biological Oxygen Demand					
	Hardness filtered as CaCO3					
	Nitrite and nitrate,					
	pH					
	Metals;					
	Total Petroleum Hydrocarbons (Total)	ES Vol 1 Sec 9.5.2				
GS15	Should peat be encountered during construction, the likely extent should be investigated and appropriate measures taken to ensure it is not adversely affected by the Scheme	ES Vol 1 Sec 9.5.2				
	Materials					
GS16	Materials would be stored away from sensitive receptors including watercourses and visual receptors where feasible	ES Vol 1 Sec 10.5.2	SWMP, PCCP,			
GS17	Any imported materials required would be from approved sources and sourced as near as is reasonably practicable to the Scheme	ES Vol 1 Sec 10.5.3	WI			
	Noise and Vibration					
	Construction mitigation					
	Vehicles & Plant					
NV1	Only plant conforming with or better than relevant national or international standards, directives or recommendations on noise or vibration emissions would be used. All vehicles and plant would be switched off when not in use.	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV2	Where practicable, gates will not be located opposite buildings containing noise sensitive receptors.	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV3	Vehicle and mechanical plant used for the purpose of the works should be fitted with effective exhaust silencers.	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV4	Equipment that breaks concrete by munching or similar, rather than by percussion, will be used as far as is practicable;	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV5	The use of mufflers on pneumatic tools	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV6	Where practicable, rotary drills actuated by hydraulic or electrical power will be used for excavating hard materials	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV7	The use of non-reciprocating construction plant where ever practicable	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV8	The use, where necessary, of effective sound reducing enclosures	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
NV9	Information provision and communication with local communities, including forewarning of especially noisy works expected in the area and expected durations	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			
	Blasting					
NV10	A detailed assessment of residential and non-residential sensitive receptors will be undertaken	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan			

NV11	A plan of works specifying techniques, locations, detonation depths and maximum charge sizes will be devised to minimise adverse effects as far as practicable and included in the CEMP	ES Vol 1 Sec 11.5.1	CEMP, Noise & Vibration Management Plan				
NV12	Blasting operations will only take place within strictly specified periods and limited numbers of detonations that will be agreed with the LPA and communicated to the local community						
Effects on Travellers							
Construction Mitigation							
EOT1	NCN 8 to remain open during construction (Jan 2017 - Dec 2018). Where it crosses Scheme's main access road at Goat Roundabout there would be signage and guardrails which would advise cyclists to dismount and be vigilant of site access crossing.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT2	Temporary footpath put in place to divert ProW Llanwnda Rhif 19 along boundary of Scheme's temporary land take and away from the main alignment works. Temp path to be signed accordingly and provision made for safety of walkers where required (e.g. surfacing and fencing). This would be in place until March 2018.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT3	Temporary crossing following line of new alignment would be put in place at approx. Ch1100 in order for ProW Llanwnda Rhif 10 to cross the Scheme. Signage and fencing required.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT4	Provision made to protect path users Where NCN8 crosses Scheme through S108 (Pont Cefnwerthyd).	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT5	Temp. crossing at provided to maintain access between ProW Bontnewydd Rhif 27 and ProW Caernarfon Rhif 19	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT6	Regional Cycleway 61 would remain in place on Rhos Bach Lane, crossing the Scheme via a temporary plant crossing until construction of S111 (Pont Bryn Mafon) to the south is finished. Once S111 is completed and ready for operation (during summer 2018), NCN 61 would be permanently routed over it. There may be temporary periods of closure during construction.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT7	ProW Bontnewydd Rhif 26 would cross the Scheme at Ch.5+000 via a temporary crossing and join its existing alignment. Signage and fencing would be put in place to safeguard users of the footpath. Signage warning site traffic about the crossing would be erected. The temporary diversion would be in place from January 2017 to summer 2018.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT8	ProW Waunfawr Rhif 31 would cross the Scheme at Ch.5+000 via temporary crossing and join its existing alignment. Signage and fencing would be put in place to safeguard users of the footpath. Signage warning site traffic about the crossing would be erected. The temporary diversion would be in place from January 2017 to summer 2018.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT9	ProW Llanrug Rhif 36 would be temporarily diverted across the Scheme via a temporary crossing Ch.7+000. Signage, fencing and barriers would be put in place to safeguard users of the footpath. Signage warning site traffic about the crossing would be erected. The temporary diversion would be in place from January 2017 to summer 2018.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT10	Bethel Road would remain open during construction of the new overbridge and the proposed offline roundabout after which the existing road would be linked to the new structures. Traffic management would be in place to safeguard any NMUs using the proposed (in the draft Joint LDP for Anglesey and Gwynedd) shared use path throughout the construction phase which would include controlled temporary crossing locations.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT11	NCN 8 would be temporarily diverted during the construction of Plas Menai Roundabout and associated side road junctions – a temporary cycleway would be provided in order to divert cyclists around the construction works. The temporary diversion would be in effect from summer 2018 to December 2018.	Vol 1 Sec 12.5.1	Public Rights of Way Diversions (Appendix K of CEMP)				
Operational Mitigation							
EOT12	At the Goat Roundabout, NCN 8 cycleway would be diverted south around the eastern side of Goat Roundabout, crossing both the existing A487 arms (via an at-grade uncontrolled crossing) to join its existing alignment.	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT13	North of Goat Roundabout, at Ch.0+250, ProW Llanwnda Rhif 19 would be diverted north along the eastern boundary of the Scheme for ~200 m to Glanrhyd Road and then west for ~80 m, crossing the Scheme via a footway through S101A (Pont Parc Underpass), to join its existing alignment. The portion of ProW Llanwnda Rhif 19 running along the western boundary of the Scheme would cease to exist and access to it from Glanrhyd Road would be removed	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT14	At Ch.01+025, where ProW Llanwnda Rhif 10 currently leaves Ty'n Llan Road, it would instead be diverted west along Ty'n Llan Road for ~250 m, crossing the Scheme over S103 (Ty'n Llan Overbridge). It would then be routed north along the western boundary of the Scheme for ~200 m to join its existing alignment. The portion of ProW Llanwnda Rhif 10 running northwest from Ty'n Llan Road would cease to exist and access to it from Ty'n Llan Road would be removed.	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT15	The existing road which ProW Bontnewydd Rhif 27 and ProW Caernarfon Rhif 19 join would be stopped-up either side of the Scheme. S109 (Pont Cerw NMU Overbridge) would provide access over the Scheme in order to connect ProW Bontnewydd Rhif 27 and ProW Caernarfon Rhif 19 to one another	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT16	~250 m southeast of Regional Cycleway 61 existing tie-in to Penybryn Road it would be diverted west for ~200 m and across the Scheme through S111 (Pont Bryn Mafon) at Ch.3+950. It would then be routed north for ~170 m to join its existing alignment ~35 m west of its existing tie-in with Penybryn Road.	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT17	~300 m after leaving Penrhos, ProW Bontnewydd Rhif 26 (previously ProW Waunfawr Rhif 32) would be diverted north along the eastern boundary of the Scheme for ~440 m to the A4085. It would then be routed northwest for ~200 m alongside the A4085 via a footway, crossing the Scheme through S112E (Waunfawr Road A4085 Underbridge) to reach its existing northern terminus. The portions of ProW Bontnewydd Rhif 26 and ProW Waunfawr Rhif 32 remaining to the west of the Scheme would be stopped-up at the Scheme's boundary.	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT18	~370 m after leaving Penrhos, ProW Waunfawr Rhif 31 would join ProW Bontnewydd Rhif 26's diversion. It would be routed north along the eastern boundary of the Scheme for ~300 m to the A4085. It would then be routed northwest for ~200 m alongside the A4085 via a footway, crossing the Scheme through S112E (Waunfawr Road A4085 Underbridge) to reach its existing northern terminus. The portion of ProW Waunfawr Rhif 31 remaining to the west of the Scheme would be stopped-up at the Scheme's boundary.	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT19	~250 m after leaving the A4086 near to Kent, ProW Llanrug Rhif 36 would be diverted north-east along the Scheme's eastern boundary for ~150 m. It would cross the Scheme through S113A and then travel northwest for ~200 m to join its existing alignment. The portion of ProW Llanrug Rhif 36 to the west of the Scheme and south of Tydyn Bistle would cease to exist	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT20	The B4366 Roundabout would be moved east ~150 m to accommodate the B4366 crossing the Scheme over S115 (Bethel Road Overbridge). As the shared use path alongside the B4366 is currently only a proposal there is no cyclist/pedestrian crossing proposed at the new B4366 Roundabout.	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
EOT21	Road leading to Plas Menai National Outdoor Centre being realigned off Plas Menai Roundabout, NCN 8 cycleway would cross it (via an at-grade uncontrolled crossing) before it joins Y Felinheli. The net result of this is NCN 8's crossing being moved further from Plas Menai Roundabout.	Vol 1 Sec 12.5.2	Public Rights of Way Diversions (Appendix K of CEMP)				
Community and Private Assets							
Construction mitigation							
CPA1	Temporary land take returned to agricultural use where possible following construction	Vol 1 Sec 13.12.1	Detailed design				
CPA2	Provision of temporary or permanent access at the following locations: Geufron Farm - access to severed land from the lane to the south	Vol 1 Sec 13.12.1	Detailed design				
CPA3	Dinas Farm would be provided with an underpass and realigned access track to enable access to the severed land. There would also be height under the viaduct for passage by animals and some vehicles	Vol 1 Sec 13.12.1	Detailed design				
CPA4	Cefnwerthyd Farm would be provided with animal access under the viaduct, plus access under the Scheme adjacent to the railway	Vol 1 Sec 13.12.1	Detailed design				
CPA5	Pengelli Isaf would be provided with access to severed land east of the industrial estate. On the main holding, an underpass would be provided together with a new farm track to enable dairy cows and cattle to access land otherwise severed by the proposed Scheme.	Vol 1 Sec 13.12.1	Detailed design				
CPA6	Advance warning given to farmers to allow planning ahead for year in relation to crop loss and timing impacts						
CPA7	Care to avoid spreading soil and materials between different farms when the fencing is being erected at the start of the entry process, would minimise the limited risk of spreading diseases						
CPA8	Water provision would be maintained wherever possible and where severance is unavoidable, owners would be compensated to provide either temporary or permanent water supplies						
Operational mitigation							
CPA9	Considerations and provisions would be made as follows: Ty-Hen Farm - Land severed by the Scheme. Mitigated by provision of new PMA between main holding and local lane	ES Vol 1 Sec 13.12.2	Detailed design				
CPA10	Glanrafon Bach - Access to all parcels would be provided	ES Vol 1 Sec 13.12.2	Detailed design				
CPA11	Bryn Eden - Access to severed land parcel would be available from an existing access point or from a new access track proposed	ES Vol 1 Sec 13.12.2	Detailed design				
CPA12	Crug Nurseries - Lower parcel would be accessible from an existing gateway off the public highway	ES Vol 1 Sec 13.12.2	Detailed design				
Road Drainage and the Water Env.							
Construction mitigation							
RSW1	Production of emergency plan to include: Management of water that collects on site or within excavations	ES Vol 1 Sec 14.5.1	PCCP				
	Management of polluting substances that are being brought on site and used as part of the construction process (including appropriate measures for spillage containment and interception prior to discharge of runoff)						
	Working methods for working in close proximity, or within, watercourses and drainage ditches						
	Appropriate diversions / pumping / temporary crossings to maintain flow routes during construction						
RSW2	Minimise areas of exposed surface by only removing vegetation when necessary and keep gradients as shallow as possible to prevent large amounts of earth being washed away during periods of heavy rainfall. Areas that are exposed should be reseeded or surfaced as soon as practicable.	ES Vol 1 Sec 14.5.1	CEMP, PCCP				
RSW3	Avoid undertaking works during periods of high flow to prevent transportation of sediment downstream.	ES Vol 1 Sec 14.5.1	CEMP, PCCP				
RSW4	Enforce tight control of site boundaries including minimal land clearance and restrictions on the use of machinery adjacent to water bodies. Where possible, do not locate stockpiles within 10m of water bodies or drainage lines.	ES Vol 1 Sec 14.5.1	CEMP, PCCP				
RSW5	Capture site runoff in perimeter cut off ditches, settlement lagoons and/or settlement tanks where possible	ES Vol 1 Sec 14.5.1	CEMP, PCCP				
RSW6	Remove hydrocarbons and oils from surface water prior to discharge. Access around containers should be marked clearly to prevent collisions with machinery and rupturing of tanks, as well as any spills	ES Vol 1 Sec 14.5.1	CEMP, PCCP				
RSW7	Provide storage facilities and tanks and conduct refuelling of machinery within bunded areas, which should not be located within 10m of water bodies or drainage lines.	ES Vol 1 Sec 14.5.1	CEMP, PCCP				
RSW8	For works located within Zone 3 and in close proximity to watercourses it is recommended that the contractor prepares and implements a Flood Emergency Response Plan during the construction phase	ES Vol 1 Sec 14.5.1	CEMP, PCCP				
Operational mitigation							
RSW9	Swales and attenuation ponds are proposed to be unlined to maximise infiltration where possible. Where groundwater levels are less than 1m below the base of unlined conveyance or storage structures (or there is a specific risk to a nearby borehole / well), these will be lined with an impermeable layer to prevent pollution of groundwater or groundwater emergence into the structure	ES Vol 1 Sec 14.5.2	MEMP				
RSW10	spillage containment will be provided in carrier drains upstream of swales. A clear access corridor of approximately 4m, or another suitable distance agreed with NMWTRA, will be provided adjacent to all surface water management features to enable maintenance	ES Vol 1 Sec 14.5.2	MEMP				
RSW11	Ongoing maintenance: New and existing surface water management features including swales and detention basins to be maintained	ES Vol 1 Sec 14.5.2	MEMP				
RSW12	Highway drainage including swales, silt traps, gully pots and filter drains to be maintained	ES Vol 1 Sec 14.5.2	MEMP				
RSW13	New culvert crossings and watercourse diversions to be monitored and maintained	ES Vol 1 Sec 14.5.2	MEMP				
Other							
Communications & Public Liaison							
OTH1	Information provision and communication with local communities, including forewarning of especially noisy works expected in the area and expected durations.	ES Vol 1 Sec 11.5.1	Communications Plan				
OTH2	Develop and implement a stakeholders communications plan which includes community engagement before work commences on site	ES Vol 1 Sec 5.5.1					
Lighting							
OTH3	Construction site lighting limited to specific locations where it is absolutely necessary for public safety or security. Light spill to be minimised by directing lighting downwards onto rather than across areas.	ES Vol 1 Sec 8.5.4	Lighting design				
