Environmental Action Plan

Project name	Shoreham Adur Tidal Walls
Project 1B1S reference	IMSO000648
Region and Area	South East
Date	December 2021
Version number	P29
Author	Mott MacDonald

Revision history

Revision date	Summary of changes	Author	Version number
16-12-21	Minor revision based on updates to the ER	S Connolley	P29
10-12-21	Revision in line with ER and s28 revisions/ s61 constraints / FRAP/ PRoW /	S Connolley	P28
11-11-21	Updates made to EAP in line with Environmental Report		P27 Draft
10-03-21	Updates made to Section A6.2 in line with Environmental Report		P26 Draft
05-02-21	Construction Phase update No 19		P25 Draft
04 10 2018	Construction Phase update no 17	G Langler	P24

EAP Approvals

Name	Signature	Title	Date	Version
		NEAS		**P27-28**
C Dutton		NEAS		P26
C Dutton		NEAS		P23

Distribution

Name	Title	Date	Version

Purpose

This Environmental Action Plan (EAP) summarises the actions required to implement the environmental mitigation and outcomes contained within the Environmental Statement (ES) that has been prepared following Environment Agency Operational Instructions. It sets out specific objectives and targets defining the way in which we wish the ES and its relevant findings to be addressed during the implementation phase of the project (detailed design, construction and post-construction phases). It also details roles and responsibilities of those involved in the proposal and refers to all **temporary** and **permanent** works.

These actions form part of the contract documentation and must be adhered to.

Roles

Each action in the table below has **a** named individual from the environmental site team who is responsible for ensuring that the action is implemented. It is ultimately the contractor's responsibility for ensuring the EAP commitments, which may include planning conditions, are delivered.

The National Environmental Assessment Service (NEAS) are responsible for agreeing any changes to the EAP and for signing off, or agreeing to the signing off of, the actions.

The contractor and Project Manager are responsible for advising NEAS on any changes to method statements or the planned construction work as these may result in changes to the EAP or additional consultation with statutory consultees. NEAS will assess the significance of these changes and determine the appropriate course of action.

Site practices shall conform to the EAP. Any additional environmental management actions arising from subsequent consultations must be agreed by the project team. Project designs shall include suitable provision to mitigate negative environmental impacts during temporary works, permanent operation and maintenance.

The personnel involved in administering the EAP are set out below. The named individuals are subject to change and confirmation.

- Environment Agency Project Manager (EAPM): Will Culley
- Environment Agency NEAS Senior Environmental Project Manager (SEPM) (NEAS Officer): Tania White
- Designer's Project Manager: Graham Wallace (MM)
- Supervisor's Representatives on site (Supervisor): TBC
- Engineering Construction Contract Project Manager (ECC PM): Deb Nutt
- Contractor's Project Manager on site: Sean Deal
    - Contractor's Environmental Manager: Lucinda Farrington-Parker Lucinda.Farrington@volkerstevin.co.uk>
    - Contractor's Ecologist: TBC
- Environmental Clerks of Work (ECW): Bob Antonini (JBA)
    - Ecological supervision: TBC
    - Landscape supervision: Peter Martin (Landscape Contracts Manager & LCW)

The Contractor is also responsible for implementing good environmental practice on site, in line with their own EMS and MTR. The ECW will monitor adherence to the EMS. Typical issues include:

- Any working hour restrictions;

- Dust suppression measures;
- Traffic management;
- Site waste management;
- Materials management;
- Maintenance of the carbon calculator;
- Vehicle maintenance and management;
- Pollution prevention and control (including storage, refuelling and incident response);
- Response procedures eg services strike, contaminated land;
- Hazardous materials handling and storage;
- Noise management; and,
- Securing and delineation of working areas including signage.

Environmental Audits

The appended template should be used when undertaking any site audits during construction. Such audits can be undertaken by NEAS Environmental Project Managers (EPM) or delegated by NEAS to the ECW or other individuals. Technical assistance can be obtained from functional staff as appropriate. Site audits can potentially highlight good practice and can be separate to the review of EAP actions as undertaken in progress meetings. They do not replace the regular checks undertaken by the ECW during the works; no set template has been provided for this.

Environmental Incident Reporting system

All environmental incidents must be reported to the Environment Agency Incident Hotline 0800 80 70 60 as per the Environmental Incident Reporting Poster at the earliest opportunity and then to the ECC Project Manager, Site Supervisor, Environment Agency Project Manager and Environment Agency NEAS Environmental Project Manager. In addition, near misses must be reported via the hotline where there was/is the potential for a significant impact and where lessons can be learned.

Initial reports for such incidents and near misses must be followed by a written report using the contractor's in-house forms. This must include the following information (project/location, date, contractor, NIRS reference number, details of what happened, cause of incident, lessons learned). This final and comprehensive investigation report is to be provided by the Contractor to the ECC Project Manager, Environment Agency Project Manager and Safety, Health and Environment Manager within 14 days.

Summary of scope of works

The EAP has been produced to address the environmental requirements of the ES for remedial construction works further to completion of the Shoreham Adur Tidal Walls Scheme(the 'Scheme'). The Shoreham Adur Tidal Walls Scheme consisted of seven reaches on the west bank (Reaches W1 – W7) and three reaches on the east bank (Reaches E1 – E3) of the River Adur within Shoreham-by-Sea. The remedial works consist of correction of seepage at 0.2km of defences on the west bank in a section extending from the Network Rail Bridge north toward Shoreham Toll Bridge. The proposed additional construction works include vegetation clearance, removal and reinstatement of the footpath and installation of vertical steel sheet piling within the footprint of the existing chalk embankment.

Relevant contact details

Project Sponsor	Russ Long
Project Executive	Nicola Smith External: 07920 297 543
Project Manager	Will Culley External: 07470 062 235
NEAS	Tania White External: 07780 22 64 87
ECW	Bob Antonini JBA
Contractor	Sean Deal Volker Stevin 07701 08 65 69
Site Supervisor	TBC

Environmental Action Plan

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
Pre-construction							
A1 General							
A1.0							
A1.1	**To ensure that the works are undertaken in line with the requirements of the EAP with minimum environmental impact**	*Appoint an Environmental Clerk of Works (ECW) for the duration of the works. This must comprise distinct allocation for Ecological Supervision of ecological issues, and Landscape Supervision of the hard and soft landscape works. The personnel undertaking these roles must be appropriately qualified and experienced.*	*W7*	*EA PM (via ECC PM)*	*MTR*	*Ongoing*	
A1.2	**To comply with Waste Management Licensing Regulations (WMLR)**	*To produce CL:AIRE code of practice declaration or apply for relevant waste management exemption.*	*W7*	*Contractor*	*N/A*	*Ongoing*	
A1.3	**Location of material/ storage areas**	*1. Contractor to confirm the compound locations with the Environment Agency (EA) Project Manager (PM) prior to starting works on site.* *2. Early confirmation is required to enable any necessary environmental assessment/ mitigation e.g. ecological, archaeological to be completed prior to construction.*	*W7*	*1. Contractor confirms locations* *2. Contractor undertakes all necessary assessment and consultation and obtains all required approvals for alternative locations from those specified in the Environmental Report .*	*ESA*	*Ongoing*	

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A1.4	**To ensure works in sensitive areas are carried out following good working practices and reducing environmental impacts**	*Produce and gain acceptance and/or approval for method statements to reduce environmental impacts within sensitive areas within the working area including:* 1. *Ecological Toolbox Talks and site staff register of Talk attendance;* 2. *Traffic Management Plan* 3. *Pollution Response Plan for acceptance by Employer;* 4. *Dust Management Plan, for approval by the Employer,* 5. *Piling Risk Assessment, for acceptance by Employer;* 6. *Site Waste Management Plan, for acceptance by Employer;* 7. *Environmental Risk Register, for acceptance by Employer; and,* 8. *Staff site induction programme, for acceptance by Employer.*	*W7*	*1 Designer re s28 assent / buildability .Contractor with support from ECW / Contractor ecologist* *3. Contractor* *4. Contractor* *5. Contractor* *6. Contractor* *7. Contractor* *8. Contractor*	*ES* *ER (Remediation works assessment)*	*Ongoing*	
A1.5	To ensure the works are considered lawful development in accordance with The Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended).	*Produce and gain acceptance and/or approval of application for a Lawful Development Certificate for the proposed remediation works.*	*W7*	*Designer*	*Certificate of Lawfulness Application*	Await acceptance from LPA upon submission of Certificate of Lawfulness application	
A2 Air Quality							
A2.1	**To control fugitive construction dust**	*No Action*	*W7*	*N/A*	*N/A*	*N/A*	

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A3 Historic Environment							
A3.1	**No Action**	*No Action*	*N/A*	*Designer*	*ER (Remediation works assessment); and* *NEAS consultation during design development*	*N/A Closed out by consultation with EA Sen Heritage Officer NEAS*	*2021*
A4 Nature Conservation							
A4.1	**Schedule 1 breeding bird surveys**	*No Action*	*N/A*	*Contractor (ECW)*	*ER (Remediation works assessment)*	*N/A No vegetation clearance required and works not anticipated to result in disturbance with implementation of mitigation.*	
A4.2	**Pre-felling bat inspection**	*No Action*	*N/A*	*N/A*	*N/A*	*N/A No relevant habitat as identified in updated baseline site visit*	*N/A*
A4.3	**Gain approval for works within and adjacent to SSSI**	*No works are to proceed until CROW Assent has been granted by Natural England. All works must be undertaken in accordance with the s28 application.* *Where method statements for works within and adjacent to SSSI include changes to the working methods proposed in the ESA, further acceptance by Employer and approval by Natural England must be obtained.* *Where there are any changes to the works footprint, timing and methods as outlined in the CROW Assent, this may require re-application for CROW Assent which is likely to take at least 6 weeks and therefore could delay*	*W7*	*Designer (Motts are accountable to s28 consenting by agreement)*	*ER (Remediation works assessment)*	*CRoW Assent Application*	

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		works.					
A5 Landscape and Visual Effects							
A5.1	**Development of butterfly bank design and management plan and re-use of material plan in agreement with Contractor and client**	*To provide butterfly bank enhancement to the embankment design and addendum to LHMP for grazing or strimming management (herbicides at last resort to control invasives or prevent domination of tall ruderals)*	*W7*	*Designer*	*LHMP and updated CE scope*	*urgent*	*N/A*
A5.2	**PRoW consent**	*Obtain PRoW consent for closure during works (in which a requirement is inherent to reinstate to same or better standard, by agreement of LPA)*	*W7*	*Designer consenting, ownership changed to Contractor Nov 21. Designer to align EAP with outcomes from Consenting process obtained by* *Designer to assist with minor changes where IPA agree provision of litter collection.* *Contractor to obtain PRoW consent*	*Submit surfacing and before and after illustration with MS*	*Meeting with Nicholas Scott ProW Principle Officer and TL West Sussex 261121.* *Volkerstevin preparation of application underway, for submission prior to 14 Dec 21 (6 month closure for 14 Feb 22 to 14 Aug 22). Diversion to east bank of Adur. Signage Norfolk Bridge.* *Further action: Notify District Council to notify residents. PRoW team to advertise is local papers in Dec-21 January 22*	

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A6 Noise and Vibration							

A6.1	**To minimise noise impacts on landowner, residents and users of the reaches.**	*Site operations to be designed to minimise noise emissions wherever possible:* ▪ *Local residents and stakeholders must be kept fully informed about timing and the nature of any noisy works including compound locations and any traffic management (works will be advertised on site and in local newspapers as PD)* ▪ *The Contractor must comply with the Considerate Contractors Scheme and a representative should be on site to answer any queries* ▪ *Temporary hoarding around the site to be in place where works are close to residential and business by agreement* ▪ *Works to be undertaken between 07:00 – 20:00 Monday to Friday. Piling works and any works with potential to result in noise levels above 70db will be undertaken from 28th March 2022 between the hours of 08:00 – 18:00. Impact pile driving will occur only by exception and last resort for a maximum of 2 hours per day to pile through obstructions.. It is not expected that there will be a need to complete any works at night.* ▪ *No working on Saturdays, Sundays or bank holidays except in exceptional circumstances and with prior arrangement with Adur and Worthing Councils.*	*W7*	*Designer is obtaining s61 consent* *Contractor*	*Consent under Section 61 of Part III of The control of Pollution Act 1974*	*S61 Application*	

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A6.1.2	**To minimise noise impacts on landowner, residents and users of the reaches.**	*A Construction Noise Management Plan (CNMP) is to be produced for acceptance by the Employer and will be produced as part of the Construction Phase Plan (CPP).*	*W7*	*Designer*	*Consent under Section 61 of Part III of The control of Pollution Act 1974*	*S61 Application*	

A6.1.3	**To minimise noise impacts on landowner, residents and users of the reaches.**	*In accordance with Consent under Section 61 of Part III of The control of Pollution Act 1974, good practice measures are to be implemented where practicable and include:* • *The site compound will be arranged in such a way to reduce potential noise impacts.* • *All equipment is to be fitted with effective exhaust silencers, maintained in good repair and in accordance with the manufacturer's instructions, and operated so as to minimise noise emission;* • *Silenced compressors, or other alternatives accepted by the PM/Supervisor, are to be used, and any parts fitted by the manufacturer for the purpose of noise reduction is to be well maintained;* • *Machinery that is used intermittently is switched off when not in use, or where this is impractical it is throttled back to a minimum;* • *Stationary equipment e.g. pumps, compressors, generators, are situated as far as practical from residential property, and where appropriate, acoustic screens are erected around them;* • *Avoiding unnecessary double handling of any excavated material wherever practicable and drop heights will be minimised when loading vehicles with rubble;* • *Vehicles and plant will be maintained in a good and effective working order and*	*W7*	*Designer is obtaining s61 consent* *Contractor*	*Consent under Section 61 of Part III of The control of Pollution Act 1974*	*S61 Application*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		operated in a manner to minimise noise emissions; • *Where practicable, HGV and site vehicles will be equipped with broadband, non-tonal reversing alarms;* • *Engine compartment doors will be kept closed, and plant turned off when not in use;* • *Occupiers of adjacent properties, the relevant local councillors and the local authority environmental health officer will be informed by the Contractor at least 14 days in advance of the works taking place, including the duration and likely noise and vibration effects.* • *Signs will be displayed within the site to raise awareness of noise-sensitive neighbours and to stress the importance of noise and vibration control.* • *Site personnel will be instructed to minimise unnecessary noise and vibration as part of their training prior to specific work activities;* • *All site works are supervised, so as to prevent any unnecessary noise and vibration;* • *Sub-contractors and suppliers will be made aware of the environmental constraints of the site and made to follow the necessary procedures to minimise vibration levels;*					

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A6.1.4	**To minimise noise impacts on landowner, residents and users of the reaches.**	*Advertising works in 2 local papers. Landowners engaged through meetings. And agreements made. Activity to communicate with Ricardo's required / further meeting with landowners and airport managers required in December 2021.*	*W7*	*Designer / Contractor*	*N/A*	*Ongoing*	
A7 Soils and Ground Conditions							
A7.1	**To minimise disturbance of asbestos within buildings to be demolished**	*No Action*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
A7.2	**To prevent contamination of the secondary and principal aquifer during installation of sheet pile wall**	*No Action*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
A8 Water Environment							
A8.1	**To minimise any potential impacts on water quality during construction**	There will be CCTV of a filter drain to ensure no damage on completion (after site works in vicility). If damaged, this will be repaired under strict SHEWCoP and MTR site management protocols	*W7*	*Contractor*	*N/A*	*Ongoing*	
A8.2	**To minimise any potential impacts on flood risk during construction**	*1. A Flood Risk Activity Permit (FRAP) is to be obtained for all works within 16m of a tidal river prior to works commencing.* *2. If required under the FRAP, a Flood Evacuation Plan for Construction sites to be prepared, for acceptance by the Employer, in conjunction with registration for the Environment Agency's Flood Warnings service.*	*W7*	*1. Contractor (FRAP - temporary works)* *1. Employer (FRAP - permanent works)* *2. Contractor*	*Action in progress with Contractor. PSO team notified*	*Urgent action (3 month turnaround for bespoke FRAP).*	

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A9 Material Assets							
A9.1	**Production of a Site Waste Management Plan (SWMP)**	*Produce a SWMP to ensure appropriate waste management activities specific to the Scheme are provided.* *The SWMP is to include the requirement for the Contractor to monitor and record resource-use efficiency and waste production.*	*W7*	*Contractor*	*Reference should be made to DTI (2004) Site Waste Management Plans: Guidance for Construction Contractors and Clients, Voluntary Code of Practice for guidance.*	*Ongoing*	
A10 Socio-Economics							
A10.1	**To minimise disturbance to the local community and users of the works area access route.**	*Notify all affected consultees of planned commencement of works and their expected duration including:* ▪ *All Statutory consultees* ▪ *Landowners* ▪ *Local residents and Businesses (via advertising)*	*W7*	*Contractor. Notification to Statutory consultees (Natural England, etc.) to come via the Employer.*	*N/A*	*Ongoing*	
During construction							
B1 General							

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B1.1	**To ensure that works are undertaken in line with the requirements of the EAP with minimum environmental impact**	*All construction staff to attend environmental toolbox talks on the mitigation proposed for each reach. Staff to sign a register after attending a tool box talk, Updated talks or materials to be conveyed formally with sign off after staff changes/alterations to actions required.* *EAP report to be sent by Contractor's Site Manger and ECOW/LCW weekly for review by NEAS and PM.* *Reports to be made to NEAS or PM daily during Construction*	*W7*	*Contractor organises and maintains register. ECW /LCW supports.*	*ER* *EAP* *S28 Application* *S61 Application* *Certificate of Lawfulness*	*Ongoing*	
B1.2	**To minimise disturbance to human beings, and flora and fauna in the vicinity of works and access routes**	*Delineate works area and access routes:* ▪ *Clearly mark the boundaries of the works area before the start of works;* ▪ *Clearly mark the boundaries of the access routes prior to mobilisation;*	*W7*	*Contractor*	*N/A*	*Ongoing*	
B1.3	**To minimise impacts on local transport routes**	*1. Implement the approved Traffic Management Plan (TMP).* *2. Limit movement to approved access routes as specified in the approved TMP.* *3. Limit movements including deliveries to working hours (as per CNMP) and avoid peak traffic flows, where possible.*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor*	*TMP*	*Ongoing*	

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B1.4	**To minimise impacts on river navigation**	*1. Consultation with Shoreham Harbour Board to be carried out throughout construction particular on activities that could affect the river network.* *2. All vessel and pontoon movements to be agreed with Harbour board 3 months in advance, unless otherwise agreed with the Harbour Board* *3. Alternative access points to be provided and adequately signed when pontoon access is disrupted.*	*N/A*	*1. Contractor* *2. Contractor* *3. Contractor*	*N/A*	*N/A*	*N/A*
B2 Air Quality							
B2.1	**To minimise disturbance to the local community**	*1. Keep to agreed working hours (as per CNMP).* *Selection of low emission fuel and plant where possible- and by default* *Operation according to MTR 2021 and best practice e.g.. minimum idling. Observance of s61 noise profile commitments* *2. All plant and equipment to be properly maintained to maximum operational efficiency and operated in accordance with manufacturers recommendations to prevent burst pipes and any spills of hydraulic fluids* *3. Equipment is to be shut down when not in use for a period longer than 5 minutes*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor*	*N/A*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B2.2	**To control construction traffic movements.**	*Adhere to restrictions on the number of vehicles accessing site. Restrictions to be agreed via the Contractor.* *Contractor to agree TMP and PRoW arrangements with airport, further to site management plan and to gain consent (PRoW), submitting TMP to LPA is required*	*W7*	*Contractor*	*TMP (and relationship to PRoW arrangements and diversion)*	*Ongoing*	
B2.3	**To control fugitive construction dust: general**	*1. Record all dust and air quality complaints, identify causes and take appropriate action and record measures to reduced emissions.* *2. No idling vehicles.* *3. No burning of waste.* *4. Cover, seed or fence stockpiles to prevent wind whipping.* *5. Use enclosed chutes and conveyors and covered skips.*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor* *4. Contractor* *5. Contractor*	*IAQM 'Guidance on the assessment of dust from demolition and construction'*	*Ongoing*	
B2.4	**To control fugitive construction dust: demolition**	*No Action*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B2.5	**To control fugitive construction dust: earthworks**	*1. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.* *2. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Protocol to be confirmed with Contractor.* *3. Only remove the cover in small areas during work and not all at once. Protocol to be confirmed with Contractor.*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor*	*IAQM 'Guidance on the assessment of dust from demolition and construction'*	*Ongoing*	
B2.6	**To control fugitive construction dust: construction**	*1. Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.* *2. For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.*	*W7*	*1. Contractor* *2. Contractor*	*IAQM 'Guidance on the assessment of dust from demolition and construction'*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B2.7	**To control fugitive construction dust: track out**	*1. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.* *2. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. Avoid dry sweeping of large areas.* *3. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.* *4. Record all inspections of haul routes and any subsequent action in a site log book.* *5. Ensure timber navimat will be used for tracking of plant and machinery.* *6. Implement a wheel washing system. (no site water supply – obtain agreement).*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor* *4. Contractor* *5. Contractor* *6. Contractor*	*IAQM 'Guidance on the assessment of dust from demolition and construction'* *ES* *DMP*	*Ongoing*	
B3 Historic Environment							
B3.1	**No Action**	*No Action*	*N/A*	*Contractor*	*N/A*	*N/A*	*N/A*
B4 Nature Conservation							
B4.1	**To ensure that works are undertaken in line with the requirements of the EAP with minimum ecological impacts.**	*Ecological toolbox talks will be given to contractors prior to the works to make them aware of the legalisation afforded to protected species, and the working practices implemented to minimise impacts on the sensitive habitats and species within the*	*W7*	*Contractor to organise tool box talks.* *ECW / Contractor Ecologist to support.*	*ER (Remediation works assessment)*	*Ongoing*	

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		designated areas.					
B4.2	**Minimise disturbance to intertidal habitats.**	*All works to be carried out using sensitive working practices as outlined within EA guidance notes.*	*W7*	*Contractor*	*ES*	*Ongoing*	
		1. With exception of boundary fencing to prevent access to the saltmarsh as a desire line passing site, Construction activities are to be confined to the embankment crest and the landward side of the embankment. If construction works are required on the riverward face of the embankment the Contractor will first obtain permissions from the Employer. This would involve changes to the works outlined in the CROW Assent and may require re-application for CROW Assent which is likely to take at least 6 weeks and therefore could delay works.	*W7*	*1. Contractor* *2. Contractor* *3. Contractor*	*ER (Remediation works assessment)*	*Ongoing*	

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B4.3	**Minimise disturbance to the Adur Estuary SSSI**	*1. All works should adhere to any restrictions identified in the CRoW Assent.* *2. Measures should be implemented to minimise dust generation and adverse impacts on sensitive habitats within the SSSI (e.g. inspect all vehicles on arrival and wash all vehicles and equipment before leaving site if in close vicinity to sensitive receptors. Any washing facilities must be in an area separated from drainage in River Arun).* *3. No works shall be undertaken outside of the red line boundary within the SSSI boundary on the seaward side of the embankment. No storage of equipment or machinery is permitted within the SSSI. Where any permitted activity on the seaward side of the embankment are undertaken, e.g. installation of heras fencing to prevent public access, this should be supervised by an ecological clerk of works and avoid working between mid-high tide to minimise risk of disturbance to wintering birds.* *4. Works should follow CIRIA Pollution Prevention guidance to minimise the risk of construction related pollution incidents and contain any incidents, so they do not impact the SSSI.*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor* *4. Contractor*	*ER (Remediation works assessment)* *DMP*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B4.4	**Minimise disturbance to notable flora**	*1. Installation of heras fencing to prevent public access on the seaward side of the embankment shall be supervised by an ecological clerk of works to ensure placement of heras fencing supports does not impact notable saltmarsh flora.*	*W7*	*Contractor*	*ER (Remediation works assessment)*	*N/A*	
B4.5	**Minimise disturbance to breeding birds**	*No vegetation clearance required for works. Should this change, any vegetation clearance should be undertaken outside of the bird breeding season (March – August inclusive). If works need to complete during this period, a nesting bird check will be required immediately prior to any clearance by a suitably qualified Ecologist. Where nests are identified, works will be stopped immediately, and the ECW notified immediately. A no work zone would be erected to ensure all legal obligations are met. This would then remain in place until all young have fledged.*	*W7*	*Contractor* *ECW / Contractor ecologist to undertake nesting bird check where required*	*ER (Remediation works assessment)*	*Ongoing*	
		Noise assessments have identified that construction works have the potential a very low risk of disturb nesting Cetti's warbler within an area of scrub to the south of the site. To further reduce any potential noise levels to an acceptable level, the site compound will be placed at the southern end of works area and will be arranged in such a way to reduce potential noise impacts.	*W7*	*Contractor with support of ECW / Contractor ecologist*	*ES* *Bird Report* *ER (Remediation works assessment)*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		The proposals to install heras fencing at either end of the works presents a risk of bird strike and killing or injury of birds which may attempt to fly through the mesh fencing (applies to wintering and breeding birds). To minimise this risk, regular signage or other appropriate features should be installed on the heras fencing to make it more visible to birds.	*W7*	*Contractor with support of ECW / Contractor ecologist*	*ES* *Bird Report* *ER (Remediation works assessment)*	*Ongoing*	
B4.6	**Minimise disturbance to reptiles**	*1. No works or storage of materials, equipment or machinery shall occur on the unmanaged grassland on the seaward side of the embankment, or in the unmanaged grassland outside of the red line boundary.* *2. Existing managed grassland within the red line boundary shall continue to be regularly managed before and throughout the construction to avoid reptile habitat establishing. This shall include cutting and removing of arisings to maintain a short grass sward.* *3. Should any reptiles be found during the works, works will stop immediately, and the ECW notified immediately.*	*W7*	*Contractor to clear vegetation.* *Contractor (ecologist) to supervise.*	*ES*	*Maintain the low levels of vegetation to prevent the repopulation of the site boundary by reptiles.*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B4.7	**Minimise disturbance to wintering birds**	*Subject to consultation with Natural England, the placement of sound attenuation screening in accordance with BS 5228-1:2009+A1:2014 where practicable, will be used in discrete areas to reduce noise and visual impacts. If screening is not used due to wind force, noise dampened equipment will be investigated*	*W7*	*Designer to produce noise profile in collaboration with EA and contractor* *ECW / Contractor ecologist to support Employer and Contractor in liaison with Natural England.*	*ES* *Bird Report* *ER (Remediation works assessment)*	*No screening was required for the main works.*	
		Piling works and any other works which are likely to result in noise in excess of 70db at receptor shall only be undertaken from 28th March onwards to avoid disturbing wintering birds.	*W7*	*Contractor*	*ES* *Bird Report* *ER (Remediation works assessment)*	*Ongoing*	
		**Severe winter weather is defined, according to JNCC (2015): (when more than half of [the scheme] meteorological stations (in England) have recorder frozen conditions for seven consecutive days (but allowing for short periods of thaw).*	*W7*	*Contractor*	*ES* *Bird Report* *ER (Remediation works assessment)*	*Modify further to s28 conditions when received. This will include a consideration of stoppage during certain cold weather conditions in regard to foraging time*	
B4.8	**Minimise disturbance to retained trees**	*No Action*	*N/A*	*Contractor*	*N/A*	*N/A*	*N/A*
B4.9	**To reinstate habitats affected by construction**	*All habitat will be reinstated in and surrounding working areas immediately following construction.* *Should this have further actions referencing control of invasive species, implementation of landscape scope. Use of herbicides will be a last resort to control invasive species and tall ruderal dominance.*	*W7*	*Contractor under supervision of ECW landscape.*	*ER (Remediation works assessment)* *S28 Application*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B4.10	**To prevent harm or injury to fish and to minimise disturbance to fish and marine mammals.**	*N/A No piling works within water column.*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
B5 Landscape and Visual Effects							
B5.1	**Visual appearance of works area, compounds and access routes**	*1. Keep working area compact and tidy.* *2. Ensure temporary lighting levels and direction of lighting does not cause visual intrusion at properties.* *3. All materials and machinery to be stored in compound area.* *4. Receive materials as and when needed (where feasible) to avoid unnecessary stockpiles.*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor* *4. Contractor*	*ER (Remediation works assessment)*	*Ongoing*	
B5.2	**To ensure that the works are undertaken in accordance with the landscape proposals and a Landscape and Habitat Management Plan**	*2. All planting to be of local provenance, where feasible.* *3. Any planting removed is to be replaced with appropriate species as agreed with the Employer.*	*W7*	*1. Contractor, with supervision from ECW landscape.* *2. Contractor, with support of ECW landscape.*	*ES* *ER (Remediation works assessment)* *Butterfly Bank CE*	*Ongoing*	
B6 Noise and Vibration							
B6.1	**To minimise disturbance to the local community**	*Contractor to apply for Section 61 consent under the Control of Pollution Act 1974.* *Keep to agreed working hours.* *Adopt best practicable means to reduce noise impacts as defined in the Control of Pollution Act 1974, including the employment of good site practice to minimise noise and vibration impacts from the works.* *All plant and equipment to be properly maintained and*	*W7*	*Contractor (all)*	*ES* *ER (Remediation works assessment)*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		operated in accordance with manufacturers recommendations. *Equipment is to be shut down when not in use for a period longer than 5 minutes.* *Deliveries will only arrive during daytime hours, preferably during the working hours of the site* *Where the construction site is adjacent to noise-sensitive receptors, the plant and activities should be reviewed to ensure they are the quietest available for the required purpose.* *When a site is in a residential environment, lorries should not arrive at or depart from the site at a time inconvenient to residents.* *When appropriate, screens or enclosures should be provided for equipment. This is understood to be limited as wind force is strong on embankment crest. minimize disturbance to occupants of nearby premises.*					
B6.2	**To reduce noise levels at the source**	*Contractor to apply for Section 61 consent under the Control of Pollution Act 1974.* *Works noise to be monitored for conformance by ECOW present from start and throughout. ECOW to liaise daily at a minimum with site manager, and provide regular toolbox talks re noise and related conditions. Ensure site staff are all aware and sign to understanding of*	*W7*	*Designer (all) / Contractor*	*ER (Remediation works assessment)*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		noise constraints *Sources of significant noise should be enclosed and used correctly and according to mitigation committed within the s61 noise profile information. Plant types, phases and methods accompanying plant use to mitigate radius of transmission should confirm to commitments made in the s28 assent.* *Materials suitable for constructing enclosures are listed in Annex B of BS 5228* *Refer to working hours for less noise generating works, to hours constraining piling activity. To further constraints on impact pile driving (max 2 hrs per (week)day at last resort and by exception to drive through obstacles.* *Works will be subject to cold weather stoppage clauses within the Conditions of the SSSI s28 assent – requirement to confirm with these Conditions* *In reference to low value potential Cetti's warbler habitat adjacent to the site compound, please refer to page 14 of the s28 application. To minimise the risk of disturbance, site compound will be located at the southern end of the works area and will be arranged in such a way to reduce potential noise impacts.* *Avoid unnecessary revving of engines and switch off equipment when not required.*					

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		For steady continuous noise, such as that caused by diesel engines, it might be possible to reduce the noise emitted by fitting a more effective exhaust silencer system or by designing an acoustic canopy to replace the normal engine cover. *Keep internal haul routes well maintained* *Use rubber linings in, for example, chutes and dumpers to reduce impact noise.*					

		Minimise drop height of materials. *Soft start plant to avoid startle.* *Run on revs that minimise noise disturbance (sufficient for task)* *Start-up plant and vehicles sequentially rather than all together. Machines which are used intermittently should be shut down between work periods.* *The movement of plant onto and around the site should have regard to the normal operating hours of the site and the location of any Noise Sensitive Premises (NSP) as far as is reasonably practicable. In addition, plants from which the noise generated is known should be orientated so that the noise is directed away from noise-sensitive areas.* *Noise caused by resonance of body panels and cover plates should be reduced by stiffening with additional ribs or by increasing the damping effect with a surface coating of special resonance damping material to minimise direct metal-to-metal contact.* *Noise from existing plant and equipment may be reduced by modification or by the application of improved sound reduction methods.* *Care should be taken to site equipment away from noise-sensitive areas.*					

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		If compressors are used, they should have effective acoustic enclosures and be designed to operate when their access panels are closed. *Regular and effective maintenance of plant and machinery by trained personnel.* *Avoid noisy processes by increasing the distance between the noise source and sensitive area or introduce noise reduction screens, barriers or bunds.* *Site layout is important for screening. Site compounds that include offices and stores can be grouped together to form a barrier separating site operations and nearby noise sensitive receptors. Please refer to EAP condition B4.5 for further information.*					
B6.3	**To minimise vibration from surface based activities**	*1. Designer to apply for Section 61 consent under the Control of Pollution Act 1974.* *2 Reduce transient phases for variable moment piling.*	*W7*	*1. Designer* *2. Contractor*	*ER (Remediation works assessment)*	*Ongoing*	
B7 Soils and Ground Conditions							

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B7.1	**Minimise ground contamination risk to site workers**	*1. Contractor should implement safe systems of working that minimise exposure to contaminants* *2. Workers should be made aware of the risks through toolbox talks before undertaking any works* *3. All site operatives should be fully trained and there should be a trained and responsible manager on site*	*W7*	*1. Contractor* *2. Contractor* *3. Contractor*		*Ongoing*	
B7.2	**Minimise ground contamination risks to general public and local residents**	*No Action*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B7.3	**To prevent soil quality deterioration in areas of excavation and embankment construction**	*Landscape Clerk of Works to review construction methodology and reinstatement.* *Where temporary works are proposed, soils will also be stripped and then reinstated upon completion of the construction period.* *Soils will be stripped, handled, stored and reinstated using best practice procedures, in accordance with appropriate guidelines, such as DEFRA's 2009 'Code of Practice for the Sustainable Use of Soils on Construction Sites' or alternative best practice procedures which are to be outlined during the design of the proposed butterfly bank. Best practice procedures may include topsoil and subsoil stripping, stockpiling and placing.* *Residual gaps will be seeded with same or equivalent seed mix agreed by Client, in accordance with Scope and Landscaping MTR* *Landscaping care will be provided by Contractor for 1 year and care should provide establishment as congruent with good practice. Approval by LCW required and weekly update to be provided to LCW.*	*W7*	*Contractor* *Designer*	'Code of Practice for the Sustainable Use of Soils on Construction Sites' (DEFRA, 2009) *ER (Remediation works assessment)* *Butterfly Bank CE*	*Ongoing*	
B7.4	**To minimise disturbance of asbestos within buildings/structures to be demolished**	*No Action*	*N/A*	*N/A*	*Buried asbestos pipe as identified in Drawing No. IMSO00648-MMC-01-W7-DR-C-2711*	*N/A*	*N/A*

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B7.5	**To prevent contamination of soils through contaminant mobilisation during excavations or accidental spills and leakages of hazardous substances.**	*Hazardous substances, including contaminated land, fuels, chemicals, waste and construction material, will be stored, handled, transported and disposed of in accordance with relevant legislation and best practice guidance for mitigation of spillages and leaks. Measures to be applied include the appropriate use of safe storage containers, labelling of containers, the secure storage of containers and regular checks for leaks, bunding to be used where appropriate* *Should any unexpected contamination be encountered during the construction works, all works will cease whilst an assessment of the level and extent of contamination is undertaken. In all cases where contamination is identified, risk assessment will be undertaken to determine if remediation is required. Any clean-up will be conducted as part of the construction works.* *Non-intrusive UXO survey methods will be trialled using UXO magnetometer probe to preceede piling, or to probe ahead of piling in tandem. Risk is need to cut off pile rather than risk vibration or impact of ferric. Method in review in consultation with Brimestone.*	*W7*	*Contractor (all)*	*ES* *ER (Remediation works assessment)* *SHEWCoP* *MTR* *SWMP* *Model Procedures for the Management of Contaminated Land, Contaminated Land Report 11. (Environment Agency, 2004)* *Managing and Reducing Land Contamination: Guiding Principled for Land Contamination, LIT 4338 (Environment Agency, 2010).*	*Ongoing*	
B7.6	**To reduce the amount of waste soils**	*The generation and disposal of surplus or unsuitable soil materials is to be avoided as far as practicable by adoption of the guidance published in CL:AIRE*	*W7*	*Contractor (all)*	*SWMP*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		'The definition of waste: development industry code of practice'. *Disposal of waste materials unavoidably generated during construction is to be disposed of via licensed waste contractors to appropriate disposal sites in accordance with the Site Waste Management Plan.* *Any waste soils generated on site that are suitable are to be reused where possible. Waste generated on site is to be stored safely in designated areas and in appropriate containers in accordance with the Site Waste Management Plan.*					
B7.7	**To reduce the risk of spreading unknown contamination.**	*No Action*	*W7*	*N/A*	*N/A*	*N/A*	*N/A*
B8 Water Environment							
B8.1	**To minimise potential impacts of sediments on water quality during construction operations.**	*No Action*	*W7*	*N/A*	*N/A*	*N/A*	*N/A*

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B8.2	**To minimise any potential impacts of other contaminating materials on water quality during construction.**	*Implement rigorous adherence to appropriate methods for working over and adjacent to water, including specific appropriate checks and controls associated with higher risk activities commence, including:* • *Refuelling of plant; and* • *Guarding against damage or contamination at filter drain;* *Any repair to the filter drain to be specifically assessed for contamination pathways by a waste and contamination specialist if this risk is realised.* *Waste water from site welfare facilities shall either be discharged to the mains foul sewer with consent from Southern Water, or taken off site for appropriately licensed treatment.* *All on-site plant with hydraulic systems working in, over or in close proximity (<10 metres) to watercourses or vulnerable groundwater zones must use biodegradable hydraulic oil. Exceptions to this, for specialist plant, must be justified and the pollution risk assessed by the Contractor and approved by the Employer.*	*W7*	*Contractor*	*Environmental good practice on site (CIRIA, 4th Edition, 2015)* *Control of water pollution from construction sites – guide to good practice (CIRIA, 2002)* *Control of water pollution from linear construction projects (CIRIA, C648, 2006)*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B8.3	**To minimise any contribution to flood risk during construction.**	*Register with the EA flood incident management team for notification of flood warnings.* *The Construction Method Statements and the requirements of the FRAP shall be closely adhered to.*	*W7*	*Contractor*	*Construction Access Report, Jackson Hyder and EA (2015)* *Construction Methodology Report, Jackson Hyder and EA (2015)*	*Ongoing*	
B8.4	**To prevent permanent impacts to drainage systems disturbed by the works.**	*Any drainage system disturbed must be reinstated and replaced to at least their pre-construction standard.* *Additionally, any drainage system that is assessed and found to be disturbed will be replaced, as agreed by the client.*	*W7*	*Contractor*	*N/A*	*Ongoing*	
B9 Material Assets							
B9.1	**To minimise the amount of waste taken to landfill.**	*Follow the waste hierarchy with actions for reuse, recycling, recovery and disposal. Reference should be made to the SWMP to ensure full compliance.* *Consideration must be given to potential waste streams in advance of excavation – at Contractors risk. All potential elements must be highlighted explicitly to Client for review of proposals / SWMP and Claire arrangements, by Waste team.*	*W7*	*Contractor*	*Guidance outlined in CIRIA's (2015) Environmental Good Practice on Site Guide (4th edition)*	*Ongoing*	
B9.2	**To avoid the risk of localised contamination**	*Store all containers of material, such as oils and paints, in a bunded area (away from traffic flow)* *Site layout to have adequate space to handle materials safely, and risk of localised contamination should be*	*W7*	*Contractor*	*Follow best practice guidelines, to avoid the risk of a pollution incident. / consider impact pathways and SSSI*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
		managed in a precautionary way (e.g. containment equipment anticipates co-occurring events) *Put control measures in place and/or local spill kits near to bulk stores and ensure they are accessible and fully stocked.* *Designate responsibility for hazardous materials storage, restrict and manage access.* *Store material so as to guard against breakage, vandalism or theft, and protect stores against flood damage or inundation.*					
B10 Socio-Economics							
B10.1	**To keep the local community and consultees informed of progress.**	*Site contact to be provided on signs outside working area.* *Advertising of PRoW closure to be implemented through PRoW closure/diversion application process* *Slippage to be highlighted with reference to impacts on consented parameters at earliest opportunity and prior to occurrence where reasonably foreseen*	*W7*	*Contractor*	*PRoW diversion application*	*Ongoing*	

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B10.2	**To minimise general disturbance to the local community and visitors to the area.**	*Keep working area tidy and compact.* *Dust suppression to be carried out e.g. during long periods of dry weather.* *Only essential construction plant to access works areas, all other non-construction traffic to park within the main compound area agreed with the Employer.* *Provide appropriate signage.*	*W7*	*Contractor*	*N/A*	*Ongoing – Priority for agreement with Employer with regard to Site Management and TMP*	
B10.3	**To minimise disturbance to human beings in the vicinity of the works and access routes.**	*Maintain working area/access route fencing for duration of the work*	*W7*	*Contractor*	*PRoW diversion application* *ER (Remediation works assessment)*	*Ongoing*	
B11 Carbon							

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
B11.1	**To reduce carbon emissions associated with the scheme.**	*Transportation of materials to site would prioritise low-carbon modes where possible;* *Where possible, low-carbon construction materials and products would be preferred;* *Where possible low-carbon construction plant and equipment would be used;* *Circular economy principles, such as Modern Methods of Construction, would be implemented, where possible* *Carbon MTR to be followed unless variation afgreed by Employer* *HVO non-palm oil plants to be utilised where possible* *Project to regularly review potential carbon reduction opportunities and consider this in progress meetings.*	*W7*	*Contractor*	*ER (Remediation works assessment)*	*Ongoing*	
Post construction							
C1 Landscape and Visual Effects							

Ref. No.	Objective	Action	Reach affected	Responsibility	Reference to Further Information	Progress and Further Action	Sign off and date
C1.1	**To preserve and enhance the character and appearance of the area.**	*Maintain the implemented landscape planting to ensure establishment and successful mitigation in accordance with maintenance requirements for a full five years.*	*W7*	*Contractor during defect period.* *Reference Landscape elements of Contractors scope and Designer specification of additional enhancements (Environment Agency to operate LHMP (adjusted by agreement of NE following reduction of original works impact) and remediation works addendum*	*ES + LHMP (adjusted by NE-EA agreement further to Construction impacts not realised as consented) LHMP addendum as relevant*	*Ongoing in progress.*	

Environmental Audit Record

Project	Shoreham Adur Tidal Walls (W7 remediation) / “SATW W7”	**Project ref.:**	TW to fill
Project Manager:	Will Culley	**NEAS EPM:**	Tania White
Location	Shoreham – River Adur West Bank at Brighton City Airport	**Grid reference**	NGR South to NGR North (10 fig)

Site Visit Audit Details

Visit During/Post Construction:		**Date of Visit:**		**Time of Visit:**	
Audit Officer:	? Julien Diaz <Julien.Diaz@volkerstevin.co.uk>	**Photos taken (y/n):**		**Referenced to Pre-Photos(y/n):**	

Does the Site Supervisor have an up to date copy of the EAP? Yes / No

General Comments

Ensure revisions agreed by all parties