

Welsh Government

M4 Corridor around Newport

Environmental Statement: Volume 1

Chapter 18: Environmental
Management

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18 Environmental Management

18.1 Introduction and Purpose

18.1.1 Environmental management during the construction of the proposed new section of motorway would be delivered through the development of a Construction Environmental Management Plan (CEMP). This would ensure that environmental issues associated with construction are appropriately identified, assessed, planned for and addressed in line with the requirements of the plan.

18.1.2 A Pre-Construction Environmental Management Plan (Pre-CEMP) has been developed during the EIA process and is provided as Appendix 3.2 of the Environmental Statement (ES).

18.1.3 The Pre-CEMP sets out the means by which the various construction activities would be managed to comply with the relevant environmental legislation and best practice to minimise effects on local residents and environmental receptors. Following publication of the draft Orders and the Public Local Inquiry, the Pre-CEMP would be developed into a full CEMP, which would be in place before construction begins. The CEMP would be incorporated as part of the Health, Safety and Environmental Management Plan (HASEMP) and would be managed as part of a bespoke Environmental Management System (EMS) during the construction period.

18.1.4 The CEMP is a 'live' document that would be regularly reviewed and updated where necessary during the construction process.

18.1.5 The purpose of the CEMP would be to:

- record environmental risks and identify how they would be managed during the construction period;
- provide a means of identifying environmental commitments, objectives and targets;
- provide a means of monitoring and reporting performance against the objectives and targets;
- provide a framework to ensure that all parties are aware of their responsibilities;
- establish a checklist of control procedures which must be integrated into the overall environmental management system;
- describe how construction activities would be undertaken and managed in accordance with the obligations of environmental legislation and policy, and the requirements of environmental regulatory authorities and third parties;
- provide detailed Environmental Action Plans for reducing the potential for environmental impacts during construction;
- define the activities that may require consents or licences;
- act as a link and main document reference for environmental issues between the design, construction and maintenance stages; and
- ensure the requirements of the Assessment of Implications on European Sites (AIES), ES and the Environmental Commitments Register are met.

18.1.6 The scope of the CEMP would cover all environmental effects associated with the construction of the proposed new section of motorway. The plans and processes set out in the CEMP would be relevant to all contractors undertaking work during the construction phase.

18.1.7 A separate Pre-CEMP would be prepared for the Complementary Measures that form part of the Scheme.

18.2 Environmental Management System

18.2.1 An Environmental Management System (EMS) would be established, which would be in compliance with the requirements of the Design Manual for Roads and Bridges (DMRB) and BS EN ISO 14001 (BSI, 2015).

18.2.2 The Pre-CEMP and other environmental management plans (for example, the Site Waste Management Plan) would form part of the EMS, all of which would be updated at least every six months. During construction, the CEMP would be the principal document for managing environmental compliance and best practice on site.

18.2.3 The EMS would be managed by the Environmental Clerk of Works (ECoW) and/or the Environmental Co-ordinator.

18.2.4 As part of the overall EMS, monitoring of the environmental performance of construction would be undertaken (e.g. against the Environmental Commitments Register) and reported upon both monthly and annually. During the aftercare period (see below) reporting would be undertaken annually.

18.3 Environmental Policy

18.3.1 The CEMP would be based on an Environmental Policy Statement. This is a declaration of intent to ensure that works are effectively managed, environmental impacts are minimised and the operation and environmental management of activities are subject to continual improvement. This would be achieved by proactively developing solutions to minimise environmental impacts during the construction period.

18.3.2 The policy would be implemented by adopting a number of principles, including the maintenance and improvement of the Environmental Management System to ensure that operations comply with all relevant environmental legislation. The list of principles is set out in the Pre-CEMP (see Appendix 3.2).

18.4 Environmental and System Monitoring

18.4.1 The Pre-CEMP sets out a series of control measures necessary to minimise the effects of the proposed new section of motorway, based on the measures proposed in this ES.

18.4.2 A key element of the full CEMP would be the development and implementation of a monitoring programme. The programme would be developed in consultation with the appropriate statutory consultees. It would be a key mechanism that the contractor would use to ensure compliance with relevant legislation, standards

and commitments. The objectives of the monitoring programme would be as follows.

- To determine whether the environmental measures have achieved or are achieving their intended purpose.
- To identify successes, failures or weaknesses in the application of these measures.
- To identify remedial measures required to achieve environmental requirements.
- To provide information for the production of performance reports required under the contract.
- To meet the mitigation requirements of the ES, the AIES and relevant consents, licences and permits.
- To ensure that the agreed environmental commitments as set out within the CEMP are being implemented.

18.4.3 Proposals for ongoing monitoring during the construction works for issues such as dust, noise nuisance etc., and monitoring of watercourses, would be incorporated within individual Environmental Control Plans contained within the CEMP and, where appropriate, actions would be incorporated into detailed work method statements.

18.4.4 Procedures for checking, auditing and corrective actions would include regular meetings and internal and external audits to review the operation and effectiveness of the CEMP. The CEMP would be monitored reported upon and updated on a regular basis as part of the overall monitoring for the Environmental Management System.

18.4.5 The monitoring programme would be included in the CEMP prior to the commencement of construction. Reporting and feedback mechanisms for the monitoring programme would be important and would be linked into the site management programme to ensure corrective actions are identified and actioned to prevent non-compliance occurring.

18.5 Roles and Responsibilities

18.5.1 The Project Manager would have overall responsibility for the construction of the new section of motorway. An Environmental Co-ordinator (ECO) would be responsible for the interface between the environmental specialists and engineers. The ECO would have primary responsibility for managing environmental issues through construction and post-construction monitoring phases and for obtaining relevant licences and consents.

18.5.2 The specific tasks would include the development and implementation of the CEMP and would include the following responsibilities.

- To develop the CEMP document and systems and maintain it as a working document, undertaking reviews and updates where required.
- To ensure commitments made in the Environmental Commitments Register are included in the environmental management system, CEMP and detailed environmental design.

- Co-ordinating and attending necessary meetings and consultations relating to the environmental and sustainable construction aspects of the works.
- To provide monthly reports on site environmental monitoring.
- To ensure environmental quality standards are adhered to and to monitor compliance during the detailed design and construction phases of the proposed new section of motorway.
- To periodically provide review reports, including monitoring data where appropriate, to consultees. These reports would indicate compliance performance with the CEMP and would provide assurance that a high standard of environmental protection is being maintained, as well as identifying the implications of failure to meet standards of mitigation, the reasons for this and remedial actions to be taken.

18.5.3 The ECO would be supported during the construction phase by the full time Environmental Clerk of Works and by a full-time Site Environmental Manager. The project team would also include the appointment of suitably qualified Environmental Specialists. The responsibilities of the Clerk of Works and Site Manager would be set out in the CEMP.

18.6 CEMP Contents

CEMP Structure

18.6.1 The full CEMP would comprise the following.

- The Environmental Policy.
- A register of appropriate legislation.
- An Environmental Aspects Register, which sets out the sensitive receptors and potential significant impacts of the proposed construction works.
- Environmental Control Plans based on the commitments set out in the ES (and later in the Public Local Inquiry) to mitigate the potential impacts.
- CEMP text and procedures: These would include reporting and monitoring mechanisms and management procedures, roles and responsibilities, maintenance programmes and procedures.

Other Documents

18.6.2 The CEMP would refer to a number of documents that would provide a framework for the construction of the proposed new section of motorway. These documents would include the following.

- The Environmental Commitments Register: An initial register (see Appendix 18.1) has been developed using data presented in the ES and would continue to be populated during the Public Local Inquiry process as required.
- A register of ongoing environmental monitoring programmes (e.g. water quality monitoring) and procedures. This would be based on information contained within this ES.
- Environmental Masterplan drawings (see Figure 2.6): A master set of drawings illustrating all the features of the landscape and required environmental design and mitigation measures.

- Method Reports or Method Statements, which describe the method of construction.

18.6.3 It is anticipated that a number of sub-plans would be developed and referred to in the CEMP, which would set out specific environmental requirements and would include the following.

- Environmental Masterplan.
- Environmental, Landscape and Ecology Aftercare Plan.
- Ground and Surface Water Management Plan
- Site Waste Management Plan
- Materials Management Plan.
- Construction Traffic Management Plan.
- Remediation Strategy.
- Dust Management Plan.
- Cultural Heritage Mitigation Plan.
- Sites of Special Scientific Interest Mitigation Strategy.
- Pollution Control and Prevention Plan.

18.6.4 Each plan would be implemented at an appropriate stage of the new section of motorway construction. A framework would be drawn up during detailed design to outline timeframes for implementation of each plan under the overall umbrella of the CEMP.

18.6.5 The CEMP would be monitored, reported upon and updated on a regular basis. This review process would involve consultation with statutory authorities where necessary.

18.7 Environmental Masterplan

18.7.1 The key environmental mitigation measures incorporated within the design of the Scheme are illustrated on the Environmental Masterplan drawings (see Figure 2.6), which is accompanied by a series of Cross Sections (see Figure 2.7). The Environmental Masterplan drawings have been prepared in accordance with the Design Manual for Roads and Bridges (DMRB) Volume 10, Section 0, Parts 1 to 8, which uses Environmental Functions, Landscape Elements, Environmental Elements and Planning Policy features to describe areas shown on the Environmental Masterplan drawings.

18.7.2 All mitigation measures have been ascribed a purpose or Environmental 'Function' and an associated Landscape or Environmental 'Element'. These are described as follows.

- Environmental 'Function': The intended purpose of features within the highway estate in environmental terms.
- Landscape 'Elements': Landscape features found within the highway estate, which can encompass both hard landscape features (i.e. retaining walls, hard surfacings) and elements of the soft estate (i.e. grasslands and woodlands).

- Environmental 'Elements': Non-landscape features of the highway estate that have environmental functions, i.e. noise attenuation measures, water quality controls, protected species, and legislated elements such as injurious weeds and pests.
- Planning Policy Features: Features pertaining to, or situated in close proximity to, the highway estate that have a specific designation or land use, i.e. Special Area of Conservation (SAC), Scheduled Monument.

18.7.3 The landscape and environmental design proposals forming the environmental mitigation for the proposed new section of motorway are fully described in Chapter 9 (Landscape and Visual Effects). The following Environmental Functions (EF) are referenced on the Environmental Masterplan drawings.

- Visual Screening (EFA).
- Landscape Integration (EFB).
- Nature Conservation and Biodiversity (EFD).
- Visual Amenity (EFE).
- Heritage (EFF).
- Auditory Amenity (EFG).
- Water Quality (EFH).
- Access (EFK).

18.7.4 Landscape Elements shown on the Environmental Masterplan drawings include Grassland (LE1), Native Planting (LE2) and Hedgerows (LE4). Environmental Elements include Auditory Amenity (E1), Water Quality (E2) and Nature Conservation and Biodiversity (E3).

18.7.5 In addition to a range of existing features including retained vegetation, watercourses and culverts, the Environmental Masterplan drawings also show a number of designated areas such as Scheduled Monument, Listed Buildings and Sites of Special Scientific Interest.

18.8 Environmental, Landscape and Ecology Aftercare Plan

18.8.1 The five year aftercare period following the completion of the construction of the proposed new section of motorway would be managed as described within the Environmental, Landscape and Ecology Aftercare Plan, which would form part of the CEMP. The plan would assist with the establishment of all new planting and other habitat creation areas formed during the construction of the new section of motorway as well as the ongoing effectiveness of other elements of environmental mitigation, including ecological fencing wildlife crossings. It would include the:

- protection, management and maintenance of existing vegetation;
- protection, management and maintenance of new planting and seeding;
- protection, management and maintenance of ecological measures, including habitat creation and species protection measures;

- habitat creation areas;
- summary schedule of activities and monitoring required including timetable;
- procedure for monitoring compliance;
- any relevant protected species licence requirements; and
- procedures for reporting on completion and establishment of measures during the aftercare period.

18.8.2 The environmental mitigation, including the requirements set out in the ES, the Assessment of the Impacts upon European Sites (AIES) and the Environmental Commitments Register, would be monitored on a regular basis throughout the five year aftercare period. It is anticipated that this would involve meetings at six monthly intervals with the Client and/or the Employer's Agent. In addition to these meetings an Interim Environmental Design Performance Report would be submitted to the Client/Employer's Agent on an annual basis. The report would document the performance of the environmental mitigation measures over the preceding 12 month period including any deficiencies in performance and measures to rectify as well as identify where mitigation has been successful. It would also include copies of any related correspondence received from environmental or other bodies pertaining to the performance of the environmental mitigation.

18.8.3 At the end of the five year aftercare period a Final Environmental Design Performance Report would be prepared which would draw together information within the interim reports and conclude on the overall performance of the environmental mitigation. It would include details of any measures necessary as part of an ongoing maintenance commitment and any undertakings given to Natural Resources Wales, adjoining landowners and others. The final report would be included with the Handover Environmental Management Plan as described in Section 18.9 below.

18.9 The Handover Environmental Management Plan

18.9.1 At the end of the five year aftercare period a Handover Environmental Management Plan (HEMP) would be produced which would set out the proposed strategy for the future maintenance and management of the environmental mitigation measures for the following 10 year period. The HEMP would describe how the Environmental Functions and corresponding Landscape and Environmental Elements for each area shown on the Environmental Masterplan would be achieved. It would also include a record of the previous maintenance operations and management systems undertaken during the preceding five year maintenance period, together with any problems encountered and recommendations for remediation.

18.9.2 The HEMP would also include the following.

- Strategies for the regular maintenance of areas shown on the Environmental Masterplan.
- A timetable for the implementation of each regular maintenance operation during a typical 12 month period, together with an overall 10 year timetable showing any variation to the regular maintenance tasks during the period of the HEMP and with any 20 year objectives.

- A timetable showing the anticipated date at which the Environmental Functions attributed to each area shown on the Environmental Masterplan would be achieved during the period of the HEMP.
- A timetable showing the regular monitoring requirements for the areas shown on the Environmental Masterplan, including those in relation to habitats and species and/or water quality.

18.9.3 Responsibility for maintenance and ongoing management of the new section of motorway would pass to the South Wales Trunk Road Agency. The HEMP would comprise an annotated and updated set of documents (including the CEMP, ES and baseline studies as appropriate), which are likely to be accompanied with the environmental and landscape maintenance procedures, results of monitoring and copies of any non-compliance sheets/enforcement actions.