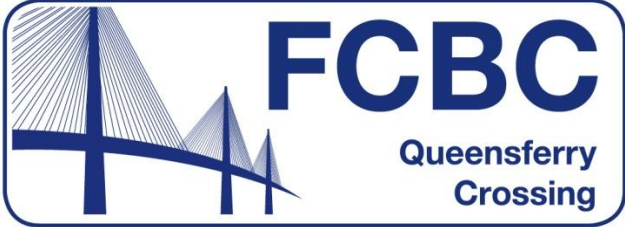




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Project **FORTH REPLACEMENT CROSSING**

Document title

**ENVIRONMENTAL MANAGEMENT PLAN:
IMPLEMENTATION AND OPERATION**

07	22/01/2016	General Review – no change.	MRN	SWR	CGR
06	16/11/2015	General Review – no change.	SWR	CGR	CGR
05	28/01/2015	Amendments following ISO 14001 Audit	SSN	LSN	LSN
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03	22/11/13	Interim working draft	ESE	LSN	LSN
02	09/09/13	Updated to include objectives and targets and additional information relating to aspects and impacts	NAM	ESE	NAM
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ENVIRONMENTAL MANAGEMENT PLAN

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1 INTRODUCTION

- 1.1.1 The Forth Replacement Crossing (the 'Project') will provide a replacement crossing of the Firth of Forth to the west of the Forth Road Bridge as well as new dual carriageway approach roads. The Project contractor is Forth Crossing Bridge Constructors (FCBC) and the Project is estimated to take 66 months to complete.
- 1.1.2 The Environmental Management Plan (EMP) sets out how FCBC will manage the environmental issues associated with the construction of the Forth Replacement Crossing and ensure compliance with the Code of Construction Practice (CoCP), the Environmental Statement, Appropriate Assessment documents and any other relevant environmental legislation. It is a working document subject to periodic review and update. This EMP will apply to FCBC and all subcontractors employed by the company.
- 1.1.3 The document structure of the EMP is set out as shown in Figure 1. All site management teams are responsible for the implementation of all documents within the EMP, unless otherwise specified within the individual plans. The implementation of the procedures and measures within the plans will be overseen by the Environmental Team.

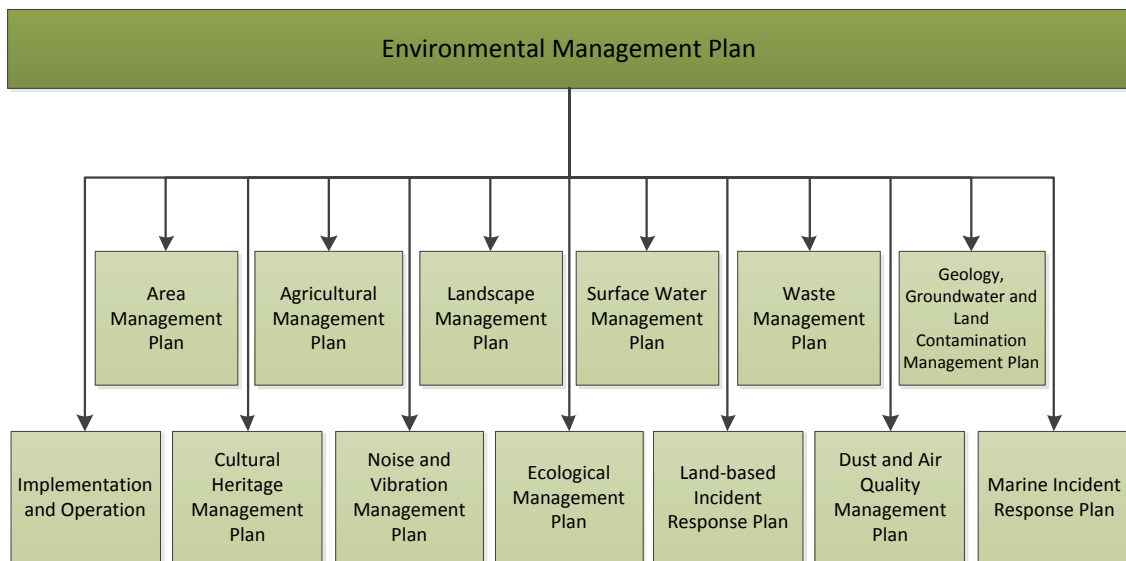


Figure 1: Environmental Management Plan – Document Structure

2 MANAGEMENT TEAM AND STRUCTURE

2.1.1 The organisational charts in the FCBC Project Management Plan set out the key roles of the Project team and Environmental team. The organisation of the Environmental Team and the key responsibilities are as follows:

- Quality and Environmental Manager
 - Head of Department, responsible for overseeing quality and environmental management of the project to ensure compliance with all the requirements of the Contract.

- Environmental Manager
 - Setting up the Environmental Management System.
 - Managing the Environmental systems used by the FCBC.
 - Ensuring compliance with the CoCP and Employers Requirements.
 - Supervising the environmental monitoring of the project.
 - Supervision of the Environmental staff.
 - Manage environmental audits by internal and external bodies.
 - Report to Environmental Liaison Group (ELG) and Noise Liaison Group (NLG).

- Environmental Advisor
 - CEEQUAL assessment.
 - Carbon foot-printing.
 - Monitoring boreholes for gas and groundwater, compiling data.
 - Energy monitoring.
 - Waste management and reporting.
 - Environmental support.
 - Formatting monitoring data for review by Environmental Manager.
 - Site inspections (including air quality monitoring and surface water monitoring).

- Ecological Clerk of Works
 - Protection of ecologically sensitive receptors.
 - Ecological surveys.
 - Site inspections.
 - Ensuring compliance with Employers Requirements and CoCP in respect ecological issues.
 - Ensuring terrestrial and marine operations are compliant with Employers Requirements and CoCP.
 - Air quality monitoring and surface water monitoring.

- Noise Clerk of Works
 - Management of Plans for the Control of Noise and Vibration (PCNVs).
 - Calculation of noise levels.
 - Calibration of noise equipment.
 - Analysis of noise results.
 - Analysis of vibration data.
 - Investigative noise reports.
 - Reporting to the client on noise issues.
 - Determining need for insulation in properties.

- Landscape Clerk of Works (Individual nominated by Grontmij)
 - Identifying vegetation to be protected or removed.
 - Monitoring site clearance adjacent to existing vegetation to be retained.
 - Monitoring erection of protective fencing for vegetation.
 - Monitoring topsoil strip.
 - Monitoring earthworks and landscape grading.
 - Monitoring subsoil ripping.
 - Monitoring removal of redundant surfaces.
 - Testing, handling and spreading of soils.
 - Monitoring soil preparation and cultivation.
 - Monitoring seeding.
 - Monitoring plant handling and planting.
 - Monitoring landscape maintenance.

2.1.2 Environmental information will be relayed to staff by way of site specific inductions, tool box talks and through training. Records of these toolbox talks will be held by the relevant construction teams. A training matrix, which is maintained onsite by the HR department, will be informed by the Environmental Aspects and Impacts Register.

3 COMMUNICATIONS AND STAKEHOLDER CONSULTATION

3.1.1 Community Liaison and Stakeholder consultation are covered significantly in Engaging with Communities – Construction (Transport Scotland, Version 2, June 2014) and in the FCBC Community Liaison Plan (PL-PR-001) and as such does not form part of this plan.

3.1.2 Internal communications relating to the EMP significant environmental aspects and potential impacts, where these are relevant to staff roles and responsibilities will be done via a mixture of inductions, training and visual aids around the offices.

3.1.3 A Noise Liaison Group has been formed to provide oversight of all aspects of noise planning, control during construction and monitoring. The group includes representatives from each of the relevant local authorities and Scottish Natural Heritage. The Environmental Manager, Noise Clerk of Works and members of the construction teams will be present at each meeting.

3.1.4 An Environmental Liaison Group has been formed and will be consulted regarding all other environmental matters defined in this CoCP. This group will include representatives from the local authorities, Scottish Natural Heritage, the Scottish Environment Protection Agency, Marine Scotland and Historic Scotland. The Environmental Manager, Environmental Advisor and Ecological Clerk of Works will be present at each meeting.

3.1.5 The above statutory consultees have been consulted on the development of this EMP, where relevant.

4 ENVIRONMENTAL MANAGEMENT SYSTEM

4.1.1 The Environmental Management System (EMS) is part of FCBC's combined

management system; the tool used for management of FCBC's environmental activities in a comprehensive, systematic, planned and documented manner. It includes the organisational structure, planning and resources for developing, implementing and maintaining policy for environmental protection covering all works carried out by FCBC on the Forth Replacement Crossing project.

4.1.2 The EMS:

- is compliant with ISO14001;
- serves as a tool to improve FCBC's environmental performance;
- provides a systematic way of managing FCBC's environmental affairs;
- gives order and consistency for FCBC to address environmental concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures and processes; and
- focuses on continual improvement of the system.

4.1.3 The Quality and Environmental Department Functions document (DF-QAM-001) outlines the environmental responsibilities and actions of the site team based on relevant legislation, the Environmental Statement, the RIAAs, the Code of Construction Practice, method statements and this EMP.

5 IDENTIFICATION OF ENVIRONMENTAL EFFECTS AND RISKS

5.1.1 In order to identify all aspects of work within this project that have an impact on the Environment, and to assess the risk from these activities a project register of effects (Aspects and Impacts Register, FM-ENV-015) will be kept by the Environmental Manager.

5.1.2 The Aspects and Impacts Register has been compiled using information from the following:

- Desk Study: Review of drawings, understand project construction process & aspects, existing features, geography, infrastructure/built environment, ecology, designated sites, Environmental Assessment, Appendix R processes and the Code of Construction Practice.
- Site inspections: Identify potential receptors & assess significance of construction on them.

5.1.3 Effects are significant if they; breach legislation, breach compliance with either the Appropriate Assessment Documents, Environmental Statement or Code of Construction Practice, cause harm or damage or result in complaint from stakeholder.

5.1.4 The risks will be communicated and briefed to the site teams via toolbox talks and briefings.

5.1.5 There will be a review and update to the Aspects and Impacts Register when there is a change of circumstance, materials or location or on a yearly basis.

- 5.1.6 For Emergency and Incident Procedures see Land Based Incident Response Plan and Marine Incident Response Plan.
- 5.1.7 The Employer's Requirements, Part A1 clause 8.15.5 requires detailed Method Statements for every major activity including site preparation, construction activities and reinstatement of land following completion of the main construction works. The primary function of the Method Statement is to provide a stand-alone document so that the work can be executed without any other documents.
- 5.1.8 The Method Statements will set out the step by step process to be followed including establishing appropriate 'hold points' so that works progress with the necessary supervisory controls and approvals being in place. The Method Statements will define any specific environmental control measures to be implemented to meet the requirements of the EMP. Where environmental control measures are specified, appropriate hold points will be defined to enable the measures to be checked and approved by the relevant supervisory personnel prior to works commencing.
- 5.1.9 The Method Statements will also clearly set out the safe methods of working and other criteria determined by the health and safety risk assessment for the task. Where appropriate they will reference Permits to Work or other authorisations. The construction team carrying out the work will be briefed on these requirements in advance of the operation.
- 5.1.10 All RAMS will be reviewed by the Environmental Manager before being submitted to the Employer's Delivery Team (EDT). The Environmental Manager will be responsible for ensuring that where there are additional or specific mitigation measures required for an activity that these are incorporated into the relevant method statement.
- 5.1.11 The Appendix R process provides input from a design perspective into environmental impacts of the project. It ensures that the long term impact of the works as well as the construction impact is not worse than that predicted in the Environmental Statement. Unlike construction risk assessments, the Appendix R process does not utilise any scoring system in terms of risk. It instead relies on an iterative process and specialist advice as well as consultation with regulatory bodies, where appropriate.

6 ENVIRONMENTAL MONITORING, INSPECTIONS AND AUDITING

- 6.1.1 Environmental performance of the Project will be evaluated in accordance with the requirements of ISO14001. Environmental Inspections will be carried out on a weekly basis by construction site teams or environmental staff. Completed Environmental Inspection sheets are kept by the Environmental Team. Audits will be carried out by the Quality and Environmental Manager as required.
- 6.1.2 A monthly Environment and Sustainability report will be submitted to the Employer and the FCBC Board containing details of the progress made with respect to the relevant subsections of the EMP and updates on Key Performance Indicators (KPI's).

7 LEGAL UPDATES

- 7.1.1 Legal updates will be provided as detailed in the integrated management procedure PR-IMS-500 and reference should be made to the process for details on legal updates and responsibilities.
- 7.1.2 A Register of Legislation is available to FCBC via online Croner services.
- 7.1.3 FCBC will identify legal obligations and requirements via the consortium's parent companies and internally via access and updates to Croner, as per PR-IMS-500. The legislative updates are communicated by the relevant environmental advisors to the project Environmental Manager on a periodic basis.
- 7.1.4 Other requirements will be determined via Management Review, monthly meetings of the Environmental Liaison Group, Noise Liaison Group and consultations with relevant bodies.
- 7.1.5 Currently, other requirements are outlined in the following documents:
- The Code of Construction Practice (Revision 5);
 - The Employers Requirements;
 - Appropriate Assessment Documents; and
 - Environmental Statement.

8 OBJECTIVES AND TARGETS

- 8.1.1 FCBC has used the Environmental Aspects and Impacts register to inform the choice of objectives for the Forth Replacement Crossing which have been chosen based on the following SMART criteria.
- Specific - each target should address only one issue.
 - Measurable - targets should be expressed quantitatively and in absolute terms
 - Achievable - targets should be possible to meet for everyone involved.
 - Realistic - targets should be challenging but not overly ambitious.
 - Time-bound - target must be assigned a deadline for attainment.
- 8.1.2 The objectives will be communicated via the Project Management Plan. The Environmental Manager shall be responsible for achieving the objectives and targets.



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9 REFERENCES:

Transport Scotland (2014) Engaging with Communities – Construction (version 2)