



Project Execution Plan

Forres (River Findhorn & Pilmuir) Flood Prevention Scheme (2008)

Moray Council

April 2010
Final Report

MFAG 329 Issue 2

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Document title	Project Execution Plan Forres (River Findhorn & Pilmuir) Flood Prevention Scheme (2008)
Document short title	Project Execution Plan
Status	Final Report Issue 2
Date	February 2010
Project name	Forres (River Findhorn & Pilmuir) Flood Prevention Scheme (2008)
Project number	9R6782
Client	Moray Council
Reference	MFAG 329

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1 INTRODUCTION

1.1 Purpose

The purpose of this report is to set out a project execution plan (PEP) for the delivery of the Forres (River Findhorn & Pilmuir) Flood Prevention Scheme (the Scheme). The plan sets a structured format for delivery of the Scheme for The Moray Council by Moray Flood Alleviation (MFA). Issue 2 of the plan (this report) focuses on pre-construction activities.

The PEP:

- identifies key tasks and the risks and opportunities addressed by carrying out those tasks;
- sets out the process, resources and programme until construction start; and,
- defines the role and responsibilities of The Moray Council, Royal Haskoning, EC Harris and Morrison Construction to enable those organisations to understand, accept and carry out their responsibilities.

1.2 Key stages

Development of a flood alleviation scheme requires a staged process, moving through gateways that indicate the achievement of key milestones. The development of the Scheme has already moved through Design Stage 1. A Flood Prevention Order and planning application have been submitted. The detailed design has been progressed to a stage suitable for Target Setting and information is available to make an application for a Controlled Activities Regulations (CAR) licence. Once the conditions from the Planning Application and the CAR Licence have been issued by the appropriate authorities and any feedback from the re-pricing work, then the draft contract documents can be formulated. These stages are shown graphically in Figure 1.

This PEP sets out in detail the remaining work required before construction can commence and outlines the work required during the construction and operation & post construction monitoring stages.

The PEP is a dynamic document that will change as the project progresses.

2 PROJECT DEFINITION AND BRIEF

2.1 Introduction

The Scheme is described in the planning applications submitted in May 2008 (08/01020/EIA), with further advertising in December 2009 for amended plans and compliance with the 'New Local Plan'. The Flood Prevention Order advertised in March 2008 (MFAG583). The planning application was supported by an Environmental Statement (MFAG590 and MFAG594) and a Flood Risk Assessment

(MFAG601). The Flood Prevention Order is supported by a document setting out the flood damages and scheme benefits (MFAG587).

The Flood Prevention Order will soon be the subject of a Public Local Inquiry, scheduled to commence on 8 June 2010. The Reporter's recommendations may include modification(s) to the Scheme.

One of the deliverables from the pre-construction activities set out in this PEP has been the preparation of the draft Works Information for the construction contract. This has been prepared in order to allow the re-pricing of the scheme to proceed. The re-pricing process was completed in mid March. This reflects the agreed scope of works incorporating (where practicable) all works identified during the design and statutory processes.

2.2 Key Issues

A number of key issues have been identified during the design and statutory processes. These are outlined below:

Planning Conditions. The planning consent is still pending. Once approved, there will be planning 'Conditions' that will need to be discharged either before construction can commence or before completion of the works. Because the conditions are still unknown a cost risk item has been included in the recent cost estimate for the construction works.

Disruption during Construction. The construction phase of the Scheme is likely to last for more than two years, creating disruption to those living, working and visiting in Forres and the surrounding areas. Consultation with those directly affected by the works in this pre-construction phase have been important in developing plans for managing this inevitable disruption. In particular, construction traffic and temporary traffic arrangements throughout the construction phase will require careful management.

Earthworks. The Scheme requires extensive earthworks: constructing flood embankments and the raising of the A96 using excavated material; river restoration; creating haul roads and diversion channels. The earthwork specification is based on extensive ground investigations carried out during Design Stage 1. The residual risks associated with the earthworks will be identified and management strategies incorporated in the Works Information for the construction phase.

SAM Site. The Scheme requires permission to work within the SAM site. This application will be submitted this year to allow intrusive archaeological investigations to be performed after the crops are harvested in autumn 2010. Until this work is completed there is a residual risk of additional costs being incurred.

CAR Licence. It is planned to submit the CAR licence application after the Public Local Inquiry has finished. This should provide a suitable time frame to have the licence in place before the planned start of construction in April 2011 and, all being well, also to provide the Contractor with the consequences of the conditions, defined

by SEPA, they need to consider for inclusion in the Target Cost. A risk item for additional costs has been included in the recent scheme cost estimate in acknowledgement of the remaining cost risk associated with compliance with the CAR Licence conditions.

Landscaping. A landscaping scheme was developed during the outline design stage of the project and was submitted as part of the planning application. This has now been included in the Works Information for the construction phase. Some amendments may be required following the conclusion of the PLI.

Invasive Species. The Scheme requires the removal and safe containment of Giant Hogweed seeds. There is much 'contaminated' soil material to deal with. After considerable discussion with the Contractor and SEPA a management strategy has been developed. SEPA are still considering the formal decision submitted to them in October 2009. We anticipate conditions concerning this aspect of the work will be set out in the CAR Licence, when it is received. There is still a residual risk that some delays during the construction phase may be encountered.

Contaminated Land. There are two potentially contaminated sites within or near the footprint of the Scheme. The issues associated with these sites are being investigated with The Moray Council Contaminated Land Team. The intention is to undertake soil sampling this spring to help evaluate the extent, if any, of the contaminated areas.

Environment. The Environmental Action Plan identifies a number of constraints and mitigation measures that have been integrated into the Works Information and Construction Plan. These include archaeological watching briefs, pre-construction surveys for specific species and time constraints for felling trees and working close to the watercourse.

2.3 Risks

There are a number of headline activities that need to be completed within the allocated timescales in order for the construction start to be achieved in accordance with the pre-construction programme shown in Appendix A. The headline activities which represent key risks to the Scheme start are:

- PLI outcome and any resulting modification(s) to the Scheme;
- Approval of the Scheme FPO by the Scottish Government;
- Agreement of Scheme funding;
- Agreement of construction contract;
- Archaeological site investigations;
- Agreement with SEPA about the changes to the gauging station;
- Agreement from Transport Scotland regarding the works to the A96;
- Agreement with Network Rail regarding the works in the vicinity of the Inverness to Aberdeen railway track;
- Landowner agreements; and,
- CAR licence approval.

2.4 Opportunities

The key opportunity identified for this PEP is the potential for carrying out early works ahead of the main construction contract if major delays to the construction programme would be incurred due to the contract award date not enabling the construction work to be undertaken in the necessary sequence to minimise costs, e.g. the autumn/winter tree felling, to avoid the bird nesting season, service diversions and site clearance.

Following a favourable outcome from the Public Local Inquiry (PLI) there will be a review of the possibility of needing to engage in early works ahead of the main construction works.

Further opportunities for delivering the Scheme at a lower cost and/or completing the Scheme earlier will be reviewed on a regular basis throughout the coming period to construction start.

3 APPROACH AND INFLUENCES

3.1 Scheme drivers

Scheme drivers influence the plan for delivery of the Scheme. The key drivers for the Forres (River Findhorn & Pilmuir) Flood Prevention Scheme are:

- **Effective flood alleviation for the community of Forres as soon as possible**
- **Value for Money and Affordability**
- **Minimise and manage health and safety risks**

More detail on each of these drivers is given below:

Effective flood alleviation for the community of Forres as soon as possible

To respond to this driver the plan is programme driven. The Moray Council's Flood Alleviation Sub-Committee has endorsed this approach by deciding, for example, that the detail design activities should continue in parallel with the statutory processes. For the work set out in this PEP, this means that the focus will be on:

- ensuring that appropriate decision makers are involved early in the processes. This is intended to enable the early identification and swift resolution of issues; and,
- overlapping tasks wherever possible so that overall scheme progress will be as swift as possible.

Value for Money and Affordability

The Scheme will be funded by The Moray Council who, under the current funding regime, will receive a block grant from the Scottish Government. The Moray Council will be bidding for funding in the spending review which is due in autumn 2010. This

will require a robust cost estimate and risk review to be completed by June 2010. The full Target Setting process will be finished in February 2011.

Any costs over and above the agreed budgets will be met by The Moray Council – it is, therefore, imperative that the agreed budgets are robust and comprehensive. The Council's budget will include a "risk allowance" or contingency sum to allow for unforeseen items and Council risks materialising during the construction phase. Effective management of the construction phase will be essential to ensure that value for money is achieved.

Minimise and manage health and safety risks

A whole-life approach has been adopted in developing the Scheme, with consideration given to minimising and managing health and safety risks in construction, operation and maintenance during the design stages of the project.

The residual risks have been scheduled and the CDM-C will ensure that these are communicated effectively to the team, with owners of each residual risk being identified. This is an ongoing process.

The risk owners will be responsible for managing the residual risks, reporting plans and progress to both the CDM-C and The Moray Council.

4 ROLES, RESPONSIBILITIES AND AUTHORITIES

4.1 Organisation

MFA is an integrated team comprising The Moray Council (Client), Royal Haskoning (Consultant), EC Harris (Cost Consultant) and Morrison Construction (Contractor). The mission of the group is "to alleviate flooding in the communities of Moray". The main objectives of the group are:

- To have no major accidents or incidents;
- To have a satisfied client and community;
- To deliver effective flood alleviation as soon as possible;
- To make most use of the teams' resources;
- To develop demonstrably sustainable solutions; and,
- To ensure that the project is commercially viable for all partners

4.2 The Moray Council

Role:

- Client and Scheme Promoter.

Responsibilities:

- Ensure agreement as to what the objectives and benefits of the Scheme are.
- Define success criteria for the Scheme.

- Provide scheme leadership and direction. Take strategic decisions, based on options and risks identified and presented.
- Promote the Scheme and seek commitment from stakeholders to delivery of the Scheme.
- Secure the necessary investment and funding for the Scheme.
- Ensure that there is a coherent organisation structure and logical plan for Scheme delivery.
- Monitor, control and report the progress of the Scheme at a strategic level.
- Appoint key personnel and delegate authority to ensure that the Scheme achieves its objectives.
- Be aware of the broader perspective and how it affects the Scheme.
- Manage consultants and contractors appointed to assist with delivery of the Scheme including authorisation of works and payments.
- Advise on operation and maintenance issues to ensure that the Scheme design reflects requirements.
- Asset management after construction.
- Post Project Monitoring.
- Manage the risk management process.
- Manage press and scheme publicity.
- Promote recommendations to the Flood Alleviation Sub-Committee.
- Programme and financial management of utility companies.
- Manage the preparation of the Project Management Plan for the start of construction.

4.3 Royal Haskoning

Role:

- Consulting Engineers and Environmental Scientists. Advising and assisting The Moray Council

Responsibilities:

- Promote best practice and sustainable flood alleviation methods.
- Provide professional staff to assist with Scheme delivery.
- Manage changes to the design of the Scheme.
- Undertake the role of Designer and CDM Coordinator as set out in the Construction (Design and Management) Regulations.
- Eliminate hazards or reduce risk through design; provide information about remaining risks.
- Contribute to the risk management process.
- Plan and manage the day-to-day delivery of the Scheme within the agreed overall framework.
- Plan and manage the deployment of Royal Haskoning resources to produce required deliverables and meet project milestones.
- Report on Scheme progress, risks and opportunities.
- Ensure that quality controls of Royal Haskoning work are planned, performed and recorded correctly.

- Co-ordinate the delivery of enabling works until the contractor starts the enabling works on site.

4.4 EC Harris

Role:

- Cost and risk consultants. Advising and assisting The Moray Council in risk, programming and financial aspects.

Responsibilities:

- Advise on contractual arrangements.
- Manage target setting process.
- Check, review and benchmark Target Cost submissions and certify that the proposals represent value for money.
- Plan and assist in management of the risk management process.
- Plan and manage the deployment of EC Harris resources to produce required deliverables and meet project milestones.
- Ensure that quality controls of EC Harris work are planned, performed and recorded correctly.
- Assist in the preparation of the Project Management Plan for the start of construction on site.

4.5 Morrison Construction

Role:

- Contractors. Contributing to scheme development

Responsibilities:

- Advise on constructability and best practice in development of designs and alternatives.
- Provide and manage development of the cost plan, construction Target Cost, construction programme and Activity Schedules.
- Provide construction method statements, plans and programmes to inform pre construction consent process.
- Investigate, design and manage the temporary works requirements.
- Consider buildability between the Scheme design and services infrastructure.
- Participate in enabling works delivery where appropriate.
- Plan and manage the deployment of Morrison Construction staff to fulfil required activities and meet project milestones.
- Contribute to the risk management process.
- Undertake the role of Principal Contractor as set out in the Construction (Design and Management) Regulations.
- Ensure that quality controls of Morrison Construction work are planned, performed and recorded correctly.
- Assist in the preparation of the Project Management Plan for the start of construction on site.

4.6 MFA Strategic Steering Group

The MFA Strategic Steering Group comprises representatives from The Moray Council, Royal Haskoning, EC Harris and Morrison Construction.

The MFA Strategic Steering Group meets monthly to consider issues that affect Moray Flood Alleviation including scheme progress, team working and external influences.

4.7 Organisational Structure

An organisational structure, showing key activities and reporting lines is included in Appendix B.

5 PROCESS

5.1 Introduction

A number of tasks and activities have been identified. It has been noted that these fit into a number of categories, which are described in the sections below.

5.2 Licenses and Consents – Pre-construction

The aim is to ensure that all relevant pre-construction legislation is identified and complied with. This includes obtaining CAR licence(s). This task will be managed by Wendy Johnston.

5.3 Licences and Consents for Construction

The aim is to ensure the appropriate licenses and consents required by the contractor for the construction phase are in place to start on site. This task will be managed by Ian Thomson and includes:

- Waste Management;
- Sediment Management; and,
- Traffic Management.

5.4 Planning Permission

The aim is to gain planning permission and discharge as many of the planning conditions that can be dealt with before construction. This task will be managed by Bob Bryce.

5.5 Health and Safety

The aim is to prepare the pre-tender health and safety information and co-ordinate the initial work for the construction phase health and safety plan. This task will be managed by Comer Mead.

5.6 Design and Works Information

The aim is to ensure that the design is complete and comprehensively set out in the Works Information. This process, particularly the Works information, will be interactive with many of the other activities, and accordingly, the deliverables will be provided initially for Target Setting and finally for construction. This task will be managed by Alex Lee.

Design Activities still to be completed include:

- Any necessary modifications to the SEPA gauging station
- Compliance with SEPA's SUDS requirements for the A96 modification works
- Reinforcement detailing of the concrete structure following confirmation of no further changes to the design

Works Information activities to be completed include:

- Inclusion of any further accommodation works requirements following the PLI;
- Confirmation of all necessary utilities diversions;
- Planning conditions and FPO modification(s);
- Any necessary contaminated land remediation;
- Finalising the Specification and drawings following confirmation of no further changes to the design.

The overall task will also include a value engineering exercise to ensure, overall, that the works represent the best value for money.

5.7 Utilities

The aim is to expedite the diversion and protection works, which are required to the many utilities that will be impacted by the Scheme. This will include continuing liaison with the utility companies, and the agreement of the scope, programme and cost of diversion works. These will be divided into two categories. Firstly, those to be undertaken as part of the Scheme, and which will be detailed in the Works Information. Secondly, those to be undertaken by the Utility company themselves and which the Council will need to order and pay for in advance.

The task will include the evaluation of risk reduction by undertaking key utility diversions as early works. This task will be managed by Stewart Gordon.

5.8 Risk Management

The aim is to identify and manage risks to the project delivery. This task is now partially complete. A draft cost risk schedule, which has estimated monetary values against each identified risk item. There will be a risk workshop during the summer of 2010 for all parties to contribute to the development and refinement of the schedule. This task will be managed by Peter Haslam.

5.9 Consultation

The aim is to ensure that access to the site is secured in a timely manner and accommodation works and constraints are agreed with landowners in advance of the works commencing. This includes liaison with those parties who own land that will be altered and/or disturbed during the works. The task will also include Section 75 Agreements. This task will be managed by Bob Bryce.

5.10 Pre-construction Surveys

The aim is to ensure that all necessary information is gathered and recorded before the construction phase commences. This includes ecological, invasive species and archaeological surveys which will be managed by Wendy Johnston and noise, "marching in" and dilapidation surveys, which will be managed by Ian Thomson.

5.11 Construction Planning and Programming

The aim is to ensure that the Scheme as described in the Site and Works Information is constructed efficiently and effectively. This task will also provide the input data for many of the other tasks mentioned in this PEP (construction programme, method statements, sediment and waste management plans, temporary works etc). The work will include a cut-fill balance to identify probable requirements for waste management and a review of the embankment design to identify implications on cost and programme. This task will be managed by Ian Thomson.

5.12 Target Setting and Contract Conditions

The aim is to develop a construction contract agreed between the Council and Morrison Construction which demonstrates a continuation of the value for money which the original 2003 Contract award represents.

The Target Setting process will set a mutually acceptable Target Cost for the Works together with a programme suitable for managing and administering the contract. The task includes preparation of the Contract Data Parts 1 and 2 as well as a risk management workshop to ensure that a suitable risk allocation framework is formulated for target and budget setting purposes. These tasks will be managed by Shona Weir.

5.13 Scheme Management

The Scheme Manager for the pre-construction phase will be Paul Winfield. He will be responsible for the day-to-day management of the project. This phase of the project is now drawing to a close. Paul will continue to apply an appropriate project management framework, plan the project and monitor progress, ensure that work is neither duplicated nor overlooked, identify resource requirements and liaise with TMC, RH, ECH and MC to locate appropriate resources. Paul will report to Dave Gowans and Peter Haslam.

6 PROGRAMME MANAGEMENT

6.1 General

A programme for the remaining part of the pre-construction phase has been prepared as an integral part of this PEP. The programme is included in Appendix A. The date when works can start on site is yet to be determined due to uncertainties over the completion of the statutory processes and funding allocations. For the purposes of this PEP, March 2011 has been set as a target for works to commence on site.

Progress will be monitored against the programme. The Scheme Manager will be responsible for maintaining the programme and ensuring that, as work is undertaken, it becomes a record of the Scheme development and remains a live document planning the remaining work.

6.2 Milestone dates and periods

The CAR licence application(s) will be submitted by June 2010 following conclusion of the PLI. The statutory determination period is six months including notification and advertising periods, meaning that a response can be expected by the end of December 2010. This means that there is 12 weeks float in this task as CAR licence(s) are required before the majority of work items can commence. The CAR licence(s) are likely to be accompanied by conditions. The programme means that the Target Cost and construction programme may be finalised before any conditions associated with the CAR licence are known.

There will be planning conditions that require resolution before construction can commence. The programme aims to resolve these items by the end of January 2011, leaving two months float before the anticipated start on site.

The Target Setting process will not be completed in time for The Moray Council to use the information for the spending review in autumn 2010. A budget price has been prepared in March 2010 and initial risk allowance has been included to provide the best current scheme value for the spending review. The Target Setting programmed to commence in August 2010, and will be complete with a recommendation to the Council in March 2011.

The design and the resultant Works Information needs to be complete as far as practical for Target Setting. The programme aims to achieve agreements in principle with landowners regarding accommodation works by 30 December 2010. This will allow the Works Information to be updated with the accommodation requirements so that their impacts are included in the Target Cost and construction programme.

7 PROJECT COST PLAN AND COST MANAGEMENT

7.1 General

MFAG579 Cost-Risk Evaluation 1 in 200 year set out the estimated whole-life cost of the Scheme. This report was completed in December 2007 and was primarily written to provide information for the cost benefit analysis for the Scheme. The report set out the then most recent construction cost estimate and risk profile for the Scheme and forms one of the items available for benchmarking the target cost.

7.2 Construction Cost

MC will be responsible for developing a Target Cost in response to the Site and Works Information provided by RH and Contract Data Parts 1 and 2 provided by ECH.

ECH will be responsible for checking and benchmarking the Target Cost and certifying that the Target Cost represents value for money.

7.3 Project Management and Site Supervision

TMC will be responsible for commissioning a construction stage Project Management Plan setting out the construction stage project management and site supervision team, together with their responsibilities and lines of communication. This will generate a budgetary requirement for supervision and administration of the construction phase.

7.4 Risk Management

All parties will participate in the risk identification and allocation exercise.

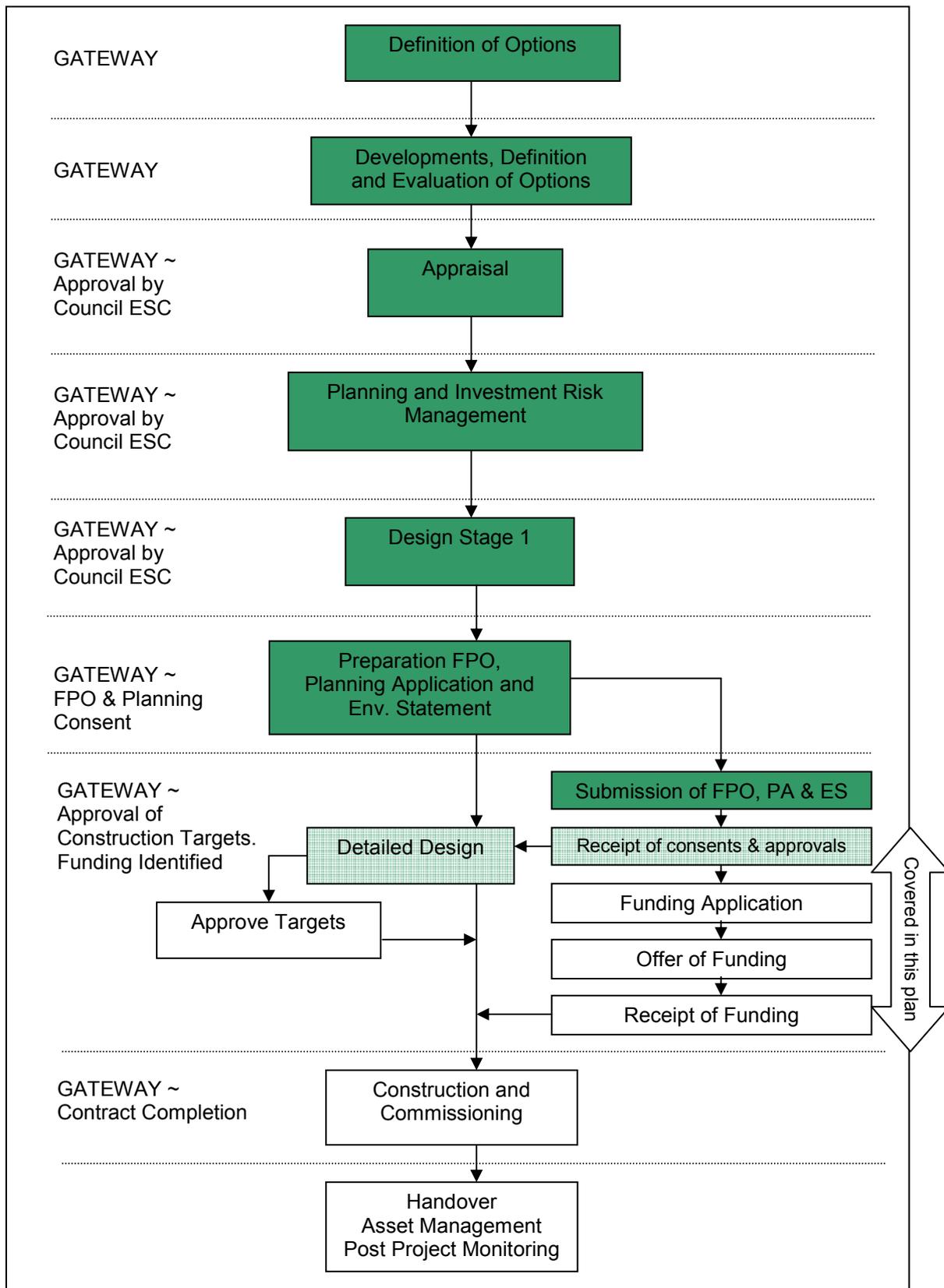
7.5 Funding

Council officers will review the financial implications involved in the delivery of this plan.

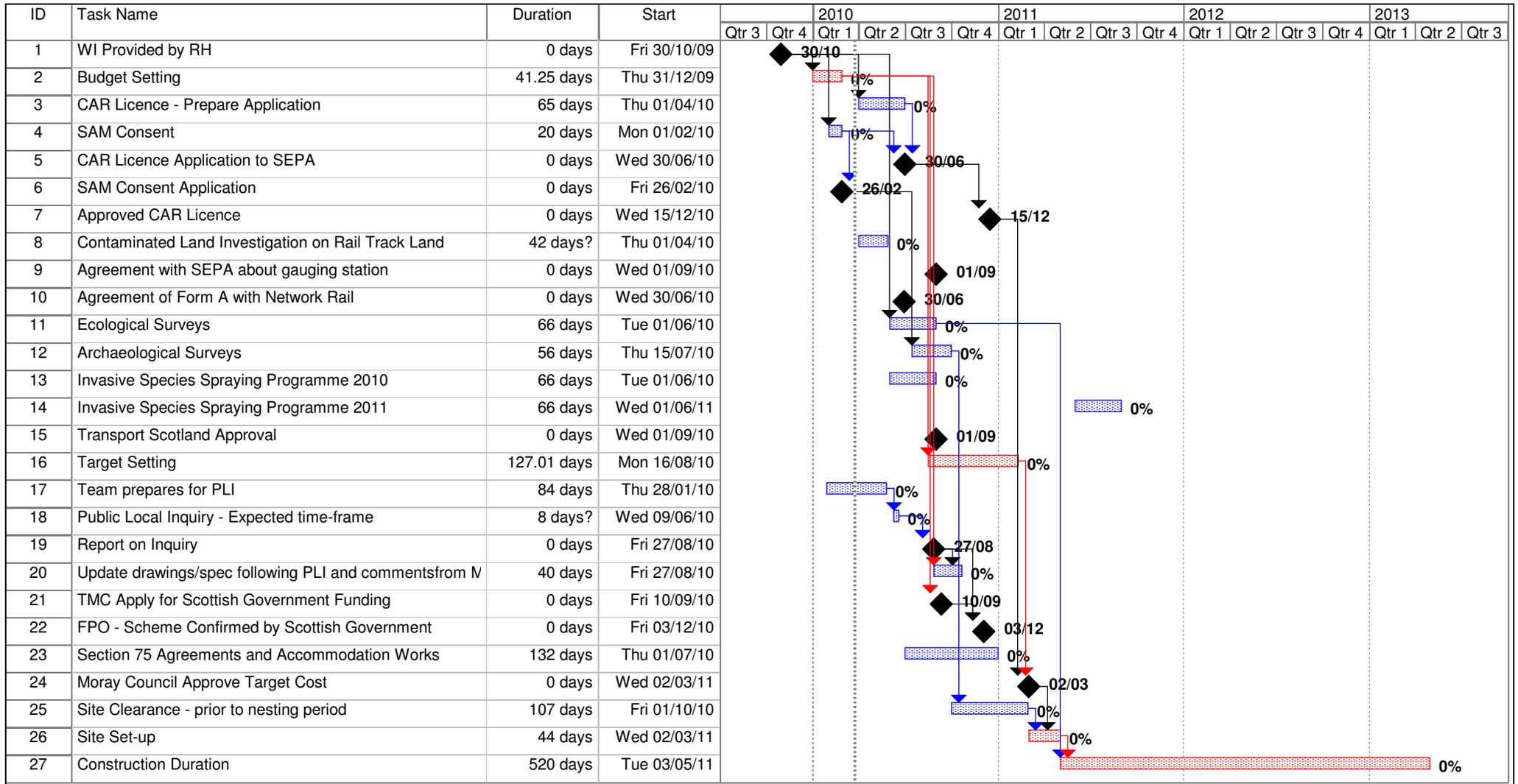
Council officers will work with the Scottish Government to secure sufficient funding to progress the Scheme with a view to delivering a construction start in March 2011.

Figure 1
Overall Process and Gateways

Figure 1 Overall Process and Gateways



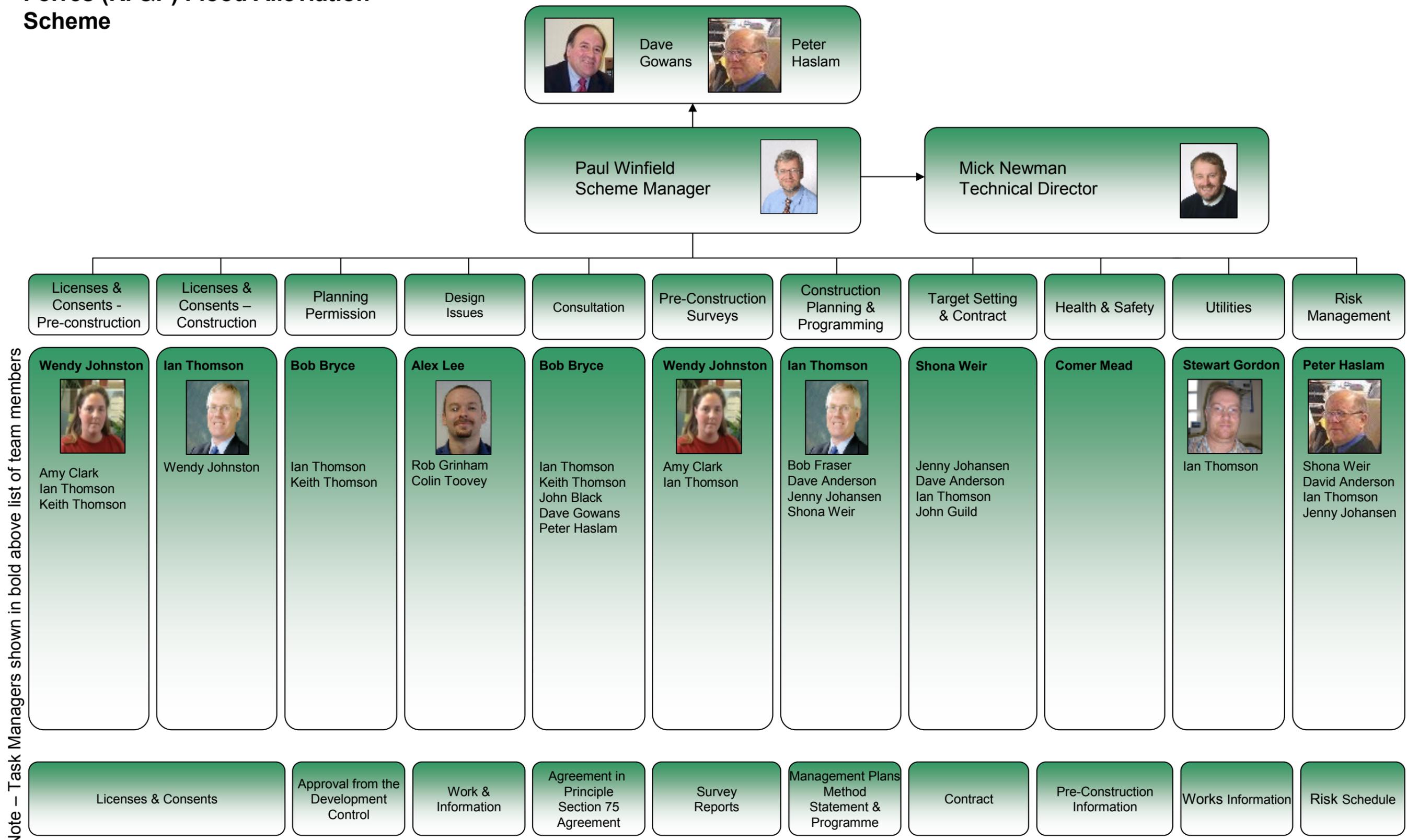
Appendix A Programme



Project: Findhorn Project Plan pre con Date: Tue 23/03/10	Critical		Baseline		Project Summary	
	Critical Split		Baseline Split		External Tasks	
	Critical Progress		Baseline Milestone		External Milestone	
	Task		Milestone		Deadline	
	Split		Summary Progress			
	Task Progress		Summary			

Appendix B
Organisational Chart – Pre-Construction

Forres (RF&P) Flood Alleviation Scheme



Note – Task Managers shown in bold above list of team members