

TOBIN

**Leitrim County Council
Dromahair Flood Relief Scheme
Outline Construction
Environmental Management Plan**



**Comhairle Chontae Liatroma
Leitrim County Council**

BUILT ON KNOWLEDGE

Document Control Sheet	
Document Reference	11271- Construction Environmental Management Plan
Client:	Leitrim County Council
Project Reference	11271

Rev	Description	Author	Date	Reviewer	Date	Approval	Date
A	First Issue	FOC	03/09/2024	KD	04/09/2024	PC	18/09/2024
B	Planning Issue	FOC	31/10/2024	KD	15/11/2024	PC	15/11/2024

Disclaimer

This Document is Copyright of Patrick J Tobin & Co. Ltd. trading as TOBIN. This document and its contents have been prepared for the sole use of our client. No liability is accepted by TOBIN for the use of this report, or its contents for any other use than for which it was prepared.



Table of Contents

1.	INTRODUCTION	1
1.1	Background	1
1.2	Purpose of Report	2
2.	Project Description.....	4
2.1	Site Location.....	4
2.2	Need for the Development	4
2.3	Proposed Works	4
3.	Construction Logistics.....	8
3.1	Site Contact Details.....	8
3.2	Site Accommodation	8
3.3	Construction Compound & Storage Areas.....	8
3.4	Site Access and Security	8
3.5	Construction Programme.....	9
3.6	Working Hours.....	9
3.7	Pre-Construction Surveys.....	9
3.8	Site Enabling Works	10
3.9	Oil and Fuel Storage	11
3.10	Environmental Response Procedures.....	11
3.11	Training and Awareness.....	12
4.	Health and Safety	14
5.	Construction Traffic Management.....	16
5.1	Temporary Road Closures.....	17
6.	Environmental Objectives and Targets	18
7.	Environmental Management.....	19
7.1	Construction phase - Construction Environmental Management Plan (CEMP). 19	19
7.2	General Mitigation Measures	21
7.3	Severe Weather Events	21
7.4	Construction phase - Site-Specific Mitigation Measures.....	21
7.5	Operational Phase Mitigation.....	27
8.	Record Keeping.....	29



List of Figures

Figure 1-1: Location of Properties at Risk of Flooding.....	1
Figure 2-1: CFRAM Mapping of Dromahair.....	4
Figure 4-1: Example of Site Safety Signage.....	15

1. INTRODUCTION

1.1 BACKGROUND

TOBIN Consulting Engineers were appointed in September 2021 by Leitrim County Council to carry out a Feasibility Study of the flood risk to the Dromahair area. The study included the review of the CFRAM Hydraulic Modelling and all other relevant water level data in the town of Dromahair and the surrounding catchment, to quantify the risk of flooding to existing properties identified within the study area. The feasibility study was completed by TOBIN in September 2022.

The following properties have been identified as at risk of flooding from the River Bonet:

- Residential Property No.1
- The ‘Mill’ Apartments, sewage pumping station (serving St. Phelim’s nursing home) and
- The Mill Master House Accommodation
- The Clubhouse Bar & Riverbank Restaurant
- Residential Property No. 2

Figure 1-1 shows the location of the properties and the River Bonet.



Figure 1-1: Location of Properties at Risk of Flooding

The Feasibility report then investigated a number of proposed mitigation measures that would be suitable to protect the effected properties.



The report concluded that the most feasible flood protection option was to construct flood defence structures at three locations in Dromahair Co. Leitrim. The design basis for the proposed flood defences at each property is to construct a flood protection structure with a top-level set 300mm above the predicted 100-year MRFS maximum water level at the property boundary. The type of flood defence structure was chosen based on existing site conditions and aimed to minimise any impact on the existing sites functions.

The following flood defences are proposed at each property:

- Residential Property No. 1
- The 'Mill' Apartments, sewage pumping station (serving St. Phelim's nursing home) and
- The Mill Master House Accommodation
- The Clubhouse Bar & Riverbank Restaurant
- Residential Property No. 2

1.2 PURPOSE OF REPORT

This Outline Construction Environmental Management Plan (CEMP) will be provided to the main contractor for implementation during the site clearance and construction stages. It will be considered as a 'Live Document' and will be updated accordingly throughout the project as required.

The purpose of this Outline CEMP is to:

- Identify stakeholder requirements;
- Ensure compliance with the grant of planning;
- Effectively avoid any potential significant adverse environmental effects during site clearance and construction; and
- Translate mitigation measures set out in the planning documentation into committed site procedures.

This Outline CEMP describes the anticipated construction programme and the nature of the activities to be undertaken. It identifies the environmental considerations associated with these activities and outlines appropriate measures that might be implemented for their mitigation.

The purpose of the Outline CEMP is to outline the details in relation to the environmental measures to be implemented on site to prevent any adverse impacts on the surrounding environment. Accordingly, this Outline CEMP identifies the main objectives for the managed procedures which are required to ensure the construction related activities on the site are executed in a safe and controlled manner and to minimise disruption and impacts on the amenities in the area.

The objective of this Outline CEMP is therefore to identify the potential issues which are relevant to the project, to address these issues and to provide solutions which are satisfactory to all concerned.



Planning for the construction works is necessarily broad at this stage and will be subject to modification during the subsequent application, the Outline CEMP is therefore indicative as part of this application for consent

This assessment has been made using the experience of the Applicant and their professional advisors based on the typical construction methods and strategies that can be reasonably anticipated at this stage of the process

On appointment, the main contractor is required to implement the mitigation and protective measures set out in this document and maintain environmental monitoring records for the duration of the project which shall be made available to representatives from Leitrim County Council for inspection on request.



2. PROJECT DESCRIPTION

2.1 SITE LOCATION

The sites which have been identified as at risk of flooding from the River Bonet are all located in, or close to the town of Dromahair, as previously shown in Figure 1-1.

2.2 NEED FOR THE DEVELOPMENT

In 2015, the OPW produced flood maps as part of the Catchment Flood Risk Assessment and Management (CFRAM) Study. The flood extents in these maps are based on detailed modelling of Areas for Further Assessment identified in the National Preliminary Flood Risk Assessment.

The CFRAM study identifies all of the properties as being liable to fluvial flooding, see Figure 2-1.



Figure 2-1: CFRAM Mapping of Dromahair

2.3 PROPOSED WORKS

It is proposed to construct flood defence structures at three locations in Dromahair Co. Leitrim. The design basis for the proposed flood defences at each property is to construct a flood protection structure with a top-level set 300mm above the predicted 100-year MRFS maximum water level at the property boundary. The type of flood defence structure was chosen based on existing site conditions and aimed to minimise any impact on the existing sites functions.

The following flood defences are proposed at each property:

- Residential Property No. 1 – earthen embankment

- The 'Mill' Apartments – concrete flood defence wall
- The Mill Master House Accommodation – concrete flood defence wall
- The Clubhouse Bar & Riverbank Restaurant – concrete flood defence wall
- Residential Property No. 2 – earthen embankment

2.3.1 Construction Activities

The following is the sequence of activities that will be undertaken during the Construction Phase of the of the proposed development:

2.3.1.1 Construction Schedule

It is anticipated that the proposed construction works will take approximately 16 weeks to complete. Normal works hours during the construction phase are expected to be Monday to Friday 08:00 to 17:00 hours. The total number of construction staff on-site will vary during the construction phase but is expected to range from three to five staff. No construction lighting will be used during construction.

2.3.1.2 Traffic

All four sites are located adjacent to the R287 regional road. This road will provide the main access route to the sites. Construction material will be transported onto site using the existing access roads. The main construction machinery on site will be an excavator, compaction rollers, crane, transport lorries, cement lorries and tractor and trailers.

Artic lorries will be used to delivery pre-cast retaining walls and rebar reinforcement for the cast in-situ wall and will be lifted into place via a crane. Concrete for the walls will be delivered using concrete lorries. Dump trucks/tipper lorries will be used to deliver embankment fill.

2.3.1.3 Site Clearance

The proposed construction works requires the removal and disturbance of earth, riverbanks and trees within the site in order to accommodate the access tracks, the instalment of walls and embankments, and facilitate the works.

Approximately five mature trees, located to the west of the Riverbank restaurant at the Mill will be removed by a competent contractor once the initial site clearance has been completed.

The existing stone wall located at the Mill along the alignment of the proposed flood defence wall, will be demolished. The stone from this wall will used as part of the construction of the flood defence wall for cladding, as per the Conservation Architects recommendations. This demolition will be carried out by a suitable excavator.

It is not envisaged that works will generate significant construction waste, such as hardcore stone, and gravel. Although every effort will be made to recycle and re-use of materials on site, some waste will require to be disposed off-site. Cement wash will occur outside the proposed sites. Any disturbed areas will be fully reinstated following the completion of the works. Excavated soil will be stored at temporary storage areas within the proposed development site.



2.3.1.4 Earthworks

Excavation works will be carried out at all four sites for the construction of embankments and retaining walls. A total of 2,789m³ will be excavated from all the sites. Topsoil will be stripped and stockpiled at designated locations within each site.

Soil will be excavated to the required formation levels. Excavated soil will be stored at temporary soil storage areas within each site of the proposed development.

All excavated topsoil material will be reused within the site, where possible, for embankments. All remaining topsoil and all other excavation material will be disposed of offsite, in accordance with Waste Legislation (Waste Management Act 1996 – 2001).

Soil and other fill material arriving to site will be delivered near existing access roads and used imminently. The delivery locations will not be located near watercourses.

Embankment fill material will be added to the site excavations and compacted until a firm foundation is achieved. Embankment fill material will consist of fine-grained cohesive soil (with between 20% and 40% clay particles, and 13% to 21% moisture content for compaction) is specified for the proposed embankment. No rocks greater than 75mm in size shall be permitted in the soil.

This material will also be used as fill material to form the formation levels of the defences. The material delivered to site will be used once it arrives on site and will not require stockpiling. The excavation and fill works will be carried out with an excavator.

Invasive plant species will be removed from site and disposed of offsite in accordance with Waste Legislation (Waste Management Act 1996 – 2001). and the Invasive Species Management Plan (Appendix A) carried out for the proposed development.

2.3.1.5 Fencing

A total of 361m of fencing will be removed from Site 1 and Site 4. There will be pre-cast post and wire fencing installed at all four sites. The fencing will be installed at the base of the embankments located along site boundaries. The fence is proposed to be constructed to a height of 1.2m, using concrete posts with high tensile horizontal wire to BS EN 10244. The horizontal lines will also comprise of 2.5mm wire at approximately 150mm centres. A gap measuring a minimum of 150mm will be placed at the bottom of the fence to allow for the continued movement of mammals through the site.

2.3.1.6 Flood Defence Construction

2.3.1.6.1 Embankments

Topsoil will be removed at each site and the soil will be excavated to the proposed formation levels using an excavator. The excavation site will then be filled with embankment material to the foundation and the embankment will be constructed on top of it. This will be compacted in layers using an excavator and roller until the design height is achieved. Once the level is reached, the earthen embankments will be topped off with topsoil in order to allow them to be planted with grass seed.

2.3.1.6.2 Pre-cast Retaining Walls

Pre-cast retaining walls will be delivered to site and lifted into position by a crane. The base of the retaining walls will be backfilled with suitable material to insure stability.



2.3.1.6.3 RC Retaining Walls

Formwork will be constructed at the formation levels to allow for the concrete to be poured. Once the formwork is in place, steel reinforcement will be added. The RC wall will then be poured in position using concrete lorries. The base of the retaining walls will be backfilled to the original ground levels with suitable material to insure stability.

2.3.1.6.4 Surface Water Drainage

The existing surface water and foul water drainage systems on all the sites will remain operational during the construction phase of the project. It is proposed to construct new stormwater outfalls at all the sites to prevent ponding inside the flood defences. These outfall pipes will be constructed on the existing stormwater network lines. The outlet of the pipes will have a headwall constructed around them and they will be fitted with a non-return valve. In addition, at Residential Property No. 2 there are two drainage pipes proposed to supplement the capacity of the existing drainage infrastructure. The proposed works involves installing headwalls for the stormwater outfalls on the banks of the river at each site at various locations. These will connect into the existing surface water networks. The headwalls will be precast concrete slab (1.5m X 1.6m). A 300mm flap valve drain is incorporated into the concrete slab.

2.3.2 Operational Activities

The operation phase of the proposed development is expected to be characterised by the movement of the river below the embankments and reduced flooding. Any local maintenance activities on the flood defences are not expected to differ from the baseline/present conditions. The maintenance of the proposed flood alleviation scheme will be the responsibility of the Local Authority, although in terms of emergency repairs, the Local Authority would revert to the OPW. The following general measures will be required as part of the routine monitoring and maintenance. They include:

- Flood walls – Annual inspection and sealant replacement (every 5 years);
- Flap Valves (if any) – Inspection once every 5 years and replacement (every 25 years);
- Bank protection – Inspection once every 5 years and maintenance (as required);
- Tree Management – Annual inspection and maintenance (as required); and
- Debris Traps – Bi-annual inspections and maintenance (as required)



3. CONSTRUCTION LOGISTICS

3.1 SITE CONTACT DETAILS

The Construction Site Contact details will be updated on the event that the application for consent is granted, and the Client progresses to the construction stage of the project:

- Site Manager – TBC
- Phone No. – TBC
- Email – TBC
- Out of Hours Contact: TBC

The above contact details will be posted at the site entrance gate and will be clearly displayed for public information. Any changes to the above details during the proposed works will be notified to Leitrim County Council and amended on-site.

3.2 SITE ACCOMMODATION

As part of the site accommodation, the contractor shall be responsible for the provision and maintenance of site offices, welfare facilities, parking for site vehicles and plant at night, storage of equipment materials used in the construction phase and temporary storage of material to be re-used or awaiting removal by licenced waste contractor for the duration of the works.

3.3 CONSTRUCTION COMPOUND & STORAGE AREAS

As referenced previously, the temporary works area accommodating the site offices, welfare facilities & temporary works compound area shall be located in a corner of the existing car park at the Mill Apartment.

Artic lorries will be used to delivery pre-cast retaining walls and rebar reinforcement for the cast in-situ wall and will be lifted into place via a crane. Concrete for the walls will be delivered using concrete lorries. Dump trucks/tipper lorries will be used to deliver embankment fill.

Incoming construction materials will be offloaded and stored in the pre-determined stockpile locations before being used as part of the construction works.

Vehicles will be directed to the delivery points for holding/off-loading/storage, these deliveries will be controlled by a dedicated person allocated to overseeing all deliveries and controlling the entrance.

All deliveries will be notified to the site management team at least 24 hours in advance. No large deliveries will be allowed to the site during peak traffic times for the area.

The Contractor will strive to maintain a tidy site and operate a “just in time” policy for the delivery and supply of materials for the works, particularly the final phase of the works when on-site storage will be at a minimum.

Materials will be stored on-site to minimise the risk of damage.

3.4 SITE ACCESS AND SECURITY

Construction traffic accessing all sites will be via the R287 regional road and existing entrances.



There is sufficient space for construction vehicles to enter the sites for delivery of materials and collection of waste without causing an obstruction on the road network.

Signage will be erected on the local roads and on the R287 (in both directions) to notify motorists of the construction works ahead. Vehicles entering and exiting the site will use the local roads as per normal circumstances. Signage at the site entrance off the local roads will be provided to ensure members of the public do not mistakenly enter the site road.

The site will be secured using temporary fencing or boarding at all times to ensure that the ongoing works are separated from the public. Netting will be erected on any fencing used, where required, to prevent debris release from the site and provide screening of the construction and demolition works. The Site management team will carry out regular inspections and maintenance of the security fencing/ hoarding while also ensuring areas are kept clean.

3.5 CONSTRUCTION PROGRAMME

It is anticipated that the proposed construction works will take approximately 16 weeks to complete. This will be confirmed prior to the commencement of construction.

Insofar as is possible, ground excavation works will be scheduled during periods of dry weather to minimise the potential for silt-laden run-off from the works or requirements for wheel wash facilities.

3.6 WORKING HOURS

It is proposed that Construction works will be carried out between the hours of 08:00 and 17:00 from Monday to Friday.

No construction works will be carried out on Sundays or Bank Holidays, without the specific agreement of Leitrim County Council.

Workings hours will be confirmed by Leitrim County Council.

The total number of construction staff on-site will vary during the construction phase but is expected to range from three to five staff. No construction lighting will be used during construction.

3.7 PRE-CONSTRUCTION SURVEYS

A number of pre-construction surveys were carried out for Dromahair including:

- Topographical Survey: TOBIN, 2023 & 2024
- Ecological Multi-Disciplinary Walkover Survey: TOBIN, 2023
- Invasive species survey: TOBIN, 2023
- Intrusive Site Investigation: IGSL, 2024
- Architectural Survey: ACP Architectural Conservation Professionals, 2024

An invasive species survey was undertaken by TOBIN and identified two invasive species in the vicinity of the subject sites, the IAPS Japanese Knotweed and Himalayan Balsam. As a result, TOBIN complete an Invasive Species Management Plan. The plan outlined a series of suitable methods to remove the invasive species prior to the construction works being undertaken. The works will be undertaken by a competent contractor prior to any works on the site.



In addition to the above, the Contractor will be required to complete the pre-construction surveys as identified within the following sub-sections.

3.7.1 Pre-Condition Photo Survey

The Contractor will be required to carry out a pre-condition photo survey of the sites which will include all perimeter boundaries, footways, existing carriageway on approach to the site. Any damage caused to existing boundaries or elements to be retained will be rectified by the Contractor in accordance with relevant standards.

3.7.2 Pre-Construction Ecological Surveys

Prior to the commencement of works a preconstruction survey of the Bonet River should be carried out for Otter and Kingfisher refugia sites and nesting sites, respectively.

- Tree removal and bank works should be carried out outside the bird breeding season (March to September inclusive).

3.8 SITE ENABLING WORKS

Site enabling works will include but will not be confined to the following:

- Completion of pre-condition photographic survey.
- Completion of pre-construction otter survey.
- Securing of site boundary and erecting of fencing or hoarding as required.
- Establishment of exclusion zones at known locations of invasive species, continued monitoring & treatment of invasive species as identified within the Invasive Species Management Plan.
- Service terminations and positive identification of any services on the site by the utility providers.
- Set up of site accommodation and welfare facilities.
- Set up of storage facilities, including chemical storage facilities.
- Identification of the trees that are required to be removed and the removal of these along with scrub and vegetation, in consultation with the appointed Arborist.
- Identification of any hazardous materials on site or in the structures that are required to be demolished during the course of the construction.



3.9 OIL AND FUEL STORAGE

Where possible, refuelling of vehicles and equipment will not be carried out on site to minimise the potential for spills or leaks to occur. However, some fuel, lubricants and hydraulic fluids will need to be stored on site during construction works for equipment such as excavators and generators.

Hydrocarbons or any hazardous chemicals will be stored in specific bunded areas. All fuels used on site will be stored in bunded units.

Fuelling and lubrication of equipment will only be carried out in a designated area of the site, removed from any watercourses and away from any existing manholes or gullies within the site compound. Refuelling of plant and machinery will also be carried out in bunded areas to minimise risk of any potential pollutants being discharged from the site. Plant and vehicles will be inspected regularly for leaks. Drip trays will be fitted to all plant machinery.

Fuels and oils will be contained within a bunded structure with capacity for 110% of the storage capacity of the largest container/tank. This bunded area will be roofed appropriately to exclude rainwater.

Spill kits will be stored near where plant is working, at bunded areas, refuelling areas, site compound, within plants (i.e. excavators) and other plant as required. Machine operators and site staff will be trained in the use of this equipment.

An Emergency Response and Preparedness Plan shall also be developed for the construction works by the PSCS (Contractor).

The fuel storage area will be properly secured to prevent unauthorised access or vandalism, and all machinery will be locked when not in use. As referenced above, spill kits and drip trays will be used during refuelling to collect any potential spills or overfills. No vehicles or containers will be left unattended during refuelling.

Mobile fuel bowsers may be used for refuelling heavy equipment. Bowsers used will be double skinned and spill kit/drip tray equipment will be used during refuelling which will take place away from any nearby drains or watercourses and from any surface water drainage gullies. Bowsers will be locked unless in use. All relevant personnel will be fully trained in the use of spill kits and hydrocarbon absorbent materials. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be referred to.

3.10 ENVIRONMENTAL RESPONSE PROCEDURES

Potential environmental problems and emergencies are considered as part of the project planning and the appropriate prevention and control measures put in place. These measures will be communicated to all people working on the Project, including sub-contractors and those who may be on-site once off or for short periods of time through the induction process, toolbox talks & method statement briefings.

An Emergency Response and Preparedness Plan shall also be developed for the construction works by the PSCS (Contractor).

The Plan will be prepared so that the Contractor has plans in place to deal with an emergency where negative environmental impacts occur. To prepare such a plan, the environmental



aspects of the project must be identified. Environmental aspects are the elements of a project activities that, either positively or negatively interact with the environment. Control of the aspect must be established to develop an emergency plan and respond to the aspect. The significance of the aspect must also be outlined so that an appropriate response plan can be established. Potential emergency situations must be identified and the appropriate solutions and remedial activities necessary to deal with the situation established.

In the event of an environmental incident, the key individuals and stakeholders as outlined on the Project organogram should be immediately informed. The nominated person on the Contractor's staff will coordinate the environmental emergency response and inform the relevant authorities as necessary. Environmental emergency contact details are to be included within each sub-plan.

Specific details of all environmental incidents shall be recorded within a standard Environmental Incident Form. In addition, all environmental incidents shall be logged within an Environmental Incident Register. The Environmental Incident Form & Register shall be discussed regularly at team meetings including details of corrective actions taken and preventative measures implemented to mitigate the risk of future incidents.

The Emergency Response and Preparedness Plan shall address the following (non-exhaustive list):

- The environmental aspects of the Project and impacts these aspects may have on the environment.
- Control of the aspects.
- Containment measures.
- Emergency discharge routes.
- List of appropriate equipment and clean up materials.
- Maintenance schedule for equipment.
- Details of trained staff. Location and provision for 24 hour cover.
- Details of staff roles & responsibilities.
- Notification procedures to inform for example Environmental Protection Agency (EPA), Inland Fisheries, Leitrim County Council, etc.
- Audit & review schedule.
- Telephone numbers of relevant statutory consultees.
- List of specialist pollution clean up companies and their contact details.

3.11 TRAINING AND AWARENESS

All site staff will be required to complete an induction prior to the commencement of works on the site. The details of the site induction will be provided by the main contractor in the *Construction Health & Safety Plan*.

As part of the site induction, all site staff will be made aware of the presence of sensitive ecological areas in the vicinity of the site. Employees will also be informed about the risks



associated with working adjacent to a river. A Designer Risk Assessment will be completed for works adjacent to a river.

During the project works, the Site Manager or Project Environmental Manager will deliver strategic toolbox talks focused on potential environmental and safety risks associated with the works being carried out at that stage of the project.



4. HEALTH AND SAFETY

The main contractor is required to provide a best practice working environments for all employees involved in the construction of the proposed development. This includes a responsibility to take into account all relevant statutory laws and guidelines.

All construction activity will be carried out in accordance with the requirements of the *Safety, Health and Welfare at Work (Construction) Regulations 2013* (as amended in 2019). The main contractor will be required to prepare a *Construction Health & Safety Plan* before the commencement of construction activities.

In the case of an emergency at the site, the following procedures shall be followed:

- Emergency services will be contacted immediately by dialling 112 or 999;
- Exact details of the emergency/incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner;
- The emergency will then be reported to the Site Manager;
- Where available, trained site first aiders will attend the incident and
- The Site Manager will maintain contact with the emergency services to ensure they have directions to the site.

In the case of an incident where emergency services are not required, any persons injured will be taken to the nearest hospital by the Site Manager or other appointed person. The nearest hospital to the site is:

- Sligo University Hospital – Located 11.5km northwest of the subject site via R286
 - Phone No. – (071)_ 917 1111
 - Driving Time – c. 20 minutes

Minimum PPE required during the construction works will include protective footwear, high visibility vests, gloves, safety glasses and hard hats. Ear defenders will be used during works, as required.

Further details will be set out on the *Construction Health & Safety Plan* to be prepared by the contractor.

Signage will be erected at the site entrance to warn the public of the ongoing construction works. The signage used will be similar to that shown in Figure 4-1.





Figure 4-1: Example of Site Safety Signage



5. CONSTRUCTION TRAFFIC MANAGEMENT

Routes for construction traffic involved in the delivery of goods to and from the site will be agreed upon with site management before deliveries happening. As part of the Construction Stage Safety Plan for the works, a Temporary Traffic Management Plan (TTMP) will be prepared for the site activities.

The Contractor will provide information on the requirements of the site traffic access rules, which will include the following:

- Access routes from the entrance to the compound.
- It is envisaged that working hours will be 08:00 to 17:00 Monday to Friday
- No parking will be permitted on any access road to the site.
- No construction traffic is permitted via any developed/occupied phases.
- No vehicle may park on or around any footpaths in the adjoining areas.
- Caution must be exercised entering and leaving the site.
- All instructions from the developer or development staff must be obeyed.
- Vehicles leaving the site must do so only at an appropriate break in the traffic and must not force their way into traffic.
- Only vehicles with specific business on the site can enter the site once permission has been granted by the developer and/or his staff.
- Heavy vehicle drivers must check their tyres for lodged stones and remove them prior to returning to the public roads.

The anticipated traffic routes to be utilised during the course of the works are outlined below:

The majority of construction traffic coming to and leaving the sites will use the local regional road the R287. There are a number of quarries located in County Leitrim which may be selected to provide construction materials which will comprise the majority of HGV traffic movements during the construction works. Similarly, the Contractor will be required to use licenced and permitted waste management facilities within the Connacht-Ulster Waste Management Region which can accept C&D waste which will be generated from the site.

The contractor will determine which facilities will provide construction materials and collect waste from the site. Suitably permitted waste contractors will be appointed to transport any waste off-site.

A site-specific traffic management plan shall be designed and employed to safely manage the flow of traffic. Construction traffic delivering to or collecting from the site will be able to drive into the site from the R287 and turn within the site such that there will be no queuing of traffic on the adjacent road network. Drivers coming to site will be informed of the site working hours and suppliers will not be permitted to park at the site entrance awaiting the gates to open.

There will be a noticeable increase in HGV traffic on the road network during the construction stage works as waste materials are removed from site and deliveries brought to site, however this activity will be of short duration.



Visual surveys of the road network approaching the site will be carried out on a regular basis. The main contractor will carry out road sweeping operations, employing a suction sweeper or similar appropriate method, to remove any project-related dirt and/or material deposited on the road network by construction/delivery vehicles. The contractor will be required to provide suitable hard standing directly within the site boundary to minimize spoil being transferred onto the public road. Nonetheless, a wheel wash system will be set up in the event there is a risk of debris deposit on the road.

Waste collection vehicles leaving the site will be required to cover their loads with a canvas to prevent waste or dust emissions from the vehicle on the road network.

Movements of large or abnormal loads will be addressed in advance with the relevant authorities. Certain trades will require parking on site for vehicles due to transportation of specialist equipment/plant requirements. Site access gate will be established, as well as a dedicated pedestrian access route.

Provision of wheel wash facilities will be made available on-site where it is deemed necessary or if space constraints do not permit this, the provision of power washing facilities for lorry wheels prior to egress off the site onto the public road in order to maintain the road in a clean condition. A road sweeper will also be utilised as required on the public road at vehicular access / egress points.

5.1 TEMPORARY ROAD CLOSURES

Road closures are not anticipated, however if they are required for the delivery of large items of plant or materials then such temporary road closures will be planned and approved by the Local Authorities and relevant authorities.



6. ENVIRONMENTAL OBJECTIVES AND TARGETS

The key environmental objectives of the construction phase of the proposed development are:

- To ensure there is no deterioration in soil or water quality at the site as a result of construction activities and
- To ensure there is minimal impact on local residents and road users as a result of construction activities.

In terms of waste management, a target of 75% recycling and recovery of C&D waste has been set and waste contractors will be evaluated on the basis of being able to achieve this target and be able to provide evidence of same.



7. ENVIRONMENTAL MANAGEMENT

An AA Screening Report was prepared, providing information to enable the competent authority to perform its statutory function to undertake a screening for AA in respect of the proposed development. An AA is required where it cannot be objectively concluded that a project or plan, either alone or in-combination with other projects or plans, is not likely to have significant effects on a European site. The AA Screening Report concluded; *The potential impacts of the proposed development have been considered in the context of the European sites potentially affected, their qualifying interests and/or special conservation interests, and their conservation objectives. Using best scientific knowledge through an assessment of the source-pathway-receptor model, which considered the Zol of effects from the proposed development, and the potential in-combination effects with other plans or projects, it is the considered the opinion of TOBIN that the possibility for likely significant effects on the Lough Gill SAC (001976) exists as a result of the proposed development. Therefore, a Stage 2 Appropriate Assessment is required.*

The AA Screening led to a Natura Impact Statement (NIS). The NIS was completed by TOBIN and was prepared in accordance with the provisions of the above stated legislation, providing information to enable the competent authority to perform its statutory function to undertake an AA in respect of the proposed development. The NIS included an examination and analysis of the best available scientific knowledge and data in the field to identify and assess the implications of the proposed development for any European sites in view of the conservation objectives of those sites. It considered whether there are ex-situ implications for any European sites, for example from impacts which occur via downstream pathways at a remote but connected location, or from impacts on populations of ex-situ species located outside of European sites, or from impacts on ex-situ supporting habitats. It considers whether the proposed development, by itself or in-combination with other plans or projects, would adversely affect the integrity of any European sites. In reaching a conclusion in this regard, consideration has been given to any mitigation measures necessary to avoid or reduce any potential adverse effects.

A schedule of the mitigation measures proposed under the NIS to be implemented are outlined below.

7.1 CONSTRUCTION PHASE - CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

A CEMP should be prepared for the proposed project, which takes into account the mitigation measures contained herein. The CEMP should outline the approach that will be adopted for environmental management throughout the project works at the site, with the primary aim of reducing and avoiding any adverse effects from construction stages on the environment with particular regard to water quality within local water bodies and local habitat areas. The CEMP works best as a live document and should be developed in conjunction with the main contractor taking into consideration the recommendations of the NIS and all other documentation for this project that relates to the protection of the environment. A Construction Environmental Management Plan Co-ordinator (CEMPC) should be appointed to oversee and implement the measures detailed below. A designated Ecological Clerk of Works (ECoW) should be appointed



to oversee the clearance phase and the construction phase of the proposed development. ECoW should be on site daily during clearance works and weekly during construction works.

7.1.1 CEMP Objectives

The objectives of this CEMP and any subsequent Contractor CEMP are therefore to:

- Act as a continuous link and reference document for environmental issues between the design, construction, testing and commissioning stages of the Project;
- Demonstrate how construction activities and supporting design shall properly integrate the requirements of environmental legislation, planning consent conditions, policy, good practice, and those of the environmental regulatory authorities and third parties;
- Record environmental risks and identify how they will be managed during the construction period;
- Record the objectives, commitments and mitigation measures to be implemented together with the programme of works and date of achievement;
- Identify key staff structures and responsibilities associated with the delivery of the Project and environmental control and communication and training requirements as necessary;
- Describe the Contractor's proposals for ensuring that the requirements of the environmental design are achieved, or are in the process of being achieved, during the Contract Period;
- Act as a vehicle for transferring key environmental information at handover to the body responsible for the operational management of the proposed development site. This shall include details of the asset, short and long-term management requirements, and any monitoring or other environmental commitments (where required); and
- Provide a review, monitoring and audit mechanism to determine the effectiveness of and compliance with, environmental control measures and how any necessary corrective action shall take place (where required).

7.1.2 The CEMP Areas

The following areas should be addressed as part of the project CEMP

- Environmental Management;
- Roles and Responsibilities
- Biodiversity
- Water Quality
- Noise and Vibration
- Dust
- Rubbish, Litter and Waste; and



- Potentially Hazardous Wastes arising

7.2 GENERAL MITIGATION MEASURES

Site preparation and construction must be confined to the project site only and should adhere to all standard best practice measures. Works areas shall be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out in advance of the proposed works.

All site staff should be briefed regarding the environmental sensitivity of the site - The Bonet River is a European designated site (SAC and pNHA). A Toolbox talk should be held to inform site staff of best practices required in these areas.

Efficient construction practices and sequences shall be employed on site, and this will minimise soil erosion and potential pollution of local watercourses with soil and sediment. Unnecessary clearance of vegetation shall be avoided and only areas necessary for building works shall be cleared.

In order to protect water quality in the River Bonet all site preparation and construction works shall conform to all guidelines within the document Inland Fisheries Ireland Requirements for the Protection of Fisheries Habitats during Construction and Development Works and River Sites (www.fisheriesireland.ie) and the updated guidelines entitled Guidelines on Protection of Fisheries During Construction Works in And Adjacent to Waters (2016).

7.3 SEVERE WEATHER EVENTS

Works should be considerate of severe weather events and should be suspended if any of the following conditions are forecast or occur:

- 10 mm/hr (i.e. high-intensity local rainfall events);
- >25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or
- >half monthly average rainfall in any 7 days.

Prior to works being suspended the following control measures shall be completed:

- Secure all open excavations;
- Provide temporary or emergency drainage to prevent back-up of surface runoff; and,
- Avoid working during heavy rainfall and for up to 24 hours after heavy events to ensure drainage systems are not overloaded.

7.4 CONSTRUCTION PHASE - SITE-SPECIFIC MITIGATION MEASURES

7.4.1 Preconstruction, clearance and tree removal

Prior to the commencement of works a preconstruction survey of the River Bonet should be carried out for Otter and Kingfisher refugia sites and nesting sites, respectively.

- Tree removal and bank works should be carried out outside the bird breeding season (March to September inclusive).



Approximately five mature trees, located to the west of the Riverbank restaurant at the Mill will be removed by a competent contractor once the initial site clearance has been completed. All tree removal and clearance works for trees and vegetation should adhere to the following:

- Tree removal should be carried out by an appropriately experienced contractor using expert equipment
- Trees must be felled into the site or adjacent fields and not over the river.
- All green material and small branches should be mulched immediately into a trailer
- No temporary storage of green material or wood should occur on-site.

Works required to construct stormwater outfalls and associated access at each of the subject sites will require excavation works along the riverbank. The works will include the addition of hardcore at the outfall location. Although the specific methodology for these works has not been finalized as they will be the responsibility of the appointed construction contractor, TOBIN will ensure they are implementing measures to minimize the suspension and transfer of sediments downstream. These measures will be based on best practices and industry standards, ensuring that environmental impacts are mitigated effectively. These measures are likely to include the use of silt curtains adjacent to the works areas, installing cofferdams to aid in dewatering of the works area and discharging all waters from working areas to an area of grassland via a silt sock.

- Prior to the onset of any construction works, the contractor will prepare a detailed Method Statement for the works, which will be agreed with the Inland Fisheries Ireland
- Where possible a precast concrete headwall and steps should be used to minimise the amount of liquid concrete required in or near the river.
- Works will only be undertaken in the period May – September inclusive to avoid the periods of greatest sensitivity for Salmonids. The exact timing of instream works is to be agreed upon with Inland Fisheries Ireland and the National Parks and Wildlife Service.
- All in-stream or bank works will be undertaken in dry conditions and may require temporary, localised blockages damming in order to produce these suitable conditions. This will minimise the risk of concrete/cement reaching the watercourse. Method Statements will be produced providing precise details of methods to protect the river and the associated SAC during construction and will include standard best practice control measures, included as a minimum:

7.4.2 Protection of aquatic fauna during dewatering operations

If dewater is required, this will be supervised by an experienced ecologist. The ecologist will collect any protected fauna that may be exposed through electro-fishing. Section 14 fish rescue license will be required to de-fish any area where fish may become entrapped i.e. a cofferdam. Fish or other aquatic fauna that become trapped in the dewatered areas will be carefully captured (by hand or using a net) and placed into a sheltered section of the river nearby.



7.4.3 Protection of Water Courses

7.4.3.1 Sediment Control Mitigation Measures

The following are mitigation measures which will be implemented by the appointed Contractor to minimise and avoid the effects of sedimentation during the proposed construction phase.

- Existing surface water drainage infrastructure (e.g. gullies) will not be interfered with or blocked during the proposed works. However, neither will they be used for the unattenuated discharge of silt-laden waters from the works;
- Surface water drains shall be 'plugged' as necessary to prevent contaminated surface water entering the Bonet_050 and Kilanummary_020 River, via drainage;
- All instream works in watercourses identified as being of fisheries value shall only be undertaken during the period July - September in accordance with the IFI Guidelines 2016 unless under previous agreement with the IFI.
- All construction works will be confined to within the proposed development site boundary. No works will be undertaken outside of this area.
- Preparation of Construction Erosion and Sediment Control Plan detailing measures to be strictly adhered to during the construction;
- Any excavations shall be supervised by a suitably qualified person. If contamination is encountered this should be appropriately segregated to prevent cross contamination; Excavation activities will not be carried out during or following heavy rainfall (i.e., if there is a yellow weather warning in place or 5mm in a 1-hour period);
- Excavations will be covered with tarp or similar material, during high rainfall to avoid the creation of surface water with high concentrations of suspended solids that would require dewatering.
- Excavations, where necessary shall be left open for minimal periods to avoid acting as a conduit for surface water flows;
- The temporary construction compound and welfare facilities will be located within the proposed development site, setback a minimum of 50m from the drainage ditches and rivers.
- Silt fences will be erected around all water features (e.g. rivers and drainage ditches) prior to any excavation works commencing to ensure sediment from the work area into the watercourse is prevented. on the proposed development site;
- Silt fences will be erected along the Bonet_050 and Kilanummary_020 River as well as any open drainage areas on the proposed development site.
- A buffer zone will be established of at least 10m between the silt curtain and the watercourse (river and any drainage ditch) and will remain in place for the duration of works.



- Riparian vegetation will be left intact for its protection to a minimum distance of 5m.
- Surface water filtered through the silt curtains be intercepted by the riparian vegetation before entering the watercourses.
- The silt fences will be positioned to allow an appropriate working area, but outside of areas prone to flood, or below the high-water mark.
- Silt fencing will also be installed on site along the works side of the Bonet_050 and Kilanummery_020 River during the proposed works, to prevent discharge into the watercourse during the construction phase;
- Silt fencing will be positioned 2m back on the riverbank between the river and the proposed foundation site for headwalls. The curtains will stay in position during the entire construction phase;
- Silt fences will be constructed using a permeable filter fabric (Hy-Tex Terrastop Premium silt fence or similar) and not a mesh. Silt fencing will be installed as per the manufacturer's guidelines prior to any ground disturbance works.
- Silt fences will be installed under the ECoW supervision and will be maintained until all ground activities have ceased and vegetation re-established. Once installed, the silt fence are inspected regularly during construction and more frequently during heavy rainfall events. Periodic inspections to verify and inspect the effectiveness and integrity of the silt curtains will be carried out. The ECoW will supervise the removal of all silt fences following the completion of the works.
- Prior to the commencement of excavations, an area for stockpiling excavated material will be identified within the proposed development site
- Stockpiling of construction materials shall be strictly prohibited within 20m of any existing surface water drainage, ditch or water-laden channel;
- The temporary soil storage areas will be located on flat lands during the construction phase. The amount of excavated material is expected to be small, but stockpiling of large volumes of loose soil material onsite will be avoided, and surplus material removed from the site as soon as work is completed.
- For the temporary storage of excavated material, site preparation will take place during the dry season. Construction will stop during heavy rains;
- The stockpile shall be covered with plastic to prevent the ingress of rainwater. The stockpile shall be bunded to collect any contaminated surface water run-off. The excavated material shall be WAC (Waste Acceptance Criteria) tested for appropriate disposal or reuse on site;



- The storage area will be located on flat ground away from wet grounds and the existing vegetation will act as an effective buffer against any sediment in runoff from the storage area;
- A reduced stockpile height of 2m will apply to any top soil / soil forming materials to prevent possible degradation of soil structure and instability;
- The excavated will be delivered by tractor and trailer to the stockpile area via the access tracks;
- A periodic inspection will be carried out to verify and inspect the integrity of the stockpile to ensure no erosion is taking place;
- All temporary excavated storages areas will be regularly checked/monitored to ensure no drainage issues of surface water quality impacts are occurring;
- Once the stockpile has been completed, the area will be cordoned off with secure fencing to prevent any disturbance or contamination by other construction activities;
- Suspended soils will not exceed 25 mg/l or result in the deposition of silts on gravels of any aquatic flora or fauna as specified in the Salmonid waters regulations SI 293 of 1988.
- All temporary construction compound and welfare facilities will be setback a minimum of 50m from any watercourses. Temporary welfare facilities will not have any discharge to ground or surface waters.

7.4.3.2 Pollution Control Measures

- Protection measures shall be put in place to ensure that all hydrocarbons used during the construction works are appropriately handled, stored and disposed of in accordance with recognised standards;
- An emergency plan for the construction phase of the proposed development to address accidental spillages will be drawn up, with mandatory adherence and training for all site personnel;
- The construction compound and parking will be located adjacent to the access road to the site;
- The construction compound and welfare facility will be located within the proposed development, and setback a minimum of 50m from the drainage ditches and rivers. The temporary welfare facilities will not have any discharge to ground or surface waters;
- All wastewater will be collected in a large tank, and will be emptied as required by a licenced waste collector according to the manufacturer's guidelines;
- No material or vehicles will be stored within 20m of drainage ditches or watercourses.
- No wheel-washing or cement wash facilities will be present within any of the development sites or at the site entrances.



- All machinery will be regularly maintained and checked for leaks. Services will only be undertaken within the construction compound or offsite.
- Fuels and oils will be stored in a secure bunded area of the construction compound sites that are located more than 50m away from the watercourses.
- Re-fuelling of construction equipment and the addition of hydraulic oil or lubricants to vehicles / equipment will be undertaken in designated hard surface, bunded areas within the construction compound or off site only. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser.
- Mobile storage units such as fuel bowsers should be bunded to 110% capacity to prevent spills. Tanks for bowsers and generators should be double skinned. All valves and fuel trigger guns from fuel storage containers should be locked when not in use;
- A spill kit and drip tray on site at all times and available for all refuelling operations. A drip tray will be placed beneath the fill point during refuelling operations in order to contain any spillages that may occur. Equipment not left unattended during refuelling. All pipework from containers to pump nozzles fitted with antisiphon valves;
- Spill-kits and hydrocarbon absorbent packs will be stored in the cabin of all construction vehicles. All fully trained machine operators and site staff will have use of this equipment;
- Any spillage of fuels, lubricants or hydraulic oils shall be immediately contained, with an appropriate emergent response put in place. Any contaminated soil will be removed from the site and properly disposed of to a suitably licenced facility;
- Refuelling will only occur within the construction compound or off site and under inspection by the ECoW. No refuelling or maintenance of machinery to occur within 50m of any watercourse. Only dedicated trained, competent personnel can carry out refuelling operations;
- Strict procedures for plant inspection, maintenance and repairs detailed in the contractor's method statements and machinery checked for leaks before arrival on site;
- All site plant inspected at the beginning of each day prior to use;
- Services only undertaken within the construction compound or offsite. Defective plant not used until the defect is satisfactorily fixed;
- All major repair and maintenance operations take place off site;
- The oil and fuel containment facility will be regularly inspected and maintained. In the event of an accidental spill of chemicals, oil, or fuel into the watercourse, IFI will be informed immediately;
- Care must be taken at all times to avoid contamination of the environment with contaminants other than hydrocarbons, such as uncured concrete or other chemicals;



- No chemicals that are deleterious to aquatic organisms can be used in cleaning works;
- The precast headwalls will comprise of a precast reinforced concrete, placed on foundations on the bank of the watercourse;
- All ready-mixed concrete shall be brought to site by truck as required and poured in place at site.
- A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline waste waters or contaminated storm water to the underlying subsoil.
- Concrete shall be contained and managed appropriately to prevent pollution of watercourses;
- No on-site batching will be permitted within the proposed development site. All raw, uncured waste concrete will be cured off site.
- Wash down and washout of concrete transporting vehicles will take place at an appropriate facility offsite;
- All concrete works will be scheduled during dry weather conditions only to reduce the elevated risk of runoff. Concrete pouring will be prevented during periods of heavy rainfall (Yellow rain warning event or higher), and quick setting mixes will be preferable;
- All concrete poured at site will be isolated from any flowing water that may drain into the river. There will be no direct discharge of concrete or residues made to waters;
- A periodic inspection will be carried out by the EcOW at the concrete pouring areas to verify and inspect the integrity of the area to ensure no pollution is taking place;
- Waste materials shall be stored in designated areas that are isolated from surface water drains.
- No harmful materials shall be deposited into any watercourses, including drainage ditches/pipes on or adjacent to the site; and
- On completion of the works, all apparatus, plant, tools, offices, sheds, surplus materials, waste material, and temporary erections or works of any kind will be removed from the site.

7.5 OPERATIONAL PHASE MITIGATION

The operation of the flood alleviation measures should not ordinarily result in operational impacts along the watercourse that would adversely affect the integrity of the downstream European sites. However, given the classification of the potential impacts from the proposed development's operation phase (i.e. of same nature as the potential surface water impacts during the construction phase), the mitigation measures proposed for the construction phase of the proposed development are also proposed for the proposed development's operation phase. In the



unlikely event of an emergency operation being required along the watercourse, the following measures shall be implemented:

- Responding staff (OPW) shall operate to the documented scheduled maintenance or emergency procedures and shall have spillage kits readily available; and
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained, with an appropriate emergent response put in place. Any contaminated soil shall be removed from the site and properly disposed of.



8. RECORD KEEPING

The Site Manager will appoint a competent person(s) to act as Project Environmental Manager and carry out environmental monitoring and maintain records for the duration of the works. The appointed person(s) will be familiar with the environmental mitigation and monitoring measures outlined in this Outline CEMP and will carry out the relevant inspections and assessments on a regular basis. The Project Environmental Manager will report to the Site Manager.

Daily inspections of the silt fences and watercourses will be logged and recorded in a site folder. Any water sampling results from field testing and laboratory testing will also be maintained in the site folder.

A record of all waste movements from the site will also be maintained and copies of the waste transfer dockets will be held on site. The Project Environmental Manager will ensure that all waste haulage vehicles are identified on the waste collection permit and that the waste description and associated List of Waste code stated on the waste transfer docket are correct.

Any incidents resulting in a potential negative impact on soils or groundwater will be notified immediately to the Project Environmental Manager and the Site Manager. Spill kits will be used where possible to clean up any release and measures taken to ensure that any release does not reach a watercourse or surface water drain. Leitrim County Council will be notified of any such incident which has the potential to cause a negative impact.

A record of any complaints received in relation to construction works will also be maintained and categorised (e.g. noise, property damage, traffic, dust etc.) within a central Site Complaints Log. The log will include the following key details:

- Name, address and contact details of the complainant (with the complainant's permission);
- Brief outline of the complaint;
- Date of complaint;
- Name of person receiving complaint details; and
- Agreed timeline for response to the complaint.

Any complaints made will be notified to the Site Manager and the Project Environmental Manager immediately and a plan put in place to investigate and seek to resolve the complaint. The Site Manager will also notify the Developer of complaints received. The complainant, Developer and other stakeholders will be kept informed of the progress in resolving the issue.

Hard copy folders will be maintained on-site for inspection by the planning authority at any time.



