

MWMP

Resource Waste Management Plan (RWMP)

Bantry Mill Culvert Upgrade Project

Cork County Council

November 2024

Contents

1.	Introduction	1
1.1	Purpose of the Plan	1
1.2	Applicant Commitment	2
1.3	Legislation and Guidance	2
1.4	Resource Targets	3
1.5	Supporting Documentation	3
2.	Project Description	4
2.1	Site Location and Description	4
2.2	Description of Construction Elements	7
2.3	Project Programming	7
2.4	Site Clearance	7
2.4.1	Vegetation Removal	7
2.4.2	Excavated Materials	7
2.5	Potential Hazardous Materials and Waste	8
2.5.1	Ground Contamination	8
2.5.2	Fuel, Oils and Chemicals	8
2.5.3	Invasive Species	8
2.5.4	Bituminous material	8
2.5.5	Other known Hazardous Substances	8
3.	Roles and Responsibilities	9
4.	Design Approach	10
5.	Key Materials, Quantities and Costs	12
6.	Site Management	15
6.1	Resource Manager	15
6.2	Procedures for identifying suitably authorised waste collection operators & waste destination sites	15
6.3	Requirements for resource-efficient supply chains	16
6.4	Procedures for record keeping and reporting of all off-site export of resources;	16
6.5	Requirements for communications with the local authority and other stakeholders;	17
6.6	Audits and inspections of resource management practices	17
7.	Site Infrastructure	18
7.1	Minimum Requirements for Site Signage on Resource Management	18
7.2	Minimum Requirements for Resource Storage	18
7.3	Handling and Export of Resources	19

Tables

Table 1-1: Standard, Good and Best Practice Recovery Rates by Material	3
Table 3-1: Roles and Responsibilities	9
Table 4-1: Design Approaches	10
Table 5-1: Waste Materials, Quantities and Cost	12
Table 7-1: Example of Waste Register Template	19

Figures

Figure 1-1: Waste Hierarchy (Source: EPA)	3
Figure 2-1: Site Location	5
Figure 2-2: Site Layout (1 of 2)	6
Figure 2-3: Site Layout (2 of 2)	6
Figure 7-1: Good practice waste segregation at WSA (Source: EPA RWMP Guidelines)	19

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MWP, Engineering and Environmental Consultants

Address: Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK

www.mwp.ie



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1. Introduction

A part 8 Planning Application is being lodged by Cork County Council (CCC) hereafter referred to as ‘the Applicant’ for the Bantry Mill Culvert Upgrade Project (BMCUP) hereafter referred to as ‘the proposed development’.

The purpose of the BMCUP is to upgrade the existing Mill River culvert within Bantry town and remove the existing foul and surface connections to the culvert and change these to discharge into an independent foul network.

The proposed development comprises:

- Reconstruction of a new Mill River Culvert along Bridge Street and New Street and Wolfe Tone Square and connection to the existing Mill River Culvert at chainage 80m; This includes:
 - A new Mill River Culvert of internal dimensions 5.2m wide, 1.5m high which will be constructed from a tie in at Wolfe Tone Square, at Chainage 80m, to William Street, at Chainage 242m
 - A new Mill River Culvert of internal dimensions 3.6m wide, 1.5m high which will be constructed from William Street junction at Chainage 242m to the Mill on Bridge Street at Chainage 452m
- Connect to existing drainage/services at William Street and Main Street;
- Repair/upgrade works to be carried out to the Mill River Culvert from Chainage 0 to 80m;
- Road and footpath reinstatement works;
- Removal and reconstruction of the central section of Wolfe Tone Square architectural feature will be required to facilitate the tie in of the new Mill River culvert;
- Construction of new services and utilities including foul water drainage. Surface water drainage, watermain infrastructure, electricity and communications will be required at Wolfe Tone Square, New Street and Bridge Street;
- Including modifications to existing services including foul, surface water and services generally to facilitate the proposed scheme;
- Construction of 2 No. surface water pumping sumps in Wolfe Tone Square.

This Resource and Waste Management Plan (RWMP) has been prepared by Malachy Walsh and Partners (MWP) on behalf of Cork County Council.

This RWMP has been developed in accordance with the Environmental Protection Agency (EPA) Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects, 2021.

1.1 Purpose of the Plan

The principal purpose of this plan is to ensure efficient use of material resources, reduce waste at source and reduce the quantity of waste that requires final off-site disposal to landfill in accordance with the waste hierarchy. A secondary aim is to facilitate the transition to a more circular economy thereby minimising the need for new inputs of virgin materials and energy, while reducing environmental pressures linked to resource extraction, emissions, and waste management.

The objective of this plan is to provide information necessary to the Appointed Contractor to ensure that construction waste generated by the development will be managed in accordance with current legal legislation, guidelines and industry standards.

This RWMP should be viewed as a live document and should be regularly revisited and revised as necessary throughout a project's lifecycle so that opportunities to maximise waste reduction / efficiencies are exploited throughout.

The Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects (EPA 2021) outline a recommended structure and content that defines Tier 1 and Tier 2 RWMPs. As information becomes available in the design phase some sections can be addressed, however some sections can only be completed during the construction phase and the Appointed Contractor commits to responsibilities. To provide full transparency and commitment during the planning and procurement phases these sections in the design phase are included.

1.2 Applicant Commitment

The Developer (Cork County Council) is committed to ensure that the preferred waste management hierarchy of avoidance, minimisation, reuse, recycling and finally disposal is followed and that the appropriate measures are implemented to comply with all relevant legislation and other guidance as outlined in **Section 1.3**.

1.3 Legislation and Guidance

- Waste Framework Directive 2008/98/EC (as amended);
- Landfill Directive 1999/31/EC (as amended);
- Waste Management Act 1996 (as amended);
- Waste Management (Facility Permit And Registration) (Amendment) Regulations 2019;
- Waste Management (Collection Permit) (Amendment) Regulations 2023 (S.I. No 63 of 2023);
- Litter Pollution Act 1997 (No. 12 of 1997) (as amended in 2022);
- European Communities (Waste Directive) (Amendment) Regulations, 2020;
- EU Construction and Demolition Waste Management Protocol (European Commission 2018);
- The Department of Communications, Climate Action and Environment (DCCAE) A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020-2025 (DCCAE 2020);
- By-Product Guidance Note, A Guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) (EPA, 2020);
- Circular Economy Action Plan, For a Cleaner and More Competitive Europe (European Commission 2020);
- Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects (EPA 2021);
- The Southern Region Waste Management Plan 2015-2021;
- Draft National Waste Management Plan for a Circular economy, 2023;
- The Circular Economy Programme 2021-2027;
- Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less';
- National Hazardous Waste Management Plan 2021 – 2027 (EPA 2021);
- Guidance Document for the Local Authority Sector: Management of Materials Arising from Roadworks, (CCMA 2020).
- Guidance on the Interpretation of Key Provisions of Directive 2008/98/EC on Waste (European Commission, 2018)
- The Management of Waste from National Road Construction Projects (TII, December 2017)
- Guidelines for the Waste Audits Before Demolition & Renovation Works of Buildings (European Commission, May 2018)

1.4 Resource Targets

The following targets have been established for the management of waste generated during the project. **Figure 1-1** illustrates the most preferred and least preferred waste hierarchy options with waste prevention highlighted as the most desired.

- During the construction phase, a CEMP will be used to ensure that the production of waste is minimised.
- 100% of uncontaminated packaging material, metals, timber, plastic, paper and cardboard waste to be sent for recycling/recovery;
- Excavated materials to be sent for appropriate waste disposal.

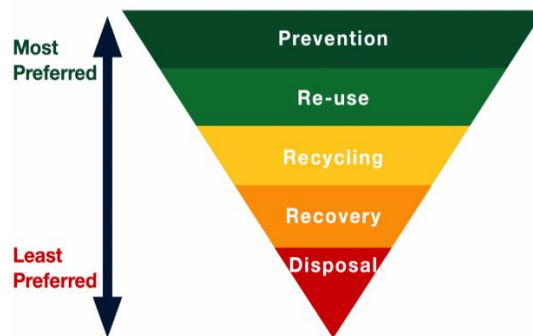


Figure 1-1: Waste Hierarchy (Source: EPA)

Table 1-1: Standard, Good and Best Practice Recovery Rates by Material

Material	Standard Practice Recovery (%)	Good Practice recovery (%)	Best Practice Recovery (%)
Metals	95	100	100
Packaging	60	85	95
Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	75
Electrical equipment	Limited information	70	95
Cement	Limited information	75	95
Liquids and oils	100	100	100
Hazardous	50	Limited information, cannot be 100% since some hazardous waste e.g. asbestos must be landfilled.	

To help with the setting of target waste recovery rates, WRAP (Waste & Resource Action Programme) has identified standard, good and best practice recovery rates for a broad range of waste materials (**Table 1-1**). The recovery rates shown in the **Table 1-1** are for key construction materials and relevant construction wastes associate with the project.

1.5 Supporting Documentation

- The Construction and Environmental Management Plan (CEMP)

2. Project Description

2.1 Site Location and Description

The permitted development is located approximately 85km west of Cork city in County Cork. The Mill Culvert runs down Bridge Street and New Street and Wolfe Tone Square (See **Figure 2-1**).

The Bantry catchment is centred around the 2.2 km long Mill River, also known as the Bantry River, a steep channel upstream before it passes into a tidal culvert under Chapel Street in Bantry Town. The culvert passes under Bantry Town Centre and has an outfall into Bantry Harbour. There are multiple tributaries which join the Mill River: the Knocknaveagh, Sheskin East, Carrignagat, Alley River, and Scart. These are relatively steep and narrow, with many engineered sections including culverts, weirs, bridges, and aqueducts. The Alley River, also known as the Reenrou, has a shallower gradient, and is culverted in its lower reaches.

Bantry's culverts consist of a main culvert and two side culverts. The main culvert is 445m long and carries the Mill River under the centre of Bantry along New Street until it outfalls to the estuary west of Wolf Tone Square. There is a 103m long side culvert from the south which carries the Scart Stream into the main culvert at Bridge Street approximately 440m upstream of the outfall. The other side culvert connects from the north and carries the Alley River into the Mill River approximately 309m upstream of the outfall.

There are surface water capacity issues with the Mill River and existing surface water culverts which contribute to flooding in the area. Foul water in the Bantry area is conveyed via a combined sewer system to the Bantry Wastewater Treatment Plant (WWTP), which has a design capacity of 6,000 population equivalent (PE) and is situated on the northern side of Bantry Harbour. Information on sewage treatment discharge locations were gathered from EPA maps (2024). The primary discharge location for foul water is in Inner Bantry Bay, approx. 2.6 km west of the Mill River outflow into Bantry Harbour. A secondary outflow is at the junction of Glengarriff Road and Barrack Street, while emergency outflows are located on the Scart Rd south of the Harbour, at Reenrou East north of the Harbour, and in Bantry Harbour itself, near the WWTP.

In 2018, an inlet survey was carried out by MWP to determine the inlets to the culverts. The findings of the inlet survey recorded 132 inlets of varying size and condition. During the inlet survey, it was not possible to fully determine whether the inlets were a foul service, storm service or combined although the presence of faecal matter throughout the culvert was noted.

Significant access difficulties, including close proximity of the culvert to buildings and absence of adjacent sewerage infrastructure at a number of locations in the town, were also noted. To confirm their (inlets) source and the likely permanent infrastructure and temporary diversion works requirements, a detailed connectivity survey was recommended.

The survey was conducted in October 2020 and additional survey works were completed in June 2021. MWP prepared the Drainage Options Report for the Bantry Culverts Connectivity Survey in 2022. The report recommended the options for the BMCUP.

The purpose of the BMCUP is to upgrade the existing Mill River culvert within the town and remove the existing foul connections to the culvert and change these to discharge into an independent foul network. An overall plan view of the proposed development is provided on **Figure 2-1** and typical cross sections are given on **Figure 2-2 & Figure 2-3**. Further detail on the BMCUP is included in the Preliminary Design Drawing Booklet which is included in the CEMP.

MWP also prepared a Geotechnical Interpretative Report (GIR) and rippability assessment on behalf of Cork County Council in relation to the proposed BMCUP.

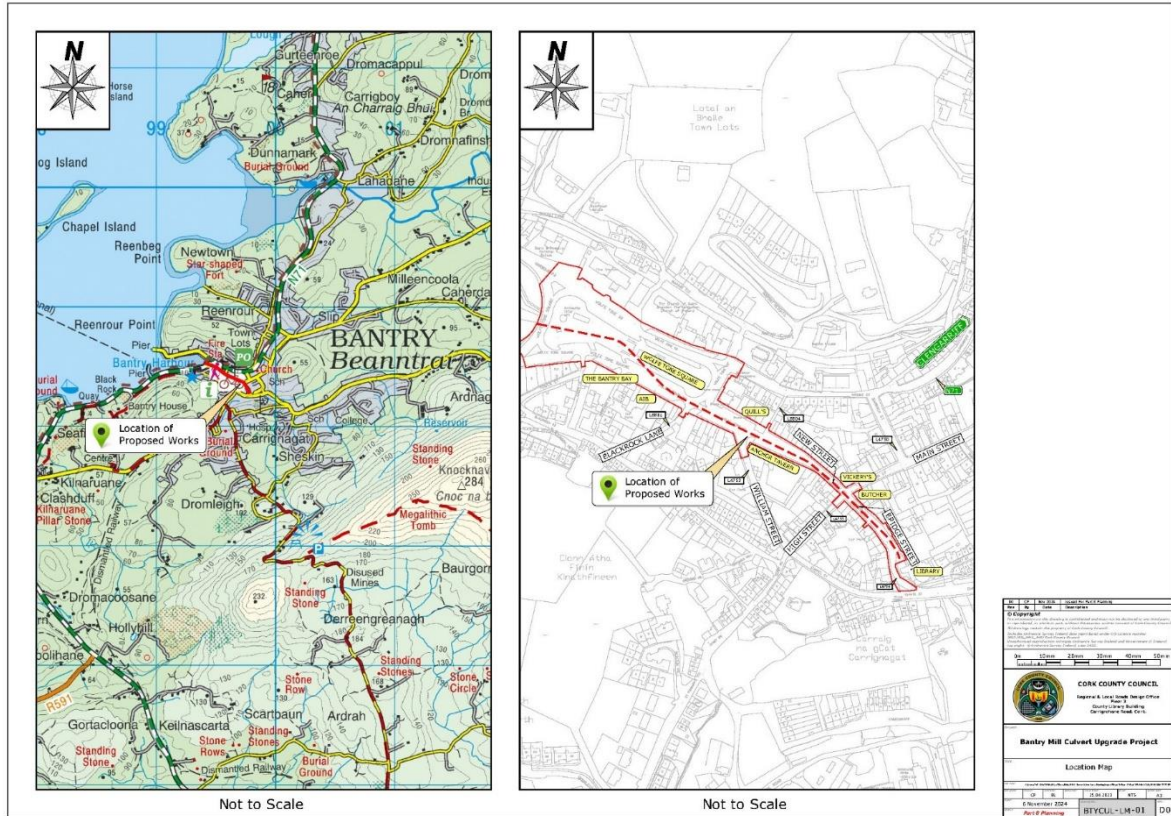


Figure 2-1: Site Location

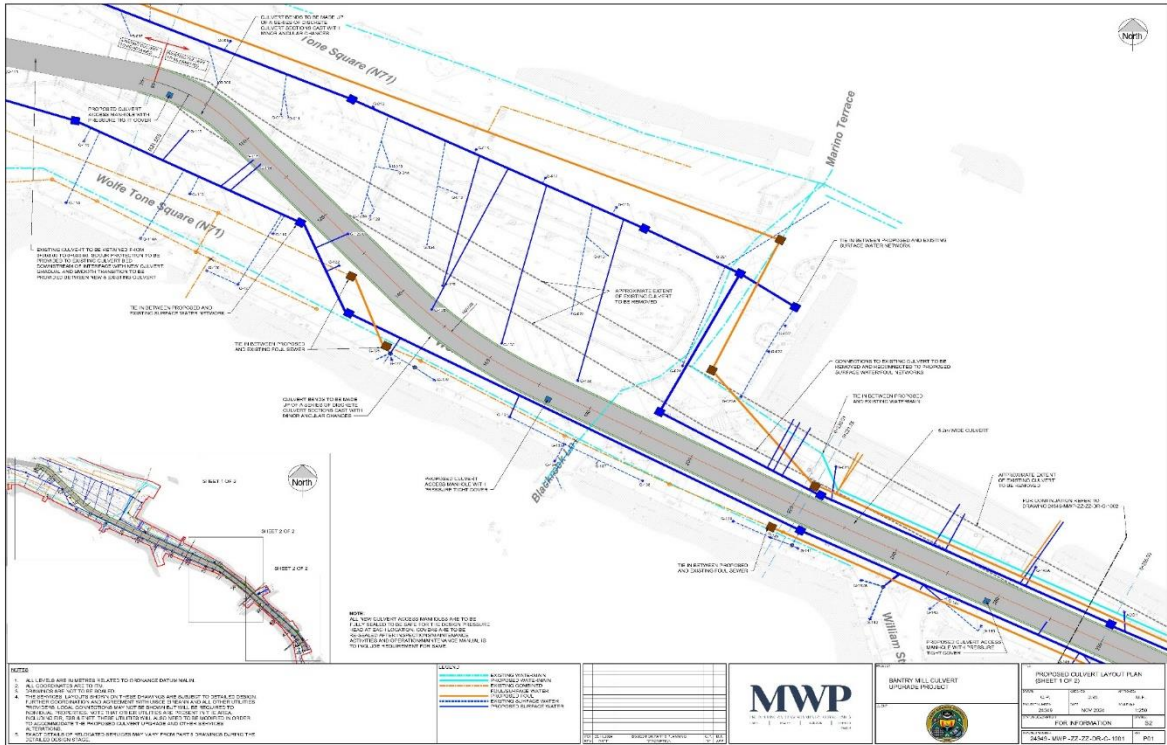


Figure 2-2: Site Layout (1 of 2)

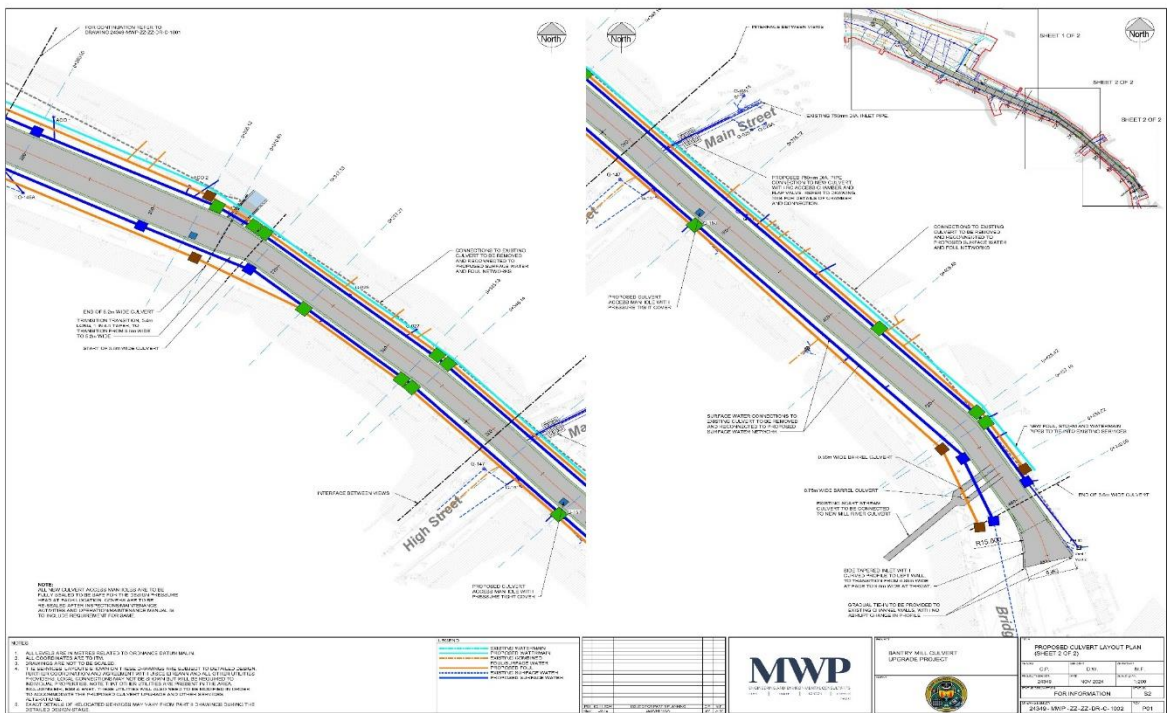


Figure 2-3: Site Layout (2 of 2)

2.2 Description of Construction Elements

The proposed project consists of upgrade works to the Bantry Mill culvert. The overall development will include:

- Initial excavations and temporary services diversions will be undertaken,
- Excavation for the culvert will typically include the additional excavation required for the new/upgraded services and utilities which will be installed on each side of the new culvert,
- A mass concrete levelling blinding will be placed where required on the existing soil/rock to ensure a uniform surface is provided to support the culvert,
- The majority of the new culvert will be manufactured off site and transported to the site in segments before being lifted into position by a crane and joined together,
- Localised sections of the culvert will be cast in-situ, typically at interfaces with existing culverts or at irregular or non-uniform geometries,
- The permanent services and utilities will be installed, and the excavation/trenches will be backfilled,
- The road/pavements will then be reinstated. It is envisaged that a temporary finish will initially be provided for each segment,
- It may be necessary to undertake additional excavations each side of the new culvert to access the new services/utilities and make the final permanent connections for properties,
- Alternatively, the culvert could be installed in its entirety with temporary services and, following completion of the culvert installation, the new services and utilities would be constructed each side of the culvert.

Works will be generally confined to Bridge Street, New Street, N71 and Wolfe Tone Square within Bantry Town. Existing drainage and services from William Street and Main Street will need to be connected which will result in limited works on both of those streets.

2.3 Project Programming

The total construction time frame for the development is anticipated to cover a period of between 12-18 months. During this period, there will be a combination of HGVs for the component deliveries and cars/vans for construction staff. HGV movements are expected to be most intense throughout the initial stage of construction, tailing off towards the final weeks. Car/van movements are expected to be constant throughout.

Due to the limited space available for the construction works at many locations, it is anticipated that the construction will be carried out in a phased manner, whereby the works will be divided into suitably sized segments.

2.4 Site Clearance

2.4.1 Vegetation Removal

There is no hedgerow or vegetation clearance foreseen for Bantry Mill Culvert.

2.4.2 Excavated Materials

It has been calculated that there will be approximately 93,700 Tonnes of material excavated during the construction phase of the project. Of this, approximately 80,000 Tonnes will be hazardous soil and stone,

approximately 10,000 Tonnes will be non-hazardous soil & stone and approximately 3,000 Tonnes will be Bituminous waste from existing roads and the remaining 700 Tonnes will be C&D waste.

All material which is excavated during the construction works will be sorted. Where material is not suitable for use elsewhere in the works, it will be disposed of off-site. Because there are existing foul discharges into the sections of culvert to be demolished, some of the excavated material may be contaminated.

2.5 Potential Hazardous Materials and Waste

2.5.1 Ground Contamination

There is potential for ground contamination due to the presence of faecal matter detected during the inlet survey conducted in 2018.

EPA maps have been consulted, confirming that the overall development does not fall within any historically designated landfill area.

2.5.2 Fuel, Oils and Chemicals

It is anticipated that fuel (lubricating oil, hydraulic fluid) will be required on site for the vehicles and equipment that will be brought on site during the construction phase. No refuelling shall take place within 50m of any watercourse. Fuel should be stored in doubly banded bowsers or in a banded area at the site compound. Spill kits will be readily available on plant equipment or when working with fuel operated heavy tools.

Chemicals may be brought on site for construction works, some of which could be considered hazardous. Care will be taken with the usage and disposal of any fuel, oils and chemicals on site. Any hazardous waste generated on site will be disposed of to the licenced waste facility.

2.5.3 Invasive Species

No invasive plant or faunal species were identified during the surveys undertaken on 9th of February and 19th of June 2024.

2.5.4 Bituminous material

During the construction phase for the new culvert, excavated material will be generated from where the ground is excavated from the existing road/surface level down to the proposed culvert formation level. Any hazardous or bituminous material (asphalt, coal tar, and bitumen) will be sent to the licenced waste authority for treatment/disposal.

2.5.5 Other known Hazardous Substances

It is anticipated that a small quantity of Waste Electrical and Electronic Equipment (WEEE) (containing hazardous components), and batteries (Lead, Ni-Cd or Mercury) may be generated during construction activities from temporary site office and machines on site. This waste will be stored in designated areas on site in labelled containers and will be collected by an authorised waste contractor.

3. Roles and Responsibilities

While the Contractor will manage the obligations of the project during construction, the client and the clients advisory team will ensure same is undertaken correctly. The general role of key people on site implementing the RWMP is described in **Table 3-1**.

Table 3-1: Roles and Responsibilities

Person Responsible	Responsibilities	Contact Details
Client	<ul style="list-style-type: none"> - To prepare a pre-construction RWMP as part of the planning compliance; - To ensure that the RWMP is submitted and agreed on by the local authority prior to construction; - To commission a competent contractor to carry out works and to update RWMP; and - To commission contractor to produce end-of-project RWMP 	TBC
Client Advisory Team (Design Team including Engineers, Consultants, etc.)	<ul style="list-style-type: none"> - To maintain and update RWMP through the planning and procurement phases of the project; - To update record of details and estimated quantities of all projected waste streams; - To incorporate relevant conditions imposed in the planning permission into the RWMP; - To work with the Contractor as required to meet the performance targets for the project. 	TBC
Contractor	<ul style="list-style-type: none"> - To update, implement and review the RWMP throughout the construction phase; - To assign relevant duties and responsibilities to the appropriate person; - To hire a responsible RM who will implement the RWMP; - To identify all hauliers engaged to transport each of the resources / wastes off-site; - To identify suitable licensed waste facility site for each type of waste; - To maintain the records of all waste resources for the duration of the project; and - To preparing an end-of-life RWMP Review Report. 	TBC
Resource Manager	<ul style="list-style-type: none"> - To conduct waste checks - To conduct audits annually/biannually as per the requirement of the site - To adopt construction and demolition methodology to facilitate maximum reuse and/or recycling of waste - To liaise with client/contractor - To assign duties in relation to RWMP - To maintain and update the waste register (see Table 7-1) 	TBC

4. Design Approach

International best practices have been considered in the design phase to prioritise waste prevention, reuse, recycling and recover material wherever possible (see **Table 4-1**).

Table 4-1: Design Approaches

Design Approach	Description
Designing For Prevention, Reuse and Recycling	The design team has considered the potential reuse of excavated materials on-site wherever feasible, incorporating them for activities such as bunding, landscaping and reinstatement of culvert and temporary construction compound(s).
Designing for Green Procurement	<p>Supply chain competency will be assessed prior to appointment via a pre-qualification questionnaire which cover key environmental matters. Procurement selection will minimise unnecessary packaging. Options for packaging reduction discussed with subcontractors and suppliers using measures such as ‘delivery when required’ delivery. Use ordering procedures that avoid waste, i.e., no over-ordering, take-back schemes for both material surplus and offcuts.</p> <p>The contractor will review ‘new’ materials to be used as part of the proposed development, which contain a recommended percentage of recycled content if they meet the functional, performance and regulatory requirements and are available locally at a reasonable cost.</p>
Designing for Off-Site Construction	<p>The design allows for the use of prefabricated and precast elements which can be manufactured off site to the required specifications. These may include:</p> <ul style="list-style-type: none"> • Cable conduits • Cable trays • Precast structural concrete panels • Fencing <p>The new culvert will be installed in accordance with the Preliminary Design Booklet Drawings.</p> <p>It is anticipated that the majority of the new culvert will be manufactured off site and transported to the site in segments before being lifted into position by a crane and joined together. Localised sections of the culvert will be cast in-situ, typically at interfaces with existing culverts or at irregular or non-uniform geometries. Cast in-situ sections will typically be constructed using the following methods:</p> <ul style="list-style-type: none"> • Steel reinforcement for the culvert base slab will be lifted onto the formation/blinding and fixed into position before pouring concrete, • Starter bar will be left out of the base slab to allow the reinforcement for the walls to be lapped on to provide continuity to the structure. Conventional formwork will be lifted into position using a crane before pouring concrete for the culvert walls. The culvert roof will also include conventional soffit formwork and may be poured at the same time as the walls, • Once the concrete has sufficiently cured the formwork will be stripped.
Designing for Materials Optimisation	<p>The project has been designed in line with standardised design details which helps avoids overdesigning and unnecessary elements.</p> <p>No unconventional construction materials are required and a large proportion of the construction materials to be used can be locally or regionally sourced.</p>

Design Approach	Description
Designing for Flexibility and Deconstruction	No unconventional construction materials are required. The vast majority of the construction materials to be used can be recycled and/or recovered and are designed to be easily disassembled.

5. Key Materials, Quantities and Costs

Table 5-1: Waste Materials, Quantities and Cost

LoW Code	Description	Volume Generated (Tonnes)	Prevention (tonnes) (non waste)	Reused (tonnes) (non waste)	Recycled (tonnes)	Recovered (tonnes)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost	Collector (Possible)
13 02 08*	Other engine, gear and lubricating oils (Waste oils)	<0.5					<0.5	TBC	TBC	AQS Environmental Solutions (WCP-NWCPO-12-02583-03)
								TBC	TBC	ENVA Ireland Ltd. (WCP – NWCPO – 0801116 – 03)
13 05 08*	Mixtures of waste from grit chambers and oil/water separators	<0.5					<0.5	TBC	TBC	AQS Environmental Solutions (WCP-NWCPO-12-02583-03)
15 01 01	Paper and cardboard packaging	<0.1			<0.1			TBC	TBC	KWD Recycling (NWCPO-10-05637-07)
15 01 02	Plastic Packaging	<0.1			<0.1			TBC	TBC	KWD Recycling (NWCPO-10-05637-07)
15 02 02*	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths,	<0.1					<0.1	TBC	TBC	AQS Environmental Solutions (WCP-NWCPO-12-02583-03)

LoW Code	Description	Volume Generated (Tonnes)	Prevention (tonnes) (non waste)	Reused (tonnes) (non waste)	Recycled (tonnes)	Recovered (tonnes)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost	Collector (Possible)
	protective clothing contaminated by dangerous substances									ENVA Ireland Ltd. (WCP – NWCPO – 0801116 – 03)
17 02 01	Wood	<5			<5			TBC	TBC	KWD Recycling (NWCPO-10-05637-07)
17 03 03*	Bituminous mixtures (coal tar and tarred products)	3,000					3,000	TBC	TBC	ENVA Ireland Ltd. (WCP – NWCPO – 0801116 – 03)
17 04 11	Cables other than those mentioned in 17 04 10	<3					<3	TBC	TBC	KWD Recycling (NWCPO-10-05637-07)
17 05 03*	Soil and stones containing dangerous substances	80,000					80,000	TBC	TBC	ENVA Ireland Ltd. (WCP – NWCPO – 0801116 – 03)
17 05 04	Soil and stones other than those mentioned in 17 05 03	10,000					10,000	TBC	TBC	KWD Recycling (NWCPO-10-05637-07)
17 06 04	Insulation materials other than those mentioned in 17 06 01 and 17 06 03	<5					<5	TBC	TBC	KWD Recycling (NWCPO-10-05637-07))

LoW Code	Description	Volume Generated (Tonnes)	Prevention (tonnes) (non waste)	Reused (tonnes) (non waste)	Recycled (tonnes)	Recovered (tonnes)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost	Collector (Possible)
17 09 03*	Other construction and demolition wastes (including mixed wastes) containing dangerous substances	700					700	TBC	TBC	ENVA Ireland Ltd. (WCP – NWCPO – 0801116 – 03)

6. Site Management

In order to ensure the RWMP will be measured and monitored for effectiveness the following proposals are outlined below.

6.1 Resource Manager

The Appointed Contractor must appoint a designated Resource Manager. The designated Resource Manager (RM) of the construction team will be responsible to ensure commitment, operational efficiency and accountability during the Construction phase of the project.

- The appointed RM will be responsible for managing the waste team, if necessary. The RM will hold the overall responsibility for supervising, recording, and providing regular feedback to the client regarding the site's daily waste management activities.
- The RM will also report to contractor when required. Additionally, they will coordinate with suppliers, service providers, and subcontractors to prioritise waste prevention, recycling and reuse.
- Training will be provided to the RM, covering the maintenance of a record-keeping system, best practices for segregating and storing recyclable materials, conducting audits, and setting targets for on-site waste management.
- RM will be responsible for conducting site induction training. The site staff will be trained to a basic awareness course (environmental induction) to detail the segregation of waste materials at source.
- The RM will be responsible to arrange Regular toolbox talks to ensure all staff are aware of the associated resources and waste management practices to be implemented on site.

6.2 Procedures for identifying suitably authorised waste collection operators & waste destination sites

The hiring of waste contractors will be undertaken in accordance with the Waste Management Acts 1996 - 2011, Waste Management (Collection Permit) Regulations 2007 as amended, and Waste Management (Facility Permit & Registration) Regulations 2007 as amended.

The following measures are adhered to ensure compliance with these requirements:

1. Ensure that waste collection contractors hold a valid waste collection permit.
2. Check that each waste contractor is permitted to carry the waste concerned. Details of authorised waste types are specified in Appendix A of each waste collection permit.
3. Check that the vehicle registration used to carry waste is listed on waste collection permit. Vehicles details are listed in Appendix C of each waste collection permit.
4. Ensure that waste is being taken to a licenced facility for processing/treatment/disposal. Details of authorised transfer facilities are set out in Appendix B of each waste collection permit.

Waste Collection: all waste shall be collected by a suitably authorised waste collection operator:

- A list of currently authorised waste collectors can be accessed here:
<https://www.nwcpc.ie/permitsearch.aspx>

Waste Disposal / Recovery: all waste shall be sent to a suitably authorised waste facility:

- Waste Facility Permits or Certificate of Registrations can be accessed here: <http://facilityregister.nwcpo.ie>
- Waste facilities licensed by the EPA (Industrial Emissions or Waste Licence) is available on the following website: <https://epawebapp.epa.ie/terminalfour/waste/index.jsp?disclaimer=yes&Submit=Continue>

6.3 Requirements for resource-efficient supply chains

The contractor will ensure that supply chain for this project adheres to best practices with regard to resources and waste management. This will include the following:

- Select procurement routes to minimise unnecessary packaging – for example applying ‘Just-in Time’ (JIT) delivery processes to minimise material spoilage.
- Implement ordering procedures and supply chain systems that avoid waste, i.e. no over-ordering, use of take-back schemes for packaging, material surplus and offcuts.
- Select procurement routes that minimise unnecessary packaging.
- Plan the work sequence to reduce the potential for on-site residual resource generation.

6.4 Procedures for record keeping and reporting of all off-site export of resources;

The RM will maintain records for all resource material which is used on site and leaves the site, either for reuse, recycling, energy recovery, backfilling or other recovery or disposal on third party sites. All records (including for waste and all resources) pursuant to the agreed RWMP shall be made available for inspection at the site office at all times.

A recording system will be put in place to record residual waste and resources generated on site. A table is provided in **Section 5** of this document. This table will be used as a daily log to update resource movements off-site and compiled into a database as part of the RWMP files. The type of information to be recorded in the site tracking system is described below.

1. For each movement of resource off-site, a signed docket/invoice will be obtained by the RM from the haulier/contractor detailing the following:
 - A description of the resource stream.
 - List of Waste (Low) Code for each stream (where applicable).
 - Validated quantity of material moved off-site by the haulier/contractor (typically reported in tonnes).
2. The name and authorisation of the haulier to transport the material – in the case of a ‘waste’ this requires a valid Waste Collection Permit (WCP). In the case of by-product or other materials that are not a waste, no WCP is required. In both cases the vehicle registration number should also be recorded for each load of material removed from site.
3. The name and authorisation of the destination site for the resource – again for a ‘waste’ this requires a valid Cert of Registration, Waste Permit or Waste Licence and in the case of by-product the relevant by-product determination.

It is the obligation of the RM to ensure that all resources taken off-site are in line with the relevant legislation and the key area relates to ensuring that hauliers and recovery/disposal sites have the appropriate authorisations. Some key considerations include:

- Checking the expiry date of the authorisation relative to the duration of the works and whether any review of the permit is required over that period (e.g. WCPs have a maximum life of five years and review applications need to be lodged before expiry).
- Checking that the waste consent i.e. permit/licence has the authorisation 'COR holders, Waste Facility Permit holders and Waste Licence holders' for the resource stream proposed.
- Checking the authorisation for the resource management operation proposed.
- Check that any waste acceptance limits expressed in the permit/licence for material acceptance are known and that on site sampling has indicated that the residual resource complies with these limits.

6.5 Requirements for communications with the local authority and other stakeholders;

The RM will communicate through the construction phase with all stakeholders as required. This may include:

- Internal reporting of resource statistics to the Client and the wider construction management team. This may include performance relative to agreed targets and objectives.
- Engaging with Cork County Council on any site inspection or enforcement audits undertaken at the site. All follow-up actions and corrective actions should be logged and reported to the local authority.
- Engaging with other stakeholders (EPA, public, etc.) as appropriate in relation to the resource management on site.
- Upon completion of construction, the RM will prepare a final report (post-project RWMP) summarising the outcomes of resource management processes adopted, the total reuse and recovery figures and the final destinations of all resources taken off-site.

6.6 Audits and inspections of resource management practices

- Routine waste audits will be conducted to assess the composition of generated waste. Waste patterns, waste categories, and opportunities for reduction, recycling, or reuse will be analysed.
- Detailed records of waste audits, including methodology, findings, and action plans will be maintained. Documentation of waste categories, quantities, and diversion rates for future reference will be done.
- Checklists for daily, weekly or monthly site audits will be finalised by the RM and the relevant personnel informed of their duties.
- On-site and off-site facility inspections will be conducted to monitor waste management practices. Waste segregation stations, recycling efforts, and storage areas will be inspected.

- Regularly inspection of incoming materials for compliance with eco-friendly packaging and minimal waste generation standards will be conducted.
- Proper training will be provided to site workers about waste management best practices, emphasizing the importance of proper segregation, recycling, and responsible disposal.

7. Site Infrastructure

7.1 Minimum Requirements for Site Signage on Resource Management

Labelling and signage will be used on site to inform personnel of key waste storage area requirements and restrictions, with clear signage provided at all Waste Storage Areas (WSAs).

7.2 Minimum Requirements for Resource Storage

- Waste materials are to be stored in appropriate areas that prevent degradation or damage from weathering or moisture.
- All construction waste within the site shall be removed from the site and disposed of/recovered at a suitably authorised waste facility. Stripped pavement/soil material will be temporarily stockpiled more than 10m away from any drain or watercourse or taken off-site. Stockpiles will be in a dry zone that is not subject to ponding. Bunds or other diversions will be put in place to keep run off from entering the stockpile area where required. Stockpiles of excavated soil and/or subsoil will be graded so as to shed water.
- A dedicated trained banksman will supervise the operation paying particular attention to the condition of materials and making sure that different materials are separated accordingly to their deposition points
- A cabin comprising a canteen, washroom and toilets will be provided. The cabin will contain three integrated holding tanks: one for clean water, one for wastewater and the third for sewage. The wastewater tank and sewage tank will be emptied as required by a vacuum tanker and removed from site to a licensed facility. The staff facilities will be removed at the end of the construction phase.
- Designated and secure WSAs (**Figure 7-1**) will be created at the site temporary construction compound and other suitable locations, for storage and segregation of wastes prior to transport for recovery/disposal at suitably licensed/permitted facilities. Suitably sized containers for each waste stream will be provided and will be supervised by the Waste Management Coordinator (WMC).

Figure 7-1: Good practice waste segregation at WSA (Source: EPA RWMP Guidelines)



- Liquid waste (Waste oils, paints, lubricants, adhesives, chemicals) will be stored in appropriate containers in bunded areas until transported offsite.
- Domestic wastewater from the on-site holding tank will be collected on a regular basis by approved contractors and disposed of in an authorised facility in accordance with best practice. Plastic waste will be taken for recycling by an approved contractor(s) and disposed or recycled at an approved facility.

7.3 Handling and Export of Resources

- All waste material is only removed from site by suitable persons/organizations, holding all appropriate local regulatory agency issued licenses and permits for the particular waste.
- Waste material removed from site is only taken for further processing or final disposal at sites approved by the appropriate local regulatory agency holding valid licenses and permits.

The following measures are adhered to ensure compliance with these requirements:

- Ensure that waste contractors hold a valid waste collection permit.
- Check that each waste contractor is permitted to carry the waste concerned. Details of authorised waste types are specified in Appendix A of each waste collection permit.
- Check that the vehicle registration used to carry waste is listed on waste collection permit. Details from Appendix C of each waste collection permit have been provided to the weighbridge in order to permit the ongoing checking of the status of waste collection vehicles.
- Ensure that waste is being taken to a licenced facility for processing/treatment/disposal. Details of authorised transfer facilities are set out in Appendix B of each waste collection permit.
- Details all materials leaving site are to be recorded.

Table 7-1: Example of Waste Register Template

Date	Material Description Type	LoW Code	Storage Location	Hazardous (Yes/No)	Quantity (Tonnes)	Waste Treatment Operation	COLLECTION DETAILS				TRANSFER DETAILS		
							Collected by	Permit No	Vehicle Details	Vehicle listed in Appendix C	Transferred to		
											Facility Name	Address	Licence/Permit /COR No