Standalone Schedule of Mitigation Measures

16.0 SCHEDULE OF MITIGATION MEASURES

16.1 INTRODUCTION

This chapter of the EIAR provides a summary of the findings of this EIAR, based on the design and mitigation measures identified within the technical assessments of this report. This schedule below details the measures upon which the findings of this EIAR have been based and are an integral part of the proposed project.

During the construction, operational and decommissioning phases of the project, all personnel working on the project will be required to be responsible for the environmental control of their own work and to perform their duties in accordance with the requirements and procedures of the CEMP (See Appendix 2-5). All works associated with the construction of the proposed project will be undertaken with due regard to the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA,2015).

16.2 SCHEDULE OF MITIGATION MEASURES FROM EIAR

The following table provides a summary of the mitigation measures proposed within this EIAR. In addition, the monitoring proposals have been included.

Ref No.	Relevant EIAR topic	Location	Mitigation Measure	Monitoring Requirements
Pre-construction Phase				
Description of the Proposed Development				
MM1	CEMP	EIAR Chapter 2	The CEMP is a live document and will be reviewed and updated, as necessary, throughout the construction of the development. Upon appointment, the Main Contractor(s) for construction of the project shall update this document to produce a construction stage CEMP which will account for any additional requirements set out in Planning Conditions or agreed upon with the Planning Authority or other relevant Bodies post planning submission.	As required through the contractors CEMP
MM2	Health and Safety and Site Emergencies	EIAR Chapter 2	An updated Emergency Response Plan will be prepared and maintained at the proposed development. The Plan, which will be based on the Emergency Response Plan for the existing facility, will detail any emergency situation which could occur on site and the proposed response should this emergency occur. A copy of the existing Emergency Response Procedures which make up the Emergency Response Plan are included in Appendix 2-8, and these will be updated in accordance with the proposed development as part of the IE Licence Review. The updated Emergency Response Plan will detail procedures for the following occurrences: ERP 02 Spill Clean-up Procedure ERP 03 Fire / Explosion Procedure ERP 04 Malicious Damage Procedure ERP 05 Unforeseen Emergencies	As required through the contractors CEMP
Biodiversity				
MM3	Invasive Species	EIAR Chapter 6	No invasive plant species were recorded within the proposed development. However, in the event that proposed construction works are delayed more than 18 months, a pre-construction invasive species survey will be undertaken as recommended within the CIEEM Advice Note (CIEEM, 2019). In the event that an invasive plant species, listed in Part 1 of the Third Schedule of S.I No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011 is recorded a site-specific Invasive Species Management Plan (ISMP) will be prepared.	As required through the contractors CEMP

MM4	Badger	EIAR Chapter 6	In the event that construction works are delayed more than 12 months after the initial survey (undertaken in May 2022), a pre-construction badger survey will be undertaken within the proposed development site by an appropriately experienced ecologist, to identify any changes to badger activity, such as the establishment of new setts within the Zone Of Influence of the proposed development. The pre-construction survey should be conducted no more than 10-12 months in advance of the construction works, as per the NRA (2005) guidelines. In the event that a sett is identified, a derogation license will be sought from NPWS	As required through the contractors CEMP
MM5	Translocation of Frogs Spawn	EIAR Chapter 6	It is recommended that a pre-construction frog spawn survey is undertaken within wet grassland and drainage ditch habitats, which may be disturbed during the common frog's spawning season (1st March – 31st June, inclusive). In the event that frog spawn is identified within the footprint of the proposed works, a derogation license under Sections 9, 23 and 43 of the Wildlife Acts will be sought from NPWS. The derogation license, if required, will detail specific measures to translocate the frogs and spawn to suitable nearby habitat which will not be impacted by the proposed development.	As required through the contractors CEMP
Archaeology & Cultural Heritage				
MM6	Archaeological Management	EIAR Chapter 13	An experienced and competent licence-eligible archaeologist will be employed to undertake archaeological probing and testing at the site of the unclassified togher (KD008:038----). In the event of archaeological features, finds and/or deposits been encountered during the monitoring, all relevant authorities should be notified immediately. Preservation in-situ or preservation by record (excavation) may be required. An experienced and competent licence-eligible archaeologist will be employed to undertake archaeological probing and testing in the area of the proposed development infrastructure adjacent to the unclassified togher (KD009-029), located 40 m east of the proposed development infrastructure.	An experienced and competent licence-eligible archaeologist will be employed to undertake archaeological probing and testing at the site

			In the event of archaeological features, finds and/or deposits been encountered during the monitoring, all relevant authorities should be notified immediately. Preservation in-situ or preservation by record (excavation) may be required. Fencing will be erected, under archaeological supervision, at the boundary of the proposed development site in the vicinity of two trackways or toghers, (KD008-029001 & KD008-030) located to the north of the existing landfill facility. The fencing will be erected to ensure that no construction traffic extends beyond the limit of the proposed development infrastructure in this area.	
Construction Phase				
Description of the Proposed Development				
MM7	Health and Safety and Site Emergencies	EIAR Chapter 2	Any accidents and other emergencies will be handled by on-site personnel in accordance with Bord na Móna emergency response procedures. Emergency response contact numbers for the relevant authorities including the Fire Service, Gardaí, and Ambulance Services will be prominently posted on-site. All site operatives and other relevant employees of Bord na Móna will be regularly trained in emergency response procedures and in fire prevention and control. Site safety procedures will be adopted to protect any persons from injury on-site. Should injury occur, the trained site operatives, where appropriate, will be the first to administer assistance. Emergency and first-aid materials will be available in the existing and proposed site buildings. Emergency and first-aid procedures will also be prominently displayed in the site buildings, and adjacent to the surface water lagoons. 1. An updated Emergency Response Plan will be prepared and maintained at the proposed development. The Plan, which will be based on the Emergency Response Plan for the existing facility, will detail any emergency situation which could occur on site and the proposed response should this emergency occur. A copy of the existing Emergency Response Procedures which make up the Emergency Response Plan are included in Appendix 2-8, and these will be updated in accordance with the proposed development as part of the IE Licence Review. The updated Emergency Response Plan will detail procedures for the following occurrences:	As required through the contractors CEMP

			ERP 02 Spill Clean-up Procedure ERP 03 Fire / Explosion Procedure ERP 04 Malicious Damage Procedure ERP 05 Unforeseen Emergencies 2. Should an emergency situation occur, the relevant response procedure documented within the Emergency Response Plan will be implemented. Each procedure details the emergency situation, the proposed response should this emergency occur and the potential environmental impacts of this occurrence. 3. The Facility Manager shall assume the role of Site Incident Controller, with responsibility for: • assessing the scale of the incident; • informing emergency services; and • directing rescue and fire-fighting operations. In the absence of the Facility Manager, the designated Environmental Officer shall assume the role of Site Incident Controller. 4. In an emergency situation, the Facility Manager shall be contacted immediately via the two-way radio system. The weighbridge radio shall act as the main point of contact for the Facility Manager. 5. Following an emergency, the Facility Manager (or in his absence the designated Environmental Officer) shall record the details of the incident. An Environmental Incident Investigation and Reporting Form (EPF 8.1) shall be completed which is located within the procedure for Environmental Incident Investigation and Reporting (EMS Environmental Procedure EP 8.0). Following the environmental incident, appropriate procedures shall be implemented, i.e., Environmental Non-Conformance Procedure (EP 9.0) and Environmental Corrective and Preventative Action Procedure (EP 10.0). 6. This procedure shall be reviewed by the Environmental Management Team, annually or after the occurrence of an emergency situation. Additional procedures may be prepared as identified by environmental reviews/audits, environmental compliance monitoring reports, personnel during routine working hours or other communications which bring potential emergency situations to the attention of the Environmental Management Team.	

			7. The Facility Manager shall notify the EPA as soon as possible after the occurrence of an incident as per procedure EP 17.0 Reporting 8. In the case of any incident which relates to discharges to water, the Facility Manager shall notify the Local Authorities and the IFI as soon as practicable after the incident. 9. On a weekly basis, all emergency response equipment shall be checked to ensure it is provided in agreed quantities and in suitable working order. The dust suppression water bowser shall be checked on a daily basis to ensure that it is full of water. 10. In the case that an emergency situation arises outside the hours of operation, the security person shall immediately contact the designated person on call.	
MM8	Breakdowns	EIAR Chapter 2	The regular maintenance of all plant and equipment utilised on-site will be undertaken in accordance with the manufacturer's guidelines. This maintenance programme will help to minimise occurrences of breakdowns on-site. In the event of any breakdown, the item of plant or equipment will be promptly repaired or replaced. A new maintenance building is proposed to facilitate this maintenance programme. All plant and equipment will be checked on a daily basis.	As required through the contractors CEMP
MM9	Staffing	EIAR Chapter 2	Off-roster fully trained staff will be deployed to the site in the event of sickness to key personnel. This will also apply to general site operatives and plant operators. If required, plant operators will be sourced from local plant contractors should the need arise.	As required through the contractors CEMP
MM10	Out of normal hours	EIAR Chapter 2	Site personnel and other employees of Bord na Móna will be available in the event of any emergency at the site outside of normal working hours. An emergency contact number will be prominently posted at the existing entrance at the R403 Regional Road. Local emergency services will be informed of contact numbers for key Bord na Móna personnel. Outside normal working hours, security personnel will also be provided at the site who will also have the relevant contact numbers. These security arrangements will be implemented in order to guard against unlawful trespass and vandalism. Basic routines will exist whereby any cash, records and	As required through the contractors CEMP

			equipment will either be taken off-site daily or secured within the administration building. These procedures will be in the interest of overall security.	
MM11	Environmental Contamination	EIAR Chapter 2	It is important to note that leachate and wastewater will be collected, fully contained and will be fully isolated from the surface water collection system during the lifetime of the facility. The discharge from the surface water lagoons through the ICWs to the existing bog drains and eventually the Cushaling River will be monitored continuously in respect of electrical conductivity, dissolved oxygen and flow rate. In the unlikely event that deterioration in the surface water quality being discharged is detected, an automated isolating valve will close. This isolating valve will allow for the retention of all surface water on-site until the contamination event is investigated and remediated. This protection measure will be in place throughout the construction, operation and decommissioning phases.	As required through the contractors CEMP
MM12	Out of normal hours	EIAR Chapter 2	The proposed development will operate six days per week (Monday to Saturday inclusive) between the hours of 07:30 and 19:00. While machinery handling and transferring waste in the MSW processing and compost plant (proposed and existing) will only operate within the above hours, the composting process will operate on a continuous basis as the stockpiled material breaks down and stabilises in the designated compost tunnels. Odour controls and biodegradation monitoring processes will be fully automated to allow them to operate effectively on a continuous basis. Pumping of leachate from the landfill to the storage compound and the drawing of landfill gas into the compound for electrical generation/flaring will also be carried out on a continuous basis (refer to Section 2.3.3 and 2.3.4 of the EIAR). Monitoring equipment will be connected to a central control system which will notify designated persons, such as the Facility Manager or other designated emergency contact, in the event of abnormal readings outside of the defined operating hours. Waste material will only be accepted into or depart from the facility between the hours of 07:30 and 18:30 (Monday to Saturday). In exceptional circumstances, such as vehicle breakdown or similar unavoidable delay, the facility will permit the late arrival of waste after 18:30, however this will only be permitted where there	As required through the contractors CEMP

			is a genuine extenuating circumstance and is required in order to prevent illegal parking of haulage vehicles that may have travelled a long distance. Waste that is accepted at the facility at or near closure time, will be unloaded at the appropriate waste reception area, stored overnight and processed during the next working day.	
MM13	Nuisance Control	EIAR Chapter 2	A Complaints Register, detailing any and all complaints received from the general public in respect of the operation of the facility, will be maintained at the site. The following measures are currently and will continue to be employed at the site to control litter: • All waste entering the proposed development will be in covered vehicles. Bord na Móna will exclude any contractor failing to comply with this requirement from entering the site; • Waste processing associated with the composting activity will take place within fully enclosed buildings; • The approach roads to the proposed development site will be monitored on at least a daily basis and, in the event of litter being found on these roads, site staff will promptly remove it and deposit it in the appropriate manner at the facility; • General clean-up and attendance work will be carried out regularly by site staff around the entire perimeter of the overall facility footprint, on all internal access roads and on approach roads; • All waste will be deposited in a controlled manner in the landfill, offloaded into the compost building waste reception area or stored in the quarantine area. No waste will be stored, even temporarily, in any other undesignated area; and • All site areas will be inspected and cleaned regularly. Inspections of the wider bog area will also be carried out on occasion and any litter found will be collected and deposited within the landfill. A Vermin Control Plan has been developed by Bord na Móna as part of the Environmental Management Plan (EMP) for all of the company's waste management facilities. This Plan incorporates site specific measures for the existing facility and will be expanded upon to include infrastructure from the proposed development. This Plan will incorporate the following elements:	As required through the contractors CEMP

			• A site map showing the positions and numbers of each bait point; • A bait point monitoring routine with monthly inspection records for the facility filled up by the vermin control company and signed by the facility manager; • Inspection records for the bait points describing any signs of vermin and highlighting any vermin attractions on site; • Responsibility for the facility manager to act on the findings of the monthly inspection records; and • A vermin control manual containing the bait point location maps, product details/specifications for the baits used and the monthly inspection records. Records of vermin control will be kept on site for inspection by the EPA and/or KCC as required. A firm of professional vermin control experts will implement the Vermin Control Plan. Baiting will be undertaken in a professional manner and every precaution will be taken to avoid non-target species. In particular, bait will be placed in areas which are not accessible to non-target species and dead/dying vermin will be removed from site as soon as possible. The following measures are implemented at the existing facility and will continue to be implemented as part of the proposed development to eliminate or minimise nuisance odour emissions: • All aspects of the MSW processing and composting process will be undertaken in fully enclosed buildings; • All waste delivered to the proposed development will be in covered/enclosed vehicles. Similarly, all leachate being removed from the proposed development will be in enclosed tankers; • Access doors at the waste reception area of the MSW processing and compost building will be rapid closing doors, with an opening or closing time of approximately 20 seconds. Existing access points into the composting building will continue to be used; • The core composting process will be undertaken in fully enclosed concrete composting tunnels located within the enclosed building - thereby providing double containment features;	

			• Air streams with a potential for high ammonia levels will be treated in an acid scrubber prior to biofiltration and release to atmosphere; • The existing odour management plan at the facility will be updated to incorporate the additional infrastructure. This plan will include management strategies for the prevention of emissions and a strict preventative maintenance and management program for ensuring that all odour mitigation techniques remain operational at optimal capacity throughout all operational scenarios; • The new odour abatement system at the compost building will be connected to the sites existing Supervisory Control and Data Acquisition (SCADA) system which allows for continuous monitoring of performance criteria. Should any parameter deviate outside of an accepted range, an alarm will be immediately generated. Critical alarms will be texted to selected mobile phones numbers thereby ensuring the communication of critical alarms to responsible individuals on a 24-hour basis; • Good housekeeping practices, such as clean working areas, dedicated storage areas and regular wash-down, (internally and externally) and a closed-door management strategy will be maintained at all times; • Biofilters will be compartmentalised to facilitate maintenance and replacement of media. Each biofilter will comprise of two sections such that treatment will be provided by one of the sections while the other section is being maintained; • Biofilters will be covered and thereby isolated from extreme weather conditions (e.g. intensive rainfall or intensive heat) thereby providing optimum control of biofilter efficacy; and • Treated air from the biofilters will be emitted through elevated vent stacks to facilitate appropriate residual odour dispersion. A number of fire risk control measures will be implemented at the proposed development. These include the following: • Control of incoming waste vehicles to ensure that no burning or smouldering loads enter the facility; • All site operatives and employees will be trained in fire prevention, control and emergency response procedures; • Emergency response contact numbers (Fire Service, Gardaí, Ambulance and other agencies) will be posted in prominent locations around the facility;	

			• Automatic communication of fire alarms to mobile phone numbers of assigned responsible individuals; • Fire extinguishers, smoke detectors and fire alarms will be provided in all facility buildings; • A water bowser will be available to deal with any small fires within the facility; and • Smoking will only be permitted at designated areas within the proposed development. Water for fire-fighting will be provided from the proposed surface water lagoons on the site with a back-up supply from the existing on-site borehole where required. A firewater ring main will be installed to distribute water for fire-fighting to the new landfill and maintenance building and fire hydrants will be installed. In the event of a fire at the proposed development, all firewater generated will be collected within the surface water drainage network and will pass into the surface water lagoons. The firewater will be contained in these lagoons for sampling and analysis prior to release to surface water. If the samples indicate contaminants in the water, tankers will be used to pump out the contaminated water and transfer to an off-site WWTP. There is an existing Fire Prevention and Response Plan in place at the facility (included in Appendix 2-7) which will be reviewed and updated to reflect the proposed development and requirements of a future revised IE Licence from the EPA.	
MM14	Health and Safety	EIAR Chapter 2	Key health and safety risks at the proposed development relate to unauthorised access and trespassing into the facility. Site fencing will be installed as shown on Drawing No. 11290-2006 of Appendix 2-1 to prevent unauthorised access and to remove the risk of members of the public entering the landfill during operations and construction as well as at night. Warning signs will be placed along the fencing at regular intervals informing people of the active waste facility and the potential hazards associated with the facility. CCTV will also be installed at key locations to monitor the perimeter fencing and access gates.	As required through the contractors CEMP

			Workers and visitors to the site will all be required to undertake a site induction prior to leaving the administration building and will be provided with a *Health and Safety Handbook* by Bord na Móna outlining general advice for protection of health and safety as well as information specific to the Drehid WMF. Speed limit signs area erected at regular intervals along the private access road to remind drivers to keep below 50 km/h while driving into or out of the facility to reduce the risk of vehicle collisions on the access road. All operations carried out at the facility will be in accordance with the requirements of the *Safety, Health and Welfare at Work Act 2005* as amended and all implementing regulations. Construction works will be carried out in accordance with the requirements of the Act and the *Safety, Health and Welfare at Work (Construction) Regulations 2006 to 2008*. All visitors attending the facility are required to sign in at reception and are met by facility staff. No unauthorised persons are permitted to walk around the facility on their own. Access onto the active tipping face where heavy machinery is operating is limited to only essential persons and must be accompanied by Bord na Móna staff unless authorised for work purposes. Access for vehicles to the administration building car park is controlled from the weighbridge and CCTV cameras at the site entrance are also monitored from this location. Within the site, there are dedicated access routes for incoming and outgoing waste vehicles with signage and barriers erected to segregate vehicles from pedestrians. All buildings and site access will be locked during non-working hours. Machinery will be locked during non-working hours and parked within the confines of the proposed development site.	
MM15	Environmental Monitoring	EIAR Chapter 2	All environmental monitoring will be carried out in accordance with the requirements of Conditions set out in a revised IE Licence to be issued by the EPA for the facility.	As required through the contractors CEMP
Population & Human Health				

MM16	Health and Safety	EIAR Chapter 2 and 5	The project will employ all of the latest and relevant guidelines and legislation (See CEMP in Appendix 2-4 5 in terms of health and safety for works at the proposed development. The required levels of safety will be maintained for all site visitors and staff. The proposed development site itself will not be open to the public for the duration of the project. Appropriate health and safety measures as described in the CEMP (Appendix 2-45) will be taken for all works areas in the interest of worker safety also. Should any public health advice be in place during the construction phase (such as the recent Covid-19 public restrictions) these will be implemented on site.	As required through the contractors CEMP
Biodiversity				
MM17	Appointment of Ecological Clerk of Works	EIAR Chapter 6	A suitably qualified Ecological Clerk of works (ECoW) will be appointed by the Contractor. The ECoW will be experienced in the management of peatland habitats and will oversee all construction works and monitor any possible sources for impacts for the duration of the construction programme. The ECoW will guarantee the construction phase of the proposed development will be undertaken in strict agreement with the methods prescribed within the CEMP and will have the power to stop the works in case any activities/works are not compliant.	A suitably qualified Ecological Clerk of works (ECoW) will be appointed by the Contractor. Also as required through the contractors CEMP
MM18	Appointment of Ecological Clerk of Works	NIS and EIAR Chapter 6	A suitably qualified Ecological Clerk of Works (ECoW) will be appointed by the Contractor. The ECoW will be present for the duration of the construction phase programme and will ensure that all mitigation measures outlined within this report are implemented during the proposed construction works.	A suitably qualified Ecological Clerk of works (ECoW) will be appointed by the Contractor. Also as required through the contractors CEMP
MM19	Mitigation robustness	NIS and EIAR Chapter 6	A Construction Environmental Management Plan (CEMP) has already been prepared and is included within the Planning Application. All mitigation measures outlined within this NIS and within the Environmental Impact Assessment (EIA) Report have been incorporated within the CEMP. All of the information provided within the CEMP will be implemented in full by the appointed Contractor, and its finalisation by the Contractor will not affect the robustness and adequacy of the information presented and replied upon in the NIS.	As required through the contractors CEMP with supervision of ECoW.

MM20	Water quality	NIS and EIAR Chapter 6	During the construction phase of the proposed development surface water quality measures will be installed and maintained in accordance with the following CIRIA guidance; '*Control of water pollution from construction sites' (C532)* (Masters-Williams et al., 2001), and '*Control of Water Pollution from Linear Construction Projects. Technical guidance' (C648*) (Murnane et al., 2006) and with regard to the IFI guidance *'Guidelines on the Protection Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters'* (IFI, 2016) to ensure the protection of watercourses located within and downstream of the proposed development site.	As required through the contractors CEMP
MM21	Water Quality & Sediment Control	NIS and EIAR Chapter 6	The following are measures which will be implemented by the appointed Contractor to minimise and avoid the effects of sedimentation during the proposed construction phase. • All construction works will be confined to within the proposed development site boundary. No works will be undertaken outside of this area. • Prior to any excavation works commencing, silt fences will be erected around water features (e.g. drainage ditches) to ensure sedimentation is prevented. A permeable fabric (Hy-Tex Terraston Premium silt fence, or similar) will be used instead of mesh. The silt fences will be positioned to allow an appropriate working area, but should not occur within areas prone to flood, or below the high-water mark. The silt fencing will be erected as per the manufacturer's guidelines, under the ECoW supervision and will be maintained until all ground disturbance has ceased and vegetation re-established. Once installed, the silt fence will be inspected regularly during construction and more frequently during heavy rainfall events. The ECoW will also be supervise the removal of the silt fences following the completion of the works. • Once sediment control measures have been installed all exiting drainage ditches within the proposed development site will be blocked and rerouted around the works area. • All drains within the proposed development site will be blocked prior to the construction works commencing. The drains will be blocked off using locally sourced subsoil materials which will cause water levels in the subsoils and peat along the drain trajectories to rise. The rising water levels in the drains and surrounding lands within the proposed	As required through the contractors CEMP

			development boundary will be controlled by installing overflow pipes at the opposite end of drains which will allow water to overflow from the blocked drains to the new drains being established as part of the TSB Decommissioning and Rehabilitation Plan. Drain blocks and overflows will be constructed at the outset of peat stripping works to ensure that drainage water is kept out of excavation areas. • The blocking of drains will ensure there is no hydrological connectivity between the proposed development site and the Cushaling River and the Mulgeeth Stream. The blocked drains will serve as check dams/silt dams, helping to settle out any suspended matter that may derive from the peat berms. • Blocking drains will raise water levels locally which will maintain groundwater levels higher and help to re-wet previously drained peat. As such, drain blocking will have a localised positive effect. Re-wetting is expected to reduce the leaching of ammonia and other chemical constituents (e.g. organic matter, dissolved organic carbon). • The water in blocked drains will naturally undergo attenuation processes (such as nitrification of ammonia). Attenuation processes will continue to act as the water flows north to Mulgeeth Stream and along the Blackwater (Longwood) River in the downstream direction. • All excavated peat will be stored within designated areas before being used for the construction of the berms within the proposed development. The stockpiles of peat will be covered by weighted plastic sheeting which will prevent any runoff. The berms will be seeded with peat tolerant grass and shrub plant species which will help compact the peat. In addition, the area of land located to the east of the berm located along the eastern perimeter will be vegetated and will act as a vegetative buffer. • The bulk excavation works will not be carried out during or following heavy rainfall (i.e. if there is a yellow weather warning in place or 5 mm 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.	

MM22	Water Quality & Pollution Control	NIS and EIAR Chapter 6	The following are measures which will be implemented by the pointed Contractor to minimise and avoid the effects of water pollution during the proposed construction phase. • The construction compound will be located within the proposed development, adjacent to the new landfill (refer to Figure 3-1) which is set back from any water bodies. • Bord na Móna has existing Emergency & Response and Spill Clean Up plans which will be referred to and implemented during the construction phase of the proposed development to deal with accidental spillages. • Spill-kits and hydrocarbon absorbent packs will be stored in the cabin of all construction vehicles. All machine operators and site staff will be fully trained in the use of this equipment. • All machinery will be regularly maintained and checked for leaks. Services will only be undertaken within the construction compound or offsite. • Refuelling will only occur within the construction compound under inspection by the ECoW or off-site away from the proposed development site. Re-fuelling onsite of construction equipment and the addition of hydraulic oil or lubricants to vehicles / equipment will take place in designated hard surface, bunded areas within the construction compound. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur. • All concrete will be mixed off site and will be brought in as required and poured in place at site. No on-site batching will be permitted within the proposed development site. • All concrete browsers will be washed down at a dedicated concrete washout area located within the construction compound or off site at a licensed facility. No chemicals that are deleterious to aquatic organisms will be used in cleaning works. All raw, uncured waste concrete will be cured at a designated location within the construction compound or off site. • All concrete works will be scheduled during dry weather conditions only to reduce the elevated risk of runoff.	As required through the contractors CEMP

			• All waste will be removed from the site and disposed of by an approved waste contractor in accordance with prevailing waste management regulations. • On completion of the works, all apparatus, plant, tools, offices, sheds, surplus materials, rubbish and temporary erections or works of any kind will be removed from the site. • Water intercepted from constructed roads and hardstanding areas will be similarly managed to ensure that uncontrolled water discharges do not take place to the receiving environment. • Stormwater will be diverted through a sediment grit trap and oil interceptor, prior to discharge to the existing attenuation ponds and ICW. • The existing wheelwash within the proposed development site will be used during the construction phase. Upon replenishment, the dirty water from the wheelwash will be discharged into the existing foul drainage network and transferred to the wastewater storage tank for blending with landfill leachate and removal off-site.	
MM23	Surface Water Monitoring	NIS and EIAR Chapter 6	• During the construction phase, surface water quality monitoring will be undertaken within drains near the construction activity and within the Cushaling River. Monitoring will be undertaken at existing monitoring points located at SW5 and SW6 and monitoring will be undertaken at the outflow of the new ICW and will be called SW9. • In addition, water quality will also be monitored within the Mulgeeth Stream at SW10 where the watercourse exit the Bord a Móna landholding, during the construction phase. • All surface water sampling will be carried out by trained personnel from Bord na Móna or by suitably qualified consultants. All analyses, except for on-site readings, will be carried out off-site by an accredited laboratory. A visual inspection of all surface water streams on and adjacent to the proposed development will be carried out by site personnel on a weekly basis. • The parameters; pH, specific electrical conductivity (SEC), dissolved oxygen (DO), temperature, and turbidity will be measured in the field, daily at each location, with the use of hand-held, calibrated water quality instruments. Suspended solids, pH, temperature and total ammonia will be sampled weekly for laboratory analyses:	As required through the contractors CEMP

			○ 'Before' sampling will begin 4 weeks prior to activity commencing, in wet weather conditions. ○ "During" sampling will occur during or immediately following rainfall events. ○ The 'after' sampling will comprise as many samplings as necessary to demonstrate that water quality has returned to pre-activity status (where an effect has been shown). The sampling will be limited to flowing waters.	
MM24	Ground Water Monitoring	NIS and EIAR Chapter 6	• Ingress of groundwater may occur within some excavated areas. All ingress of groundwater will be over pumped using a sump pump to the existing perimeter swale and attenuation lagoons that are associated with the WMF. Based on practical experiences from the construction of the existing WMF, the quantities of water that will need to be managed (pumped out) are expected to be generally less than 5 m^3/h (0.0013 m^3/s, or 1.3 l/s), although shorter term pumping can be higher, especially after significant rainfall events. The discharge water from the sumps will be directed to the attenuation lagoons and ICW. • Existing groundwater wells will be monitored during construction works to determine the influence of any dewatering required for construction of the new landfill. All groundwater monitoring will be carried out by trained personnel in accordance with best practice sampling guidance. Samples will be collected and sent off-site to accredited laboratories for analysis.	As required through the contractors CEMP
MM25	Invasive Species Management	NIS and EIAR Chapter 6	In order to comply with Regulations 49 and 50 of the European Communities (Birds and Natural Habitat) Regulations (2011), the appointed Contractor will ensure biosecurity measures are implemented throughout the construction phase to ensure the introduction and translocation of invasive species is prevented. In the event that proposed construction works are delayed more than 18 months, a pre-construction invasive species survey will be undertaken as recommended within the CIEEM Advice Note (CIEEM, 2019). The following mitigation measures are prescribed in line with Transport Infrastructure Ireland Guidance (TII, 2020) and IFI Guidance (IFI, 2010) to control the translocation or spread of invasive species and / or pathogens:	As required through the contractors CEMP

			• No invasive plant species were recorded within the proposed development. However, in the event that proposed construction works are delayed more than 18 months, a pre-construction invasive species survey will be undertaken as recommended within the CIEEM Advice Note (CIEEM, 2019). In the event that an invasive plant species, listed in Part 1 of the Third Schedule of S.I No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011 is recorded a site-specific Invasive Species Management Plan (ISMP) will be prepared. • Prior to arrival all machinery and equipment used during the construction works will be thoroughly cleaned and then dried using a high-pressured steam cleaning, with water >65 °C, in addition to the removal of all vegetation material. Disinfectant, such as a Virkon® Aquatic solution, will be used. The appointed Contractor will establish and clearly delineate a bunded cleaning/washing area. • No removed material or run-off will be allowed to enter any water bodies (e.g. drainage ditches). • Evidence that all machinery and equipment has been cleaned will be required to be on file for review by the statutory authorities and the appointed ECoW.	
MM26	Management of Habitats ad Flora	EIAR Chapter 6	Where required, vegetation clearance will be kept to a minimum. The proposed construction work areas will be demarcated prior to the construction works commencing. No clearance of vegetation will be undertaken outside of the demarcated areas within the proposed development site. Construction vehicles will be restricted to designated areas access tracks to avoid impacting adjacent habitats and to ensure that soil compaction is restricted to these tracks. All disturbed ground will be fully reinstated following the completion of the works. Bog mats will be used mitigating rutting and reducing soil erosion and impact to bog habitat. Bog mats replacement will be enforced when they become heavily used and worn. In addition, machinery used will have wide tracks suitable to be used over areas of soft bog	As required through the contractors CEMP

MM27	Replanting of New Vegetation	EIAR Chapter 6	The development of the ICW within the proposed development site will provide a new wetland feature which will be beneficial to invertebrate, amphibians and a range of breeding and wintering waterfowl species. The ICW will be approximately 5.61 ha in size and include a range of locally sourced and native wetland emergent species such as greater pond sedge (*Carex riparia*), reed sweet-grass (*Glycyeria maxima*), bulrush (*Typha latifolia*), common clubrush (*Schoenoplectus lacustris*) and yellow flag iris (*Iris pseudacorus*). In addition, native trees and shrubs such as alder buckthorn (*Frangula alnus*), willow, alder and birch will also be planted around the ICW where suitable ground conditions can be achieved, covering and area of approximately 2.15 ha.	As required through the contractors CEMP
MM28	Replanting of New Vegetation	EIAR Chapter 6	The capping layer of the landfill will be planted with grass and shrub species, as each section is completed providing a total of 35.75 ha of new habitat. The use of "Green hay", which will be locally sourced, will be used to support reseeding the landfill capping. This will be done in addition to the use of an initial "nurse crop" that will initially revegetate the new soil. Primarily, native Irish species red fescue (*Festuca rubra*) and Common bent-grass (*Agrostis stolonifera*) will be used. This enhancement measure will aid in the recolonisation of suitable habitat for lepidoptera species.	As required through the contractors CEMP
MM29	Replanting of New Vegetation	EIAR Chapter 6	5 m high berms enclosing the development from the north, east and west will be planted with bands of locally sourced native peatland tolerant grass and shrub species. The remaining areas of the berm will be left to naturally revegetate over time. The vegetating of these areas will not only provide new habitats, but will also compact the peat, reducing runoff of suspended solids. The land located to the east of the eastern berms will be vegetated with peat tolerant grass and shrub species and will cover an area of 16.46 ha. This area of vegetation will also create a natural vegetative buffer between the berms and the drainage ditch, again reducing runoff.	As required through the contractors CEMP
MM30	Replanting of New Vegetation	EIAR Chapter 6	The lands located to the south of the proposed landfill site will benefit from the blocking of drains on the eastern boundary of the site and will likely re-wet overtime. Blocking drains will raise water levels locally which will maintain groundwater levels higher and help to re-wet previously drained peat. As such, drain blocking will have a localised positive effect. Re-wetting is expected to	As required through the contractors CEMP

			reduce the leaching of ammonia and other chemical constituents (e.g. organic matter, dissolved organic carbon). The regeneration of new habitats within this area (lands located to the south of the landfill and east of the eastern berm) will be encouraged firstly by reducing all disturbance within the area and allowing natural colonization, and through the creation of new habitats such as fens, reed swamps, heath embryonic sphagnum-rich peat forming communities and wet and birch woodland communities, where conditions are suitable. The total area of new planting will be approximately 72.57 ha. All area of replanting are shown in the Landscape Management Plan in Appendix 2-1 of this EIAR. Further details on the replanting and creation of new habitats is detailed in the Habitat Management and Enhancement (HME) Plan included in Appendix 6-3 of this EIAR.	
MM32	Protection of Aquatic Habitats	EIAR Chapter 6	All mitigation measures associated with sediment and pollution control outlined in Chapter 8 of the EIAR - Water will be implemented, which will ensure the protection of aquatic species present within the Cushaling River and further downstream. A summary of mitigation measure proposed are outlined hereunder: • All drains within the proposed development site will be blocked prior to the construction works commencing. The drains will be blocked off using locally sourced subsoil materials which will cause water levels in the subsoils and peat along the drain trajectories to rise. The rising water levels in the drains and surrounding lands within the proposed development boundary will be controlled by installing overflow pipes at the opposite end of drains which will allow water to overflow from the blocked drains to the new drains being established as part of the TSB Decommissioning and Rehabilitation Plan. Drain blocks and overflows will be constructed at the outset of peat stripping works to ensure that drainage water is kept out of excavation areas. • The blocked drains will serve as check dams/silt dams, helping to settle out any suspended matter that may derive from the peat berms. • No instream works or water abstraction will be undertaken within/from the Cushaling River.	As required through the contractors CEMP

			• Silt fences will be erected along the southern boundary of the proposed development site and around stock piles of material. • Prior to the commencement of excavations, an area for stockpiling the excavated material will be identified within the proposed development site, at minimum of 50 m from the Cushaling River, or any drainage ditch. • Excavation works will not be carried out during or following heavy rainfall (i.e. if there is a yellow weather warning in place or 5 mm in a 1-hour period). • An emergency plan for the construction phase of the proposed development to deal with accidental spillages will be drawn up, which all site personnel must adhere to and receive training.	
MM33	Protection of Nesting Birds	EIAR Chapter 6	Breeding bird habitats will not be removed, cleared or trimmed between the 1st March and 31st August, inclusive, to avoid impacts on nesting birds protected under the Irish Wildlife Acts. In the unforeseen circumstances where the construction programme does not allow this time restriction to be observed, then these areas will be inspected by a qualified ecologist for the presence of breeding birds prior to commencement of construction works. Where any nests are found, the appointed ECoW will provide recommendations as to whether a licence is required for vegetation removal and will detail the process for obtaining such derogation licence from the NPWS.	As required through the contractors CEMP
MM34	Protection of Aquatic Species	EIAR Chapter 6	No non-native fish species will be brought to, or released, within any water feature within the proposed development site, during the construction, operation and decommissioning phases.	As required through the contractors CEMP
MM35	Disturbance / Displacement Measures	EIAR Chapter 6	Construction noise will be kept to a minimum in accordance with British Standard BS 5228 1:2009 'Code of Practice for Noise and Vibration Control on Construction and Open Sites –Part 1: Noise'. The appointed Contractor will be obliged to take specific noise abatement measures and will comply with the best practice outlined in BS 5228 and the NRA guidelines *Good practice Guideline for the Treatment of Noise during the Planning of National Road Schemes* (NRA, 2014). Noise levels will be monitored using standard noise meters.	As required through the contractors CEMP

			To reduce disturbance, all temporary lighting associated with the construction works will be placed strategically by the appointed Contractor following consultation with the appointed ECoW. This will ensure that illumination beyond the works area is controlled. Lighting will be cowled and directional to reduce significant light splay.	
MM36	Protection of Lepidoptera Species	EIAR Chapter 6	The HME Plan (Appendix 6-3 of the EIAR) outlines measures that will be implemented to protect and enhance suitable lepidoptera habitats present within the proposed development site. Construction phase mitigation measures are summarised below: • The works area will be clearly defined and fenced off in advance of construction activities; • Vegetation clearance will be carried out in phases; • Natural recolonisation will be used for spoil stabilization; and • Sub-peat material/mineral soils will be stored separately from the peat materials that will be used for capping.	As required through the contractors CEMP
Soils Geology & Hydrogeology				
MM37	Clear-Brushing, Peat Stripping and Easrthworks	EIAR Chapter 7	To reduce the further loss of residual peat, the landfill footprint and defined works areas have been minimized in the design to the extent possible. The excavated peat (up to 3.5 m thick based on Section 7.4.2 of this EIAR) and underlying sediments will be reused within the Proposed Development area.	As required through the contractors CEMP
MM38	Modification to Drainage Network	EIAR Chapter 7	Some effects are inevitable, as the modifications to the drainage work are necessary to be able to construct the expanded landfill. Modifications to the drainage network were minimised during drainage design by BnM's engineering team, and bog drains will be kept as shallow as practicable to reduce the interception potential of shallow groundwater. The trajectories and depths of individual drains also consider practicalities and costs of construction.	As required through the contractors CEMP

MM39	Stormwater Runoff and Groundwater Recharge	EIAR Chapter 7	Stormwater management for the Proposed Development as a whole is described in Chapter 2 of this EIAR and Appendix 2-3. This includes measures that are based on principles of sustainable urban drainage systems (SUDS), which aim to reduce the quantities of stormwater generated by developments in order to maintain natural processes, including recharge, to the extent possible.	As required through the contractors CEMP
MM40	Seepage and Pumping of Water From Open Excavations / Pits	EIAR Chapter 7	Individual waste cells will be 268 m long and 97 m wide. During construction, sections of cells are opened sequentially with installations progressing across the cell in a sequenced manner. This process simplifies construction and water management. Based on procedures that are followed at the existing WMF, a shallow drain is dug around the area inside a cell that is under construction. This is a temporary measure to accommodate the installation of infrastructure (under-cell drainage system, sumps, liner) and facilitate the periodic pumping from open excavations. Existing drains that presently cross the landfill footprint will be blocked off as a first step. While this will cause a rise in groundwater levels in subsoils and peat along drain trajectories outside the landfill footprint, this will also prevent ingress of water directly from the drains into the excavations. This is a permanent measure.	As required through the contractors CEMP
MM41	Accidental Spills and Leaks	EIAR Chapter 7	The prevention of, and response to, accidental spills and leaks of fuel and other chemicals during construction are covered by the Construction and Environmental Monitoring Plan (Appendix 2-5 to the EIAR). The following mitigation measures will be implemented: • Onsite refuelling will be carried out at dedicated locations by trained personnel only. • Onsite refuelling of machinery will be done by mobile double-skinned fuel bowsers. • Drip trays and fuel absorbent mats will be available and used during all refuelling operations • A permit for the fuel system will be put in place. • Fuel storage tanks will be bunded, self-contained and double-walled, conforming with EPA bunding specifications.	As required through the contractors CEMP

			• The fuel-filling area will be fitted with a storm drainage system and an appropriate oil interceptor. • The plant used during construction will be regularly inspected for leaks and fitness for purpose. • Spill kits will be available to deal with and accidental spillages in and outside the re-fuelling area.	
MM42	Releases of Cement-Based Products	EIAR Chapter 7	Batching of cement will be carried out at dedicated, existing locations within the WMF. Chute cleaning water will be undertaken at lined cement washout ponds, using the smallest volume of water practicable. Containment will be facilitated with straw bales. Ponds will be lined with an impermeable membrane. Ponds will also be covered when not in use to prevent rainwater collecting. Pour sites of cement will be kept free of standing water, and plastic covers will be ready in case of sudden rainfall events. Risks of pollution will be further reduced as follows: • Concrete will not be transported around the site in open trailers or dumpers so as to avoid spillage while in transport. • All concrete used in the construction will be pumped directly into the shuttered formwork from the delivery truck. If this is not practical, the concrete will be pumped from the delivery truck into a hydraulic concrete pump or into the bucket of an excavator, which will transfer the concrete locally to the location where it is needed. • Arrangements for concrete deliveries will be discussed with operators before work starts, confirming routes, prohibiting onsite washout and discussing emergency procedures. • Clearly visible signage will be placed in prominent locations close to concrete pour areas specifically stating washout of concrete lorries is not permitted on the site. • Using weather forecasting to assist in planning large concrete pours and avoiding large pours where prolonged periods of heavy rain is forecast. • Restricting concrete pumps and machine buckets from slewing over watercourses while placing concrete. • Ensuring that covers are available for freshly placed concrete to avoid the surface washing away in heavy rain.	As required through the contractors CEMP

			• Disposing of any potential, small surplus of concrete after completion of a pour in suitable locations away from any watercourse or sensitive habitats. The duration of the applicability of mitigation measures covers the entire construction period.	
MM43	Wastewater Management	EIAR Chapter 7	As described in Chapter 2 of the EIAR, the Proposed Development includes a dedicated contractor's compound where welfare facilities for staff in the form of portacabins will be established for the duration of construction works and removed by the Contractor at the end of each construction contract. Separate welfare facilities are already in place for operational staff in the existing WMF administration building and additional welfare facilities are being constructed for operational staff in the new MSW Processing and Composting Facility as well as in the new Maintenance Building. As such, wastewater will not be treated or disposed of within the Proposed Development areas. Associated wastewater will be collected regularly and brought offsite in fully enclosed tanks for disposal by authorised means (permitted wastewater collector) to a wastewater treatment plant.	As required through the contractors CEMP
Water				
MM44	Water Protection	EIAR Chapter 8	The principal objectives of proposed mitigation measures are: • To control water discharges. • To limit chemical and sediment loading to receiving surface water bodies. • To prevent accidental spill and leaks from occurring.	As required through the contractors CEMP
MM45	Vegetation Removal	EIAR Chapter 8	Mitigation measures and routine best practice methods are incorporated in the CEMP (Appendix 2-5), consistent with: • Forestry Commission (2004): Forests and Water Guidelines, Fourth Edition. Publ. Forestry Commission, Edinburgh. • Coillte (2009): Forest Operations and Water Protection Guidelines. • Coillte (2009): Methodology for Clear Felling Harvesting Operations (Draft) ; Forest Service.	As required through the contractors CEMP

			• Forest Service (2000): Forestry and Water Quality Guidelines. Forest Service, DAF, Johnstown Castle Estate, Co. Wexford. Vegetation stripping and clear-brushing will be avoided during the birds nesting season (per the Wildlife Act: March 1st - August 31st) and during significant rainfall events.	
MM46	Vegetation Removal	EIAR Chapter 8	Machine combinations (i.e. handheld or mechanical) will be chosen which are most suitable for ground conditions in order to minimise the disturbance of peat/soils. Mechanical machinery will have wide tracks suitable for the soft bog/soil environment. BnM has considerable experience in the operation of plant and machinery in peat environments and will ensure that these initial development works are only carried out by experienced operators with suitable machinery. Vehicles will use road infrastructure and designated drain culverts/crossing points in all works areas. Tracking of vehicles across/through/along watercourses will not occur. Checks and maintenance of roads and culverts will be ongoing throughout the activity periods. Silt fences/traps will be placed downgradient of work areas near and along drains. The purpose is to allow the settling of silt and limiting sediment transport into and via drains. Any accumulated sediments will be excavated based on visual inspection. Bog mats will be used to support vehicles on soft ground, thereby mitigating rutting and reducing soil erosion. Bog mats replacement will be enforced when they become heavily used and worn. Loose sediments will be compacted or removed from tracks during wet periods and dust suppression will be employed during dry spells. Vehicles leaving works areas and going onto the access or public roads will pass through a wheel wash. Controlled, accumulated sediments will be carefully disposed in dedicated disposal areas away from drains. Drains and silt fences/traps will be maintained throughout the activity periods, and will be kept clear of sediment build-up.	As required through the contractors CEMP

			Brush materials, including roots, will be stacked in dedicated dry areas. Straw bales will be emplaced on the downgradient side of such areas. Branches, logs or debris will not be allowed to build up in aquatic zones.	
MM47	Vegetation Removal	EIAR Chapter 8	Prior to activity, operational rules will be communicated with the contractor/operator. Activities will be supervised on a full-time basis. Equipment, machinery, access roads and culverts will be inspected daily. Following activity, all drains will be inspected to ensure that they are functioning as intended, including those which are part of the TSB Decommissioning and Rehabilitation Plan (BnM, 2022). Any accumulated silts will be removed. Removed materials will be deposited in dedicated disposal areas, away and separated from drains. Disposal will not result in sediment mobilisation towards any stream leaving the landholding.	As required through the contractors CEMP
MM48	Vegetation Removal	EIAR Chapter 8	During the construction phases, monitoring campaigns will be undertaken as presented in Section 8.4.19 of the EIAR.	As required through the contractors CEMP
MM49	Earthworks	EIAR Chapter 8	Risks and effects of earthworks are made greater during storm events. Hence, earthworks will not be carried out during significant storm events. Decisions to potentially suspend works will be made from visual observation and weather forecasting of storm events. The checking and communication of weather forecasts are part of the CEMP. The following forecasting systems are available: • General Forecasts: Available on a national, regional and county level from Met Eireann. These provide general information on weather patterns including rainfall, but do not provide any quantitative rainfall estimates. • MeteoAlarm: This service alerts to the possible occurrence of severe weather for the next 2 days at provincial scale. • 3-hour Rainfall Maps: These forecast quantitative rainfall amounts for the next 3 hours but do not account for possible high-intensity localised events. • Rainfall Radar Images: Images covering the entire country are freely available from the Met Eireann website (www.met.ie/latest/rainfall_radar.asp). The images are a composite of radar data from Shannon and Dublin airports and provide a picture of	As required through the contractors CEMP

			current rainfall extent and intensity. Images show a quantitative measure of recent rainfall. A 3-hour record is given and is updated every 15 minutes. Radar images are not predictive. • Consultancy Service: Met Eireann provide a 24-hour telephone consultancy service. The forecaster will provide interpretation of weather data and give the best available forecast for the area of interest. Prior to suspending works for climatic reasons, the following control measures will be completed: • Open excavations will be secured. • Temporary or emergency drainage will be provided to prevent back-up of surface runoff in work areas. Working for up to 24 hours after heavy rainfall events will be avoided to ensure drainage systems are not overloaded. Decisions are subject to visual inspection and judgement by the resident (supervising) engineer. The intent and objective is to control erosion, avoid collapses of embankments, and limit the mobilisation and transport of sediments.	
MM50	Earthworks	EIAR Chapter 8	Proposed mitigation measures fall into three basic categories: • Source controls, involving the use of swales, silt fences, straw bales, flume pipes, sand bags, oyster bags (e.g. filled with gravel), and filter fabrics. Flexibility to adapt methods will be required based on location-specific conditions, as judged by supervising engineers. • In-Line controls, involving the use of silt fences, straw bales, check/silt dams and flume pipes. • Treatment systems, involve the use sediment traps and attenuation lagoons. Swales will surround the works and staging areas. Runoff and drainage water collected in the swales will initially be directed to the existing perimeter swale that surrounds the WMF. From here, the collected water will be routed to the existing attenuation ponds and ICW system south of the WMF. Directing the water to in this manner will require pumping from collector sumps which will be placed at suitable locations in active works and staging areas. The water pumped from the sumps will be led to the perimeter swale using temporary pipes.	As required through the contractors CEMP

			In addition to the source and in-line control measures, the water will be treated through the existing attenuation lagoons and ICW system. Once the proposed, new attenuation lagoons and ICW system are constructed, the water will pass through this system, reducing the distance of the sump pumping involved. Trapped sediments in source, in-line and treatment controls, including swales and drains will be periodically removed based on regular inspection. Drains will also be maintained so as not to overflow during the construction stages. Outflows from blocked drains (see Section 8.5.2.3 of the EIAR) will be controlled by 8-inch pipes at the downstream ends of each blocked drain.	
MM51	Earthworks	EIAR Chapter 8	Monitoring will be performed according to the Section 8.5.2.1 of the EIAR. In addition, regular (min. daily) inspections of drainage systems will be undertaken, especially during rainfall events, to check for damage and blockages, and ensure there is no escape or build-up of standing water in parts of the systems where it is not intended. Any excess build-up of sediment in the drainage system will be removed in a controlled and supervised manner using excavators, as outlined in the CEMP.	As required through the contractors CEMP.
MM52	Modification to Drainage Network	EIAR Chapter 8	The proposed drain blocks outside the landfill expansion footprint will contribute to raising water levels in and surrounding the blocked drains. The raising of water levels is expected to reduce the leaching potential of ammonia and mobilisation of suspended matter east of the landfill expansion footprint. The flat areas between the peat berms and actively flowing drains (e.g., the new south-to-north drain) will be purposefully vegetated to create buffer zones, whereby the aim is to attenuate ammonia and suspended matter loads. The drain blocks will also serve as check dams for suspended solids (including organic matter). The water in the blocked drains will undergo natural attenuation processes (including nitrification), and such processes will continue in the downstream direction within TSB, Mulgeeth Stream and along the Blackwater (Longwood) River. Bog drainage water which passes to the Cushaling River will continue to flow through the old settlement ponds near the western BnM landholding boundary.	As required through the contractors CEMP

			Bog drainage water which passes to the Mulgeeth Stream will pass through a new settling pond to be built on the main drain within TSB, before the exit point of TSB, as per PCAS/TSB Decommissioning and Rehabilitation Plan.	
MM53	Pumping/ Dewatering of open Excavations/ Pits	EIAR Chapter 8	Following water management procedures in the existing WMF, a perimeter drain will be dug around the phase that is under construction as a means of helping to control water levels in the excavations. This limits the quantity of water collecting in excavation floors. Existing drains that presently cross the landfill footprint will also be blocked off. This will raise water levels in subsoils and peat along the drain trajectories, external to the landfill footprint, but will also prevent ingress of water from the drains into the excavations.	As required through the contractors CEMP.
MM54	Pumping/ Dewatering of open Excavations/ Pits	EIAR Chapter 8	The water pumped by sump pumps will also pass through silt bags before being discharged into swales. As the water pass through the silt bags, the majority of sediment and organic matter is retained by geotextile fabric. The silt bags will be used with natural vegetation filters or sedimats. Sediment entrapment mats, consisting of coir or jute matting, will be placed at the silt bag locations to provide further treatment of the outfalls from silt bags. Sedimats will be secured to the ground surface using stakes/pegs. The sedimat will extend to the full width of the outfall to ensure that all water passes through this additional treatment measure. Level spreaders will be designed for each outfall. As outlined in the CEMP (Appendix 2-5), these are standard practice methods which help to reduce suspended matter loads.	As required through the contractors CEMP
MM55	Pumping/ Dewatering of open Excavations/ Pits	EIAR Chapter 8	Surface water will be monitored as described in Section 8.4.19 and 8.4.20 of the EIAR.	As required through the contractors CEMP
MM56	Accidental Spills and Leaks of Chemicals	EIAR Chapter 8	The prevention of, and responses to, accidental spills and leaks of fuel and other chemicals are covered by the CEMP. The following mitigation measures will be implemented: • Onsite refuelling will be carried out at dedicated locations by trained personnel only.	As required through the contractors CEMP

			• Onsite refuelling of machinery will be done by mobile double-skinned fuel bowsers. • Drip trays and fuel absorbent mats will be available and used during all refuelling operations. • A permit for the fuel system will be put in place. • Fuel storage tanks will be bunded, self-contained and double-walled, conforming with EPA bunding specifications. • The fuel-filling area will be fitted with a storm drainage system and an appropriate oil interceptor. • The plant used during construction will be regularly inspected for leaks and fitness for purpose. • Spill kits will be available to deal with and accidental spillages in and outside the re-fuelling area.	
MM57	Releases of Cement- Based Products	EIAR Chapter 8	Concrete will be delivered where it is needed in sealed concrete delivery trucks. Ready-mixed supply of wet concrete products such as pre-cast elements for culverts will be installed. Concrete trucks will be directed back to their batching locations for washout. As stated in the CEMP, discharge of cement-based products to construction phase drainage systems or directly to any artificial drain or other watercourse will not be allowed. Pre-cast elements for culverts will be used.	As required through the contractors CEMP
MM58	Releases of Cement- Based Products	EIAR Chapter 8	Batching of cement will be carried out at dedicated, existing locations within the WMF. Chute cleaning water will be undertaken at lined cement washout ponds. Containment will be facilitated with straw bales. Ponds will be lined with an impermeable membrane. Ponds will also be covered when not in use to prevent rainwater collecting. Pour sites of cement will be kept free of standing water, and plastic covers will be ready in case of sudden rainfall events. Risks of pollution will be further reduced as follows: • Concrete will not be transported around the site in open trailers or dumpers so as to avoid spillage while in transport. • All concrete used in the construction will be pumped directly into the shuttered formwork from the delivery truck. If this is not practical, the concrete will be pumped from the delivery truck into a hydraulic concrete	As required through the contractors CEMP

			pump or into the bucket of an excavator, which will transfer the concrete locally to the location where it is needed. • Arrangements for concrete deliveries will be discussed with operators before work starts, confirming routes, prohibiting onsite washout and discussing emergency procedures. • Clearly visible signage will be placed in prominent locations close to concrete pour areas specifically stating washout of concrete lorries is not permitted on the site. • Using weather forecasting to assist in planning large concrete pours and avoiding large pours where prolonged periods of heavy rain is forecast. • Restricting concrete pumps and machine buckets from slewing over watercourses while placing concrete. • Ensuring that covers are available for freshly placed concrete to avoid the surface washing away in heavy rain. • Disposing of any potential, small surplus of concrete after completion of a pour in suitable locations away from any watercourse or sensitive habitats.	
MM59	Wastewater Management	EIAR Chapter 8	The Proposed Development includes a dedicated contractor's compound where welfare facilities for staff in the form of portacabins will be established for the duration of construction works and removed by the Contractor at the end of each construction contract. Separate welfare facilities are already in place for operational staff in the existing WMF administration building and additional welfare facilities are being constructed for operational staff in the new MSW Processing and Composting Facility as well as in the new Maintenance Building. As such, wastewater will not be treated or disposed of within the Proposed Development areas. Associated wastewater will be collected regularly and brought offsite in fully enclosed tanks for disposal by authorised means (permitted wastewater collector) to a wastewater treatment plant. The use of sealed storage tanks and offsite disposal breaks the link between the source and receptor.	As required through the contractors CEMP

MM60	WFD Status of Surface Water Bodies	EIAR Chapter 8	Strict control measures will be put in place, as presented in Section 8.4.21 and Sections 8.5.2.1 through 8.5.2.7 of the EIAR. Construction-related waters will pass through swales, sumps, check dams, attenuation lagoons and ICW systems in all stages of development. Existing data associated with the existing attenuation lagoons and ICW system at the WMF shows that ammonia and suspended solids concentrations are significantly reduced (attenuated) by the system, with discharge values that are consistently below ELVs.	As required through the contractors CEMP
MM61	WFD Status of Surface Water Bodies	EIAR Chapter 8	Surface water quality monitoring serves to identify, track and respond to potential effects. The proposed surface water quality monitoring is presented in Section 8.4.19 of the EIAR.	As required through the contractors CEMP
Material Assets				
MM62	Land Use	EIAR Chapter 9	Optimised sizing of footprints of the proposed facility. This was carried out at the initial pre-planning design stage, where 3D modelling of the void space was carried out to determine the required footprint that would be needed for the landfill, thereby minimising the proposed land take and potential effects on Material Assets. Minimising areas for earthworks thereby reducing land take requirements. A cut/fill analysis was carried out for the landfill to calculate how much soil would be excavated and would require deposition in the surrounding area (as a berm). The suitably sized area was then designed for the berm. Autotrack models were run to ensure that truck movements within the proposed facility would be practical without using inappropriately excessive space. This minimised the areas that required topsoil stripping and surfacing with gravel and/or bitumen. Restricting areas for construction works and temporary storage to a minimum. The proposed contractor's yard for the construction works was designed to be big enough to fulfil its requirements without being so large that it would cover too much space.	As required through the contractors CEMP
MM63	Land Use	EIAR Chapter 9	Retention of all existing vegetation and regenerating peatland where possible and sufficiently protect the areas close to construction works as described in BS	As required through the contractors CEMP

			5837:20051. The areas where existing vegetation is to be protected will be marked off temporarily during the construction and operational phases of the proposed development to ensure that machinery does not accidentally enter the areas. Proposed planting and/or allowing natural revegetation around the site will help integrate the proposed development into the current land use.	
MM64	Land Use	EIAR Chapter 9	The main long-term mitigation measure will be the staged grassing of the mounds as each section is completed. Small shrubs will also be planted on the capped landfill to mitigate long term impacts relating to the proposed development. The vegetation would improve the visual appearance of the site, provide some useful habitat for biodiversity, and would also help to slow the surface runoff.	As required through the contractors CEMP
MM65	Other Material Assets	EIAR Chapter 9	As with any excavations there is a potential to disrupt local underground services. A confirmatory survey of all existing services will be carried out by a suitably qualified and experienced engineer and surveyor prior to the start of onsite construction works to verify the assumptions in this report and identify the precise locations of any services. The developer will liaise with the service provider where such services are identified. Digging around existing services, if present, will be caried out by hand to minimise the potential for accidental damage. Segregation of waste will e carried on site to maximise the potential for waste recycling and minimise any potential for effects on waste services.	A suitably qualified engineer and surveyor will be appointed to oversee the effective implementation of the mitigation measures for the construction/operational phases of the proposed project.
Noise and Vibration				
MM66	Noise and Vibration Control	EIAR Chapter 10	Construction phase noise and vibration impacts are determined to be not significant at the nearest off-site sensitive buildings. No specific mitigation measures are required to control noise or vibration during the construction phase given the significant distance between the site works and the nearest NSLs. Notwithstanding, best practice noise and vibration control measures will be applied on site as standard during this phase. With regard to construction activities, reference has been made to BS5228 Parts 1 and 2, which offer detailed guidance on the control of noise and vibration from	As required through the contractors CEMP

[1] https://www.thenbs.com/PublicationIndex/documents/details?Pub=BSI&DocID=300496

			construction activities. Best practice control measures will be considered and applied during the construction of the proposed development where necessary. Details are in the Construction Environmental Management Plan (CEMP). These measures will ensure that: • During the Construction Phase, the works will be managed to comply with the limits detailed in Section 10.2.1.1 of the EIAR using methods outlined in BS 5228–1; and • The best means practicable, including proper maintenance of plant and equipment, will be employed to minimise the noise produced by on site operations.	
Landscape and Visual Effects				
MM67	Landscape and Visual	EIAR Chapter 11	Selection of a site adjoining a similar existing facility. Minimising earthworks and change in levels. Restricting areas for construction works and temporary storage to a minimum.	As required through the contractors CEMP
MM68	Landscape and Visual	EIAR Chapter 11	Retention of all existing perimeter planting and re-generating vegetation where possible and sufficiently protect in areas close to construction works as described in BS 5837:2005. Disturbance of existing vegetation will be minimised where possible.	As required through the contractors CEMP
MM69	Landscape and Visual	EIAR Chapter 11	The landfill mounds will be vegetated as each section is completed. Proposed planting shown on the Landscape Plan will be on the landfill cap will precise species and positioning of shrubs and other woody vegetation will be determined at the detailed design stage and due consideration will be given to plant root structures to avoid potential for damage of the landfill cap geomembrane. In the shorter term, 5 m high berms enclosing the development from the north, east and west will be planted with bands of native peatland tolerant woodland mix taking into account the specific drier soil conditions of the mounding. Remaining areas of the berm will naturally revegetate over time.	As required through the contractors CEMP

Air Quality and Climate				
MM70	Dust	EIAR Chapter 12	In order to minimise dust emissions during construction of new phases, a series of mitigation measures have been prepared in the form of a dust minimisation plan. The dust minimisation measures outlined in the Plan (see Appendix 12-3) and Construction Environmental Management Plan (CEMP) (Appendix2-5) will be adhered to during the construction phase. In summary the measures which will be implemented will include the following; • Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic; • Furthermore, any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions; • Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly. On any un-surfaced site road, this will be 20 kph, and on hard surfaced roads as site management dictates; • Vehicles delivering material with dust potential (soil, aggregates) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust; • Public roads outside the site will be regularly inspected for cleanliness, and cleaned as necessary; • Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods; and	As required through the contractors CEMP

			• During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions. At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.	
MM71	Carbon Emissions	EIAR Chapter 12	Monitoring of the embodied carbon in the construction and operational phases will be conducted. The aim of the monitoring will be to seek further ways to minimise climate impacts. Monitoring will include; embodied carbon of construction materials, water usage, power and fuel usage and waste generation (including reuse and recycling rates). Where monitoring shows the proposed developmentis not meeting its targets further mitigation will be put in place.	As required through the contractors CEMP
Archaeology & Cultural Heritage				
MM72	Archaeological Management	EIAR Chapter 13	In the event of archaeological features, finds and/or deposits been encountered during the monitoring, all relevant authorities should be notified immediately. Preservation in-situ or preservation by record (excavation) may be required.	An experienced and competent licence-eligible archaeologist will be employed to undertake archaeological monitoring working under licence issued by the minister (DHLGH) under section 26 of the National Monuments Acts (1994-2014)
Traffic & Transport				
MM73	Traffic & Transport	EIAR Chapter 14	The following are measures that will be implemented to mitigate the traffic and transportation effects of the proposed development:	As required through the contractors CEMP

			• Photographic survey of haul roads again, immediately prior to commencement of construction; • Continuous monitoring of haul roads throughout the construction phase; In compliance with a request from Kildare County Council, Pavement Management Systems were commissioned to undertake the following surveys (Appendix 14.2) on existing and proposed haul routes: 1) Falling Weight Deflectometer (FWD) testing. 2) Ground Penetrating Radar (GPR) and cores where required. 3) Road Condition Data (RCD) using Road Surface Profiler (RSP) including: • Digital Video (chainage and GPS referenced). • Visual condition survey from video survey using pavement condition index (PCI). • Ride quality survey using International Roughness Index (IRI). • Transverse profile for rut depth. Surveys were carried out in June 2022. The surveys were undertaken in line with TII 'Guidelines for the use of the Falling Weight Deflectometer in Ireland'. As per the guidelines for two lane roads, the surveys were carried out in both traffic directions and at 50 m intervals with the tests being staggered in adjacent lanes. The assessment did not include sections of the haul routes which were on motorway or national roads as these roads have been designed to cater for larger traffic volumes. The Reports for all of the testing mentioned above are shown in Appendix 14.2 and include drawings showing the haul routes and associated chainages. The FWD level 1 survey covers the testing undertaken to assess the condition of the existing pavement layers and subgrade. The output from these are; D1 - overall pavement structural condition, surface curvature index (SCI) - the upper surface pavement condition, and D7 - the subgrade strength.	

			These detailed pavement condition surveys will underpin the determination of maintenance costs of the life of the scheme and will facilitate and assessment of pavement defects that may arise during the construction period. It is proposed that any direct impact of construction on road structure during construction works will be identified to Kildare County Council and a schedule of maintenance agreed and carried out under the appropriate licences.	
Operational Phase				
Population & Human Health				
MM74	Recreational amenity and Socio-Economics	EIAR Chapter 1 and 5	The community benefit fund will provide benefits for the local community through the provision of environmental improvement and recreational or community amenities in the locality.	To be operated and ran by a group of individuals including the Drehid WMF operator, members of the local community and others.
Biodiversity				
MM75	Protection Measures for Bats	EIAR Chapter 6	The location of the proposed new lighting was designed in consultation with a qualified ecologist with regard made to the NPWS guidelines. No lighting will be installed along bat commuting/ foraging routes. The luminaires used will use LED 3000K with a warm colour temperature as recommended within the guidelines. In addition, the luminaires will be full cut off/ flat glass type with no tilt (0% uplight) which will minimise glare and light spill. Lighting at the landfill will be controlled and kept at a minimum.	As required through the contractors CEMP
MM76	Protection of Lepidoptera Species	EIAR Chapter 6	A Habitat Management and Enhancement Plan is included within Appendix 6-3 of this EIAR. This management plan outlines measures that will be implemented to protect and enhance suitable lepidoptera habitats. Operational phase mitigation and monitoring measures are summarised below: • Capping of the waste management facility will use subsoil as this will create a species rich grassy habitat; • Wildflower seed mixes will not be used; • The use of “green hay” will be used to support reseeding of the landfill capping; • A mowing regime will be implemented and agreed with a suitably qualified ECoW;	As required through the contractors CEMP

			• No mowing will be carried out during the breeding bird season (1st March – 31st August); • Mowing will not be uniform i.e. mowing certain areas will be rotated to every second year; • Cutting will favour the retention of south facing slopes, south facing banks provide a warm microclimate for butterflies; and • Alder buckthorn (*Frangula alnus*) will be included in landscaping plans, this species is the food plant of the brimstone butterfly (*Gonepteryx rhamni*) and several moth species; and • Vegetation establishment and species composition will be monitored by a suitably qualified ecologist.	
MM77	Stormwater	EIAR Chapter 6	The proposed new, designed attenuation lagoons and ICW system form part of the proposed development and will treat all stormwater before discharging into the Cushaling River. Surface water quality will be monitored downstream of the ICW outlet (SW9) during the operational phase of the facility under the new IE License. All surface water sampling will be carried out by trained personnel from Bord na Móna or by suitably qualified consultants. All analyses, except for on-site readings, will be carried out off-site, by an accredited laboratory. A visual inspection of all surface water streams on and adjacent to the proposed development will be carried out by site personnel on a weekly basis. The key aspects of the surface water monitoring programme will be as follows: • Surface water sampling locations will be identified with a permanent identification marker; • Surface water will be sampled in accordance with industry standard protocols and guidelines prepared by the EPA. Samples will be handled and transported in accordance with accepted protocols; and • The analytical programme will be carried out such that an ion balance can be computed. In the unlikely event that deterioration in the surface water quality being discharged is detected, an automated isolating valve will close. This isolating valve	All surface water sampling will be caried out by trained personnel from Bord na Móna or by a suitably qualified consultants

			will allow for the retention of all surface water on-site until the contamination event is investigated and remediated. Annual biological monitoring will also be undertaken at SW4 during the monitoring period from June to September. Kick samples will be taken and analysed, in accordance with EPA guidelines, to determine the invertebrate colony of the surface water environment. A relationship between water quality and macroinvertebrate community structure will be determined in the form of a 'Q' value, where Q1 represents poor quality water and Q5 represents good quality water. The locations at which samples will be obtained will be agreed with the EPA and other relevant stakeholders such as Inland Fisheries Ireland (IFI). In relation to the ICW, a suitably qualified person with experience in ICWs will carry out monitoring and maintenance of the ICW. This will include: • Monitoring water level; • Influent and discharge monitoring – flow and quality; • Vegetation monitoring and maintenance within cells and around the site; • Maintenance of the inlet and outlet pipes; and • Sediment/sludge management.	
MM78	Habitat & Vegetation management	NIS and EIAR Chapter 6	• Following the completion of the proposed construction works, the capping layer of the landfill will be planted with grass and shrub species, as each section is completed. Furthermore, the berms located around the north, east and west boundary will be planted with bands of locally sourced native peatland tolerant grass and shrub species. The vegetating of these areas will not only provide new habitats, but will also compact the peat, reducing runoff of suspended solids. • The land located to the east of the eastern berm will also be vegetated with peat tolerant grass and shrub species, which will create a natural vegetative buffer between the berm and the drainage ditch, again reducing runoff and will attenuate ammonia and suspended matter loads.	
MM79	Surface Water Quality	NIS and EIAR Chapter 6	• All stormwater runoff will be collected and treated via the attenuation lagoon and ICW, which form part of the proposed development, prior to discharge into the Cushaling River. As the water passes through the new	

			attenuation lagoons and ICW, attenuation of ammonia and suspended solids will be achieved. • Surface water quality will be monitored within and downstream of the proposed development during the operational phase of the facility at the monitoring locations shown Figure 7-1. Surface water quality will also be monitored at the inflow (SW8) of the new attenuation ponds and at the outflow of the ICW (SW9) during the operational phase of the facility under the new IE License. • As mentioned, all surface water sampling will be carried out by trained personnel from Bord na Móna or by suitably qualified consultants. All analyses, except for on-site readings, will be carried out off-site by an accredited laboratory. A visual inspection of all surface water streams on and adjacent to the proposed development will be carried out by site personnel on a weekly basis. • The key aspects of the surface water monitoring programme will be as follows: o Surface water sampling locations will be identified with a permanent identification marker; o Surface water will be sampled in accordance with industry standard protocols and guidelines prepared by the EPA. Samples will be handled and transported in accordance with accepted protocols; o The analytical programme will be carried out such that an ion balance can be computed. • In the unlikely event that deterioration in the surface water quality being discharged is detected, an automated isolating valve will close. This isolating valve will allow for the retention of all surface water on-site until the contamination event is investigated and remediated. • Annual biological monitoring will also be undertaken at SW4 during the monitoring period from June to September. Kick samples will be taken and analysed, in accordance with EPA guidelines, to determine the invertebrate colony of the surface water environment. A relationship between water quality and macroinvertebrate community structure will be determined in the form of a 'Q' value, where Q1 represents poor quality water and Q5 represents good quality water. The locations at which samples will be obtained will be agreed with the EPA and other relevant stakeholders such as Inland Fisheries Ireland (IFI).	

MM80			• Maintenance works will be subject to routines and procedures which are based on BnM's extensive operational experience (under licence) at the existing WMF. • The periodic removal of sediments within drainage ditches will be undertaken to maintain the existing drains. • A suitably qualified person with experience and training in ICWs will undertake regular monitoring and maintenance of the ICW during its operation. Operational and maintenance procedures will include the following: o Water level management; o Influent and effluent monitoring – flow and quality; o Vegetation monitoring and maintenance within the cells and around the site; o Maintenance of access; o Maintenance of inlet and outlet pipes; o Maintenance of embankments; o Sediment and sludge management (desludging may be required every 10 years or more).	
Soils Geology & Hydrogeology				
MM81	Maintenance Works	EIAR Chapter 7	Maintenance works will be subject to routines and procedures which are based on BnM's extensive operational experience (under licence) at the existing WMF. Operational procedures for handling and management of leachate, fuels and chemicals are in place, as described in Chapter 2 of this EIAR. Because operational maintenance activity is conducted in parallel with construction activity (in adjacent phases), and risks are of a similar nature, the key measures that apply for maintenance works are covered by those outlined in Section 7.5.2 of the EIAR. In the unlikely event that pollutants escape the lined waste cells during operations, the pollutants will attenuate in the subsurface (groundwater) environment and be captured by the under-cell drainage system which acts as a second protection barrier (additional to the liner and leachate collection system). This is a highly unlikely event, because a) the landfill expansion is planned and	As required through the contractors CEMP

			designed to prevent this from occurring, and b) this is not occurring at the existing WMF.	
MM82	Groundwater Lowering by the Under-cell Drainage System	EIAR Chapter 7	The under-cell drainage system is necessary as a control measure to prevent damage to the landfill liner during waste deposition. Dewatering effects will be countered near the landfill footprint by maintaining water levels in the drainage network as high as possible and as close to the landfill expansion as possible, by the blocking of drains (Section 7.5.2.2 of the EIAR). The aim is to maintain water levels high in the peat outside the landfill expansion footprint.	As required through the contractors CEMP
Water				
MM83	Maintenance Works	EIAR Chapter 8	Maintenance works will be subject to routines and procedures which are based on BnM's extensive operational experience (under licence) at the existing WMF. Because operational maintenance activity is conducted in parallel with construction activity (in adjacent phases), and risks are of a similar nature, (e.g., accidental spills and leaks), the key measures that apply for maintenance works are covered by those outlined in Section 8.5.2 of the EIAR.	As required through the contractors CEMP
MM84	Water Management and Discharges from New Attenuation Lagoons and ICW	EIAR Chapter 8	The proposed new, designed attenuation lagoons and ICW system is a necessary mitigation measure. As presented in Appendix 2-4 of the EIAR, it is specifically designed to remove ammonia and suspended solids in the discharge. It will serve to reduce loads that would otherwise be higher, which will benefit the receiving water environment.	As required through the contractors CEMP
MM85	WFD Status of Surface Water Bodies	EIAR Chapter 8	Relevant mitigation measures are those referred to in Sections 8.5.3.1 (Maintenance Works) and 8.5.3.2 (Water Management and Discharges from New Attenuation Lagoons and ICW) of the EIAR and include the new attenuation lagoons and ICW system.	As required through the contractors CEMP
Material Assets				
MM86	Material Assets	EIAR Chapter 9	Mitigation referred to in the construction phase also applies here.	As required through the contractors CEMP

Noise and Vibration				
MM87	Noise Level	EIAR Chapter 10	In order to ensure noise levels associated with the operational phase of the development are minimised as far as practicable, the following mitigation measures will be incorporated into the site design as best practice; • All roller shutter doors and building access points are maintained closed at all times and opened only to permit vehicle and personnel entrance/egress, and; • All operational plant will be switched off during evening and night-time periods when the facility is not in operation, with the exception of the fixed plant items required to operate on a continual basis for odour control and gas utilisation.	As required through the contractors CEMP
Air Quality and Climate				
MM88	Odour	EIAR Chapter 12	The Drehid facility (W0201-03) operates an odour mitigation and management plan which includes a range of practical odour abatement measures for the Composting Facility. All processes associated with the Composting Facility are internal within buildings under negative pressure so air does not escape from the buildings. An odour management plan will be in place for the proposed landfill facility. This plan includes management strategies for the prevention of emissions and a strict preventative maintenance and management program for ensuring that all odour mitigation techniques remain operational at optimal capacity throughout all operational scenarios. Good housekeeping practices (internally and externally) and a closed-door management strategy will also be maintained at all times. If composting temperatures exceed approximately 65°C, odour emissions increase significantly, due to the changes in process biochemistry. Excessive increases in composting temperatures are especially relevant in the first stage of composting when, due to the fast degradation, a lot of energy is released. Temperature sensors are used to measure the temperature in the composting tunnels and subsequently in the maturation area. The SCADA control system ensures that the composting temperature does not exceed 65°C by adding more	As required through the contractors CEMP

			fresh process air to the composting mass. This reduces the odour load in the process air being transported to the odour abatement systems. Critical and key odour abatement system performance parameters are continually monitored on the SCADA control system. Should any parameter deviate outside of its accepted range, an alarm will be immediately generated. Critical alarms will be texted to selected mobile phone numbers thereby ensuring the communication of critical alarms to responsible individuals on a 24 hour basis. The biofilters are maintained to ensure optimum performance. Biofilters are compartmentalised to facilitate maintenance and replacement of media. Each biofilter comprises two sections such that treatment is provided by one of the sections while the other section is being maintained. Biofilters are covered and hence isolated from extreme weather conditions (e.g. intensive rainfall or intensive heat) thereby providing optimum control of biofilter efficacy.	
MM89	Air Quality	EIAR Chapter 12	There is no significant predicted operational phase impact with respect to air quality from traffic. However, some site-specific mitigation measures are required for the existing development, in particular the prevention of vehicles from having engines idling while waiting to be processed, even over short time periods. The review of road traffic for impacts on human and ecological receptors has found no significant impacts that require mitigation measures with respect to the modelling of emissions. However, some mitigation measures can be put in place to minimise emissions: • Implement a policy which prevents idling of vehicles both on and off-site including HGV holding sites; • Traffic should be monitored to ensure vehicles are using the designated haul routes; • Efficient scheduling of deliveries to minimise number of deliveries required, and in turn their emissions; and • Construction vehicles should conform to the current EU emissions standards and where reasonably practicable, their emissions should meet upcoming standards prior to the legal requirement date for the new standard. This will ensure emissions on haul routes are minimised.	As required through the contractors CEMP

			Mitigation measures are required for the control of dust with respect HGV moments onsite with the site and deliveries to/from the site: • HGV traffic leaving site will pass through a wheel wash; • Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary. If public roads are deemed to require additional cleaning where possible a suction device for road cleaning will be utilised can access spaces around cars and other street furniture more effectively; and • During movement of materials both on and off-site, trucks will be stringently covered at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.	
MM90	GHG Emissions	EIAR Chapter 12	Vehicles, generators etc., will give rise to some GHG emissions, however the proposed development's impact on climate due to traffic can be minimised through mitigation measures. The following mitigation measures will be put in place to minimise emissions: • Implement a policy which prevents idling of vehicles both on and off-site including HGV holding sites; • Construction Phase traffic should be monitored to ensure construction vehicles are using the designated haul routes; • All plant and machinery will be maintained and serviced regularly; • Efficient scheduling of deliveries will be undertaken to minimise emissions; and • Construction vehicles should conform to the latest EU emissions standards and where reasonably practicable, their emissions should meet upcoming standards prior to the legal requirement date for the new standard. This will ensure emissions on haul routes are minimised. Monitoring of carbon emissions will also include the ongoing management of adaptation and mitigation in order to measure their effectiveness, with consideration given to the vulnerabilities to extreme heat and cold noted in Section 12.4.4 of the EIAR. Emissions from the composting and landfill process will be minimised through good practice measures and management however are vulnerable to extreme heat. If monitoring of adaptation measures and mitigation measures indicates the measures are not effectively minimising embodied carbon	As required through the contractors CEMP

			or climate is impacting on the construction of the proposed development then they should be reviewed and updated. The majority of mitigation measures with respect to the proposed developments vulnerability to climate change are set out through management plans, designing out potential issues. Operational Phase climate vulnerability should be reassessed on an annual basis in order to respond to new scientific data on potential climate change impacts. The impact of the landfill emissions are mitigated by the collection of the landfill gases emitted (as per Table 12.27 in the EIAR) to produce electricity. A landfill gas collection system will be installed to safely collect and divert this gas from the new landfill to the existing landfill gas management compound which includes landfill gas flares and landfill gas utilisation plant (LGUP) which generates electricity. The amount generated will vary throughout the lifespan of the landfill as the waste decomposes. Landfill gas generation rates will vary considerably over the lifetime of the facility and is discussed in more detail in Section 2.3.4 of the EIAR. The operational phase will have carbon sinks in the form of approximately 72.57 ha of the site being allowed to be vegetated. Further areas of revegetation will be created where possible. In addition, in areas where it is practical gradual drain blocking will also encourage water levels to rise resulting in the rewetting of peat which is currently dried out. A bog rehabilitation plan is being conducted for areas outside the project redline boundary which includes drain blocking to encourage rewetting.	
Archaeology & Cultural Heritage				
MM91	Archaeology	EIAR Chapter 13	The following mitigation measures will be implemented during the construction phase: • All ground disturbance associated with the construction of the proposed development will be monitored by a suitably qualified archaeologist working under licence as issued by the minister (DHLGH) under section 26 of the National Monuments Acts (1994-2014). • In the event of archaeological features, finds and/or deposits been encountered during the monitoring, all relevant authorities should be	All ground disturbance associated with the construction of the proposed development will be monitored by a suitably qualified archaeologist working under licence. Also as required through the contractors CEMP

			notified immediately. Preservation in-situ or preservation by record (excavation) may be required.	
Traffic & Transport				
MM92	Traffic & Transport	EIAR Chapter 14	The following are measures that will be implemented to mitigate the impact associated with the facility: • Continuous monitoring of haul roads throughout operational phase; • All contractors, delivering waste to the facility and removing outputs from the facility, and all construction contractors will undergo and induction progress and will ultimately be issued with a map of the permitted haul routes such that all materials imported into the site and exported out of the site are transported via the identified and agreed haul routes. A penalty system will be operated by Bord na Móna to ensure haulage operators comply with these requirements; • Use existing wheel wash facilities at the Waste Facility during both the construction and operational phase to reduce the potential for deposition of dirt or detritus on the public road. The existing 4.8 km private access road also aids in this regard; • Maintenance of warning signage on the approach to the entrance; • Monitoring of parking requirements during the operational phase with additional spaces to be provided if required; • Maintenance of site entrance ensuring visibility splays remain unobstructed; and; • Monitoring of haul routes performance.	As required through the contractors CEMP
Decommissioning Phase				
Biodiversity				
MM93	General Biodiversity	EIAR Chapter 6	Impacts during decommissioning are expected to be of similar type and magnitude to those anticipated during the construction phase, but generally of a shorter duration. Therefore, the same mitigation measures implemented during the construction phase, will be applied during the decommissioning works.	As required through the contractors CEMP

MM94	Habitats and Ecology	NIS and EIAR Chapter 6	All structures proposed to be removed, will be removed offsite, while below ground structures will be filled with clean and free from invasive species material. Hardstanding areas will be rehabilitated by covering with local topsoil and allowed to revegetate. The landfill body will be restored as per the proposed levels set out in the restoration drawings and in accordance with the landscaping plan. In the event that the composting plant and MSW processing plant are to be decommissioned, the following measures will be undertaken to ensure that there will be no adverse environmental effects from the closed facilities: • Bord na Móna will ensure that any remaining waste materials within the facility are managed and removed off-site to an appropriately licensed facility; • All oils and fuels on site at the time of closure, that are not required for long-term aftercare, will be collected by an approved waste contractor; • All mobile plant and equipment associated with the facility will be removed from the site; • All site floor and process building walls will be power cleaned to clear all debris and dust; • All tanks will be de-sludged and interceptors cleaned. The waste from the cleaning operations will be disposed to relevant licensed facilities; • Where possible, all portable or removable structures will be dismantled or removed from site; • The weighbridge, weighbridge kiosk and wheel wash will be decommissioned and removed; and • A monitoring programme of all potential emissions including surface water and dust will be conducted after the decommissioning process in order to ensure that emissions from the facility have ceased. When the operations have ceased on site, as per the requirements of the Landfill Directive, monitoring and analysing of landfill gas and leachate from the site and the groundwater regime in the vicinity of the site, shall continue as required by the EPA. The commitments to restoration and aftercare of the landfill are as follows and adhere to the guidance set out in the EPA's *Landfill Manual: Landfill Restoration and Aftercare* (1999):	As required through the contractors CEMP

			• On cessation of filling at each cell of the landfill, the final capping layer will be installed which will include a low permeability LLDPE liner and soil layer; • This final capping will initially be seeded with grass to limit dust blow on these areas; • The site will then be left to recolonise with natural species; • The site will be landscaped in accordance with the landscape proposals; • Gas extraction and leachate treatment will continue post closure; and • Monitoring of surface and groundwater quality and other parameters as outlined in Section **Error! Reference source not found.** of the NIS will continue post closure.	
Material Assets				
MM95	Waste Management	EIAR Chapter 9	Segregation of waste will be carried on site to maximise the potential for waste recycling. Appropriately licensed waste collectors will be used to remove any municipal waste, wastewater or general demolition waste that does occur on site. The majority of wastes from decommissioned infrastructure will be recyclable (e.g. metal signage).	As required through the contractors CEMP