

The Irish Water's BAP has set out objectives to preserve and where possible enhance the natural environment and its ecosystems. The proposed GCSWOE project is not considered to interfere with the objectives of the BAP.

### 19.4.2 Existing or commenced Planning Applications

Table 19.3 refers to the developments considered for cumulative effects. Any other existing applications not identified do not have the potential to exacerbate effects.

**Table 19.3: Schedule of developments considered for cumulative effects**

File Number	Address	Relevance	Description	Status	Decision Date
181104	Newtown, Castletroy, Co. Limerick	Located near study site	a residential development comprising 89 no. residential units. Ancillary site development works included	Application Finalised	4/30/2019
181105	Newtown, Castletroy, Co. Limerick	Located near study site	a residential development comprising 41 no. residential units. Ancillary site development works included	Application Finalised	4/30/2019
18698	Newtown, Castletroy, Co. Limerick	Located near study site	a residential development comprising 38 no. residential units. Ancillary site development works included	Application Finalised	10/18/2018
21350	Newtown, Castletroy, Co. Limerick	Located near study site	a residential development comprising 62 no. residential units. Ancillary site development works included	Application Finalised	10/26/2021
211152	Newtown, Castletroy, Co. Limerick	Located near study site	a residential development comprising 89 no. residential units. Ancillary site development works included	Application Finalised	3/15/2022
211400	Newtown, Castletroy, Co. Limerick	Located near study site	a residential development comprising 96 no. residential units. Ancillary site development works included	Application Finalised	5/4/2022
21396	7 Lonsdale Road, Plassey Enterprise Centre, National Technology Park, Castletroy, Limerick		demolition of existing boiler house construction of a two storey front and rear extension which will accommodate a new office space, storage space and new entrance, along with alterations to front and side elevations and all associated site works	Application Finalised	3/10/2022
198004	Orchard Site (bounded by Castle Street,		provision of older persons residential accommodation consisting of 27 units on two	Application Finalised	10/2/2019

	Island gate, Old Dominick Street and Church Street), King's Island, Limerick.		adjacent sites specifically, modifications and re-paving of a section of Old Dominick Street, vehicle and pedestrian access road, footpaths, parking spaces, open space and soft landscaping to public and private amenity spaces, all associated site works		
22558	Johnson & Johnson Vision Care, Plassey Park Road, National Technology Park Rivers, Limerick		a water retention pond, area circa 1,100m <sup>2</sup> with 2.0m high perimeter fence, relocation and modification of existing landscaped berm, and associated ancillary works	Decision Made	9/16/2022
191037	Foxhollow,, Golf Links Road, Castletroy, Co. Limerick.		demolition of an existing haybarn and construction of a residential development comprising 6 units and all ancillary site development works	Application Finalised	5/15/2020
21660	Monaleen National School, Monaleen Road, Castletroy, Co. Limerick		the demolition of the existing single storey school buildings and the provision of a new stepped 2 storey school building comprising: 32no. classrooms, special needs unit, GP room, library, resource rooms, staff room, ancillary accommodation all measuring approximately 5,516 m <sup>2</sup>	Application Finalised	1/20/2022
211793	Plassey Park Road, National Technology Park, Rivers, Limerick		a water recycling plant, comprising single/part two storey enclosures for mechanical and electrical equipment, storage tanks approx. 15m high and evaporating equipment approx. 20m high, access road, perimeter fence and ancillary site works	Decision Made	9/9/2022

### 19.4.3 Existing or Commenced Projects

There are various identified existing or commenced projects in the vicinity that may or may not have a cumulative impact. A list of the projects are as follows:

- Kings Flood Relief Scheme
- Castleconnell Flood Relief Scheme
- Corbally Baths Project
- Bunlicky WwTP upgrade

### 19.4.4 Significance of Cumulative Impact

The detailed assessment provided in the preceding sections attribute to the fact that the proposed development will not have any residual negative impacts on any of the environmental aspects or on the European Sites. The impact of the proposed development on water quality has been demonstrated to be imperceptible. Consequently, the contribution of this project to any cumulative water quality impacts will also be imperceptible.

Various other developments around the vicinity of the site were taken into consideration to assess for cumulative effects. Limerick Co. Co. planning portal was accessed to examine planning applications in the vicinity of the site for the potential to act in combination with the proposed project (Table 19.3). Active (within 5years) planning applications in the surrounding area consist of housing projects and applications for projects within Johnson and Johnson landholdings.

Majority of the planning applications around the site are residential developments. The planning applications propose the construction of residential units in Newtown, Castletroy. Due to the distance between the sites, there are no negative cumulative impacts in association with these construction sites. Although the construction of the older persons residential accommodation can have a negative impact on the quality of water due to oil spillage, concrete, dust emissions. These activities can lead to a significant increase in the population of the area and with the upgrade project of the WwTP, it will be able to treat the excess flows.

The construction of water retention tank and water recycling plant in the Johnson and Johnson landholdings have no negative cumulative impacts due to the location and distance of the development from our site.

Two flood relief schemes, Kings FRS and Castleconnell FRS are around the site of the proposed upgrade project. There are no significant abstractions or discharge of water into these developments that will have a negative impact on the quality of water. In fact, the FRS will have a positive impact and help in enhancing the entire situation. Therefore, there are no significant cumulative effects due to the two FRS.

Corbally Baths is a historic swimming area approximately 8km downstream from Castletroy WwTP. A project to reinstate the baths has been ongoing in recent years. The Baths draw water directly from the Lower River Shannon, and therefore depend on its water quality which at present is not of appropriate standard. WQ monitoring in the area, carried out by a local interest group, showed a significant deterioration after the first flush of rainfall events, indicating that storm water overflows in the area are having an effect. The proposed development will see the installation of stormwater storage that will greatly reduce, and almost eliminate spills during the bathing season which will have a positive effect on cumulative downstream water quality.

Limerick (Bunlicky) WwTP is located to the west of Limerick city , approximately 13km downstream from Castletroy WwTP. It currently serves a population equivalent of 186,233PE (2020 AER) and is due to undergo a similar development project which will upgrade the treatment capacity of wastewater and sludge processes on the site. Due to the distance downstream and mixing of flow with other tributaries, there will be no cumulative effects from the combination of Castletroy effluent with current or future discharges from the Bunlicky WwTP.

The sludge from the Castletroy WwTP will be transported to Bunlicky for treatment. This is the same as the current situation and there are only two lorries each day. This is not expected to have bare any significance on the Bunlicky project, either during its construction or operational phases. therefore, there will be no significant cumulative effect to Traffic and Transportation due to the upgrade projects.

This EIAR has considered potential cumulative impacts arising from the construction and operation of the proposed upgrade project in accordance with the EIA Directive and corresponding guidelines. It has done so mainly through the integration of cumulative impacts in the undertaking of baseline surveys related to effects on Biodiversity, Water Quality, Noise and Vibration, Air Quality and Climate, Traffic and Transport, Landscape and Visual Impacts and Waste Management. The proposed development is not likely to give rise to any significant or interactive cumulative impacts.

## SECTION 20: Summary of Mitigation and Monitoring

This Volume of the EIAR has assessed the impacts and resulting effects likely to occur as a result of the Castletroy Wastewater Treatment Upgrade Project on the various aspects of the receiving environment. The Proposed Development has been designed and will be constructed in a manner to ensure that the impacts on the receiving environment are avoided where possible. Full details of the Proposed Development can be found in Volume 2, Part A, Section 3. In cases where impacts or potential impacts have been identified, the mitigation that has been proposed aims to avoid/prevent/reduce or offset the significance of particular impacts. These mitigation recommendations are contained in the specific environmental sections within this document. This Section proposes to collate and summarise the mitigation commitments made in Section 6 to Section 18 of this Volume of the EIAR. In addition to the mitigation measures proposed, appropriate best practice measures relating to construction activities are also provided. Mitigation of environmental impacts are described in the following sections.

### 20.1.1 Mitigation by Design

The design of the Volume of the EIAR has incorporated many inherent elements to avoid undesirable environmental impacts. Buildings that can accommodate operations internally will mitigate impacts on the local environment. Odour control, road layout and drainage measures are environmental design considerations. This EIAR has assessed the environmental effects of the construction and operation of the Proposed Development. Where impacts were identified, appropriate mitigation measures will be incorporated in the construction and operation stages as described in the various sections of the EIAR.

### 20.1.2 Mitigation by Management

Many potential environmental impacts have been identified that are associated with construction activity and methodology. Consequently, an outline Construction Environmental Management Plan (CEMP) has been drafted (this outline CEMP is included in Appendix 5A). The CEMP will incorporate all the mitigation measures proposed in this Volume of the EIAR as well as other good practices and guidelines. The CEMP will be updated to include any conditions that are set out as part of a planning approval. The contract specific CEMP will be a live document that will be reviewed and updated throughout Proposed Development in conjunction with the local authority and prescribed bodies as may be outlined in planning conditions. Likewise, an Environmental Management Plan will be put in place post construction, in the operational phase which shall also address environmental monitoring procedures. The mitigation measures are summarised in Table 20.1. Note that in the table below, mitigation measures are itemised and numbered based on the stage that they are relevant to (i.e. construction or operational - C or O) and the Section that they come from. For example, mitigation measure C.6.1 relates to construction mitigation measure no. 1 from the Traffic and Transportation Section 6.

### 20.1.3 Monitoring

Monitoring is also listed under each Section title in

Table 20.2 in order to summarise any monitoring requirements identified within this Volume of the EIAR. Monitoring items are numbered in the same way as mitigation measures.

**Table 20.1: Summary of Mitigation Measures**

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
General			
C.Gen.1 and O.Gen.1	Construction and Operational	Construction Impacts General	<p>A contract specific Outline Construction Environmental Management Plan (CEMP) has been prepared by IW. Detailed CEMPs will be developed for individual contracts and implemented by the various Contractors.</p> <p>The individual CEMPs will have regard to the guidance contained in the handbook published by Construction Industry Research and Information Association (CIRIA) in the UK, Environmental Good Practice on Site, CIRIA 2005, as well as the Outline CEMP document. The CEMPs shall have individual project specific Management Plans appended relating to Waste Management, Invasive Species Management, Traffic Management, Monitoring Plans, and Emergency Response Plans.</p> <p>Any planning conditions imposed by the planning authority shall be strictly observed and monitoring requirements shall be observed in either the construction or operational phase as conditioned.</p>
Section 6: Traffic and Transportation			
C.6.1	Construction	Traffic Management	A Preliminary Traffic Management Plan will be drafted by the Project Supervisor Design Process for the works in full consultation with Limerick City and County Council, An Garda Síochána, the Fire Service and the Ambulance service prior to the issuing of tender documents, and will be developed by the Project Supervisor Construction Phase into a Detailed Traffic Management Plan in full consultation with the same stakeholders.
C.6.2	Construction	Equipment Management	Tracked excavators will be moved to and from the site on low-loaders and will not be permitted to drive on the street pavements
C.6.3	Construction	Road Surface Cleaning	Wheel washers/ judder bars will be placed at all site access points to minimise the migration of detritus onto the public roads, where appropriate. The roads will be inspected and cleaned on a regular basis.
C.6.4	Construction	Air Quality Control	<p>Haul vehicles will be covered after loading to ensure there is no risk of construction material falling or to any prevent any nuisance due to dust particles.</p> <p>Water bowsers will be deployed within the sites during periods of hot weather to damp down potential dust generation from unbound surfaces.</p>
C.6.5	Construction	Abnormal Loads	An Application for an Abnormal Load Permit will be made to Limerick City and County Council in advance for any abnormal loads exceeding the thresholds laid out in the Road

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			Traffic (Construction and Use of Vehicles) (S.I. No. 5/2003) Regulations 2003. Where possible abnormal load movements will be restricted to evening or night-time to minimize disruption to local traffic and traffic on strategic routes.
C.6.6	Construction	Site Deliveries	Restricted HGV movements into and out of site to avoid peak traffic shall be in force during both construction phases.
-	Operational	-	None
Section 7: Odour			
-	Construction	-	None
-	Operational	-	None
Section 8: Air Quality and Climate			
C.8.1	Construction	Dust Management	<p>A Dust Management Plan (DMP) will be developed and implemented, which will include measures to control other emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real-time PM10 continuous monitoring and/or visual inspections.</p> <p>Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;</p> <p>Ensure an adequate water supply on the site for effective dust / particulate matter suppression / mitigation, using non-potable water where possible and appropriate;</p> <p>Use enclosed chutes and conveyors and covered skips;</p> <p>Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and</p> <p>Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.</p> <p>Additional measures specified considering the effects on Biodiversity:</p> <ul style="list-style-type: none"> <li>▪ Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions.</li> <li>▪ Public roads outside the site and along the main access route to the site will be regularly inspected by the Site Manager for cleanliness, most notably before and after plant and machinery deliveries to site.</li> </ul>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<ul style="list-style-type: none"> <li>▪ Material handling systems and material storage areas will be designed and laid out to minimise exposure to wind.</li> <li>▪ Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.</li> <li>▪ Water misting or bowsers will operate on-site as required to mitigate dust in dry weather conditions.</li> <li>▪ If transport of soils or other material off site is required, which has significant potential to generate dust, this will be undertaken in tarpaulin-covered vehicles where necessary.</li> <li>▪ Daily inspection of site to examine dust measures and their effectiveness.</li> </ul>
C.8.2	Construction	Engagement	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
C.8.3	Construction	Site Management	<p>Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;            Make the complaints log available to the local authority when asked;            Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook; and            Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport / deliveries which might be using the same strategic road network routes.</p>
C.8.4	Construction	Operating Vehicle / Machinery and Sustainable Travel	<p>Ensure all vehicles switch off engines when stationary - no idling vehicles;            Avoid, where possible, the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable;            Impose and signpost a maximum-speed-limit of 15 miles per hour (mph) on surfaced and 10 mph on unsurfaced haul roads and work areas;            Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials; and,            Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).</p>
C.8.5	Construction	Track-out/ Dust management	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>Avoid dry sweeping of large areas;            Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;            Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;            Record all inspections of haul routes and any subsequent action in a site logbook;            Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned;            Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);            Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; and            Access gates to be located at least 10m from receptors where possible</p>
C.8.6	Construction	Earthworks	<p>Re-vegetate earthworks and exposed areas / soil stockpiles to stabilise surfaces as soon as practicable;            Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and            Only remove the cover in small areas during work and not all at once.</p>
<b>Section 9: Noise and Vibration</b>			
C.9.1		Noise Management	<p>To protect residential amenity, construction activities will be restricted to daytime hours as outlined:</p> <ul style="list-style-type: none"> <li>- Monday to Friday: 0700 hours – 1900 hours;</li> <li>- Saturday: 0800 hours – 1300 hours.</li> </ul> <p>To protect residential amenity, the cumulative noise level from construction activities on the development site (including plant and equipment) shall not exceed 65 dB LAeq(12 hour) at residential dwellings outside the nearest window of the occupied room closest to the site boundary (SR 11).            Best practicable means will be employed to minimise noise emissions and will comply with the general recommendations of BS 5228</p>
C.9.2		Operating Vehicle / Machinery / Equipment	An on-site speed limit will be enforced for all traffic



Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>All plant will be maintained in good working order. Where practicable, machines will be operated at low speeds and will be shut down when not in use;</p> <p>Mechanical plant used on site will be fitted with effective exhaust silencers. Vehicle reverse alarms will be silenced appropriately to minimise noise breakout from the site while still maintaining their effectiveness;</p> <p>If required, compressors will be of the “noise reduced” variety and fitted with properly lined and sealed acoustic covers;</p> <p>In all cases, engine and/or machinery covers should be closed whenever the machines or engines are in use;</p> <p>All pneumatic percussive tools will be fitted with mufflers or silencers as recommended by the equipment manufactures. Where practicable all mechanical static plant will be enclosed by acoustic sheds or screens;</p> <p>Employees working on the site will be informed about the requirement to minimise noise and undergo training on the following aspects:</p> <p>The proper use and maintenance of tools and equipment;</p> <p>The positioning of machinery on-site to reduce the emission of noise to the noise sensitive receptors;</p> <p>Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment; and</p> <p>The use and maintenance of sound reduction equipment fitted to power pressure tools and machines.</p>
C.9.3	Operational	Installation of Plant and Equipment	All new plant and equipment will be installed with noise attenuation measures fitted as per manufacturers’ guidance.
O.9.1	Operational	Aerzen Blowers Noise Control	The existing blowers and the proposed additional blowers will be installed at this location will be fitted with a suitable noise attenuation enclosure.
<b>Section 10: Archaeology, Architectural and Cultural Heritage</b>			
C.10.1	Construction	Site Specific conservation	The mature trees and hedging bounding and screening the site should be retained
O.10.1	Construction	Archaeological Monitoring of construction works	Archaeological monitoring of all groundworks associated with the development should be carried out by a suitably qualified archaeologist in line with a method statement, and under licence from the Department of Housing, Local Government and Heritage in consultation with the National Museum of Ireland.

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			Should significant archaeological material be identified during works, preservation in situ, where possible, or preservation by record is recommended and shall be undertaken following consultation with the National Monument Services.
Section 11: Biodiversity			
C.11.1	Construction	Mitigation for Habitat Loss	<p>A landscaping plan has been prepared for the proposed development, it includes: Creating a wet woodland to the north of the site that includes following plant species:</p> <ul style="list-style-type: none"> <li>▪ Pedunculate oak (<i>Quercus robur</i>) – 30%</li> <li>▪ Alder (<i>Alnus glutinosa</i>) – 20%</li> <li>▪ Grey willow (<i>Salix cinerea</i>), Goat willow (<i>Salix caprea</i>), Hawthorn (<i>Crataegus monogyna</i>), holly (<i>Ilex aquifolium</i>) and Hazel (<i>Corylus avellana</i>) – 50%</li> </ul> <p>Planting of a treeline along the proposed new access track. Species will include:</p> <ul style="list-style-type: none"> <li>▪ Rowan (<i>Sorbus aucuparia</i>)</li> <li>▪ Wild Cherry (<i>Prunus avium</i>)</li> <li>▪ Silver Birch (<i>Betula pendula</i>)</li> <li>▪ Scots pine (<i>Pinus sylvestris</i>)</li> <li>▪ Elder (<i>Sambucus nigra</i>)</li> <li>▪ Pedunculate oak (<i>Quercus robur</i>)</li> </ul>
C.11.2	Construction	Faunal Habitat Protection Measures	<p>At least 4 bat boxes will be placed on suitable trees along the eastern and western boundaries of the site, in agreement with a qualified ecologist. It is proposed to use bottom-less bat boxes in order that bat droppings will fall out, reducing the need for cleaning. However, these will be checked by site operators to ensure they do not become clogged. If the boxes require cleaning, this will be carried out by a qualified Ecologist with a roost disturbance licence, outside of bat maternity season (May to August).</p> <p>It is proposed to place a swift box on the external façade of the northern building within the site, underneath an overhang, approximately 5m from the ground, under supervision of a suitably qualified ecologist.</p> <p>Dead wood piles will be created in suitable areas of the site from the trees being felled.</p>
C.11.3	Construction	Mitigations for Disturbance/Displacement of Fauna	All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 “European Communities (Construction Plant and Equipment) (Permissible Noise Levels)

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>Regulations 1996". Plant will be chosen to avoid significant low-frequency noise emissions which increase nuisance potential.</p> <p>Operating machinery will be restricted to the proposed development site boundary.</p> <p>The methodology of British Standard BS 5228-1:2009+A1:2014 "Code of Practice for Noise and Vibration Control on Construction and Open Sites" Part I, will be employed during works, where required, to minimise emission of any noise.</p> <p>Work will be completed during daylight hours. However, if lighting is needed for construction during certain periods over winter months, this lighting will be limited and will face downwards, with no lighting focussed onto surrounding woodland.</p> <p>A pre-commencement survey for Otter will be carried out prior to any works commencing. Should Otter holts be recorded within 150m of the proposed works, a derogation license will be obtained from NPWS and works carried out in accordance with NRA (2006) Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes.</p> <p>Regular maintenance of plant will be carried out in order to minimise noise emissions. Particular attention will be paid to the lubrication of bearings and the integrity of silencers.</p> <p>All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works.</p> <p>Compressors will be of the "sound reduced" models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.</p> <p>Machines, which are used intermittently, will be shut down during those periods when they are not in use.</p> <p>Noisier plant will be positioned to optimise screening by other plant.</p> <p>Any requirement for removal of vegetation will be carried out in line with the provisions of the Wildlife Act. Therefore, the necessary removal of trees within the site will not be carried out between 1st of March and 31st of August inclusive, unless a breeding bird survey is carried out by a qualified ecologist 2 weeks before scheduled felling and a second survey no more than 48 hours before the felling.</p>
C.11.4	Construction	Mitigation Measures for Badger	<p>All construction works will be carried out in line with <i>NRA (2006) Guidelines for the Treatment of Badger Prior to the Construction of National Road Schemes. National Roads Authority, Dublin, Ireland.</i></p>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>The following measures will be in place to prevent disturbance or infringement on the sett:</p> <ul style="list-style-type: none"> <li>▪ A pre-construction badger survey will be carried out no more than 10-12 months in advance of construction in order to ascertain if there are any additional sett entrances.</li> <li>▪ No construction works will take place within 30 meters of the badger sett unless in consultation with the NPWS.</li> <li>▪ No heavy machinery will be used within 30m of badger setts (unless carried out in consultation with NPWS); lighter machinery (generally wheeled vehicles) will not be used within 20m of a sett entrance; light work, such as digging by hand or scrub clearance will not take place within 10m of sett entrances.</li> <li>▪ Any works within the badger breeding season (December to June inclusive) will require an exclusion zone of 50m around the setts.</li> <li>▪ During the breeding season, no blasting or pile driving will be carried out within 150m of active setts. This will apply to works related to the construction of the storm tank. Therefore, piling for construction of the storm tank will be carried out between July and November, outside of badger breeding season.</li> <li>▪ As the proposed works are located in proximity to the badger sett, they will be carried out in consultation with the NPWS. It is proposed to erect fencing along the south of the paved area adjacent to the sett in order screen off the works from the sett and prevent any entry of machinery to the south of the paved area.</li> <li>▪ The fence will be constructed in consultation with a qualified ecologist. It will not obstruct badger movement along existing commuting routes.</li> <li>▪ Construction works will be carried out during normal working hours and all construction lighting and machinery will be switched off outside of these hours.</li> </ul>
C.11.5	Construction	Lighting Impact Control	<p>All lights will be of warm colour temperature 3000K. External lights will contain motion sensor systems, therefore, there will be the option for all lights to be off, or dimmed, when not needed. Lighting levels around the perimeter of the site/wooded areas will be maintained to below 1 lux.</p>
C.11.6	Construction	Surface Water Runoff Control	<p>No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products will be used where needed.</p>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>No washing out of any plant used in concrete transport or concreting operations will be allowed on-site.</p> <p>Where concrete is delivered on site, only chute cleaning will be permitted, using the smallest volume of water possible. No discharge of cement contaminated waters to any watercourse will be allowed. This will be contained within the site compound area which will be surrounded by silt fencing to ensure that there is no escape of cement-laden water from works areas.</p> <p>The weather forecast will be checked prior to the pouring of concrete and no such works will be undertaken when rain is forecast. Concrete will not be poured at times when rain is predicted as this may lead to run off and over spillage of the formwork.</p> <p>Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event.</p>
C.11.7	Construction	Contamination, Spills and Accident Prevention	<p>An emergency plan to deal with accidental spillages will be developed within the contractor's CEMP. Spill kits, oil soakage pads and oil booms will be available to deal with and accidental spillage in and outside the refuelling area and will be kept within the site compound.</p> <p>All plant will be inspected prior to use. Defective plant shall not be used until the defect is satisfactorily fixed. All major repair and maintenance operations will take place off site. Minimal refuelling or maintenance of vehicles or plant will take place on site. Off-site refuelling will occur at a controlled fuelling station.</p> <p>Vehicles will never be left unattended during refuelling. Only dedicated, trained, and competent personnel will carry out refuelling operations. Plant refuelling procedures, which will include the below listed measures, shall be detailed in the contractor's method statements.</p> <p>Fuels, lubricants and hydraulic fluids for equipment used will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment.</p> <p>Refuelling will be completed in a controlled manner using drip trays at all times.</p> <p>Fuels volumes stored on site will be minimised. Any fuel storage areas will be bunded appropriately for the fuel storage volume for the time period of the works and fitted with a storm drainage system and an appropriate oil interceptor.</p>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>Mobile storage tanks such as fuel bowsers will be bunded to 110% capacity to prevent spills. Tanks for bowsers and generators shall be double skinned. When not in use, all valves and fuel trigger guns from fuel storage containers will be locked.</p> <p>All pipework from containers to pump nozzles will have anti siphon valves fitted.</p> <p>The plant refuelling procedures shall be detailed in the contractor's method statements.</p> <p>The plant used will be regularly inspected for leaks and fitness for purpose.</p>
C.11.9 & O.11.1	Construction and Operational	Biosecurity	A site-specific Invasive Species Management Plan has been provided in respect of the proposed works and the presence of Giant Hogweed and Himalayan Balsam at the site.
Section 12: Landscape and Visual-			
-	Construction	-	None
-	Operational	-	None
Section 13: Land and Soil			
C.13.1	Construction	Runoff Contamination Control	<p>Precautionary measures will be taken to contain any areas within the planning boundary at risk of contaminated run-off.</p> <p>Potential pollutants shall be adequately secured against vandalism and will be provided with proper containment according to the relevant codes of practice. Any spillages will be immediately contained, and contaminated soil shall be removed from the Proposed Development and properly disposed of in an appropriately licensed facility.</p> <p>Dust generation shall be kept to a minimum through the wetting down of haul roads as required and other dust suppression measures.</p> <p>Any stockpiles of earthworks and site clearance material shall be stored on impermeable surfaces and covered with appropriate materials.</p> <p>Silt traps shall be placed in gullies to capture any excess silt in the run-off from working areas.</p> <p>Soil and water pollution will be minimised by the implementation of good housekeeping (daily site clean-ups, use of disposal bins, etc.) and the proper use, storage and disposal of these substances and their containers.</p>
C.13.2	Construction	Removal of potentially contaminated soils	<p>The Site Manager will ensure that a Waste Management Plan is in place to ensure that these criteria are followed.</p> <p>Excavations in made ground will be monitored by an appropriately qualified person to ensure that any evidence of contamination (e.g. asbestos, hydrocarbons, etc) encountered are</p>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>identified, segregated and appropriately stored in an area where there is no possibility of run-off generation or infiltration to ground or surface water drainage. Care will be taken to ensure no cross-contamination with clean soils elsewhere throughout the site.</p> <p>The contractor will be required to carry out a waste characterisation of the material that will be taken off site for disposal.</p> <p>A waste acceptance criteria (WAC) analysis and asbestos levels should be determined on any material that will be taken off site for disposal.</p> <p>All wastes in the European Waste Catalogue are classified by a unique 6-digit code. In this case (waste soil/stones), two List of Wastes (LoW) Codes are applicable to material that may be taken off site for disposal during the construction phase:</p> <ul style="list-style-type: none"> <li>▪ 17 05 03* -Soil and stones containing hazardous substances;</li> <li>▪ 17 05 04 -Soils and stones other than those mentioned in 17 05 03.</li> </ul> <p>Any soil samples that contain asbestos should be subjected to full quantification analysis. Uncontaminated soil materials can be brought to a licensed soil recovery facility.</p> <p>Any materials exceeding soil trigger levels or containing invasive species, will be disposed of at an appropriately licenced landfill facility.</p>
C.13.3	Construction	Loss of Overburden	<p>Excavated material will, where possible, be retained and reused on site as construction fill. It is anticipated that all of the excavated topsoil may be reused in landscaping throughout the site.</p> <p>The appointed contractor will need to ensure acceptability of the material for reuse and oversee the appropriate handling, processing and segregation of the material.</p> <p>This material would have to be shown to be suitable for re-use and subject to appropriate control and testing according to the Earthworks Specification(s). These excavated soil materials will need to be stockpiled using an appropriate method to minimise the impacts of weathering.</p> <p>Care will be taken in reworking this material to minimise dust generation, groundwater infiltration and generation of runoff.</p>
C.13.4	Construction	Sealing of Overburden	<p>Remediation works will be undertaken where compaction occurs due to truck movements and other construction activities on unfinished surfaces. Where practicable, compaction of any soil or subsoil which is to remain in situ along the sites will be avoided.</p>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>Earthworks operations shall be carried out such that surfaces shall be designed with adequate falls, profiling and drainage to promote safe runoff and prevent ponding and flooding.</p> <p>Runoff will be controlled through erosion and sediment control structures appropriate to minimise the water impacts in outfall areas.</p> <p>Care will be taken to ensure that the bank surfaces are stable to minimise erosion.</p>
C.13.5	Construction	Groundwater Quality and Flow	<p>Excavated soils will be segregated and stored in an area where there is no possibility of runoff generation or infiltration to ground or surface water drainage.</p> <p>Should contaminated materials be encountered, care will be taken to ensure no cross-contamination with clean soils elsewhere throughout the site.</p> <p>Dewatering will be required for the construction below the groundwater table. Extracted groundwater would be passed to a suitably sized settlement pond or a propriety fines removal system, along with any other treatment as required by Limerick County and City Council before discharge to the Lower River Shannon, or local drainage network.</p> <p>Any discharge to either sewer or watercourse would be subject to a WWDA.</p>
-	Operation	-	None
Section 14: Water			
C.14.1	Construction	Surface Water Run-Off	<p>Temporary works will be designed to minimise effects on water quality and hydrology in the study area during construction.</p> <p>The Outline CEMP has been developed which includes a range of site-specific measures with regards to surface water run-off during construction activities.</p> <p>Prior to the outset of works, a double silt fence will be erected along the drains present to the west and north of the WwTP boundary.</p> <p>During construction, surface water runoff would be collected by the temporary drainage system installed by the contractor and then treated or desilted on-site before discharge into the Lower River Shannon;</p> <p>Best practice measures will be implemented during excavation works to avoid the release of bentonite and prevent sediment running into the drainage network and/or to surface waters during construction;</p> <p>Earthworks operations shall be carried out such that the surfaces are designed with adequate slope to promote safe runoff.</p>



Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>Any excavated vegetation, soil and subsoil will be temporarily stockpiled away at least 20 m from surface water or drainage features;</p> <p>Earthworks will aim to be carried out in periods of dry weather (from April to September inclusive) to avoid potential for suspended sediment runoff;</p> <p>All concrete works will be carried out in dry conditions;</p> <p>Good housekeeping such as site clean ups, use of disposal bins, etc will be adopted in construction areas;</p> <p>Working areas will be dewatered at the end of each working day and vehicle washdown will be carried out in an appropriate area where wash water can be captured and treated accordingly.</p>
C.14.2	Construction	Accidental Spills and Leaks	<p>An Emergency Plan for accidental spills will be established by the Main Contractor prior to work commencing at the site. All site workers will be made aware of the plan and its location in the site offices;</p> <p>There will be no refuelling of machinery within or near the river channel. Refuelling will take place at designated locations at distances of greater than 30 metres from any surface water or drainage features;</p> <p>No vehicles will be left unattended when refuelling and a spill kit including an oil containment boom and absorbent pads will be on site at all times;</p> <p>Any fuel that is stored on the site will be stored appropriately and at a location that is set back from the river. All other construction materials will be stored in this compound. This compound will either be located on ground that is not prone to flooding or will be surrounded by a protective earth bund to prevent inundation;</p> <p>All vehicles will be regularly maintained and checked for fuel and oil leaks;</p> <p>If a spillage does occur, it will be contained with adsorbent pig bags. These will be placed in a hazardous waste bin for ultimate disposal;</p> <p>All oils and fuels will be stored in bunded tanks with the provision of a storage/retention capacity of 110% of tank storage. Care and attention will be taken during refuelling and maintenance operations. Particular attention shall be paid to gradient and ground conditions which could increase the risk of discharge to waters; and</p> <p>No fuel storage will be allowed in areas prone to temporary flooding.</p>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
C.14.3	Construction	Flood Risk	<p>A strict long-range and short-range weather forecasting will be used for works which carry a pollution risk such as excavations.</p> <p>Works will be postponed if heavy rain is forecast.</p> <p>The contractor will devise an appropriate construction-phase flood defence around works areas, such as a defined area bunded with sandbags. An indicative drawing of the areas to be bunded has been provided.</p> <p>If a flood is forecast, potentially pollutant materials will be removed from the site and will not be stored within the floodable areas around the peripheries of the site.</p>
O.14.1	Operational	Flood Risk	<p>Where feasible, new development will be constructed within Flood Zone C of the current site, and all highly essential infrastructure be constructed at an elevation higher than the 1% AEP flood level with a suitable freeboard and an allowance for the effects of climate change.</p> <p>Where it is not possible to locate new infrastructure in Flood Zone C due to physical or hydraulic constraints, compensatory storage will be provided so as not to increase flood risk elsewhere. As per the FRM Guidelines, the volume of compensatory storage will equal the volume of flood plain lost to the proposed development, 28m<sup>3</sup>. It will also be situated in an area where flood flow routes are protected.</p>
Section 15: Resource and Waste Management			
C.15.1	Construction	Waste Management	<p>An outline Construction and Demolition Waste Management Plan (CDWMP) has been provided. This Outline CDWMP plan will be required to be developed into a Detailed CDWMP by the Contractor(s) following appointment and prior to commencing works on site.</p>
-	Operational	-	None
Section 16: Material Assets			
C.16.1	Construction	Material Assets Protection	<p>Effective implementation of a detailed CEMP will ensure that disruption and nuisance are kept to a minimum throughout the construction of the Proposed Development.</p> <p>The contractor will be obliged to put measures in place to ensure that there are no interruptions to existing utilities and services unless this has been agreed in advance with the relevant service provider.</p> <p>All proposed works will be located within the existing Castletroy WwTP site boundary and should not impact services outside of the site.</p> <p>Any shutdowns required to connect into existing water and wastewater infrastructure will be agreed in advance with Uisce Éireann and the Local Authority.</p>

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<p>Surface water management measures will be adopted along the entire site.</p> <p>The contractor will prepare relevant management plans and Works Method Statements in advance of any works commencing on site.</p> <p>Every effort will be made to ensure that any significant effects on material assets will be avoided, prevented or reduced during the construction of the Proposed Development.</p>
-	Operational	-	None
Section 17: Population and Human Health			
	Construction	Local residents and water-based recreational users of the University of Limerick Boat House	<p>Early consultation has been established with local residents and water-based recreational users of the University of Limerick Boat House. It is noted that as all works are confined within the site boundary and envisaged direct impacts on these stakeholders are considered to be minimal. The timeframe of the proposed works in general and specific works impacting indirectly on recreational uses will be communicated to ensure that any impacts from these works are minimised.</p>
	Construction	Traffic Management	<p>A Traffic Management Plan will be prepared by the design team in consultation with Limerick Council, UL and other stakeholders. It will propose signage and manning the hazard spots during busy periods with close liaison proposed with UL throughout the construction phase. All construction traffic shall use Harvard Close via Junction 1 – Plassey Park Road/ Harvard Close travelling to/from the site, to minimise any potential for temporary disruptions to the operation of University of Limerick and businesses in the vicinity. Passing bays or banksmen will be provided on Harvard Close to ensure smooth traffic movement. Where possible abnormal load movements, on receipt of a permit from the council, will be restricted to off peak times.</p> <p>Construction staff parking will not be permitted on the public road network. Restrictions to the movement of tracked vehicles and haul loads shall apply, in conjunction with the use of wheel washers and water bowsers to prevent migration of detritus and dust built-up on public roads.</p>
	Construction	Water Quality	<p>In terms of water quality, during the construction phase best practice will be adopted, to ensure contaminated runoff and stormwater or any resuspended silt particles do not pose a risk to the Lower River Shannon.</p>
-	Operational	-	None
Section 18: Major accidents and Natural Disasters			

Mitigation Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
	Construction	Risk of Flooding the site during construction	All the earthworks operations will be designed with adequate drainage to promote safe runoff and prevent ponding and flooding. The potential effects due to a part of the development site being located primarily within Flood Zone A, have been reduced by Mitigation measures as specified in <b>Section 14</b> . Also as outlined in CEMP, all chemicals will be stored appropriately in the COSSH stores. Oil, including diesel, would be stored in properly bunded tanks / bunded mobile bowsers/ drip trays. No fuels, chemicals or solvents will be stored outside of the confines of the WwTP buildings.
	Operational	Risk of Major Accidents	A maintenance programme at the site will be updated and implemented, in compliance with the conditions of the Wastewater Discharge Authorisation required under the Wastewater Discharge (Authorisation) Regulations 2007-2016. The Proposed Development will be designed and built in line with best international current practice and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design.
	Operational	Risk Management	In accordance with the provision of the European Commission Guidance the Risk Management Plan on site will be updated and implemented to ensure an effective response to disasters or the risk of accidents. The plan should include sufficient preparedness and emergency planning measures.
	Operational	Flood Risk	The storage of diesel in a contained and bunded area on-site will mitigate 'by prevention' the risk of surface and/or ground pollution. A flood risk assessment has been carried out which recommends appropriate measures to mitigate the effects of flood risk.

**Table 20.2: Summary of Monitoring Requirements**

Monitoring Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
General			
C.Gen.1	Construction	General Construction	Any planning conditions imposed by the planning authority shall be strictly observed and monitoring requirements shall be observed as conditioned.
O.Gen.1	Operational	General Operational	Any planning conditions imposed by the planning authority shall be strictly observed and monitoring requirements shall be observed as conditioned.

Monitoring Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
Section 6: Traffic and Transportation			
-	Construction	-	None
-	Operational	-	None
Section 7: Odour			
-	Construction	-	None
-	Operational	-	None
Section 8: Air Quality and Climate			
C.8.1	Construction	Dust Management	The Dust Management Plan (DMP) to be developed and implemented, may include monitoring of dust deposition, dust flux, real-time PM10 continuous monitoring and/or visual inspections.
C.8.2	Construction	Dust Monitoring	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of the site boundary, with cleaning to be provided if necessary; Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked; Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; and Agree dust deposition, dust flux, or real-time PM <sub>10</sub> continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.
-	Operational	-	None
Section 9: Noise and Vibration			
C.9.1	Construction	Noise and Vibration	It is recommended that if complaints are received from nearby residential properties, periodic noise monitoring will be undertaken during construction works to determine noise levels at noise sensitive receptors. Based on the findings of such noise monitoring, appropriate noise mitigation measures will be implemented to reduce noise impacts. Where excessive noise

Monitoring Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			levels are recorded, further mitigation measures will be employed which may include temporary screening of the nearest receptor to on-site activities; Responsible Person - It is recommended that the Contractor will appoint a responsible and trained person who will be present on site and who will be willing to answer and act upon complaints and queries from the local public; and
-	Operational	-	None
Section 10: Archaeology, Architectural and Cultural Heritage			
C.10.1	Construction	General	A CEMP has been prepared and is included in Appendix 5A of the EIAR which will be updated and finalised by the Contractor prior to construction commencing.
C.10.2	Construction	Ground Disturbance	Archaeological monitoring of all ground disturbance associated with the Proposed Development with the provision for recording and excavation (if required) will mitigate any potential impact and preserve any archaeological, architectural and cultural heritage features identified by record.
Section 11: Biodiversity			
C.11.1	Construction	Environmental Monitoring	<p>The contractor will assign a member of the site staff as the environmental officer with the responsibility for ensuring the environmental measures prescribed in this document are adhered to. Any environmental incidents or non-compliance issues will immediately be reported to the project team.</p> <p>An ECoW will be employed for the duration of the project. The ECoW will monitor the silt fence prior to commencement of the proposed works and to ensure its efficiency is maintained throughout the construction phase. ECoW visits will be conducted weekly initially to ensure that all mitigations are in place. The ECoW will also ensure other mitigations listed in this report are adhered to, including flood defence measures and biosecurity on the site. Daily general visual inspections of site operations and inspections of all watercourses within the site and in the surrounding area by the Site Manager.</p> <p>Inspection to include silt fences and all monitoring. Inspections required to ensure that mitigation measures are operating correctly and to identify any maintenance that is required. Daily inspections checks will be completed on plant and equipment, and whether materials such as silt fencing or oil absorbent materials need replacement.</p> <p>Silt fences will be check and repaired as necessary in the case of a flood event.</p> <p>Event based inspections by the Site Manager as follows:</p> <ul style="list-style-type: none"> <li>▪ Rainfall &gt;10 mm/hr (i.e. high intensity localised rainfall event)</li> </ul>

Monitoring Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
			<ul style="list-style-type: none"> <li>▪ Rainfall &gt;25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or,</li> <li>▪ Rainfall total greater than monthly average recorded in 7 consecutive days (prolonged heavy rainfall over a week).</li> </ul> <p>Water monitoring will be carried out by the ECoW at agreed intervals during works that have potential to result in sediment-laden water entering the Lower River Shannon. A point upstream and downstream of the site, will be monitored for turbidity. If the downstream turbidity (NTU) is 10% higher than the upstream turbidity, works will be paused and silt prevention measures will be inspected and improved where necessary. A written record will be maintained or available on-site of all monitoring undertaken.</p>
C.11.2	Construction	Invasive Species Monitoring	<p>Post control monitoring will be carried out four weeks after the control operations to assess the need for further control and additionally on at least an annual basis, since seeds can persist in soil for up to 3 years, and since the infestation extends beyond the boundary of the WwTP. This will be performed for Giant Hogweed and Himalayan Balsam according to the Invasive species Management Plan.</p> <p>Ongoing monitoring for Giant Hogweed with follow-up spraying will be necessary in order to control Giant Hogweed within the site</p>
-	Operational	-	None
Section 12: Landscape and Visual			
-	Construction	-	None
-	Operational	-	None
Section 13: Land and Soil			
C.13.1	Construction	Excavations	<p>Excavations in made ground will be monitored by an appropriately qualified person to ensure that any contaminated material is identified, segregated and disposed of appropriately. Any identified hotspots shall be segregated and stored in a bunded area where there is no possibility of runoff generation or infiltration to ground or surface water drainage. Care will be taken to ensure that the hotspot does not cross-contaminate clean soils elsewhere.</p> <p>Any excavation shall be monitored during earthworks to ensure the stability of side slopes and to ensure that the soils excavated for disposal are consistent with the descriptions and classifications according to the waste acceptance criteria testing.</p>
C.13.2	Construction	Construction Activities Impact	<p>Ground settlement, horizontal movement and vibration monitoring will be implemented during the works to ensure that construction activities do not exceed the design limitations of nearby existing WwTP infrastructure.</p>

Monitoring Measure No.	Construction / Operational Stage	Impact / Topic	Mitigation and Environmental Commitments
C.13.3	Construction	Water Quality	Water quality monitoring will be carried out at all discharge points as per the requirements of the issued Wastewater discharge authorisations (WWDA)
O.13.1	Operation	Contamination due to Leakage	Ongoing monitoring of the infrastructure for leaks shall be carried out during operation. If leaks are detected, the system should include measures for the management of any resulting contamination of the surrounding soils.
Section 14: Water			
C.14.1	Construction	Surface Water	The site-specific CEMP will set out the monitoring requirements for the scheme during the construction stages. Visual inspections will be undertaken as part of the regular site audits during construction to ensure surface water drainage discharge is not impacting the Lower River Shannon. The contractor will also be required to monitor weather conditions and have formal flood warning and evacuation procedures in place.
-	Operational	-	None
Section 15: Resource and Waste Management			
C.15.1	Construction	Waste Management	Monitoring required as part of the CDWMP and/or CEMP as set out in sections 16.5.1 and Appendix 5A in relation to wastes will be undertaken and recorded by the Contractor(s)
O.15.1	Operational	Waste Management	Monitoring of sludge generation and management will be undertaken in accordance with the provisions of operational procedures for the WwTP and the NWSMP.
Section 16: Material Assets			
-	Construction	-	None
-	Operational	-	None
Section 17: Population and Human Health			
-	Construction	-	None
-	Operational	-	None
Section 18: Major Accidents and Natural Disasters			
-	Construction	-	None
	Operational	Risk and Accidents	Uisce Éireann and the operator of the Proposed Development will continue to assess the risk of major accidents and/or disasters on site on an on-going basis during operation. The maintenance programme, record of reported incidents, as well as general site activities will be monitored on an on-going basis to ensure risk of major accidents does not increase over time.



### 20.1.4 Residual Effects Summary

Considering all the mitigation measures suggested have been put in place, it is concluded that there will not be significant residual effect(s) during the construction and operation of the Proposed Development.

## 20.2 References

EPA (2015) Advice Notes for preparing Environmental Impact Statements

EPA (2017) Guidelines on the information to be contained in Environmental Impact Assessment Reports

European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment of Projects