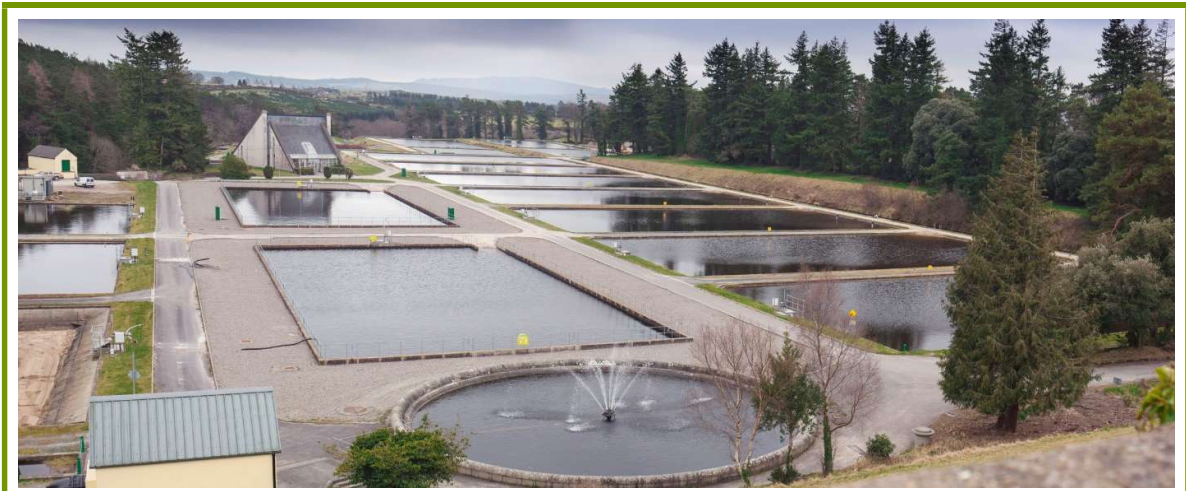


## **VARTRY WATER SUPPLY PROJECT**

# **Vartry Water Treatment Plant Schedule of Commitments**

**FINAL**



**May 2018**

# IRISH WATER

## VARTRY WATER SUPPLY PROJECT

### VARTRY WATER TREATMENT PLANT SCHEDULE OF COMMITMENTS

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**May 2018**

PROJECT NO. 20586					
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## **1 INTRODUCTION**

The Determination of the Appeal by An Bord Pleanála for the Vartry Water Treatment Plant (Appeal Reference PL 27.247745 - *Planning Reference 16 363*) requires the preparation of a Schedule of Commitments.

This document is submitted to Wicklow County Council in compliance with the Appeal Condition 2 (b) below.

### **1.1 Wording of the Condition**

The Condition is worded as follows:

- 2 *The following shall apply in relation to mitigation measures and commitments:*
- (a) *The mitigation measures and commitments identified in the Environmental Reports and other plans and particulars submitted with the planning application, and the further particulars submitted by the applicant at the oral hearing, shall be implemented in full by the developer, except as may otherwise be required in order to comply with the following conditions.*
  - (b) *All mitigation measures and commitments, including relevant matters which emanate from the planning conditions below, shall be compiled into a Schedule of Commitments, which shall be a single document, a draft version of which shall be submitted to the planning authority within three months of the date of this decision.*
  - (c) *No development including enabling works shall commence prior to receipt of the written agreement of the planning authority in relation to a final Schedule of Commitments. In default of agreement the matter shall be referred to An Bord Pleanála.*

### **1.2 Layout of the Report**

The relevant mitigation measures and commitments have been subdivided into those relating to the Construction phase of the project and those relating to the Operational Phase.

### 1.3 Reference Documents

The following documents were referred to determine the relevant matters, mitigation measures and commitments:

Document	Version and Date
An Bord Pleanála Direction PL27.247745.	08.01.2018
Statements of Case submitted to the Oral Hearing	12.06.2017
Irish Water Response to the Appeal.	26.01.2017
Schedule of Conditions attached to Wicklow County Council Grant of Consent 16/363.	24.11.2016
Further Additional Information Response.	03.11.2016
Additional Information Response to WCC.	21.09.2016
Planning application.	08.04.2016
Vartry WTP Outline CEMP (prepared for the Oral Hearing)	08.06.2017
Appropriate Assessment Screening Report (updated following revised proposals and submitted in support of the Response to Further Information)	RevE 28.10.2016
Ecological Impact Assessment (EcIA) (revised for oral hearing to ensure alignment with revised proposals).	RevA 08.06.2017
Noise Impact Assessment (Envest Environmental)	v1 08.12.2015
Air Quality Impact Assessment (Envest Environmental)	v1 31.11.2015
Traffic Impact Assessment	RevB 06.04.2018
Archaeological Assessment if the Vartry Dam and Spillway Improvement Works and Water Treatment Plant. Prepared by IAC Limited, November 2015.	v1 November 2015
Built Heritage Assessment. Prepared by Historic Building Consultants.	10.03.2016

**2 SCHEDULE OF COMMITMENTS**

The planning conditions from An Bord Pleanála are set out in **Table 2-1**.

Following this, a table of construction related commitments (**Table 2-2**) and a table of operational related commitments (**Table 2-3**) are presented. The tables are arranged against each subject area (Construction Management, Ecology, Traffic etc.) and the relevant ABP condition is included in the table for completeness. Where the same commitment is made in several documents these have been combined to ensure consistency and avoid duplication.

*Table 2-1 An Bord Pleanála Conditions*

No.	Mitigation Measure
	<b>Overall</b>
<b>1</b>	The development shall be carried out and completed in accordance with the plans and particulars lodged with the application as amended by the further plans and particulars submitted on the 22nd day of September 2016, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.
	<b>Planning</b>
<b>2</b>	The following shall apply in relation to mitigation measures and commitments:
<b>(a)</b>	The mitigation measures and commitments identified in the Environmental Reports and other plans and particulars submitted with the planning application, and the further particulars submitted by the applicant at the oral hearing, shall be implemented in full by the developer, except as may otherwise be required in order to comply with the following conditions.
<b>(b)</b>	All mitigation measures and commitments, including relevant matters which emanate from the planning conditions below, shall be compiled into a Schedule of Commitments, which shall be a single document, a draft version of which shall be submitted to the planning authority within three months of the date of this decision.
<b>(c)</b>	No development including enabling works shall commence prior to receipt of the written agreement of the planning authority in relation to a final Schedule of Commitments. In default of agreement the matter shall be referred to An Bord Pleanála.

No.	Mitigation Measure
	<b>Operational</b>
3	The operation of the proposed development shall be in accordance with the following:
(a)	Water abstraction shall not exceed the established volume of eighty million litres per day.
(b)	A minimum compensation flow of five million litres per day shall be discharged.
(c)	The method of delivery of this flow shall be by way of the seven sand filter beds which are to be retained.
(d)	The branch pipework proposed to deliver the discharge shall have a capacity of at least fifteen million litres per day and the valve controlling the branch pipework shall be capable of remote control and variability.
(e)	The practice of 'back pumping' shall cease.
(f)	All supernatants shall be recycled to the head of the works.
(g)	Within three months of the operation of the proposed development the existing water abstraction at Annagolen Bridge shall cease.
(h)	The existing interceptor channel shall be retained for the delivery of surface water only.
(i)	All chemical dosing shall be relocated to the site of the new water treatment plant and the existing infrastructure adjacent to the river fully decommissioned.
	<b>Hydrology</b>
4	The following shall apply in relation to the monitoring of flow:
(a)	Within six months of the date of this decision the developer shall install and maintain two hydrometric gauging stations, one on-site in the Vartry River and a second one further down the Vartry River catchment, which shall be permanently established with a fixed structure incorporating suitable fish passage and shall accurately measure and record in real time the combined flows from the water treatment plant discharge and the spillway channel.
(b)	The locations shall be subject to the written agreement of the planning authority following consultation with the Environmental Protection Agency and Inland Fisheries Ireland.
(c)	The existing weir in the discharge chamber shall be calibrated and its performance evaluated.
(d)	The availability of data shall be in accordance with the requirements of the planning authority. The developer shall also make information available to the planning authority on request and shall present an annual report summarising key issues which shall also be made available for public inspection by the developer.

No.	Mitigation Measure
	<b>Aquatic Ecology</b>
5	The developer shall undertake a wetted area fisheries habitat mapping and hydrological monitoring to include a fisheries area assessment. Details shall be submitted to the planning authority and the development shall comply with the requirements of the planning authority following consultation with the Environmental Protection Agency and Inland Fisheries Ireland. The duration of this assessment shall be for the construction period.
	<b>Environmental Management</b>
6	An Environmental Management Plan and Invasive Species Management Plan shall be submitted by the developer to the planning authority.
(a)	This shall include inter alia a construction programme for the works, hours of construction and a traffic management plan and shall incorporate the Final Schedule of Commitments to include measures for the protection of the natural environment and to mitigate noise and air quality impacts.
(b)	The developer shall retain the services of a suitably qualified Environmental Clerk of Works to monitor and record the implementation of the mitigation measures, the impact of works on the environment and to record and investigate any environmental complaints received from the public. This person shall be given power to suspend or take further mitigation measures as necessary.
(c)	The written agreement of the planning authority in relation to the above measures shall be obtained prior to commencement of any works including enabling works.
	<b>Built Heritage</b>
7	The following shall apply in relation to the protection of architectural heritage:
(a)	The Built Heritage Assessment report shall be supplemented by specific details of the fittings and features on the site which are to be retained and where they will be stored pending any future display.
(b)	The detailed design of the works to the tower and at the entrance to the valve chamber and the implementation of those works shall be supervised by an accredited Conservation Architect. On completion of the works, the Conservation Architect shall certify compliance with best practice.
(c)	Prior to commencement of works, the Conservation Architect shall prepare a record of the features of interest at the site. This record shall include a detailed, labelled photographic survey of all structures, including the spillway and of fittings and features.
(d)	This record shall be submitted to the planning authority prior to commencement of development and one copy of this record shall be submitted to the Irish Architectural Archive.



No.	Mitigation Measure
	<b>Archaeology</b>
<b>8</b>	The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within the site. In this regard, the developer shall -
<b>(a)</b>	notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.
<b>(b)</b>	employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and
<b>(c)</b>	provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove.
	<b>Building Design</b>
<b>9</b>	Details of the materials, colours and textures of all the external finishes to the proposed buildings shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.

Table 2-2 Schedule of Construction Mitigation Measures

Subject Area	No.	Mitigation Measure	Source
<p><b>Construction Environmental Management</b></p>	1.0	<p>ABP Condition 6. An Environmental Management Plan and Invasive Species Management Plan shall be submitted by the developer to the planning authority.</p>	<p><u>ABP Direction</u></p>
	1.1	<p>This shall include inter alia a construction programme for the works, hours of construction and a traffic management plan and shall incorporate the Final Schedule of Commitments to include measures for the protection of the natural environment and to mitigate noise and air quality impacts.</p>	
	1.2	<p>The developer shall retain the services of a suitably qualified Environmental Clerk of Works to monitor and record the implementation of the mitigation measures, the impact of works on the environment and to record and investigate any environmental complaints received from the public. This person shall be given power to suspend or take further mitigation measures as necessary.</p>	
	1.3	<p>The written agreement of the planning authority in relation to the above measures shall be obtained prior to commencement of any works including enabling works.</p>	
	1.4	<p>During construction of the new WTP best practice environmental control measures will form part of the construction methodology for the site. These will be included in a Construction Management Plan (CEMP) for the site which will be agreed in advance with the statutory authorities. It will be a contractual obligation that the Contractor implements Best Practice Construction and Biosecurity Methods when undertaking works on behalf of Irish Water.</p> <p>An outline Construction Environmental Management Plan has been prepared which will be updated by the appointed Contractor prior to the construction phase. The plan includes all</p>	<p><u>Ecological Impact Assessment Report (EcIA)</u></p>

Subject Area	No.	Mitigation Measure	Source
		environmental control measures detailed in the EcIA and Screening Report and will be agreed in advance with the statutory authorities.	
	1.5	<p>Throughout the Design – Build works, the Contractor shall take account of relevant legislation, Inland Fisheries Ireland Guidelines for work near rivers and best practice UK CIRIA guidance including but not limited to the following:</p> <ul style="list-style-type: none"> <li>• C532 Control of water pollution from construction sites: guidance for consultants and contractors;</li> <li>• C648 Control of water pollution from linear construction projects;</li> <li>• SP156 Control of water pollution from construction sites – guide to good practice.</li> </ul>	<a href="#">AA Screening Report</a>
	1.6	<p>A detailed Emergency Preparedness and Emergency Response Plan will be prepared in advance of the works.</p> <p>The Environmental Emergency Preparedness and Response Plan will address the following:</p> <ul style="list-style-type: none"> <li>• Containment measures;</li> <li>• Emergency discharge routes;</li> <li>• List of appropriate equipment and clean-up materials;</li> <li>• Maintenance schedule for equipment;</li> <li>• Details of trained staff, location and provision for 24-hour cover;</li> <li>• Details of staff responsibilities;</li> <li>• Notification procedures to inform the statutory authorities including the Environmental Protection Agency (EPA) or Environmental Department of Wicklow County Council;</li> <li>• Audit and review schedule;</li> <li>• Telephone numbers of statutory water consultees; and</li> <li>• List of specialist pollution clean-up companies and their telephone numbers;</li> <li>• Storm and surface water shall be managed to ensure potential contamination is prevented/controlled, and surplus storm water will flow to designated settlement ponds</li> </ul>	

Subject Area	No.	Mitigation Measure	Source
		prior to being pumped to the Vartry River. The water quality of all discharges will be monitored to ensure accordance with the water quality objectives for the receiving stream.	
	1.7	Training. Environmental training will be given by suitably qualified Environmental Staff to all permanent and temporary site staff, subcontractors and visitors. This will be included within site inductions, toolbox talks, site posters etc. Detailed training will be given to staff or subcontractors with specific environmental responsibilities or tasks. This is detailed in Section 3.2 of the Outline CEMP.	<u>Outline CEMP</u>
<b>Aquatic Ecology</b>	2.0	ABP5. The developer shall undertake a wetted area fisheries habitat mapping and hydrological monitoring to include a fisheries area assessment. Details shall be submitted to the planning authority and the development shall comply with the requirements of the planning authority following consultation with the Environmental Protection Agency and Inland Fisheries Ireland. The duration of this assessment shall be for the construction period.	<u>ABP Direction</u>
	2.1	<p><u>General Pollution Control:</u></p> <ul style="list-style-type: none"> <li>• The works area, will be kept to the minimum area required to carry out the proposed works and will be clearly marked out in advance of the proposed works. Vegetation will be retained where possible. In particular, a buffer strip of natural vegetation of at least 10m will be retained adjacent to waterbodies, or otherwise as agreed with IFI.</li> <li>• No in-stream works will be carried out without prior approval from Inland Fisheries Ireland (IFI). IFI guidelines for the protection of watercourses (IFI, 2016) Guidelines for the Protection of Fisheries During Construction Works in and Adjacent to Waters. <a href="http://www.fisheriesireland.ie/fisheries-management-1/624-guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters">http://www.fisheriesireland.ie/fisheries-management-1/624-guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters</a>) will be adhered to in full. Any specific recommendations provided by IFI will be fully implemented.</li> <li>• No machinery will enter or cross the sites drainage channels, and any temporary crossings will be approved by IFI prior to use.</li> </ul>	<u>AA Screening Report</u>

Subject Area	No.	Mitigation Measure	Source
		<ul style="list-style-type: none"> <li>Any waste arising from construction works will be disposed of to a licensed waste facility by a licensed waste handler.</li> </ul>	
	2.2	<p><u>Control of Sediments:</u></p> <ul style="list-style-type: none"> <li>In order to avoid indirect sedimentation impacts on nearby surface waters, run-off from construction areas (either surface water or ground water generated during dewatering of excavations) will be intercepted and managed through a series of treatment stages that will include suitably designed settlement pond/filter channels along with other pollution control measures such as silt fences and silt mats. Pumping and transport of water off-site in tankers will be required if volumes prevent effective control by other means. The contractor will be obliged to maintain any water management system in satisfactory working order throughout the period of construction activities. This will ensure that there will be no direct or indirect discharge of surface or ground water generated during construction activities to any surface water feature (drain, stream, river).</li> <li>Stockpiles will be sited over 50m from any surface water feature or drainage channel. Stockpiles or areas of bare soil will be covered (or seeded if not required in the short-term).</li> <li>Groundworks adjacent to waterbodies will not take place during periods of heavy precipitation.</li> </ul>	AA Screening Report
	2.3	<p><u>Concrete Pours</u></p> <p>Wet concrete is corrosive and can cause serious pollution to watercourses. A number of measures are proposed below to ensure concrete does not enter a watercourse:</p> <ul style="list-style-type: none"> <li>Concrete pours will be closely managed by a dedicated team and directed by a site foreman.</li> <li>Where shuttering is used, measures will be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.</li> </ul>	AA Screening Report

Subject Area	No.	Mitigation Measure	Source
		<ul style="list-style-type: none"> <li>• Wash water from cleaning ready mix concrete wagons and mixers may be contaminated. Concrete wagons and mixers will be washed off site.</li> <li>• Activities which result in the creation of cement dust will be controlled by dampening down areas.</li> <li>• Raw or uncured waste concrete will be removed from the site by a licenced waste contractor and disposed of at a facility licenced to accept the material.</li> </ul>	
	2.4	<p><u>Fuels, lubricants and hydraulic fluids</u></p> <ul style="list-style-type: none"> <li>• All fuels, lubricants and hydraulic fluids will be kept in secure bunded areas remote from the watercourse. The bunded area will accommodate 110% of the total capacity of the containers within it. Containers will be properly secured to prevent unauthorised access and misuse. An effective spillage procedure will be put in place with all staff properly briefed. Any waste oils or hydraulic fluids will be collected, stored in appropriate containers and disposed of offsite in an appropriate manner.</li> <li>• Storage areas, machinery depots and site offices will be located remotely from the watercourse.</li> <li>• All refuelling and lubrication of equipment will take place on sealed and bunded surfaces in order to avoid the potential for accidental spillage of hydrocarbons.</li> <li>• All plant and machinery will be regularly maintained and serviced to minimise release of hydrocarbons.</li> <li>• Spill kits will be present in all plant machinery.</li> <li>• Oil booms and oil soakage pads will be kept on site to deal with any accidental spillage.</li> <li>• Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or re-cycling.</li> </ul>	<u>AA Screening Report</u>
	2.5	<u>Monitoring</u>	<u>AA Screening Report</u>

Subject Area	No.	Mitigation Measure	Source
		<p>Day to day monitoring of water quality, effectiveness of silt and pollution control measures and general compliance with prescribed best practice control measures will be carried out by the Resident Engineer. An Ecological Clerk of Works (ECoW) will be appointed to oversee monitoring on a weekly basis and during critical periods of construction to ensure control measures are effective in protecting the surrounding environment.</p>	
	2.6	<p><u>Spillway Works</u></p> <ul style="list-style-type: none"> <li>• The reservoir water level will be controlled at a level below top water level during the spillway works. This will typically be set at least 0.5m drawdown. This will prevent waves overtopping the weir and minimise leakage through the weir.</li> <li>• A bund will be formed upstream of the working area in order to maintain a dry working area. Any water draining to this bund will be pumped through a settlement tank to discharge back into the reservoir.</li> <li>• Site clearance on the spillway channel banks will not to be undertaken during wet conditions, i.e. when rainfall of more than 0.5 mm/hour is forecast within the next 24 hours.</li> <li>• No works on the riverbank will be carried out when rainfall of more than 3 mm/hour is forecast within the next five days in the River Vartry catchment.</li> <li>• Fuels, lubricants and hydraulic fluids for equipment used on the construction site, as well as any solvents and oils, will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment.</li> <li>• Fuelling and lubrication of equipment will only be carried out in designated areas which will not to be close to any watercourse. Any spillage of fuels, lubricants or hydraulic oils will be immediately contained, and the contaminated soil removed from the site and properly disposed of by a licenced waste contractor. Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or recycling.</li> <li>• Felled trees and excavated rock will be stockpiled outside of the channel and high-risk flood zones. Plant will not be stored within the spillway outside of working hours.</li> </ul>	<p><u>AA Screening Report</u></p>

Subject Area	No.	Mitigation Measure	Source
		<ul style="list-style-type: none"> <li>The spillway banks are to be reinstated in a manner so as to minimise the potential for erosion, and to return the bank to as close to its original condition as possible.</li> <li>To avoid the introduction of invasive non-native species and fish pathogens, all plant and machinery utilised on site will be thoroughly cleaned and washed using high pressured steam cleaning before delivery to the site. A visual inspection for evidence of attached plant or animal material, or adherent mud or debris will be completed on all equipment that has come into contact with the water before leaving the site.</li> <li>To avoid impacts on suitable salmonid spawning areas downstream of the works, excavation will take place outside the period October to May, inclusive. Agreement with IFI and NPWS must be obtained as to the dates when the work can be allowed.</li> </ul>	
	2.7	<p><u>Interceptor Channel</u></p> <p>A drainage ditch (Interceptor Channel) runs along the eastern boundary of the proposed new WTP site which flows into the River Vartry approximately 275 m south of the proposed works. Suitable precautions are necessary to ensure the ditch is not polluted during construction.</p> <p>Soil or any other spoil/pollutants must not enter the watercourse. A buffer strip of at least 10 m is to be put in place along the ditch, where no construction will take place. No materials, machinery or plant will be stored within the buffer area between the security fencing and the waterbodies. No vehicular movements will take place within this buffer zone.</p>	<u>EcIA Report</u>
	2.8	<p><u>Site Compound Location</u></p> <p>Site compounds will be located at least 15 m from the drainage ditch and the refuelling of all plant and vehicles will take place within a designated area, at least 15 m away from the watercourse.</p>	<u>EcIA Report</u>
	2.9	<p><u>Spill Kits</u></p> <p>A spill kit must be kept on site with sand, earth or commercial products for the containment of fuel and other material spillages. All staff will receive appropriate training in the use of these</p>	<u>EcIA Report</u>



Subject Area	No.	Mitigation Measure	Source
		<p>kits and are to be made aware of where the kit is stored. In the event of a spillage of oils or chemicals resulting in contamination of water courses the following procedure will be adopted:</p> <ul style="list-style-type: none"> <li>• The site manager is to be informed and the appropriate spill kit is to be deployed immediately</li> <li>• The incident is to be recorded within the site log book</li> <li>• In the event of contaminants being discharged directly to water courses, or in the event of significant spillage (in excess of 10 litres), the EPA is to be contacted.</li> </ul>	
	2.10	<p><u>Ponds/ Amphibians</u></p> <p>The drainage and infilling of the ponds should be undertaken during the period September – January when breeding amphibians are more likely to be absent from the waterbodies. If it is not possible to drain and infill the ponds during this period, an amphibian survey and translocation should be undertaken if amphibians are confirmed present.</p>	<u>EcIA Report</u>
<b>Terrestrial Ecology and Ornithology</b>	3.1	<p><u>Ecological measures:</u></p> <ul style="list-style-type: none"> <li>• Any clearance of trees or vegetation required will be undertaken outside of the period March 1<sup>st</sup> to August 31<sup>st</sup> in order to avoid impacts to breeding birds.</li> <li>• Felled trees will be left in-situ for at least 24hrs to allow bats, if present, to escape prior to sawing/mulching.</li> </ul>	<u>AA Screening Report</u>
	3.2	<p><u>Trees and Woodland</u></p> <p>All tree removal will be replaced with equivalent compensatory / enhancement planting within the site boundary to ensure there is no net loss of treeline and woodland habitat on site in order to comply with Policy WH6 of the Wicklow County Development Plan 2010 - 2016.</p>	<u>EcIA Report</u>

Subject Area	No.	Mitigation Measure	Source
		<p>Enhancement tree planting has been detailed within the Site Landscaping Plan. Areas of green space and any landscape planting will consist of native species including a proportion of fruit bearing species that provide foraging opportunities for badgers, birds and invertebrates.</p> <p>The loss of the areas of treeline and mixed woodland is not considered to be significant in the context of the site as mitigation / compensatory planting will ensure a residual increase in the extent of trees on site that reflect the existing character of the woodland areas.</p> <p>In order to prevent damage to the structure and integrity of retained trees and woodland, construction areas within the site will have clearly-defined set-down areas, haul routes, pedestrian walkways and plant parking and manoeuvring areas. This will minimise the potential for accidental physical damage to retained trees. These measures and working practices will be set out within the CEMP which will also include specifications for appropriate perimeter or hazard fencing, fluid discharge, waste or other contaminants and occurrence of fires. All retained trees and hedgerows will be protected in accordance the recommendations set out in BS5837 Trees in relation to design, demolition and construction (2012), including the erection of robust protective fencing encompassing root protection areas.</p> <p>Where access routes pass through the treeline, these areas must not be lit to avoid fragmentation through light pollution. 'Dark corridors' through the site must be created by keeping the treelines and woodland edge unlit, thus allowing wildlife to continue to navigate through the site.</p>	
	3.3	<p><u>Grassland</u></p> <p>The loss of the grassland associated with the development is not considered to be significant in the context of the extent of retained habitat within the site and the provision of extensive areas of species-rich grassland within the landscaping plan. The grassland surrounding the WTP should be managed post construction to encourage the development of a more diverse sward than is currently present. The following management regime should be adopted to reduce the nutrient content within the habitat and allow the wildflowers to set seed.</p> <p>Mid-February - Cut short any significant winter growth leaving 25-50 mm of sward</p>	<u>EcIA Report</u>

Subject Area	No.	Mitigation Measure	Source
		<p>August/September - After flowering, carry out main cut and remove all of the arisings.</p> <p>Mowing will only take place during periods of dry weather to ensure that no waterlogged ground is damaged by machinery. When mowing the grassland all arisings will need to be removed off site to prevent nutrient build up.</p>	
	3.4	<p><u>Badgers</u></p> <p>It is recommended that a pre-construction survey for badger setts is undertaken no more than 3 months prior to the beginning of the construction phase. Badgers are able to excavate new setts and tunnel systems very quickly and therefore an up-to-date survey is required so as to confirm the absence of badger setts within the development footprint. It is also recommended that site staff are briefed on the potential of encountering badger setts. In the event that a new sett is discovered Ecologists at Nicholas O'Dwyer should be contacted immediately to devise an appropriate mitigation strategy.</p>	<u>EcIA Report</u>
	3.5	<p><u>Bats</u></p> <p>Due to the suitability of the building as a bat roost and the use of the building by brown long-eared bat during the night it is recommended that a precautionary working methodology is adopted when demolishing the building.</p> <p>Precautionary Working Method for Demolition of Toilet Block:</p> <ul style="list-style-type: none"> <li>• It is recommended that the works to demolish the buildings are programmed to be undertaken October – February when bats are highly unlikely to be roosting within the building.</li> <li>• All demolition and construction staff must be appropriately briefed by the Ecologist in a toolbox talk at the beginning of the demolition/construction phase.</li> <li>• A bat box (Schwegler 2F) will be attached to a tree to the north of the building to provide refuge in the highly unlikely event that a bat is discovered during the demolition phase.</li> </ul>	<u>EcIA Report</u>

Subject Area	No.	Mitigation Measure	Source
		<ul style="list-style-type: none"> <li>• The licensed ecologist will then supervise the roof strip and the disassembly of the wooden beams until such a point that they are satisfied that there is a negligible potential of encountering roosting bats.</li> <li>• If bats are encountered during supervised works, the licensed bat handler will capture the bat with thin gloved hands, place the bat in a drawn-string cloth bag and then take it to the bat box placed in a nearby tree.</li> <li>• If a bat is discovered at other, unsupervised times, work will cease immediately, and the licensed bat ecologist or accredited agent will be called for advice.</li> <li>• In the event that a bat is encountered at any stage during the demolition an assessment would be made by the ecologist as to the need to obtain a bat licence from National Parks and Wildlife Service. In the event it is clear that continuing with demolition works will destroy roosts that have not already been adversely affected by demolition works then it would be necessary to delay such works until a licence can be obtained from National Parks and Wildlife Service. Failure to stop works would risk offences being committed under the Habitats Regulations (2010) and the Wildlife Act (1976) and Wildlife [Amendment] Act (2000). The Ecologist would be responsible for ensuring that the adopted approach was consistent with legislation protecting bats and their roosts.</li> <li>• Although no bats were recorded roosting within the toilet block building it is recommended that four bat boxes are installed on adjacent mature trees as mitigation for the removal of potential bat roosting features. It is recommended that boxes suited for use by pipistrelle and brown long-eared bats are provided given that these were the most common species recorded during the surveys. Bat boxes such as the Schwegler 2F, 1FD and 2FN would provide suitable roosting sites.</li> </ul> <p>No bats were observed entering the Road Bridge over the spillway, the Valve House or the Intake Tower during the surveys and, as such, the presence of a maternity roost (breeding site) can be ruled out. A pre-construction inspection / survey is recommended to determine whether bats are present at the time of works. As no maternity roost was identified there is no requirement for timing restrictions of the construction works. Construction methods should avoid lighting after</p>	

Subject Area	No.	Mitigation Measure	Source
		<p>dusk, because the surrounding reservoir was identified as representing an important feeding area.</p> <p>Felling of all trees within the treeline should be preceded by an aerial inspection by an experienced ecologist. In the absence of evidence of roosting bats being discovered, work should be conducted in a sensitive manner, and where reasonably practicable, timber with bat potential should not be directly sawn through. If such timber is removed, it should be left at the base of the tree for at least 48 hours. Where it is impractical to lower potential bat roosts, piles of brash or logs can be used to soften the impact of them hitting the ground.</p> <p>If evidence of roosting bats is discovered before or during the arboricultural works, the operations on the specific tree will halt and a licence from NPWS will be applied for. If bats are found and need to be moved or taken into care for their own safety, the task should ideally be conducted by an experience bat ecologist.</p> <p>Where this is not possible, they should be placed in a box with air holes and kept in a safe and quiet location until they can be passed into the care of such an individual.</p> <p>During operation of the WTP lights on site must be set at the minimum level required for safety purposes and be directed away from habitat features suitable for bats (trees, treelines, grassland areas, artificial bat roosts [discussed further below]), utilising lighting hoods and cowls where necessary.</p> <p>Any outside security lighting should be set on a motion-sensor and timer to decrease the light pollution impacts. These lights should also be directed away from treelines and woodland edge (and hooded/cowled where necessary) and be of the lowest intensity/brightness necessary for their purpose.</p>	
	3.6	<p><u>Birds &amp; Hedgehogs</u></p> <p>Any tree removal will be replaced with equivalent compensatory / enhancement planting within the site boundary to ensure there is no net loss of bird nesting habitat. Enhancement tree planting</p>	<u>EcIA Report</u>

Subject Area	No.	Mitigation Measure	Source
		<p>is shown in the Site Landscaping Plan. The loss of the small area of suitable bird nesting habitat is not considered to be significant in the context of the large area of available habitat on site.</p> <p>Nesting birds are protected under the Wildlife Act 1976 (as amended). Therefore, it is essential that trees and scrub vegetation is removed between October and February (inclusive) when nesting birds will be absent.</p> <p><u>Bird nesting boxes, such as Schwegler 3SV, 2GR or 1B will be attached to mature trees within the site to provide enhancement to nesting bird species. Ten in number of varying designs will be installed.</u></p> <p><u>Two artificial hedgehog houses will be installed at suitable locations within the boundary of the site.</u></p>	
	3.7	<p><u>Tree Protection</u></p> <p>The tree protection zone shall be set out in accordance with the Code of Practice (5) and as per drawings TVAR001 103. A notice 'Construction Exclusion Zone' shall be placed on tree protection fencing at regular intervals along the protective fencing. This notice shall include contact details for the Site Arborist. Strictly no access should be permitted to this zone unless instructed by the Site Arborist.</p> <p>The Contractor is to maintain the protective fencing in good condition to the satisfaction of the Site Arborist for the duration of the contract. Any damage to fencing is to be reported to the Site Arborist immediately. Damaged fencing is to be repaired within 2 hours of the damage occurring. All works within the vicinity of the damaged fencing are to be suspended until the fencing is repaired.</p> <p>The Site Arborist should be given 5 days notice of any works within or access required to this zone. The 'Protected Tree Zone' should under no circumstances be used for storage of materials, equipment, or site debris. No fires should be lit within the "Protected Tree Zone", or equipment washed or cleaned.</p>	<u>Arboricultural Assessment</u>

Subject Area	No.	Mitigation Measure	Source
		<p>The Code of Practice will be brought to the attention of all site personnel including those of the Main Contractor, Sub-Contractors and Engineering Specialists associated with the project. All operations to be in accordance with BS 5837:2012 Trees in relation to design, demolition and construction -Recommendations. The Contractor should purchase and make available on site a copy of the BS standard.</p> <p><u>The Site Arborist:</u></p> <ul style="list-style-type: none"> <li>• Supervise the installation of tree protection fencing.</li> <li>• Supervise all tree works and assess on-going tree protection.</li> <li>• Liaise with the relevant authorities during the project.</li> <li>• Constantly monitor the project with regard to tree health to ensure that no damage is caused to the subject trees during the operational works.</li> <li>• Report any negligent damage to trees which will prejudice their health.</li> <li>• Monitor, where necessary, all works carried out by the Arboricultural Contractor and Main Contractor within the 'Protected Tree Zone'.</li> </ul> <p><u>Arboricultural Contractor:</u></p> <ul style="list-style-type: none"> <li>• Submit a full method statement containing machinery to be used, removal of wood etc to the Site Arborist.</li> <li>• Carry out works to the most up to date arboricultural practices available e.g. BS 3998. Recommendations for tree work (as amended).</li> <li>• Undertake work only with suitably qualified operatives in constant consultation with the Site Arborist.</li> <li>• Trees identified for removal will be section felled in wooded areas so as not to damage remaining trees.</li> </ul>	

Subject Area	No.	Mitigation Measure	Source
		<p><u>Main Contractor:</u></p> <ul style="list-style-type: none"> <li>• Appoint a member of staff to be responsible for tree protection and this person shall be the point of contact between the Main Contractor and the Site Arborist.</li> <li>• Undertake all work in accordance with this specification.</li> <li>• Ensure that all personnel, operatives, subcontractors etc. are aware of this specification and operate accordingly</li> <li>• Notify the Site Arborist of any potential conflicts that may affect the health, vigour and viability of trees.</li> </ul> <p><u>Access:</u></p> <p>Access to the site and service roads shall be agreed with the Site Arborist prior to commencement of works. Where it is deemed necessary for heavy machinery access the contractor shall refer to the guidelines within BS 5837 2012 and liaise with the Site Arborist to instigate the most appropriate root protection system.</p> <p><u>Post Construction</u></p> <p>A post construction report on the condition of trees should be undertaken and all recommendations made within this report should be carried out to BS3998 Tree Works.</p>	
<b>Management of Invasive Species</b>	4.1	<p>During the proposed works the Contractor will be required to adhere to the following in order to avoid the spread and introduction of non-native invasive species and noxious weeds:</p> <ol style="list-style-type: none"> <li>1. Providers of any soil, gravel or stone brought on to the site will be required to ensure that it is free of any non-native invasive species.</li> <li>2. Tyres and tracks of plant machinery and construction related vehicles will be power washed and checked for the presence of plant material e.g. leaves, roots and rhizomes from non-native invasive species prior to arrival on-site, and after works are completed.</li> </ol>	<u>AA Screening Report</u>



Subject Area	No.	Mitigation Measure	Source
	4.2	<p>An Invasive Species Management Plan should be prepared for the appropriate management of Canadian pondweed <i>Elodea canadensis</i> which was recorded within the ponds that are to be drained and infilled at the site of the proposed WTP.</p> <ul style="list-style-type: none"> <li>• Good construction site hygiene must be employed to prevent the spread of these species with vehicles thoroughly washed prior to leaving any site with the potential to have supported invasive species. All washing must be undertaken in areas with no potential to result in the spread of invasive species.</li> <li>• When working in areas surrounding watercourses, all connections to such watercourses must be blocked to prevent the spread of any invasive species by these means.</li> <li>• Any material that is imported onto any site must be verified to be free from any invasive species listed on 'third schedule'.</li> <li>• Any potentially contaminated material arising on site must be either treated on-site or removed from the site for treatment elsewhere.</li> <li>• Following completion of any works, the worksite must be monitored to ensure that the works have not resulted in the spread of any invasive species and that any ongoing treatment is effective.</li> </ul> <p>The treatment of Montbretia (listed on the Amber List) will follow best practice recommended guidelines issued by the National Roads Authority – Guidelines on management of noxious weeds and non-native invasive plant species on national roads (NRA, 2010).</p>	<u>EcIA</u>
<b>Landscape and Visual</b>	5.1	<p>The field the site of the proposed new plant is already enclosed on all sides by mature vegetation, a row of conifer trees along the east boundary and a belt of woodland species along the north and west boundaries. It is proposed to (a) retain and protect this vegetation during construction, and (b) supplement this vegetation with new woodland planting, infilling gaps where they exist between the existing trees and widening the belts considerably.</p> <p>Supplementary woodland planting: It is proposed that the existing woodland belts and the treeline be supplemented with targeted infill planting of woodland species to enhance these</p>	<u>Landscape &amp; Visual Impact Assessment</u>

Subject Area	No.	Mitigation Measure	Source
		<p>existing landscape features. It is further proposed that the belts of vegetation be broadened into the site to effectively surround the water treatment plant with woodland – completely screening the new water treatment plant and also improving biodiversity, habitat connectivity and a range of associated ecosystem services. The proposed species mix includes shrubs and trees, evergreen and deciduous species. All are native or naturalised species except the lodgepole pine which is selected to complement/succeed the existing lodgepole pine that characterise the site.</p>	
	5.2	<p>A site landscape layout plan has been prepared for the site which details compensatory planting of trees and grassland areas. Seven of the filter beds in the southern section of the site will be filled in using spoil from the new WTP site and planted with belts of woodland and patches of species-rich meadow grassland. For the avoidance of doubt, the original filter beds closest to the dam will be retained. Existing belts of woodland will be filled in and enhanced with new tree planting of species that reflect the existing woodland character.</p> <p>It is recommended that a Landscape and Ecological Management Plan (LEMP) for the site is written to specify how habitats within the operational site will be managed to ensure the biodiversity value of the site is maintained. This will include the landscape and management details of all retained and newly created habitats.</p>	<p><u>Landscape &amp; Visual Impact Assessment</u></p>
<p><b>Noise and Vibration Management</b></p>	6.1	<p>Appropriate mitigation measures have been recommended to ensure the Construction Phase target noise limits are not exceeded. The contractor should take note of the control measures recommended in BS 5228 and apply the appropriate measures where applicable. Other measures recommended include:</p> <ul style="list-style-type: none"> <li>Working hours during site construction operations will be restricted to daytime hours from 08.00 hours to 18.00 hours (Monday to Friday) and 08.00 hours to 13.00 hours (Saturdays). No heavy construction activities will be permitted on Saturday, before 09:00 on any day and during state examinations. These hours and requirements will be discussed with local residents, agreed with Wicklow County Council and defined in the construction contract.</li> </ul>	<p><u>Noise Impact Assessment, CEMP and Oral Hearing</u></p>

Subject Area	No.	Mitigation Measure	Source
		<ul style="list-style-type: none"> <li>• An on-site speed limit will be enforced for all traffic. Drivers of vehicles will be advised of the speed limits through the erection of signs i.e. a typically recommended on site speed limit of 10 km/hr.</li> <li>• Where practicable the use of quiet working methods will be selected and the most suitable plant will be selected for each activity, having due regard to the need for noise control.</li> <li>• Best practicable means will be employed to minimise noise emissions and will comply with the general recommendations of BS 5228, 1997. To this end operators will use “noise reduced” plant and/or will modify their construction methods so that noisy plant is unnecessary.</li> <li>• By positioning potentially noisy plant as far as possible from noise sensitive receivers the transmission of sound can be minimised. Earth mounds and/or stacks of material or buildings on site can be used in such a way that they act as a physical barrier between the source and the receiver.</li> <li>• Mechanical plant used on site will be fitted with effective exhaust silencers. Vehicle reverse alarms will be silenced appropriately in order to minimise noise breakout from the site while still maintaining their effectiveness.</li> <li>• 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.</li> <li>• If required, compressors will be of the “noise reduced” variety and fitted with properly lined and sealed acoustic covers.</li> <li>• In all cases engine and/or machinery covers should be closed whenever the machines or engines are in use.</li> <li>• 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.</li> <li>• Employees working on the site will be informed about the requirement to minimise noise and will undergo training on the following aspects:                         <ul style="list-style-type: none"> <li>· The proper use and maintenance of tools and equipment</li> <li>· The positioning of machinery on-site to reduce the emission of noise to the noise sensitive receptors.</li> </ul> </li> </ul>	

Subject Area	No.	Mitigation Measure	Source
		<ul style="list-style-type: none"> <li>· Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment.</li> <li>· The use and maintenance of sound reduction equipment fitted to power pressure tools and machines.</li> <li>• Cognisance should also be taken of the 'Environmental good practice site guide' 2005 compiled by CIRIA and the UK Environment Agency. This guide provides useful and practical information regarding the control of noise at construction sites.</li> <li>• It is recommended that should complaints be received from nearby residential properties, periodic noise monitoring should be undertaken during construction works to determine noise levels at noise sensitive receptors. On the basis of the findings of such noise monitoring and appropriate noise mitigation measures should be implemented to reduce noise impacts. Where excessive noise levels are recorded, further mitigation measures should be employed which may include temporary screening of the nearest receptor to onsite activities.</li> <li>• Responsible Person - It is recommended that the Contractor should 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.</li> <li>• Night-time Working - If there are items of plant (e.g. dewatering pumps and similar) in use during night-time hours they should be chosen, sited and enclosed such that levels at the nearest properties do not exceed the measured background noise levels.</li> <li>• <u>Excavation of rock within the spillway will be through hydraulic breaking. Blasting of rock will not be permitted or used. This is specified within the contract.</u></li> <li>• Vibration monitoring will be put in place through the construction phase at appropriate boundary and dam locations to ensure that rock excavation works meet current vibration guideline values. The monitoring locations and guideline limits will be stated in the final CEMP.</li> </ul>	
<b>Air Quality</b>	7.1	The following dust mitigation measures will be employed to minimise construction impacts. The aim of the mitigation measures outlined below is to minimise the release of dust to the environment. Outlined in detail below are the proposed dust suppression measures.	<u>Air Quality Impact Assessment</u>

Subject Area	No.	Mitigation Measure	Source
<p><b>Dust and Odour Management</b></p>		<p><u>Dust Mitigation Measures:</u></p> <p>The construction manager has the overall responsibility for ensuring compliance with the requirements of any planning authorisation. The site will have at its disposal a suitable water bowser and associated water supply to allow for dampening down of the site when the potential for windblown dust from its surface arises. The occurrence of potential wind-blown dust is very much weather dependent but suitable facilities will be available to minimise windblown dust from the site surfaces.</p> <p><u>Access Roads, Site Roads and Vehicles Loading Activities &amp; Movements:</u></p> <p>The objective of these procedures is to minimise the creation and release of dust generated by transportation activities carried out during both access to and movements within the site. This includes minimising dust from transport vehicles entering and leaving the facility.</p> <ul style="list-style-type: none"> <li>• Regular attention shall be paid to cleaning dust material from all roadways, hard surfaced areas and working areas of the facility. Dust from clean-up should be re-incorporated into stockpiles. This should be done during lulls in operations and at the end of each working period.</li> <li>• Roadways and other areas where vehicles are regularly moving shall be kept clean, by sweeping or by wetting;</li> <li>• When loading vehicles, the following procedures should be adhered to:             <ul style="list-style-type: none"> <li>○ No overloading of vehicles or containers resulting in either peaks of cargo or overspill onto the working areas or roadways.</li> <li>○ Keep fall heights of the material into the transport vehicles to a minimum.</li> </ul> </li> <li>• Strictly applied, suitable on-site speed limits shall be set, displayed and observed for the movement of all vehicles (10 mph)</li> <li>• Mandatory use of the wheel wash provided.</li> </ul> <p><u>Rock Breaking Operations:</u></p>	

Subject Area	No.	Mitigation Measure	Source
		<p>There may be a requirement for the use of a rock breaker in specific areas. When necessary, the contractor should ensure that when dry weather and ground conditions occur water should be sprayed on the surface continuously during rock breaking work to control dust emissions.</p> <p><u>Stockpiling Operations:</u></p> <p>The aims of these procedures are to ensure that materials are stockpiled only within the designated process working areas and any release of dust to atmosphere is minimised.</p> <ul style="list-style-type: none"> <li>• Stockpiling shall be co-ordinated in such a way as to minimise the potential for double handling of material and carefully planned to ensure minimum exposure to winds, thereby reducing dust emission to air.</li> <li>• Stockpile areas will be clearly and physically delineated to deter vehicles from running over extracted material at the stock edge.</li> <li>• Stockpiles shall be managed to ensure that the profile of material will minimise wind whipping.</li> <li>• During any stockpiling, stockpiles shall be profiled and compacted by flattening out peaks and ridges and when partially worked, shall be re-contoured to prevent ridges or overhanging falls.</li> <li>• Whenever possible, settled stockpiles shall not be broken into when the wind is likely to lift newly exposed dry dust. When this is unavoidable, effective dust control methods shall be implemented.</li> <li>• Prior to carrying out any stockpile handling operations, the dust suppression equipment should be checked to ensure that it is working properly.</li> </ul> <p><u>Monitoring &amp; Reporting:</u></p> <ul style="list-style-type: none"> <li>• A high standard of housekeeping will be maintained on site.</li> <li>• Contingency plans shall be made to provide dust control in the event of equipment malfunction, whether by loan, hire or other arrangements.</li> <li>• Systems for monitoring processes, responding to and reporting pollution incidents shall be devised. This information shall be kept in a logbook, together with information</li> </ul>	

Subject Area	No.	Mitigation Measure	Source																		
		<p>regarding equipment failure, periods of significant dust emissions off-site and the inspection of roadways, together with any remedial action taken.</p> <ul style="list-style-type: none"> <li>Any complaints received from neighbouring properties will be logged and appropriate actions taken to reduce the potential for further complaint.</li> </ul> <p><u>Dust Management Plan:</u></p> <p>The following Dust Management Plan will be implemented by the contractors at all times and special importance will be placed on these actions on high wind days.</p> <table border="1" data-bbox="489 597 1692 1352"> <thead> <tr> <th>Parameter</th> <th>Action</th> <th>Responsibility</th> </tr> </thead> <tbody> <tr> <td>Induction</td> <td>                     Induction for all employees will include information on:                     <ul style="list-style-type: none"> <li>Potential sources of dust</li> <li>Dust Management Plan, Monitoring program and awareness</li> <li>Speed limits onsite and staying on designated roads</li> <li>Who to report dust issues too</li> </ul> </td> <td>Site Manager</td> </tr> <tr> <td>Windy Conditions</td> <td> <ul style="list-style-type: none"> <li>Monitor wind and weather forecasts and cease operations where dust cannot be controlled.</li> </ul> </td> <td>Site Manager</td> </tr> <tr> <td>Traffic</td> <td> <ul style="list-style-type: none"> <li>Adhere to site speed limits and designated roads</li> <li>Use of wheel wash when leaving site</li> </ul> </td> <td>Drivers</td> </tr> <tr> <td>Open Areas</td> <td> <ul style="list-style-type: none"> <li>Minimise open areas exposed to wind erosion as much as practical by completing an assessment of all construction areas.</li> </ul> </td> <td>Site Manager</td> </tr> <tr> <td>Dust Suppression</td> <td> <ul style="list-style-type: none"> <li>Operate water bowsers during dry, windy conditions and during the summer months, generally from April to September, across the site to apply water to operational areas (i.e. roads and loading areas)</li> <li>All roads being used for heavy vehicle traffic within the construction area will be treated with dust suppression, where appropriate.</li> </ul> </td> <td>Site Manager</td> </tr> </tbody> </table>	Parameter	Action	Responsibility	Induction	Induction for all employees will include information on: <ul style="list-style-type: none"> <li>Potential sources of dust</li> <li>Dust Management Plan, Monitoring program and awareness</li> <li>Speed limits onsite and staying on designated roads</li> <li>Who to report dust issues too</li> </ul>	Site Manager	Windy Conditions	<ul style="list-style-type: none"> <li>Monitor wind and weather forecasts and cease operations where dust cannot be controlled.</li> </ul>	Site Manager	Traffic	<ul style="list-style-type: none"> <li>Adhere to site speed limits and designated roads</li> <li>Use of wheel wash when leaving site</li> </ul>	Drivers	Open Areas	<ul style="list-style-type: none"> <li>Minimise open areas exposed to wind erosion as much as practical by completing an assessment of all construction areas.</li> </ul>	Site Manager	Dust Suppression	<ul style="list-style-type: none"> <li>Operate water bowsers during dry, windy conditions and during the summer months, generally from April to September, across the site to apply water to operational areas (i.e. roads and loading areas)</li> <li>All roads being used for heavy vehicle traffic within the construction area will be treated with dust suppression, where appropriate.</li> </ul>	Site Manager	
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		<ul style="list-style-type: none"> <li>Apply dust suppression to all stockpiles prone to wind erosion.</li> </ul>	
		Soil Stripping <ul style="list-style-type: none"> <li>Conduct soil stripping only during suitable wind and weather conditions, so as to minimise the generation of dust.</li> </ul>	Site Manager
		Loading & Haulage <ul style="list-style-type: none"> <li>Haul truck operators to monitor loading conditions and call on water bowser to dampen areas in dusty conditions</li> <li>Haul truck operators to monitor road conditions and call on water trucks to dampen roads when dusty</li> <li>Haul truck operators to reduce speed to minimise dust</li> <li>On days where dust cannot be controlled shut down operations until dust can be satisfactorily managed</li> </ul>	Site Operators
		Record Keeping <ul style="list-style-type: none"> <li>All actions undertaken for mitigation of dust during dusty conditions will be recorded by the site supervisor.</li> <li>Document all readings, wind directions, area omitting dust and actions undertaken.</li> <li>Determine compliance when auditing and reporting.</li> </ul>	Site Manager
		Dust Monitoring <ul style="list-style-type: none"> <li>Monitoring is required to enable an assessment of the effectiveness of the dust management controls and improvements to be made, where required.</li> <li>Bergerhoff dust deposition monitoring along the north, south, east and west site perimeter boundaries</li> <li>A report on the results of this monitoring shall be available to the local authority on a quarterly basis.</li> </ul>	Site Manager
		Complaint Records <ul style="list-style-type: none"> <li>Complaints will be logged and maintained on site.</li> </ul>	Site Manager
		Performance Indicators <p>The effectiveness of the Dust Management Plan will be reviewed against the following indicators:</p> <ul style="list-style-type: none"> <li>Compliance with guideline values for dust deposition monitoring.</li> </ul>	Site Manager



Subject Area	No.	Mitigation Measure	Source
		<ul style="list-style-type: none"> <li>• The level of substantiated complaints received and registered.</li> <li>• The level of complaints satisfaction achieved.</li> <li>• The absence of fugitive dust originating from the site.</li> <li>• Audit results of compliance with actions</li> </ul>	
<b>Archaeology</b>	8.1	ABP Condition 8. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within the site. In this regard, the developer shall -	<u>ABP Direction</u>
	8.2	notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.	
	8.3	employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and	
	8.4	provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove.	
	8.5	<p>All topsoil stripping within the green field areas of the proposed development (including the spillway access route) will be subject to archaeological monitoring. If, during the course of works it becomes clear that extensive disturbance is present within the development area, then the scope of works should be revisited.</p> <p>Monitoring will be carried out by a suitably qualified archaeologist. Full provision will be made available for the resolution of any archaeological features/deposits that may be discovered, should that be deemed the most appropriate manner in which to proceed.</p>	<u>Archaeological Impact Assessment</u>
<b>Built Heritage</b>	9.1	ABP Condition 7. The following shall apply in relation to the protection of architectural heritage:	<u>ABP Direction</u>

Subject Area	No.	Mitigation Measure	Source
	9.2	The Built Heritage Assessment report shall be supplemented by specific details of the fittings and features on the site which are to be retained and where they will be stored pending any future display.	
	9.3	The detailed design of the works to the tower and at the entrance to the valve chamber and the implementation of those works shall be supervised by an accredited Conservation Architect. On completion of the works, the Conservation Architect shall certify compliance with best practice.	
	9.4	Prior to commencement of works, the Conservation Architect shall prepare a record of the features of interest at the site. This record shall include a detailed, labelled photographic survey of all structures, including the spillway and of fittings and features.	
	9.5	This record shall be submitted to the planning authority prior to commencement of development and one copy of this record shall be submitted to the Irish Architectural Archive.	
	9.6	<p><u>Earth Dam</u></p> <ul style="list-style-type: none"> <li>• Visual effects of the proposed siphon would be minimised.</li> </ul> <p><u>Draw-off tower and bridge</u></p> <ul style="list-style-type: none"> <li>• The works to the exterior would be carried out in sympathy with the design of the tower.</li> </ul> <p><u>Valve Chamber</u></p> <ul style="list-style-type: none"> <li>• The fittings of historical interest would be recorded and some would be retained for potential display.</li> <li>• The works would be carried out as far as possible in a manner sympathetic to the original building.</li> </ul>	<u>Built Heritage Assessment</u>
<b>Traffic and Transport</b>	10.1	A Traffic Management Plan (TMP) will be prepared by the Contractor and agreed with Wicklow County Council prior to works commencing. A Draft Preliminary Traffic Management Plan was submitted with the planning application.	<u>Traffic Impact Assessment</u>

Subject Area	No.	Mitigation Measure	Source
		<p>Specific mitigation measures in the Impact Assessment are to:</p> <ul style="list-style-type: none"> <li>• Limit the delivery times to 08:00-18:00, Monday to Friday and 08:00-13:00 on Saturday;</li> <li>• Restrict traffic access to the WTP site to avoid Roundwood village;</li> <li>• Restrict construction traffic to use suitable routes to and from the site;</li> <li>• Provide escorts and accommodation/reinstatement, where appropriate, to mitigate against the effects of any abnormal loads.</li> <li>• Ensure appropriate timing of deliveries within quiet periods to mitigate against the effects of any abnormal loads.</li> <li>• Provide wheel and vehicle body washing facilities, use water bowsers, dust suppression or similar apparatus and street sweepers in order to keep construction routes free from vehicle deposits and debris.</li> <li>• Provision of appropriate information and signage along the construction routes.</li> <li>• Ensure vehicle loads are securely sheeted and restrained, where appropriate, prior to dispatch.</li> </ul>	

Table 2-3 Schedule of Operational Mitigation Measures

Subject Area	No.	Mitigation Measure	Source
<b>Vartry Flows</b>	11.1	ABP Condition 3. The operation of the proposed development shall be in accordance with the following:	<u>ABP Direction</u>
	11.2	Water abstraction shall not exceed the established volume of eighty million litres per day.	
	11.3	A minimum compensation flow of five million litres per day shall be discharged.	
	11.4	The method of delivery of this flow shall be by way of the seven sand filter beds which are to be retained.	
	11.5	The branch pipework proposed to deliver the discharge shall have a capacity of at least fifteen million litres per day and the valve controlling the branch pipework shall be capable of remote control and variability.	
	11.6	The practice of 'back pumping' shall cease.	
	11.7	All supernatants shall be recycled to the head of the works.	
	11.8	Within three months of the operation of the proposed development the existing water abstraction at Annagolan Bridge shall cease.	
	11.9	The existing interceptor channel shall be retained for the delivery of surface water only.	
	11.10	All chemical dosing shall be relocated to the site of the new water treatment plant and the existing infrastructure adjacent to the river fully decommissioned.	

Subject Area	No.	Mitigation Measure	Source
	11.11	<p>A minimum of 5,000 m<sup>3</sup> per day of reservoir (natural) water will be released downstream of the plant and the practice of back pumping will cease.</p> <p>A management regime of freshet releases and increased discharges when available is also proposed.</p>	<u>EcIA</u>
<b>Flow Monitoring</b>	11.12	ABP Condition 4. The following shall apply in relation to the monitoring of flow:	<u>ABP Direction</u>
	11.13	Within six months of the date of this decision the developer shall install and maintain two hydrometric gauging stations, one on-site in the Vartry River and a second one further down the Vartry River catchment, which shall be permanently established with a fixed structure incorporating suitable fish passage and shall accurately measure and record in real time the combined flows from the water treatment plant discharge and the spillway channel.	
	11.14	The locations shall be subject to the written agreement of the planning authority following consultation with the Environmental Protection Agency and Inland Fisheries Ireland.	
	11.15	The existing weir in the discharge chamber shall be calibrated and its performance evaluated.	
	11.16	The availability of data shall be in accordance with the requirements of the planning authority. The developer shall also make information available to the planning authority on request and shall present an annual report summarising key issues which shall also be made available for public inspection by the developer.	
<b>Treatment Process</b>	12.1	It is proposed that all process water generated by the new water treatment plant will be treated and pumped back to the WTP and blended with the inflow water. This will	<u>EcIA</u>

Subject Area	No.	Mitigation Measure	Source
		<p>result in no discharge of treated process water from the new water treatment plant to the environment.</p> <p>During the treatment process some residual water and sludge is generated. Any sludge generated will be thickened, dewatered and removed off-site for disposal to a licenced facility.</p> <p>Scouring or dewatering of any pipes, tanks or other plant within the site that contains chlorinated water, such as drinking water in pipes or storage will be fully dechlorinated in accordance with the Irish Water Standard Operating Procedure prior to discharge to surface waters.</p>	
<b>Noise Management</b>	13.1	<p>The assessment of operational noise from the proposed development has indicated that the EPA’s “Area of Low Background Noise” limit criteria will not be exceeded at the nearest residential properties. No additional specific mitigation measures beyond those which are already proposed within the design have been recommended to reduce operational noise.</p>	<p><u>Noise Impact Assessment.</u></p>
<b>Air Quality</b>	13.2	<p>No impact to air quality results from the operation and no operational mitigation measures for are proposed or required.</p>	<p><u>Air Quality Impact Assessment</u></p>

**3 SEASONAL CONSTRAINTS**

The following seasonal constraints will apply to the project:

*Table 3-1 Seasonal Constraints*

<b>Activity</b>	<b>Constraint</b>	<b>Seasonal Constraint</b>
Spillway Excavation	No works in spillway when the reservoir is spilling. To avoid impacts on suitable salmonid spawning areas downstream of the works, excavation will take place outside the period October to May, inclusive. Agreement with IFI and NPWS must be obtained as to the dates when the work can be allowed.	1 October – 31 May and when reservoir is spilling. Subject to agreement with IFI and NPWS.
Clearance of trees and vegetation	No clearance of trees or vegetation to avoid disturbance of nesting bird species.	1 March – 31 August
Demolition of Toilet Block	Demolition to be undertaken when bats unlikely to be roosting (Oct-Feb)	1 March – 30 September
Draining of Ponds onsite.	Drain during period to avoid disturbance to amphibians (Sept-Jan)	1 February – 31 August

**4 DOCUMENTS TO BE SUBMITTED**

The following documents are required to be submitted to the planning authority:

*Table 4-1 Documents to be Submitted to the Planning Authority*

	<b>Document</b>	<b>ABP Condition Number</b>
1	Final Schedule of Commitments	2b
2	Proposal for the location of the two hydrometric gauging stations on the River Vartry	4b
3	Annual report on flow gauging data.	4d
4	Wetted area fisheries habitat mapping report – updated through the Construction Phase.	5
5	Construction Environmental Management Plan including construction programme and final Schedule of Commitments. CEMP will also include the following documents:	6a
5.1	<ul style="list-style-type: none"> <li>Invasive Species Management Plan</li> </ul>	6a
5.2	<ul style="list-style-type: none"> <li>Traffic Management Plan</li> </ul>	CEMP
5.3	<ul style="list-style-type: none"> <li>Waste Management Plan</li> </ul>	CEMP
5.4	<ul style="list-style-type: none"> <li>Environmental Emergency Preparedness and Response Plan</li> </ul>	CEMP
6	Built Heritage Report updated to include record of features of interest and proposals for storage.	7d
7	Archaeology. Notification of any site operation (at least four weeks prior to the commencement) including hydrological and geotechnical investigations	8a
8	Building Design. Details of the materials, colours and textures of all external finishes to the proposed buildings to be submitted and agreed in writing with the planning authority prior to the commencement of development.	9



**5 CLOSE**

This document comprises the Schedule of Commitments for the construction and operation of the Vartry Water Treatment Plant upgrade project granted consent by Wicklow County Council (Ref 16/363) and by An Bord Pleanála (Appeal Reference PL 27.247745).

The document is submitted to Wicklow County Council in compliance with the Appeal Condition 2 (b).