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**LARGE RESIDENTIAL  
DEVELOPMENT  
CORRESPONDENCE FORM**

Appeal No: ABP 319657-24its JhpnPlease treat correspondence received on 4/6/24 as follows:

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20 Fitzwilliam Place t: +353 1 6762594  
Dublin 1 e: +353 1 6762310  
D02 YV58 e: planning@mdb.ie  
w: www.mdb.ie

# MACCABE DURNEY BARNES

PLANNING | ENVIRONMENT | ECONOMICS

Our Ref: 2150 – Blessington Demesne LRD

Ms. Catherine Flynn  
Administrative Assistant  
An Bord Pleanála  
64 Marlborough Street  
Dublin 1, D01 V902

<b>AN BORD PLEANÁLA</b>	
LDG-	_____
ABP-	_____
04 JUN 2024	
Fee: €	_____ Type: _____
Time: 16.25	By: hand

4<sup>th</sup> June 2024

**Re: Response to Third Party Appeals against Decision by Wicklow County Council to grant planning permission for a Large-Scale Residential Development (LRD) on lands at Blessington Demesne, Newpaddocks and Santryhill, Blessington Co. Wicklow (ABP. Ref.319657-24 and WCC PA.Reg.Ref. 23/689)**

Dear Ms. Flynn,

We refer to An Bord Pleanála's correspondence of 8<sup>th</sup> May 2024 and 10<sup>th</sup> May 2024 inviting a response or comment by the applicant on two separate Third Party Appeals submitted to the Board under Ref. 319657-24 for a Large-Scale Residential Development (LRD) on lands at Blessington Demesne, Co. Wicklow. We have been instructed by our client, Cairn Homes Properties Limited, to prepare this response submission in respect of the appeals by;

- Ballymore Eustace Trout and Salmon Anglers' Association
- Ballymore Eustace Community Development Association

The content of the two Appeals almost entirely relate to waste water, water quality and Waste Water Treatment Plan (WWTP) capacity. An Bord Pleanála Granted Permission on 26/02/2019 for the upgrade of the Blessington Wastewater Treatment Plant (PL27.302732). The Appellants are inappropriately trying to use this LRD application to re-open that case to effectively ask ABP to reverse its decision from 2019. The Board's decision on the WWTP is referred to in detail below, which clearly demonstrates that this was a robust and considered decision by the Board based on detailed and voluminous evidence.

This correspondence summarises the various issues raised and comments on the small number of planning issues raised which only indirectly make reference to the proposed development. A comprehensive technical response has been prepared by the project engineers with additional specialist environmental consultants to address these matters as follows:

- DBFL Consulting Engineers, report addresses issues in relation the WWTP and environmental permits, issues pertaining to foul and surface water;
- Altamar Marine and Environmental Consultants, whose submission focuses on issues relating to ecology;

- Enviroguide, Environmental Consultants whose submission specifically addresses hydrology; and
- Tobin Consulting Engineers - Review of WWTP information Note.

## 1 BALLYMORE EUSTACE TROUT AND SALMON ANGLERS

### 1.1 Condition 22 of Wicklow County Council's Decision to Grant Permission

The Third Party Appeal by the Ballymore Eustace Trout and Salmon Anglers' Association do not present any Ground of Appeal against the proposed development. It only refers to condition 22 of the Planning Permission which States:

**22. (a) *Prior to the commencement of development, the written agreement of Uisce Eireann shall be obtained for the provision of water services necessary to serve the proposed development.***

*(b) The granting of this permission by Wicklow County Council is in its role as a planning authority. It does not commit Wicklow County Council to the provision of any water services to serve the proposed development. Details of connections and the specification of materials to be used for the water services are a matter for Irish Water.*

*REASON: in the interests of clarification and proper planning and development.*

The appellants refer to this condition as "*a convenient and disingenuous sleight of hand on Wicklow County Council's behalf*".

It is clear that the Ballymore Eustace Trout and Salmon Anglers' Association has misunderstood this standard condition as an abdication of responsibility by the local authority, when in fact its purpose is to ensure that water services are delivered in accordance with Irish Water/Uisce Eireann's requirements.

An Bord Pleanála is aware that planning conditions of this nature are routinely attached to large scale planning permissions including LRD's. This is provided for under the Planning Act 2000 (as amended) at inter alia section 34(4)

*34(4)(m) conditions for requiring the provision of roads, including traffic calming measures, open spaces, car parks, sewers, watermains or drains, facilities for the collection or storage of recyclable materials and other public facilities in excess of the immediate needs of the proposed development, subject to the local authority paying for the cost of the additional works and taking them in charge or otherwise entering into an agreement with the applicant with respect to the provision of those public facilities;*

The Planning and Development Act, 2000 (as amended) FIFTH SCHEDULE makes provision for Conditions which may be Imposed, on the Granting of Permission to Develop Land, without Compensation. This includes the following:

*15. Any condition relating to the provision and siting of sanitary services and waste facilities, recreational facilities and open spaces.*

*16. Any condition relating to the protection and conservation of the environment including the prevention of environmental pollution and the protection of waters, groundwater, the seashore and the atmosphere.*

*18. Any condition prohibiting, regulating or controlling the deposit or disposal of waste materials and refuse, the disposal of sewage and the pollution of rivers, lakes, ponds, gullies and the seashore.*

The Planning Condition has regard to the fact that Authorisations or approvals issued to water authorities are deemed to be issued to Irish Water (30.10.2015) by the Water Services (No. 2) Act 2013 (Other Licences, Authorisations and Permits) Order 2015 (S.I. No. 462 of 2015), in effect as per arts. 3 and 4. Irish Water has now been re-constituted as Uisce Eireann.

In effect, the planning condition recognises the division of decision making responsibility between local and state authority, where Uisce Eireann is the appropriate regulatory authority for water services and provision.

Water Services infrastructure proposals for the development were developed and designed by Cairn's professional project team in consultation with the local authority and Uisce Eireann. The DBFL statement highlights a Confirmation of Feasibility (COF) letter has been received from Uisce Eireann for the subject lands with both water and wastewater connections confirmed to be feasible in December 2023.

DBFL's statement addresses technical engineering issues matters relating to WWTP capacity and water services design. The report also refers to the Uisce Eireann Blessington WWTP - Water Quality Impact Assessment and the review of same by Tobins Consulting Engineers which are both provided with the submission. The Uisce Eireann report was submitted to the EPA in September 2023.

Overall, it is submitted that the Appellant's assertions did not fully consider the detailed information provided as part of the planning application package. In fact, Condition 22 is an environmental control on development and a safeguard to ensure that water services and capacity will operate to the highest standards possible. This condition will support the aspirations of the Anglers on protecting water quality.

## **2 BALLYMORE EUSTACE COMMUNITY DEVELOPMENT ASSOCIATION**

The Ballymore Eustace Community Development Association's Appeal sets out 17 Grounds of Appeal. However, similar to the other Appeal, the process is being used to air grievances with Wicklow County Council and Irish Water / Uisce Eireann rather than the application by Cairn.

**Items 1 to 4** refer to WWTP capacity and storm water capacity. This is comprehensively addressed by DBFL in their report.

**Item 5** refers to Algal Bloom this is addressed by Altemar Marine and Environmental Consultants in their letter.



**Item 6** refers to any development that is risk to water supply should not be granted. This is an obvious position we all agree with. There is no suggestion that the LRD development presents a risk. The enclosed letter by Enviroguide provides clarification on this matter.

**Item 7** Climate impacts are referred to by the appellants, which repeat arguments regarding WWTP capacity. This is addressed in Enviroguide's report.

**Item 8** The Appellants allege that no consideration has been given to Waste Water and Surface Water Networks in Blessington. An Bord Pleanála will appreciate that this statement has no basis and a comprehensive assessment of water services infrastructure was undertaken as part of the development's infrastructure design process.

**Item 9** of the Appeal refers alleges that the Blessington LAP is out of date with regard to designation of the Blessington Lakes SPA.

The Local Area Plan and Wicklow County Development Plan fully acknowledge the status of the SPA. Wicklow County Council, Irish Water and the EPA are not "at odds" regarding the status of the SPA at all. Clearly all public bodies place enormous weight on the protection of designated sites. A comprehensive Natura Impact Assessment was prepared as part of the planning application package which informed water services design and mitigation measures incorporated in the CEMP and EIAR.

**Item 10** refers to misconceptions in Blessington as 'unknown'. It is not clear what Ground of Appeal or argument is being presented when no case or evidence is presented.

**Item 11** refers to Storm Overflows. Again, this is addressed in DBFL's statement.

**Item 12** refers to surface water runoff in Blessington generally, WWTP capacity, without any reference to the proposed LRD development. This repeats initial arguments presented in the appeal. Enviroguide's submission elaborates on this point.

**Item 13** again repeats arguments concerning WWTP capacity and EPA licensing; all outside the applicant's subject site and control. Technical matters are addressed in the DBFL report.

**Item 14** alleges there is a conflict of interest between local authorities and Irish Water in decision making, where surface water management and pollution is neglected. Again, it is reiterated that the capacity of the network was fully considered as part of the application process. This is addressed in DBFL's response document and was clearly integral to the LRD's infrastructure design.

**Item 15** again refers to Algal Bloom. This is addressed by Altamar Marine and Environmental Consultants in the accompanying letter to this appeal submission.

**Item 16** refers to the Blessington Local Area Plan. It alleges the Plan is out of date by a full cycle and that Wicklow County Council should not prepare an update to the LAP. Again, this point is presented in the context of the capacity of the WWTP. As it is a reference to a planning issue, we address it in further detail below.

**Item 17** - The appellants refer to Poulaphouca Reservoir Risk. The allege that

- The local authorities Irish water ESB and EPA appear to have no interest in protecting Golden Falls.

- Need to consider the impact of development in Blessington on Poulaphouca reservoir (an SPA).
- There is a comparison of rural housing (with septic tanks) proximate to water courses to a WWTP.
- There is reference to Blessington Rowing Club court decision as precedent.

The alleged risk to Poulaphouca from over-development was fully considered by An Bord Pleanála under PL27.302732. The responsible authorities for Golden Falls clearly have a legal mandate to protect water quality in this locality. An NIS was prepared as part of this LRD application including mitigation measures to ensure there is no impact on the SPA.

In their conclusion the appellants allege that a discharge is *illegal and unsustainable*. Of the few references to the actual development proposed, the basic argument is that it is not appropriate to increase the discharge. The Rowing Club 'precedent' is irrelevant and addressed in further detail below.

They fully admit their '*submission is very water heavy and maybe of Cairn's control*'.

*However the basis of their position again relates back to the WWTP permission and public authority operations:*

*"all matters should be addressed before any further development is permitted. Planning cannot divorce itself from Uisce Éireann Matters. Furthermore, Wicklow County Council have a lot of issues to address around surface water management, which is currently non existent."*

With reference to the comprehensive LRD application package submitted to WCC, it is clearly evident that "all matters" were discussed, considered and assessed as part of 3 Stage LRD Process.

### 3 PLANNING DECISION REFERENCES

The Ballymore Eustace Community Development Association refer to planning decisions which they present as relevant their argument. We wish to clarify some items which are being misrepresented in the appeal.

#### 3.1 Planning Permission for Upgrade of the Blessington Wastewater Treatment Plant (ABP Ref PL27.302732, WCC Ref. 18255).

An Bord Pleanála Granted Permission on 26/02/2019 under Ref. PL27.302732 for;

*Upgrade of the Blessington Wastewater Treatment Plant. The works will include the construction of two new primary treatment units, one new anoxic tank, associated pump sumps, tertiary treatment infrastructure and all associated site works*

The Ballymore Eustace Trout & Salmon Anglers Association brought a Third Party Appeal against this decision and Ballymore Eustace CDA were Observers to the Appeal. As highlighted at the

outset of this Appeal Response, the Appellants are inappropriately trying to use this LRD application to re-open that case in a bid to get ABP to reverse its decision from 2019. All of the matters raised in their Appeal are a regurgitation of arguments that the Board has already considered and adjudicated upon.

In accordance with its statutory function The Board fully considered the evidence on the planning file, including technical reports from Inland Fisheries Ireland, KCC Executive Scientist Environment Section) and Department of Culture, Heritage and the Gaeltacht. The Inspector noted in regard to response to Appeals from Irish Water that *"Significant quantities of technical data are attached to the submission in support of the argument that there is sufficient assimilative capacity within the Liffey for the proposed discharge."*

We note the Inspector concluded *"I do not consider that this would have an impact on the qualifying interests of the Poulaphouca or Wicklow Mountains SPA's or of any other Natura 2000 sites."*

The Appellant's highlight that the Inspector Recommended Refusal on the basis of *"uncertainty about the appropriateness of the scale and design of the proposed development with regard to the amenities of Golden Falls"*.

The Board duly considered all data and information on the Appeal file, including the Inspector's recommendation and set out the following Reasons and Considerations for not accepting that recommendation:

*Having regard to the proposed upgrade of the Blessington Waste Water Treatment Plant which is necessary to address current capacity constraints and to improve compliance with discharge requirements and to the relevant policies and objectives of the Wicklow County Development Plan 2016-2022 and the Blessington Town Plan 2013-2019, which seek to improve and expand waste water treatment facilities, it is considered that the proposed development would, subject to compliance with the conditions set out below, not seriously injure the amenity of the area or of property in the area and would not be prejudicial to public health. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.*

*In deciding not to accept the Inspector's recommendation to refuse permission, the Board considered that the proposed development would help to meet the current licensing requirements for discharges and, based on information provided by the applicant and assessed by the local authority's Environment Section regarding the assimilative capacity in the receiving environment, would not be seriously injurious to either public health and amenity or the environment.*

### **3.2 Rowing Ireland application at Burgage Moyle, Blessington (Ref. PL 302615, WCC Ref. 171215)**

The Appellants have also made reference to an application by Irish Amateur Rowing Union (T/A Rowing Ireland) for A High Performance Training Centre.

An Bord Pleanála Granted Permission on 12/06/2019. However, the Board's Decision was quashed by Order of the High Court (Perfected on the 03/05/2022). A new Case Number ABP-314020-22 was initiated and is currently before the Board.

This High Court case had nothing to do with the Board's Grant of Permission for the WWTP nor acts as a precedent for any land use or development in Blessington.

The ruling entirely related to the subject site's located next to the reservoir, a designated a SPA and the potential impact of rowing activity on amber-listed greylag geese.

Ms Justice Miriam O'Regan noted that the Board's Inspector effectively stated the proposal would not result in increased rowing activity and would not see the facility used after dark, which is the main roosting period for the greylag goose.

She said the decision to approve the application was flawed, as documents submitted on behalf of Rowing Ireland suggested there would be an increase in human and boat activity on the site.

Overall, this case cited as precedent by the appellants is entirely irrelevant.

## **4 BLESSINGTON LOCAL AREA PLAN 2013-2019**

The Ballymore Eustace Community Development Association said under points 9 and 16 their submission that the Blessington Local Area Plan (LAP) is out of date. The Appellant's make reference to the LAP in the context of WWTP capacity vis a vis cumulative development in the LAP area.

Wicklow County Council has recently completed the public consultation phase on the Pre-Draft Phase of the new Local Area Plan. We enclose for the Board's convenience the Uisce Éireann submission on the LAP dated 2<sup>nd</sup> April 2022 (see Appendix).

In notes in respect of Wastewater Treatment Capacity:

*Upgrades to the wastewater treatment plant have recently been completed as a result of this significant investment by Uisce Éireann and will increase the capacity of the plant to serve a population equivalent (PE) of up to 9,000. This will enable future growth and safeguard the environment by ensuring compliance with national and EU legislation.*

With regard to the sewer network it notes:

*The promotion of storm water separation and widespread adoption of blue-green infrastructure in the town, would take pressure off the combined sewer network, contribute to climate resilience and in addition generate capacity for compact growth. Uisce Éireann are continually progressing sewer rehabilitation activities including a countywide sewer rehabilitation works package for Wicklow County which was recently completed. In addition, UÉ undertakes capital maintenance activities at pump stations, storm water overflow assessments county wide. We will continue to monitor the performance of the networks to ensure that the most urgent works are prioritised as required.*

Uisce Éireann directly address Land Development Issues and Land Use Zonings:

*Assessment of current capacity to serve the LAP area is based on population targets in the CDP.*

*Uisce Éireann are available to assist in the process of identifying suitable zoned lands from a water services perspective. Sequential development in areas with existing water services infrastructure and spare capacity is encouraged. In assessing the infrastructure requirements to service a large area of land, it is preferable to have an overall development masterplan including phases of development and timelines so that an overall strategic water services plan for the lands can be developed.*

It further notes that (consistent with Cairn Homes approach in Blessington);

*All new residential and commercial/industrial developments wishing to connect to an Uisce Éireann network are to be assessed through Uisce Éireann's Connections and Developer Service process which will determine the exact requirements in relation to network and treatment capacity.*

In the interest of balance we also include the Appellant's (BME CDA) submission on the Pre-draft LAP. It notes inter alia:

*While we acknowledge the need for an up to date Blessington LAP, we urge against complacency regarding Blessington's growth potential. Blessington, due to its current infrastructure and location, is unsuitable for significant growth. The town's proximity to sensitive areas like the Blessington Lakes Special Protection Area (SPA) and its inadequate infrastructure need to be improved.*

The applicant, Cairn Homes has directed its professional project team to ensure that all infrastructure design, as well as comprehensive engineering and environmental assessments have been undertaken to ensure that the development can operate within sustainable environmental capacity of the town including its WWTP.

## **5 MATTERS OF PROCEDURE**

The Ballymore Eustace Community Development Association states that Wicklow County Council 'has just contravened the old plan'.

The proposed LRD Development fully complied with the Blessington LAP 2013-2019 with regard to policies and zoning of Lands at Blessington Demesne. The land use in this area is consistent with long-term strategic vision for the town. Indeed, a masterplan layout for the subject site that was presented in a planning application lodged with Wicklow County Council in 2000 under Ref. 00/3687. Permission was granted by An Bord Pleanála for a housing development (598 houses), retail, educational & leisure facilities and to construct a portion of Blessington Inner Relief Road on the 13th March 2002. This application was linked to the Town Centre Ref. 01/4436 application. It established the road network for the expansion of Blessington. The land use distribution under the 2002 Planning Permission was carried forward to the zoning map adopted with the Blessington Local Area Plan.

To address potential procedural issues concerning the timelines of the outgoing LAP and adoption of a new Draft LAP, Wicklow County Council decided to utilise Material Contravention Procedure (public notice published by Wicklow on the 21<sup>st</sup> February 2024) to ensure that the permission cannot be questioned with regard to LAP lifespans.

Finally, we refer to a recent decision by An Bord Pleanála at Burgage More to the south of the subject site. (Ref. PL27.315792, WCC Ref. 22574). On 1/5/24, The Board Granted Permission for construction of 13 houses, 4 apartments and 4 duplex apartments over ground floor apartments. The status of LAP was not considered an issue by the Inspector or the Board in its decision.

## 6 CONCLUSIONS

The 2 no. Third Party Appeals submitted to An Bord Pleanála are quite clearly not opposed to the LRD application Granted by Wicklow County Council, but concern the Third Party's long-standing grievances with the local authority and Irish Water. The Appellants are inappropriately trying to use this LRD application to re-open An Bord Pleanála Permission of 26/02/2019 for the Upgrade of the Blessington Wastewater Treatment Plant (PL27.302732) to effectively ask ABP to reverse its decision.

The appellants' case is inaccurate regarding the capacity of Blessington WWTP and potential risks that would be associated with a failure in the operation of the plant. It is also evident to the applicants are seeking to retroactively address alleged issues related to the Blessington WWTP in what might be termed "time capsule" planning. Many of the points raised, particularly insofar as they relate to events or decisions that occurred in the 1980s, clearly cannot be addressed by the applicants or any public body in 2024.

The LRD Application has been developed over several years through 3 stages of pre-application engagement with the Planning Authority. The design of water services infrastructure for the scheme has always been progressed to ensure it is appropriate to the town's water infrastructure and WWTP capacity. Pre-application engagement by the applicant with WCC and Irish Water has been carefully designed to ensure any potential risk on WWTP and SPA was fully considered, in the planning application design reports, CEMP, EIAR and NIS.

Fundamentally, the Blessington WWTP has been demonstrated to operate to its appropriate design capacity in accordance with its planning consents and EPA Licence. The Appellants are inviting the Board to indirectly adjudicate on the WWTP, despite the fact it was developed and

operational within appropriate environmental law and safeguards. This operational safeguard of the WWTP is fully protected under condition 22 of Wicklow's permission.

DBFL's submission builds upon the weight of evidence in the planning application package that the WWTP is appropriate and has capacity for the proposed development. This position is supported by expert analysis by Tobin Engineers, Alternar, Enviroguide and Uisce Éireann themselves.

The applicant request that the Board confines its assessment to the issues that have been raised in the appeals and responded to in this submission. Having regard to the extensive LRD procedure undertaken (including public consultation) it would be inappropriate to consider the case *de novo* and would prejudice the applicant's right of response.

We trust the Board will have regard to this submission and we invite you to uphold Wicklow County Council's decision to Grant permission for this important LRD Development in accordance with the proper planning and sustainable development of the area.

Yours sincerely



Richard Hamilton MIPI MRTPI  
Director  
MACCABE DURNEY BARNES

Encl./

**TOBIN**  
CONSULTING ENGINEERS  
BUILT ON KNOWLEDGE

**CAIRN HOMES**

**Blessington**

**Review of WWTP information**





## Document Control Sheet

**Document Reference**

Review of WWTP

**Client:**

Cairn Homes

**Project Reference**

11412

**Galway Office**

Fairgreen House,  
Fairgreen Road,  
Galway,  
H91 AXK8,  
Ireland.  
Tel: +353 (0)91 565 211

**Dublin Office**

Block 10-4,  
Blanchardstown Corporate  
Park, Dublin 15,  
D15 X98N, Ireland.  
Tel: +353 (0)1 803 0406

**Castlebar Office**

Market Square,  
Castlebar,  
Mayo,  
F23 Y427,  
Ireland.  
Tel: +353 (0)94 902 1401

**Limerick Office**

Unit 4, Crescent Court,  
St. Nesson's Road,  
Dooradoyle, Limerick  
V94 V298,  
Ireland  
Tel: +353 (061) 976 262

**Sligo Office**

The Gateway Building  
Floor 3,  
Northwest Business Park  
Collooney, Sligo  
Ireland  
Tel: +353 (071) 9318 844

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## Table of Contents

1.	Introduction .....	1
1.1	Analysis of WWTP application.....	2
2.	Conclusion .....	4



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## 1. INTRODUCTION

TOBIN Consulting Engineers undertook a review of proposed development in relation to the Wastewater treatment Plant (WWTP) discharge. Concerns were raised by a local angling group (Ballymore Eustace Trout and Salmon Anglers Association) in relation to the existing Blessington WWTP application and associated licensing process. The document below sets out the understanding of the capacity of the WWTP network and the extent to which the discharge licence process has complied with the relevant standards.

Cairn Homes propose to connect to Blessington WWTP and develop a c. 25.14 ha on lands within the townlands of Blessington Demesne, Newpaddocks and Santryhill, Blessington, Co. Wicklow. It is proposed to discharge to the upgraded WWTP. The total development comprised 329 residential units. As part of this review the Cairn homes application has also been considered in terms of the potential loading on the system

### Context

The existing WWTP had a capacity of 6,000 population equivalent (P.E). In 2019 An Bord Pleanála permitted an upgrade which increased capacity to 9,000 PE (Ref 302732). This upgrade was constructed in 2022 and completed/operational in 2023. The current loading on the system is 6,919 PE which will increase to c8,000 PE (as per Wicklow County Development Plan 2022-2028) in the event the Cairn Homes application is permitted and completed. There are no Special areas of conservation (SACs) downgradient of the WWTP or pathways which are hydrologically linked to the site.

In 2021 prior to completion of the upgrade, it was established that the WWTP Discharge was considered non-compliant as it was overcapacity (i.e handling >6,000 PE). To address this issue The Blessington WWTP treats the WWTP discharge to Tertiary standards. This is an additional level of treatment that can be conducted within a plant to ensure the discharge output has negligible environmental risk.

Most wastewater treatment systems consist of at least two main treatment processes, primary and secondary. Primary treatment typically removes up to 70% of suspended solids in groundwater, uses physical processes like filtration and settling to remove grit, debris, oil, light solids. Secondary treatment applies additional biological processes like aeration and sludge treatment to break down dissolved solids. Primary and secondary treatment typically get wastewater clean enough to discharge into the environment. Tertiary treatment on the other hand can achieve levels of water purification that make the water safe for re-use in water intensive processes or even as drinking water. Primary and secondary treatment are often sufficient for many purposes, but Plants such as at Blessington that use tertiary treatment to achieve more stringent levels of cleanliness and generally facilitates safe discharges into sensitive ecosystems such as estuaries and lakes. The tertiary treatment at Blessington involves the additional removal of phosphate from the wastewater discharge.

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Based on a review of the WWTP information there are no Storm water overflows from the Blessington network. Storm water overflows are designed to act as discharges when the sewerage system during heavy downpours when a lot of rainwater runs into drains and the sewerage system in a short space of time. The fact there are no such overflows ensures the integrity of the receiving environment is protected. The River Liffey and Golden Falls reservoir at the discharge point are not designated as nutrient sensitive environments.

There were no incidents in the three most recent published Annual environmental reports (AERs) i.e. 2019-2023. The Blessington WWTP upgrade project comprises an upgrade to the plant to accommodate future loads up to 9,000 p.e. and ensure that the Surface water regulations – Environmental Quality Standards (EQS) can be met.

The downgradient surface water monitoring on the River Liffey were compliance for biological oxygen demand (BOD), Ammonium and Orthophosphate which are the key water quality parameters. The AER for 2023 shows compliance with the discharge standards.

Uisce Eireann (Irish Water) have reviewed the Cairn proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined, Irish Water has no objection to these proposals.

## **1.1 ANALYSIS OF WWTP APPLICATION**

The main query by the Anglers association relates to the EPA licencing. TOBIN undertook a review of the information included in the relevant application and the WWTP upgrade. As part of the EPA licencing process, there was a gap in the information provided by UE relating to low water flows. a request for the review of the low flow data was made by the EPA in September 2023. A response was submitted by Uisce Eireann which provided a review of the available flow data including the upgradient flow. Flows through the Poulaphouca Reservoir and Golden Falls Reservoir system are managed by the ESB as part of the water abstraction from Poulaphouca.

The response by UE identified that zero flow is passed between the reservoirs for up to 20% of the time while flows from Golden Falls Reservoir are maintained at a minimum of 1.5m<sup>3</sup>/s. While not detailed in the application, groundwater as well as surface water streams into Golden falls would provide additional flow/assimilative capacity of the WWTP discharge. This infers the data provided by UE was conservation and therefore robust.

With reference to the Environmental Protection Agency's request for information as part of the WWTP application, the hydrological analysis shows that there is not a consistent flow of 1.5m<sup>3</sup>/s at the WWTP discharge point. Further surface water modelling of the discharge was undertaken in 2023 based on the EPAs Tiered Approach. Due to the discharge quality and flow data a Tier 3 model was required, (this is the highest level of modelling that can be undertaken)

The Tier 3 assessment was undertaken using a CORMIX model to assess the WWTP effects on the Golden Falls Lake. CORMIX is a model for environmental assessment of mixing zones resulting from point source discharges. CORMIX modelling has been used to analyse

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mixing zone extents during times of inflow from Poulaphouca Reservoir, and a mass balance approach has been used to analyse impacts on 95%ile water quality during times of zero inflow.

The results of the mass balance calculations show that the transient increases in concentrations under zero flow periods are not sustained long enough to allow reservoir concentrations of BOD, ammonia or orthophosphate to approach the relevant EQS for lakes or rivers except under extreme conditions which have a frequency in the order of 1 in 14 years. Based on the documents submitted a continuous flow at the discharge point is not required to allow the receiving water quality to meet EQS limits under the current reservoir operating regime. The Cormix Model does not account for additional inflows from groundwater to the Golden Falls Lake or the streams that directly discharge to Golden falls lake, thus ensuring it is a robust analytical method.

The review of the data indicates that the previous WWTP licence was at or above capacity. However, the downgradient surface water monitoring, results are below the relevant standards even where the WWTP capacity was exceeded in 2021. The subsequent upgrades to the plant and inclusion of tertiary treatment standards does infer that the relevant standards will be met. The additional information submitted with the discharge licence application currently under consideration by the EPA on low flow data do provide further reassurance that the WWTP will function appropriately and in accordance with all relevant environmental regulation.



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## 2. CONCLUSION

Based on a review of the Irish Water / Uisce Eireann information, the application to the EPA is robust however the valid issues raised by the Anglers previously were addressed in the RFI information. The assessment is unusual as the upgradient flow is controlled by ESB. The upgraded WWTP licence will improve the WWTP treatment efficient while providing for the projected increase discharge. Wastewater at the Blessington is treated to a high standard (tertiary with phosphate removal). The application includes detailed information about the development, processes, and the proposed discharge. The proposed discharge meets the standards for pollutants outlined in the surface water regulations.

Based on all the available data, the proposed development by Cairn will not result in an exceedance of the updated WWTP capacity.







TOBIN Consulting Engineers

[www.tobin.ie](http://www.tobin.ie)



@tobinengineers

**Galway**

Fairgreen House,  
Fairgreen Road,  
Galway,  
H91 AXK8,  
Ireland.  
Tel: +353 (0)91 565 211

**Dublin**

Block 10-4,  
Blanchardstown Corporate Park,  
Dublin 15,  
D15 X98N,  
Ireland.  
Tel: +353 (0)1 803 0406

**Castlebar**

Market Square,  
Castlebar,  
Mayo,  
F23 Y427,  
Ireland.  
Tel: +353 (0)94 902 1401

**Limerick**

Unit 4, Crescent Court,  
St Nessan's Road, Dooradoyle,  
Limerick  
V94 V298  
Ireland  
Tel: +353 (0)61 976 262

**Sligo**

The Gateway Building, Floor 3  
Northwest Business Park  
Collooney, Sligo  
F91W40H  
Ireland  
Tel: +353 (0)71 9318 844





# Blessington Local Area Plan Submission - Report

<b>Who are you:</b>	State Body
<b>Name:</b>	Uisce Éireann
<b>Email Address:</b>	nmcdonald@water.ie
<b>Reference:</b>	BLESSLAP-102039
<b>Submission Made</b>	April 2, 2024 10:22 AM

## Topic

Compact Growth - Housing - Population Growth

## Submission

Please find attached observations on behalf of Uisce Éireann.

Regards,

## File

24\_UE\_FP\_17\_Blessington\_IP.pdf, 0.27MB

Planning Department,  
Wicklow County Council  
County Buildings  
Station Road,  
Wicklow Town,  
A67 FW96

Via Consultation Portal

2<sup>nd</sup> April 2024

A Chara,

**Uisce Éireann**  
Teach Colvill  
24-26 Sráid Thalbóid  
Baile Átha Cliath 1  
D01 NP86  
Éire

**Uisce Éireann**  
Colvill House  
24-26 Talbot Street  
Dublin 1  
D01 NP86  
Ireland

**T: +353 1 89 25000**  
**F: +353 1 89 25001**  
**[www.water.ie](http://www.water.ie)**

[24\_UE\_FP-17\_Blessington\_IP]

## **Re: Pre-Draft Public Consultation for Blessington Local Area Plan**

Uisce Éireann (UÉ), welcomes the opportunity to submit observations at this Pre-Draft Stage of the Local Area Plan. We have provided some high-level comments below and we will continue to engage with the planning department as the LAP process progresses. We will also provide updates on Uisce Éireann plans and projects as further updates become available.

Our submission is set out as follows:

- National and Regional Policy
- Key Uisce Éireann Policies and Plans
- Water Services Infrastructure Availability
- Land Development Issues (Zoning, Serviceability, New Developments, LA Projects)

### **National and Regional Policy**

#### **EMRA Regional Spatial and Economic Strategy**

UÉ acknowledges the planning policy and direction provided in the National Planning Framework and the East & Midlands Regional Spatial and Economic Strategy (RSES) and we are committed to supporting the policies therein, subject to budgetary and environmental constraints. In this regard, we would draw your attention to Section 10.2 of the RSES which provides general policy direction in relation to the sustainable management of water supply and wastewater needs.

### **UÉ Key Policies and Plans**

#### **National Water Resources Plan (NWRP)**

A Regional Water Resources Plan (RWRP) has been prepared and adopted for the East & Midlands Region. The plan allows us to consider local options that could resolve needs within individual supplies and regional options that could address needs across multiple supplies.

The outcomes and benefits of this Regional Preferred Approach, if all projects identified within it are delivered, include:

- Improved performance across all of the water supplies in terms of Quality and Quantity
- Strategic transformation from the existing fragmented supply to a more resilient and sustainable interconnected supply; and
- Ability to support growth and economic development across the Eastern and Midlands Region

Further details can be found on UÉ's website here: <https://www.water.ie/projects/strategic-plans/national-water-resources/rwrp/eastern-midlands/>

## **Drinking Water Source Protection**

UÉ has adopted the World Health Organisation (WHO) Water Safety Plan approach. Drinking Water Safety Plans (DWSPs) seek to protect human health by identifying, scoring and managing risks to water quality and quantity; taking a holistic approach from source to tap. The 'source' component of DWSPs is a key component and a priority within UÉ, as protecting and restoring the quality of raw water is an effective and sustainable means of reducing the cost of water treatment in line with Article 7(3) of the WFD.

## **Climate Change**

UÉ is focused on addressing the impacts of climate change by adapting our assets to be resilient to climate change and mitigating our climate impact by reducing our carbon footprint. The impacts of climate change are taken into account in Uisce Éireann plans and projects for example, the National Water Resources Plan.

UÉ is preparing a strategy which will respond to global and national climate change legislative and policy frameworks for climate change action and fulfils the requirements of the Water Services Strategic Plan 2015, The Water Services Policy Statement 2018 – 2025 and most recently the Climate Change Sectoral Adaptation Plan for Water Quality and Water Services Infrastructure 2019. UÉ is happy to work with the local authority to ensure the overarching goals of mitigating, and adapting to, climate change in relation to water and wastewater are achieved.

UÉ is committed to working with public bodies and other stakeholders towards a common goal of the protection of drinking water sources. Good examples of where Uisce Éireann is working in partnership with other stakeholders to protect drinking water quality are the National Pesticides and Drinking Water Action Group (NPDWAG), as well as catchment specific NPDWAG Catchment Focus Groups. UÉ is currently involved in pilot drinking water source protection projects, which aim to trial catchment scale interventions to reduce the risk of pollution in water supplies.

## **River Basin Management Plans (RBMP)**

UÉ supports the River Basin Management Plan (RBMP) Implementation Strategy through participation within the RBMP implementation structures and participation in Water Framework Directive initial and further characterisation activities. UÉ is a member of Water Policy Advisory Committee, National Technical Implementation Group, and Regional Operational Committees. UÉ works collaboratively with the EPA Catchment Science and Management Unit (CSMU) to facilitate the identification of significant pressures and the setting of environmental objectives. In addition, Uisce Éireann supports the Local Authority Waters Programme (LAWPRO) desktop studies and local catchment assessment work through ongoing data sharing.

The objectives and priorities of the RBMP 2018 – 2021 have been incorporated into UÉ investment plans and work programmes as appropriate, and the objectives and priorities of the third cycle RBMP (2022-2027) will be a key driver for the next investment plan.

## **Sustainable Drainage, Green-Blue Infrastructure and the Circular Economy**

UÉ encourages the inclusion of policies and objectives on the use of Sustainable Urban Drainage Systems and Green-Blue Infrastructure in new developments including the public realm and retrofitted in existing developed areas, in line with NPO 57 of the National Planning Framework. These measures can provide a cost effective and sustainable means of managing stormwater and water pollution at source, keeping surface water out of combined sewers (thus increasing capacity for foul drainage from new developments), while providing multiple benefits for example, improved air quality, amenity and noise reduction.

UÉ would be happy to discuss potential opportunities to collaborate on projects that would remove stormwater from combined sewers. In order to maximise the capacity of existing collection systems for foul water, the discharge of additional surface water to combined (foul and surface water) sewers is not permitted. The removal of stormwater from combined sewers as part of roads, public realm, residential or other developments is strongly encouraged; this is particularly relevant to the achievement of compact growth objectives.

In addition, and to support sustainable use of the available hydraulic capacity in Combined Sewers, UÉ welcomes the inclusion in the County Development Plan of policies to promote SUDs and in particular promotion of Nature based SUDs (NbSUDs), however, we would recommend the introduction of further objectives in the LAP to promote the introduction of NbSUDs in areas contributing to combined drainage systems where streetscape enhancement programmes or resurfacing programmes are planned.

Uisce Éireann are eager to collaborate with others in leveraging circularity opportunities to support the development of a sustainable bioeconomy model and reduce greenhouse gas emissions. In developing this Plan and associated zonings, consideration should be given to circular economy opportunities. These may include as advanced treatment and re-use of WWTP effluent to meet the needs of adjacent industry, production of biogas through anaerobic digestion and re-use of water sludge.

## **Water Services Infrastructure Availability**

### **Water Supply**

Uisce Éireann publishes Water Supply Capacity Registers annually for each county. The latest capacity register for the county was published in June 2023 and is available at the following link:

[Water Supply Capacity Register](#)

Blessington is primarily served from Ballymore Eustace. Based on the Target Population set out in the County Development Plan there is capacity available over the Plan period. However, Blessington does form part of the overall Greater Dublin Area supply, which is constrained at times.

The remaining capacity available changes regularly and our registers are only an indication of available capacity. In all instances if someone is considering progressing a development, they should contact our Developer Services team who will provide a greater level of detail in relation to the availability of water. Further details are provided below in the 'Land Development Issues' section.

### **Water Network**

Uisce Éireann are continually progressing leakage reduction activities, mains rehabilitation activities and lead replacement activities. These are prioritised based on leakage rates, water



quality issues and ongoing disruption to Customer's supplies. We will continue to monitor the performance of the network to ensure that the most urgent works are prioritised as required.

### **Wastewater Treatment Capacity**

Upgrades to the wastewater treatment plant have recently been completed as a result of this significant investment by Uisce Éireann and will increase the capacity of the plant to serve a population equivalent (PE) of up to 9,000. This will enable future growth and safeguard the environment by ensuring compliance with national and EU legislation.

UÉ are currently updating the capacity registers and will be issued in the next few months. The current register can be found at the link below.

[Wastewater treatment capacity register](#)

### **Sewer Network**

The promotion of storm water separation and widespread adoption of blue-green infrastructure in the town, would take pressure off the combined sewer network, contribute to climate resilience and in addition generate capacity for compact growth.

Uisce Éireann are continually progressing sewer rehabilitation activities including a countywide sewer rehabilitation works package for Wicklow County which was recently completed. In addition, UÉ undertakes capital maintenance activities at pump stations, storm water overflow assessments county wide. We will continue to monitor the performance of the networks to ensure that the most urgent works are prioritised as required.

### **Land Development Issues**

#### **Land Use Zonings**

As stated above, assessment of current capacity to serve the LAP area is based on population targets in the CDP.

Uisce Éireann are available to assist in the process of identifying suitable zoned lands from a water services perspective. Sequential development in areas with existing water services infrastructure and spare capacity is encouraged. In assessing the infrastructure requirements to service a large area of land, it is preferable to have an overall development masterplan including phases of development and timelines so that an overall strategic water services plan for the lands can be developed.

Available network information indicates network extensions may be required to service newly zoned sites. Depending on the extent of development realised, localised network upgrades may also be required, particularly in areas served by 150mm diameter sewers or watermain with a diameter of 80mm or less. Arklow is well served with a water supply network with the majority of the network made up of supply pipes 100mm or greater. However, some sections of pipework with a smaller diameter may require upgrades in order to support growth.

From a review of UÉ GIS data it appears that the main roads within Arklow are served by UÉ foul or combined sewers but many of the housing estates are served by estate sewerage systems. Third-party agreement may be required where it is proposed to service a new development via private property or private water services infrastructure. Where development sites are not serviced by existing infrastructure, the feasibility of extending the public network to the unserved sites would be assessed via our Pre-Connections Enquiry process. Where network reinforcements such as upgrades or extensions are required, these shall be developer driven unless there are committed Uisce Éireann projects in place to progress such works.

In settlements where the Wastewater Treatment Plant (WWTP) is close to lands with potential for the development of sensitive receptors e.g., dwellings, any future development of the lands should take account of the established use of the existing WWTP and the potential for extensions/intensification of use of the WWTP in the future.

Regarding zoning and development in lands with no public water services infrastructure, as outlined in Draft Water Services Guidelines for Planning Authorities (January 2018), Section 5.3:

*"It is the policy of Irish Water to facilitate connections to existing infrastructure, where capacity exists, in order to maximise the use of existing infrastructure and reduce additional investment costs. There is a general presumption that development will be focused into areas that are serviced by public water supply and wastewater collection networks. Alternative solutions such as private wells or wastewater treatment plants should not generally be considered by planning authorities. Irish Water will not retrospectively take over responsibility for developer provided treatment facilities or associated networks, unless agreed in advance".*

### **Serviceability of Settlements**

Uisce Éireann engaged with the Department of Housing, Local Government and Heritage (DHLGH) providing a desktop-based assessment of the GIS mapping information relating to the proximity of zoned lands to our water and wastewater networks. The mapping was developed during 2022 to act as a decision support tool for local authorities making their determinations for the Residential Zoned Land Tax. Uisce Éireann would urge the planning authority to refer to this mapping, in tandem with the notes issued by the DHLGH to assist in identifying suitable zoned lands.

The accuracy of the GIS network has not been verified in some instances. The assessment considered all zoned lands greater than 500m from an Uisce Éireann network to be of Red status on the RAG mapping.

### **Notes for New Developments**

All new residential and commercial/industrial developments wishing to connect to an Uisce Éireann network are to be assessed through Uisce Éireann's Connections and Developer Service process which will determine the exact requirements in relation to network and treatment capacity. Connections to Uisce Éireann networks are subject to our Connections Charging Policy. Further information on this process is available at: <https://www.water.ie/connections/developer-services/>

**Spatial Extent of Networks** - The spatial extent of Uisce Éireann's networks is accessible through Uisce Éireann's ArcGIS Online web viewer at: <https://irishwater.maps.arcgis.com/home/index.html>, which provides information on the position of its underground network as a general guide only, on the strict understanding that it is based on the best available information.

Where Uisce Éireann assets are within a proposed development site, these assets must be protected or diverted. If there is a possibility that Uisce Éireann assets will need to be altered or diverted because of a proposed development, a diversion agreement may be required. Further information on this process is available at: <https://www.water.ie/connections/developer-services/diversions/>

Development in the vicinity of Uisce Éireann assets must be in accordance with Uisce Éireann's standard details and codes of practice.

## Planned Road and Public Realm Projects

Planned public realm and road projects have the potential to impact on Uisce Éireann assets and projects e.g., tree planting, building over of assets, new connections, requirement to programme upgrade works in advance of road projects. Early engagement in relation to planned road and public realm projects is requested to ensure public water services are protected, enable Uisce Éireann to plan works accordingly and ultimately minimise disruption to the public.

If you require any further information or assistance in respect of this submission or in respect of the availability of capacity in our infrastructure to support the plan making process, please do not hesitate to contact us.

Yours faithfully,

*Niamh McDonald*

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**Niamh McDonald**

Asset Strategy

Forward Planning - East and Midlands Region



# Blessington Local Area Plan Submission - Report

Who are you:	Group
Name:	Ballymore Eustace Community Development Association
Email Address:	
Reference:	BLESSLAP-150525
Submission Made	April 3, 2024 3:07 PM

**File**

Blessington LAP - Ballymore Eustace CDA Submission.pdf, 0.1MB





### **Ballymore Eustace Community Development Association CLG**

Ballymore Eustace Community Development Association (BME CDA) is submitting concerns regarding the Blessington Local Area Plan (LAP). While we acknowledge the need for an up to date Blessington LAP, we urge against complacency regarding Blessington's growth potential. Blessington, due to its current infrastructure and location, is unsuitable for significant growth. The town's proximity to sensitive areas like the Blessington Lakes Special Protection Area (SPA) and its inadequate infrastructure need to be improved.

There is a disconnect between various authorities, including Kildare County Council (KCC), Wicklow County Council (WCC), Uisce Éireann (UÉ), ESB, and the Environmental Protection Agency (EPA), in managing Blessington's development. For instance:

- KCC's Blessington Environs Plan includes new residential zoning close to the overburdened Blessington WasteWater Treatment Plant (WWTP), posing environmental risks.
- WCC's facilitation of WWTP capacity expansion without EPA consent highlights regulatory shortcomings.
- Existing development plans conflict with WCC's own guidelines.
- UÉ's disregard for EPA limits and WWTP expansion exacerbates environmental concerns.

Regarding housing, BME CDA stresses the WWTP's regulatory overcapacity and inability to support further development legally and sustainably. Economic development plans should consider environmental impacts and prioritise infrastructure maintenance.

The LAP must address concerns about infrastructure, heritage preservation, and environmental assessments comprehensively. BME CDA emphasizes the importance of independent assessments and accountability.

In terms of wastewater discharge authorisation, BME CDA raises questions about infrastructure capacity, stormwater management, and pollution risks to Poulaphouca Reservoir. BME CDA highlights the need for misconnection assessments and condition surveys on ageing infrastructure.

Considering UÉ's projection of reduced Liffey water availability by 2050, BME CDA questions the sustainability of increased discharges into the Liffey catchment.. The association calls for a holistic approach to development, considering environmental impacts and the protection of Poulaphouca Reservoir.

BME CDA urges authorities to reconsider Blessington's growth given its environmental constraints and potential risks to water resources. BME CDA emphasizes the need for balanced development that prioritises environmental sustainability and community well-being.

Directors: S. Deegan, M. Evans, E. Firth, K. O'Sullivan, M. McDonald

A Company Limited by Guarantee Registration in Dublin No. 250791

Registered Charity No. 12075



DBFL CONSULTING ENGINEERS

**Registered Office**

Ormond House  
Upper Ormond Quay  
Dublin 7 Ireland  
D07 W704

+ 353 1 400 4000  
info@dbfl.ie  
www.dbfl.ie

**Cork Office**

14 South Mall  
Cork Ireland  
T12 CT91

+ 353 21 202 4538  
info@dbfl.ie  
www.dbfl.ie

**Galway Office**

Odeon House  
7 Eyre Square  
Galway Ireland  
H91 YNC8

+353 91 335599  
info@dbfl.ie  
www.dbfl.ie

**Waterford Office**

Suite 8b The Atrium  
Maritana Gate Canada Street  
Waterford Ireland  
X91 W028

+ 353 51 309 500  
info@dbfl.ie  
www.dbfl.ie

31 May 2024

The Secretary  
An Bord Pleanála  
64 Marlborough Street  
Dublin 1  
D01 V902

DBFL Ref: 220145

**RE: 220145 Lands at Blessington Demesne, Newpaddocks & Santry Hill, Blessington, Co. Wicklow –  
Response to 3<sup>rd</sup> Party Appeals by Ballymore Eustace Community Development Association &  
Ballymore Eustace Trout & Salmon Anglers Association (WCC Ref 23/689)**

**Client: Cairn Homes Properties Limited**

To Whom It May Concern,

This letter has been prepared in response to the 3<sup>rd</sup> Party Planning Appeals from both the Ballymore Eustace Community Development Association & Ballymore Eustace Trout & Salmon Anglers Association with respect to the subjects lands at Blessington Demesne which was granted planning permission by Wicklow County Council on 16<sup>th</sup> April 2024 under Planning Ref WCC 23/689. Following on from these appeals our client (Cairn Homes Properties Limited) has requested that DBFL provide a technical note in response to the relevant civil engineering items raised the appeals which is outlined below.

Please note this technical note should be read in conjunction with the Uisce Eireann Blessington WWTP - Water Quality Impact Assessment, which was issued to the EPA in September 2023, and also the review of same by Tobins Environmental Consulting Engineers and McCabe Durney Barnes Planning Consultants. Please also refer to separate submissions by Altamar and Enviroguide.

**Tech Note:**

This tech note has been prepared by Brendan Manning (BEng )(Hons) CEng MIEI. Brendan is a chartered Civil Engineer with 15 years' experience in roads, drainage, SUDS and flood risk assessment. Brendan is an Associate Director in DBFL.

**Ballymore Eustace Community Development Association Appeal:**

In relation to this appeal we have reviewed all items relevant to civil engineering. Please see our responses below to relevant civil engineering items;



DBFL CONSULTING ENGINEERS

**Registered Office**

Ormond House  
Upper Ormond Quay  
Dublin 7 Ireland  
D07 W704

+ 353 1 400 4000  
info@dbfl.ie  
www.dbfl.ie

**Cork Office**

14 South Mall  
Cork Ireland  
T12 CT91

+ 353 21 202 4538  
info@dbfl.ie  
www.dbfl.ie

**Galway Office**

Odeon House  
7 Eyre Square  
Galway Ireland  
H91 YNC8

+ 353 91 335599  
info@dbfl.ie  
www.dbfl.ie

**Waterford Office**

Suite 8b The Atrium  
Marlana Gale Canada Street  
Waterford Ireland  
X91 W028

+ 353 51 309 500  
info@dbfl.ie  
www.dbfl.ie

**'Blessington WWTP: The expansion to the Blessington WWTP, that is proposed to cater for this development is unauthorised. The authorised capacity at time of the application is 6,000PE and the WWTP is already catering for 17% higher than it's EPA authorised capacity'**

DBFL Response: We note that the capacity of the Blessington WWTP was upgraded from 6,000 PE to 9,000 PE. This upgrade was granted planning by ABP and that these works were completed in January 2023. We also note that a Confirmation of Feasibility Letter (COF) was received from Uisce Eireann in December 2023 for the subject lands which confirmed that both water and wastewater connections to the Uisce Eireann Network are feasible. The COF letter has also been provided with this submission.

In terms of the discharge licence this is under review by the EPA. Please refer to Uisce Eireann's Blessington WWTP - Water Quality Impact Assessment provided with this submission for further information which was submitted to the EPA in September 2023.

**'The 250mm diameter discharge pipe from Blessington WWTP to Golden Falls must have capacity Constraints'**

DBFL Response: We note that the 250mm outfall pipe is a rising main that is pumped from the WWTP to Golden Falls. We note the upgrades to the WWTP were granted planning by ABP. In terms of capacity, we would note that when originally designed back in 1985 that the daily flow allowance was 225 litres per person giving a total flow of 1350 cubic m / day (Reference – EPA Wastewater Treatment Manual – Treatment Systems for Small Communities. Business, Leisure Centres and Hotels – Section 2.2). Taking into account the current Uisce Eireann flow per person per day of 150 litres at a capacity of 9,000 people, this also gives a total flow of 1350 cubic metres (Reference – Uisce Eireann Code of Practice for Wastewater Infrastructure July 2020 Rev 2 Section 3.6). Consequently, there would not be an increase on the capacity of the existing 250mm rising main as stated. Please also refer to the Uisce Eireann Blessington WWTP - Water Quality Impact Assessment and the review of same by Tobins Consulting Engineers which are both provided with this submission.

We note that the Blessington WWTP has stormwater storage tanks which can store surface water during storm events before the controlled release to the rising main. We also note that a Confirmation of Feasibility Letter (COF) was received from Uisce Eireann in December 2023 for the subject lands which confirmed that both water and wastewater connections to the Uisce Eireann Network are feasible. The COF letter has also been provided with this submission.

**'The discharge capacity from Blessington to Ballymore Eustace was built in the 1980's to cater for a max capacity of 6000PE'**

DBFL Response: We note that the capacity of the Blessington WWTP was upgraded from 6,000 PE to 9,000 PE. This upgrade was granted planning by ABP and that these works were completed in January 2023. As noted above the equivalent flows for 6,000PE when originally designed in the 1980's versus the flows as per current day designs for 9,000 PE are the same. Please also refer to the Uisce Eireann Blessington



DBFL CONSULTING ENGINEERS

**Registered Office**

Ormond House  
Upper Ormond Quay  
Dublin 7 Ireland  
D07 W704

+ 353 1 400 4000  
info@dbfl.ie  
www.dbfl.ie

**Cork Office**

14 South Mall  
Cork Ireland  
T12 CT91

+ 353 21 202 4538  
info@dbfl.ie  
www.dbfl.ie

**Galway Office**

Odeon House  
7 Eyre Square  
Galway Ireland  
H91 YNC8

+ 353 91 335599  
info@dbfl.ie  
www.dbfl.ie

**Waterford Office**

Suite 8b The Atrium  
Marlana Gate Canada Street  
Waterford Ireland  
X91 W028

+ 353 51 309 500  
info@dbfl.ie  
www.dbfl.ie

WWTP - Water Quality Impact Assessment report provided with this submission. It should be noted that this granted permission by ABP for the upgrade from 6,000 to 9,000PE would have included discharge rates based on Uisce Eireann current rates of discharge, outfall location etc.

We also note that a COF letter was received from Uisce Eireann in December 2023 for the subject lands which confirmed that both water and wastewater connections to the Uisce Eireann Network from the subject lands are feasible. We note that the Organic Capacity (PE) Collected Load (peak week) of the Blessington WWTP is recorded as 6919PE in the Uisce Eireann Annual Environmental Report 2023. Please refer to submission by the project Ecologist, Altermar, for further information. The proposed scheme of 329Nr Units equates to a PE of 888 which indicates ample capacity is available for the subject development. The COF letter has also been provided with this submission. We would note that all drainage / SUDS and watermain infrastructure in the approved Blessington Phase 2 LRD application have been designed in accordance with current best practice guidelines.

**'There are no Stormwater Overflows in Blessington because the risk to the reservoir is too high, therefore, stormwater is captured and put into the treatment works over time thus the throughput of the discharge pipe is significantly higher than stated, even before 23/689 is even built'**

**DBFL Response:** In terms of storm water from Blessington Phase 2 LRD Under 23/689 we can confirm that the subject site has been designed in accordance with the GDSDS, the CIRIA SUDS manual and in accordance with the governments 'Nature-based solutions to the Management of Rainwater and Surface Water Runoff in Urban areas' guidance document. All storm water run-off from the subject site passes through a series of SUDS / Nature-based SUDS (NBS) providing both treatment and storage for storm water with infiltration to the underlying sub soils promoted. We note attenuation for the 100 year storm event (1.0% AEP) is also provided with a 20% allowance for climate change. On top of this all surface water outflow from the subject lands passes through petrol interceptors prior providing further treatment. The main item to then note is that all surface water discharge is also limited to mimic existing greenfield run-off rates and this is achieved via a flow control device. Therefore, the surface water discharge from the subject lands would not be any greater than it is at present as a greenfield site and the discharge is treated at source via the series of SUDS/NBS features throughout the subject site and finally via a petrol interceptor.

We note, while DBFL have not been involved in all schemes, that this would be the case for any recent schemes in the locality in receipt of planning.

In relation to the capacity of the existing 250mm discharge pipe, as above, we note that this pipe is a rising main. The treated foul water from the WWTP is pumped from the Blessington WWTP to Golden Falls. We also note that storage tanks are provided in the treatment plant to provide storage for surface water during the more extreme storm events. This is then treated via primary, secondary and tertiary treatment in the upgraded WWTP before being pumped to Golden Falls via the raising main. Please refer





DBFL CONSULTING ENGINEERS

**Registered Office**

Ormond House  
Upper Ormond Quay  
Dublin 7 Ireland  
D07 W704

+ 353 1 400 4000  
info@dbfl.ie  
www.dbfl.ie

**Cork Office**

14 South Mall  
Cork Ireland  
T12 CT91

+ 353 21 202 4538  
info@dbfl.ie  
www.dbfl.ie

**Galway Office**

Odeon House  
7 Eyre Square  
Galway Ireland  
H91 YNC8

+ 353 91 335599  
info@dbfl.ie  
www.dbfl.ie

**Waterford Office**

Suite 8b The Atrium  
Marlana Gate Canada Street  
Waterford Ireland  
X91 W028

+ 353 51 309 500  
info@dbfl.ie  
www.dbfl.ie

to Uisce Eireann's Blessington WWTP - Water Quality Impact Assessment provided with this submission for further information in relation to the treatment stages and quality of treated foul water being pumped from the WWTP to Golden Falls.

**'In making the decision WCC has not considered the Capacity of Existing wastewater and surface water network in Blessington. The risk of foul water entering the surface water system and making its way to the Blessington Lakes / reservoir is very high'**

DBFL Response: In terms of wastewater capacity we can confirm that a COF letter from Uisce Eireann was received confirming that a wastewater connection is feasible from the subject lands. The upgrade to the Blessington WWTP was completed in January 2023 with the capacity upgraded from 6,000 to 9,000PE. Therefore, there is ample capacity to cater for the subject development. In terms of the existing surface water network, while the overall surface water network throughout Blessington would be a matter for WCC, we can confirm that all surface water exiting the subject lands will be limited to greenfield run-off rates via a flow control device which would be best practice. Attenuation is also provided for the 100 year storm event (1.0% AEP) with a 20% allowance for climate change within the subject lands in accordance with the GDSDS. On top of this a series of SUDS / NBS features providing both treatment and storage at source is provided throughout the scheme. The SUDS / NBS features such as infiltration basins, rain gardens, bio-retention areas, tree pits, permeable paving etc also promote infiltration into the underlying ground as opposed to discharging to the main drainage system.

In terms of foul effluent entering the surface water system we would note that this is only possible where a surface water sewer discharges to a combined sewer which flows directly to the WWTP. In this case any of this discharge would flow through the combined sewer and ultimately discharge to the Blessington WWTP where it goes through 3 stages of treatment (primary, secondary and tertiary) before the treated foul water is pumped from the WWTP to Golden Falls (Please refer to Uisce Eireann's Blessington WWTP - Water Quality Impact Assessment provided with this submission for further information in relation to the treatment stages and quality of treated foul water being pumped from the WWTP to Golden Falls). We note that any surface water sewer network that discharges to a drainage ditch, stream, watercourse etc would not be at risk of foul water entering its system as these surface water networks are totally independent to the foul and combined sewers.

### Discharge Licence with EPA

DBFL Response: We note that upgrades to the Blessington WWTP were granted planning permission by ABP and works to same were completed in January 2023. In terms of the discharge licence this is under review by the EPA. Please refer to Uisce Eireann's Blessington WWTP - Water Quality Impact Assessment provided with this submission for further information which was submitted to the EPA in September 2023.



DBFL CONSULTING ENGINEERS

**Registered Office**

Ormond House  
Upper Ormond Quay  
Dublin 7 Ireland  
D07 W7D4

+ 353 1 400 4000  
info@dbfl.ie  
www.dbfl.ie

**Cork Office**

14 South Mall  
Cork Ireland  
T12 CT91

+ 353 21 202 4538  
info@dbfl.ie  
www.dbfl.ie

**Galway Office**

Odeon House  
7 Eyre Square  
Galway Ireland  
H91 YNC8

+353 91 335599  
info@dbfl.ie  
www.dbfl.ie

**Waterford Office**

Suite 8b The Atrium  
Marlana Gate Canada Street  
Waterford Ireland  
X91 W028

+ 353 51 309 500  
info@dbfl.ie  
www.dbfl.ie

For items in relation to current Algal Bloom issues raised we refer you to the Uisce Eireann Blessington WWTP - Water Quality Impact Assessment report submitted with this application. Please also refer to submission by the Blessington LRD Phase 2 project Ecologist, Altermar, in relation to same.

For items in relation to the Blessington LAP please refer to submission by McCabe Durney Barnes Planning Consultants.

**Ballymore Eustace Trout & Salmon Anglers Association Appeal:**

In relation to this appeal DBFL note that a COF letter has been received from Uisce Eireann for the subject lands with both water and wastewater connections confirmed to be feasible. Please refer to the COF letter received from Uisce Eireann in December 2023.

In terms of flows into Golden Falls, water quality, ELV's etc we refer you to the Uisce Eireann Blessington WWTP - Water Quality Impact Assessment and the review of same by Tobins Consulting Engineers which are both provided with this submission. The Uisce Eireann report was submitted to the EPA in September 2023. We would again reiterate that this granted permission by ABP for the upgrade from 6,000 to 9,000PE would have included discharge rates, water quality, outfall location etc. Please also refer to submission by the project Ecologist, Altermar, and also the submission by Enviroguide in relation to same.

We trust this provides the necessary clarification, but should you have any additional queries please contact the undersigned.

Yours sincerely

Brendan Manning  
Associate Director  
DBFL CONSULTING ENGINEERS  
([brendan.manning@dbfl.ie](mailto:brendan.manning@dbfl.ie))

## Eve O'Sullivan

---

**Subject:** Blessington RFI - modelling report  
**Attachments:** Reg18(3)(b) Response\_modelreport.pdf

**From:** Peter Keegan <pkeegan@water.ie>  
**Sent:** Thursday 7 September 2023 10:48  
**To:** Licensing Staff <licensing@epa.ie>  
**Cc:** Eve O'Sullivan <E.O'Sullivan@epa.ie>  
**Subject:** RE: Blessington RFI - modelling report

Good Morning,

Please see attached Water Quality Impact Assessment report as response to Regulation 18(3)(b) request for information. I am sending via email as unable to upload against the Notice on Eden.

If you have any queries, please do not hesitate to contact me

Kind regards  
Peter

Environmental Licensing Programme  
Office of Environmental Sustainability  
Environmental Protection Agency  
PO Box 3000  
Johnstown Castle Estate  
Wexford

07/09/2023

UÉ ref: LT0680

Dear Inspector,

**Uisce Éireann**  
Teach Colvill  
24-26 Sráid Thalbóid  
Baile Átha Cliath 1  
D01 NP86  
Éire

**Uisce Éireann**  
Colvill House  
24-26 Talbot Street  
Dublin 1  
D01 NP86  
Ireland

**T: +353 1 89 25000**  
**F: +353 1 89 25001**  
**[www.water.ie](http://www.water.ie)**

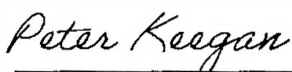
**Re: Blessington Reg. No. D0063-02 – Reg. 18(3)(b) Notice Response**

In response to the Regulation 18(3)(b) request for information, please see below relevant information.

**The primary discharge location for the Blessington agglomeration is situated between the Poulaphouca Dam, which impounds Blessington Lake, and the Golden Falls Dam, which balances discharges from the Golden Falls lake. Provide flow data for the receiving waterbody in the vicinity of the primary discharge point showing a constant minimum flow of 1.5m<sup>3</sup>/s at all times.**

Please see attached a Water Quality Impact Assessment completed for the Blessington WwTP to support the licence review application reg. no. D0063-02. As part of this assessment, a detailed review of the available flow data shows that zero flow is passed between the reservoirs for up to 20% of the time (refer to Section 3 & 4 of the attached report). Modelling was therefore carried out under both mean and zero flow conditions and has demonstrated that the existing and proposed future wastewater discharges from the treatment works are compatible with the achievement of the WFD objectives of the receiving waters. A constant minimum flow of 1.5m<sup>3</sup>/s in the vicinity of the primary point is therefore not required to allow the receiving water quality to meet the relevant Environmental Quality Standards (EQSs)

Yours sincerely,



Peter Keegan

Wastewater Strategy

**Enclosed:** Appendix 1: Blessington WwTP Water Quality Impact Assessment



# Uisce Éireann

## Water Quality Impact Assessment

### Blessington WWTP

Revision Number	Description of Change	Author(s)	Approved By	Date of Approval
01	For Issue to EPA	S Waite	R Kane	07/09/2023

## TABLE OF CONTENTS

1	INTRODUCTION .....	4
2	SITE LOCATION AND WWTP DETAILS .....	5
2.1	Site Location.....	5
2.2	WWTP Details .....	5
2.3	Environmental Context .....	8
2.4	Environmental Receptors .....	12
2.5	Legislative Context .....	13
2.5.1	Urban Wastewater Treatment Directive .....	13
2.5.2	European Communities Environmental Objectives (Surface Waters) Regulations 2009.....	13
2.5.3	European Union (Wastewater Discharge) Regulations (2020).....	13
2.6	Ambient Water Quality.....	14
3	HYDROLOGICAL ANALYSIS.....	20
4	TIERED WATER QUALITY ASSESSMENT.....	24
4.1	Introduction.....	24
4.2	Tier 0 Assessment.....	24
4.3	Tier 1 Assessment.....	25
4.4	Tier 2 Assessment.....	25
4.5	Tier 3 Assessment.....	27
4.5.1	Average Reservoir Inflow Modelling: Input Data .....	27
4.5.2	Average Reservoir Inflow Modelling: Modelled Scenarios .....	31
4.5.3	Average Reservoir Inflow Modelling: Model Results .....	31
4.5.4	Zero Reservoir Inflow Modelling.....	33
4.5.5	Discharge Impact Significance .....	36

<b>5</b>	<b>SUMMARY AND CONCLUSIONS</b>	<b>38</b>
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## LIST OF FIGURES

Figure 1:	Blessington WWTP Outfall and Golden Falls Reservoir Location	5
Figure 2:	Blessington WWTP Influent and Effluent Flow Rates (2020-2022)	6
Figure 3:	Effluent Quality Timeseries Data (2020-2023) for Substances with ELVs	7
Figure 4:	Study Area WFD River Sub Basins	8
Figure 5:	Study Area Topography	9
Figure 6:	Study Area Land Use	9
Figure 7:	Study Area Geology	10
Figure 8:	Study Area Soils	11
Figure 9:	Study Area Catchment Discharges	12
Figure 10:	Water Quality Monitoring Locations	14
Figure 11:	Ammonia Concentrations at Ambient Water Quality Monitoring Locations	15
Figure 12:	BOD Concentrations at Ambient Water Quality Monitoring Locations	16
Figure 13:	Orthophosphate Concentrations at Ambient Water Quality Monitoring Locations	17
Figure 14:	Total Phosphate Concentrations at Ambient Water Quality Monitoring Locations	18
Figure 15:	pH Recorded at Ambient Water Quality Monitoring Locations	18
Figure 16:	Dissolved Oxygen Saturation at Ambient Water Quality Monitoring Locations	19
Figure 17:	Dam Flow Timeseries for Poulaphouca Reservoir and Golden Falls Reservoir	20
Figure 18:	Lake Level Timeseries for Poulaphouca Reservoir and Golden Falls Reservoir	20
Figure 19:	Flow Duration Curves for Poulaphouca Dam and Golden Falls Dam (1985-2013)	21
Figure 20:	Casement Wind Gauge Location (Top) and Wind Rose (Bottom)	29
Figure 21:	Golden Falls Reservoir Bathymetry	30
Figure 22:	Golden Falls Reservoir Cross Section at Blessington WWTP Discharge Point	30
Figure 23:	Effluent Mixing Zones (Current Average Effluent Flows, Minimum River Flows)	32
Figure 24:	Effluent Mixing Zones (Future Average Effluent Flows, Minimum River Flows)	33
Figure 25:	Duration of Zero Inflow Period to Golden Falls Reservoir	34
Figure 26:	Zero Inflow Scenario Results for Ammonia	35
Figure 27:	Zero Inflow Scenario Results for BOD	35
Figure 28:	Zero Inflow Scenario Results for Orthophosphate	35

## LIST OF TABLES

Table 1:	Blessington WWTP ELVs and Current Effluent Quality	6
Table 2:	Water Quality Standards for River Waters under the Surface Water Regulations	13
Table 3:	Ambient Water Quality Summary (2018-2023)	15
Table 4:	Annual Flow Statistics for Pass Forward Flows from Poulaphouca Reservoir	22
Table 5:	Annual Flow Statistics for Pass Forward Flows from Golden Falls Reservoir	23
Table 6:	Tier 1 Water Quality Analysis	25
Table 7:	CORMIX Modelling Input Data	27

Table 8: CORMIX Model Run Scenarios .....	31
Table 9: CORMIX Model Run Results .....	31

## **1 INTRODUCTION**

In order to understand the potential impacts of wastewater discharges from the Wastewater Treatment Plant (WWTP) at Blessington a Water Quality Impact Assessment was carried out by Uisce Éireann . This assessment aimed to quantify the impact of the discharges on water quality in Golden Falls Reservoir under the 9,000 Population Equivalent (PE) design capacity of the WWTP and to confirm that the current Emission Limit Values (ELVs) as set in the Waste Water Discharge Licence (WWDL) are appropriate given the expected future increase in WWTP flows.

The Environmental Protection Agency provided the following request for information as part of the wastewater discharge authorisation application for Blessington (D0063-02)

*"The primary discharge location for the Blessington agglomeration is situated between the Poulaphouca Dam, which impounds Blessington Lake, and the Golden Falls Dam, which balances discharges from the Golden Falls Lake. Provide flow data for the receiving waterbody in the vicinity of the primary discharge point showing a constant minimum flow of 1.5m<sup>3</sup>/s at all times."*

Flow data for the two reservoirs are provided in Section 3 and was used in the water quality analysis in Section 4.

## 2 SITE LOCATION AND WWTP DETAILS

### 2.1 Site Location

The River Liffey rises in the Wicklow Mountains south of Dublin and flows east towards Poulaphouca Reservoir (Water Framework Directive (WFD) waterbody IE\_EA\_09\_71 Poulaphouca). Poulaphouca Reservoir is impounded by Poulaphouca dam and is a large reservoir constructed and maintained for hydroelectricity generation. The pass forward flow from Poulaphouca Reservoir is discharged to a very short (1.2km) reach of the River Liffey downstream of Poulaphouca dam (WFD waterbody IE\_EA\_09L010400 Liffey\_040) but this section of the River immediately discharges into Golden Falls Reservoir (WFD waterbody IE\_EA\_09\_53 Golden Falls) which is impounded by Golden Falls Dam. Blessington WWTP discharges treated wastewater to the short reach of the River Liffey immediately upstream of Golden Falls Reservoir, at Ordnance Survey Ireland National Grid Reference 294246E 208328N, southwest of Blessington (Figure 1). Pass forward flows from Golden Falls Reservoir are discharged to the River Liffey which then flows east and north towards Dublin.

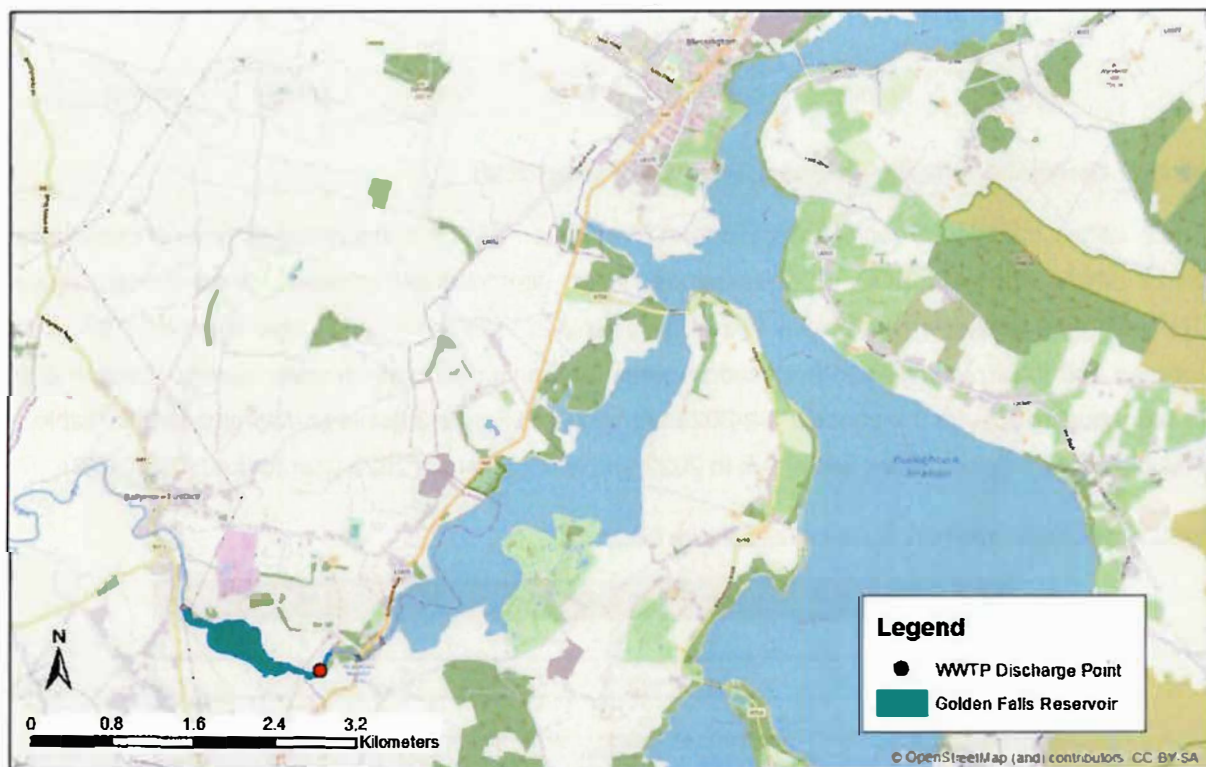


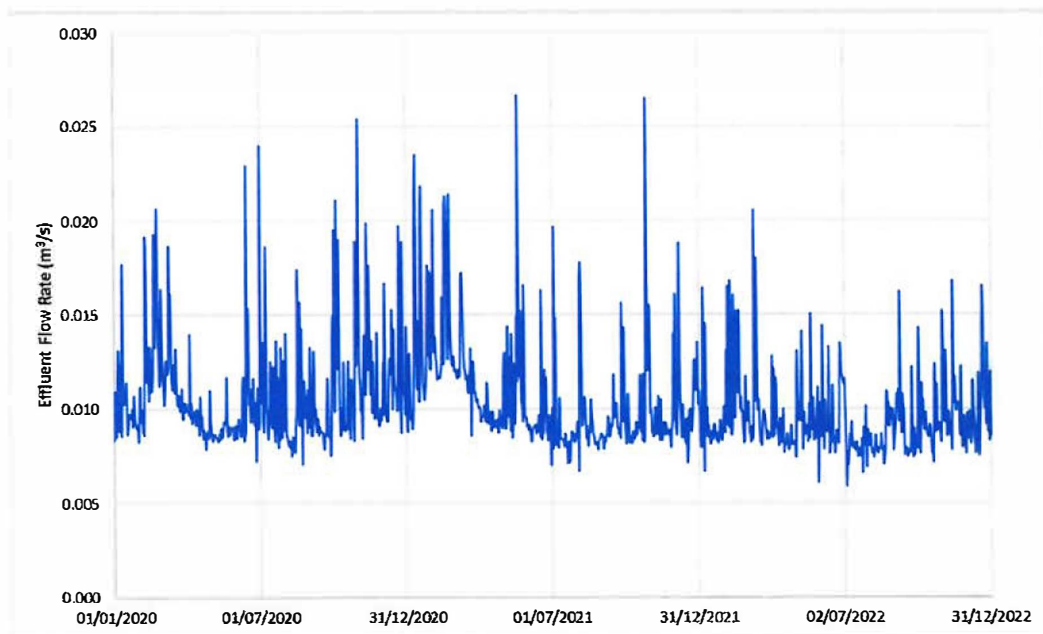
Figure 1: Blessington WWTP Outfall and Golden Falls Reservoir Location

### 2.2 WWTP Details

Blessington WWTP was upgraded in December 2022 from a capacity of 6,000 PE to a design capacity of 9,000 PE. During 2021 the maximum flow was estimated at 6,641 PE. The upgrades to the WWTP were completed in January 2023 and provide full primary, secondary and tertiary treatment (with phosphate removal) designed to meet the current WWDL ELVs. Upgrades to the existing aeration system are designed to cater for the increased biological load and nutrient removal required to reduce



ammonia concentrations in the final treated effluent to below 5mg/l. Effluent timeseries flow data for 2020 to 2022 are shown in Figure 2 – the current average effluent flow rate is 0.01m<sup>3</sup>/s.



**Figure 2: Blessington WWTP Influent and Effluent Flow Rates (2020-2022)**

The quality of the final effluent discharged from Blessington WWTP is monitored in terms of compliance with ELV's for maximum BOD, COD, suspended solids, ammonia and orthophosphate concentrations. The upstream and downstream water quality in Golden Falls reservoir is also monitored by Uisce Éireann and the Environmental Protection Agency to monitor impacts on water quality (Section 3.3). Effluent quality data for the period 2020-2023 are shown in Figure 3 below and summarised in Table 1. The plant was fully compliant with ELVs in 2022 and is compliant in 2023 year to date (July 2023)

**Table 1: Blessington WWTP ELVs and Current Effluent Quality**

Pollutant	ELV (mg/l)	2020-2023 Mean (mg/l)
Ammonia	5.0	3.51
BOD	20	6.98
Ortho-P	1.0	0.31
Total P	None	0.78
Suspended Solids	25	23.5
COD	125	51.3
Total Nitrogen	None	17.9



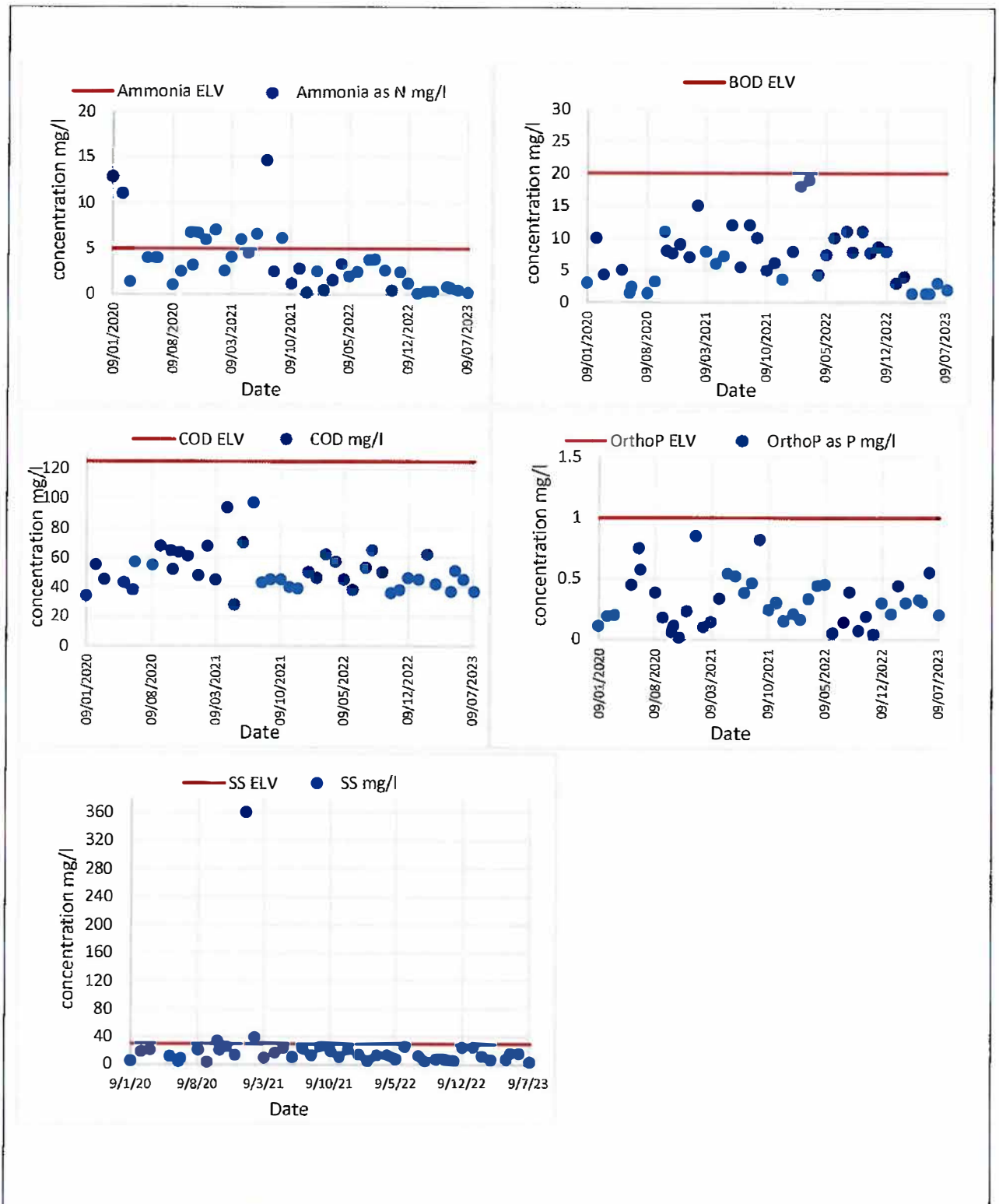


Figure 3: Effluent Quality Timeseries Data (2020-2023) for Parameters with ELVs

Final treated effluent is discharged to the River Liffey via a long pipeline (see Appendix A). The final outfall configuration consists of a 250mm pipe with a concrete headwall.

## RECEIVING ENVIRONMENT

### 2.3 Environmental Context

Blessington WWTP discharge point discharges treated wastewater to the River Liffey within the Golden Falls Reservoir section. This section of river is impounded between the upstream Poulaphouca Reservoir dam and the downstream Golden Falls dam (Figure 1) and, while technically designated as a river, flows through this section are governed by the downstream impoundment at Golden Falls making this waterbody effectively part of the Golden Falls Lake system. Both dams are owned and operated by the Electricity Supply Board (ESB) as part of a hydroelectric power supply scheme.

The discharge is located within the Liffey\_040 WFD River Sub-basin and the Liffey\_050 and Liffey\_060 sub-basins are immediately downstream (Figure 4). Golden Falls Reservoir receives additional inflow from two small watercourses which flow into the Reservoir directly, however the flow from these watercourses is small compared with the flow from Poulaphouca Dam.

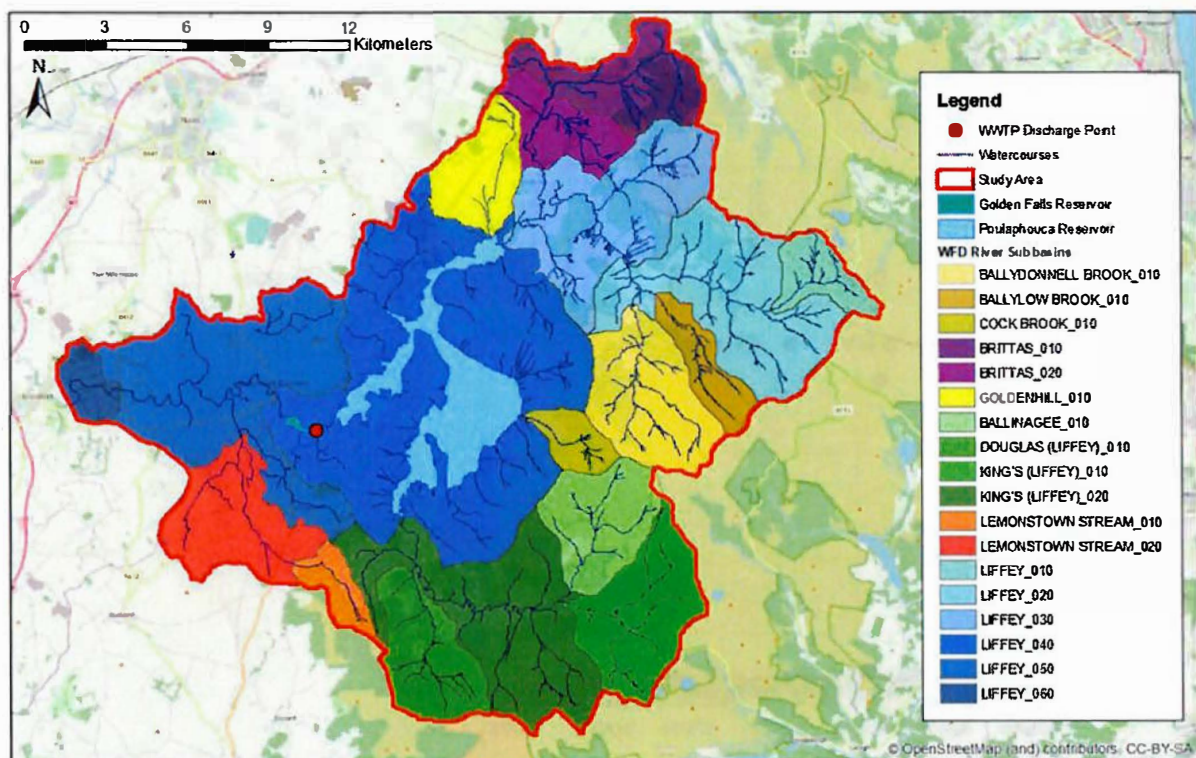


Figure 4: Study Area WFD River Sub Basins

The catchment is broadly divided into two areas in terms of land use. The higher area in the upstream, eastern catchment (catchment topography is shown in Figure 5) is dominated by peat bogs, moors and heathland with smaller areas of coniferous forest and transitional woodland shrubs. There is some agriculture, particularly along the river valleys (Figure 6). The lower lying western side of the catchment is dominated by pasture with small areas of arable land and forest of various types. Blessington is the largest urban settlement and there are several large mineral extraction sites around the Blessington area.



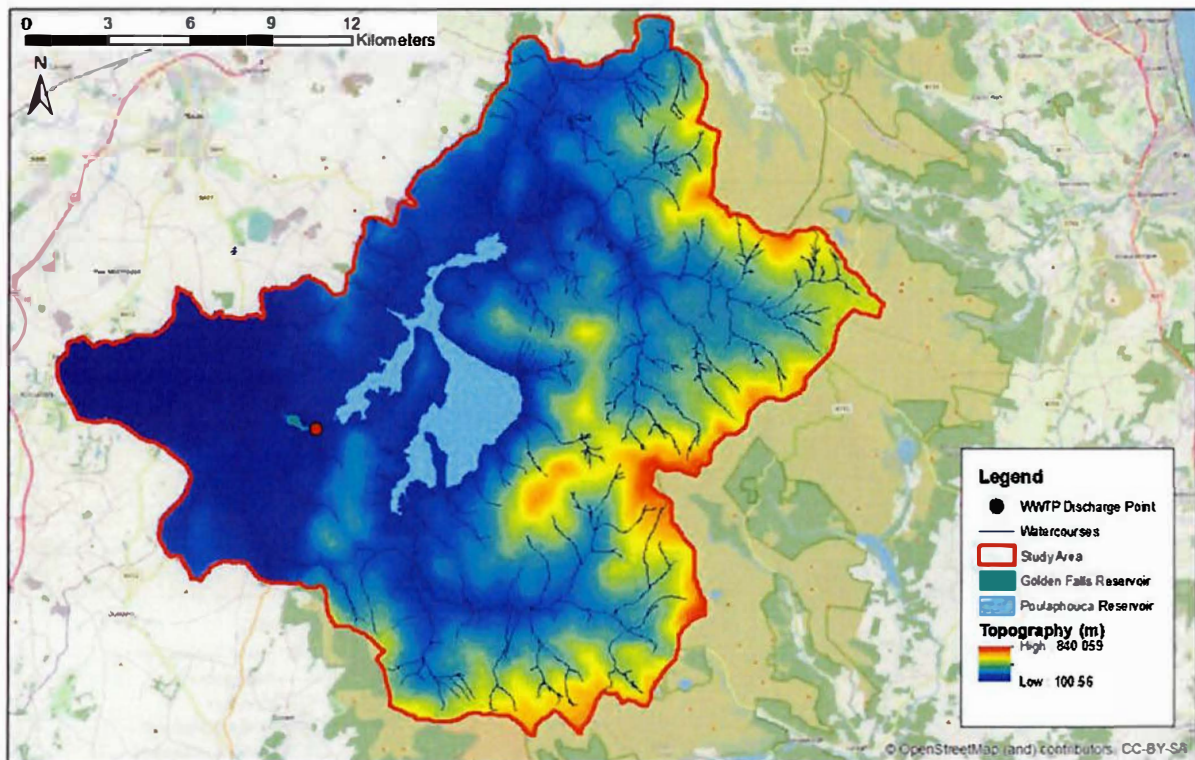


Figure 5: Study Area Topography

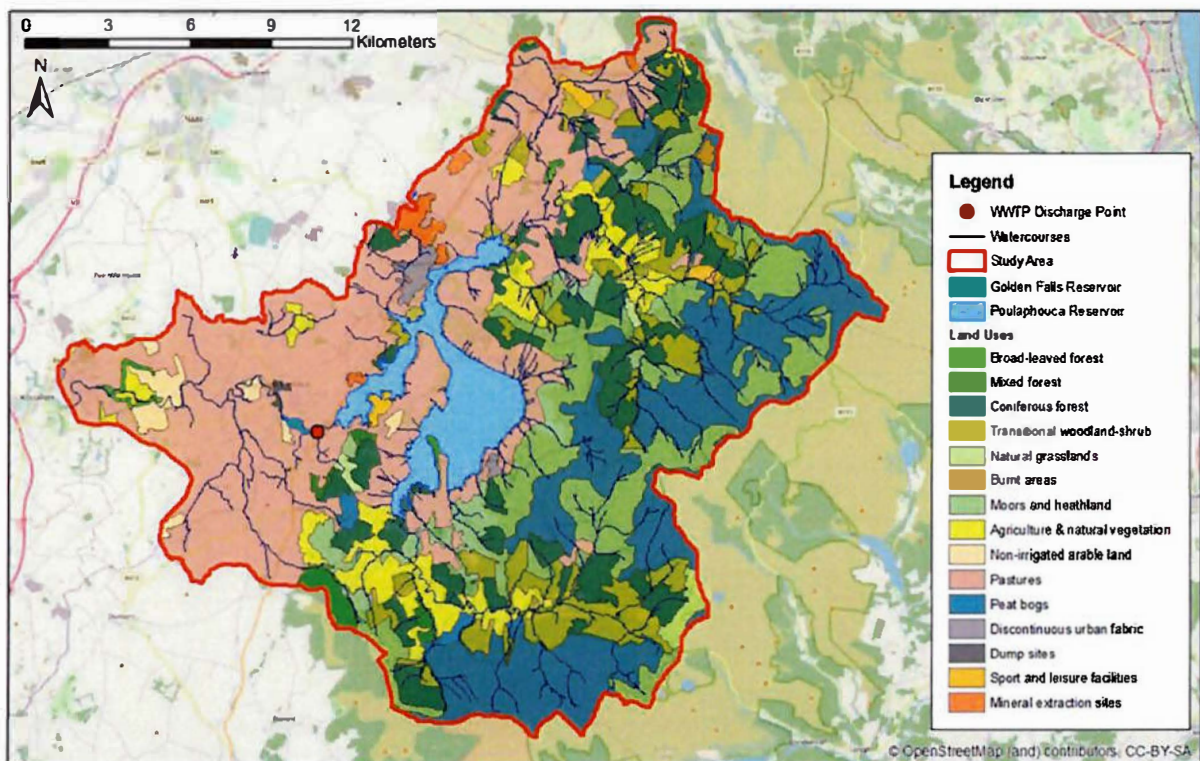
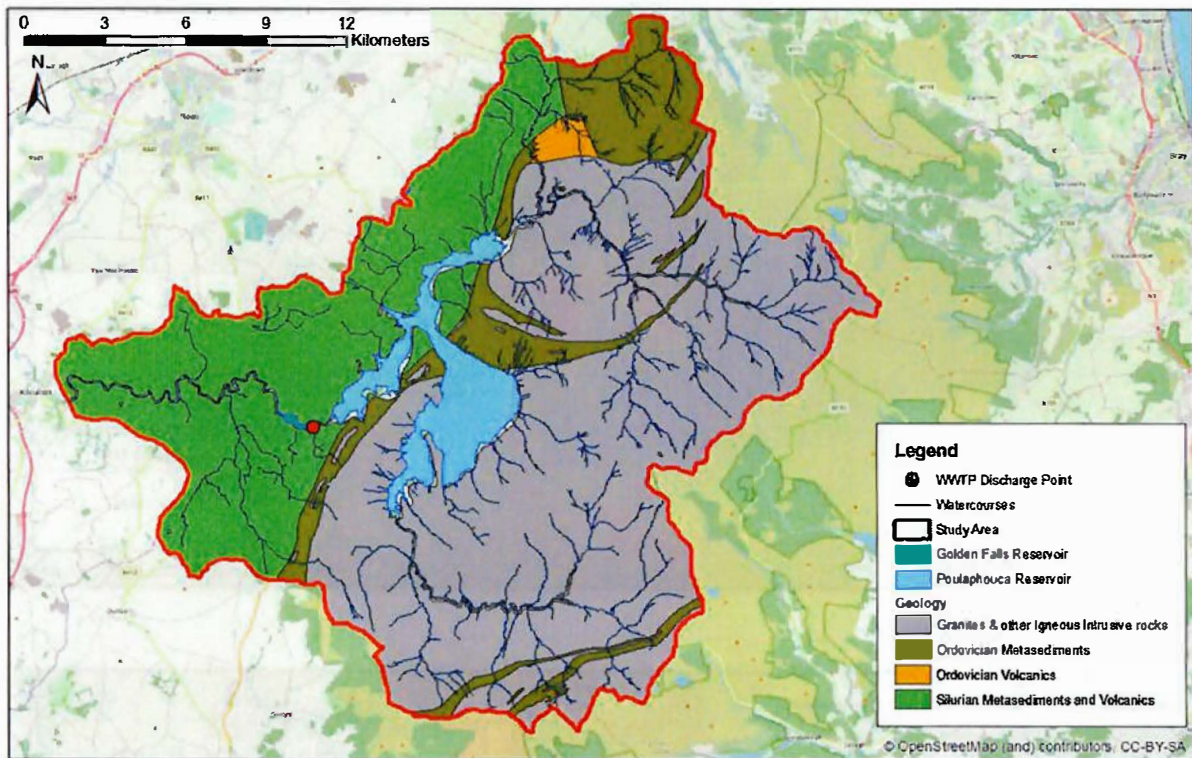


Figure 6: Study Area Land Use

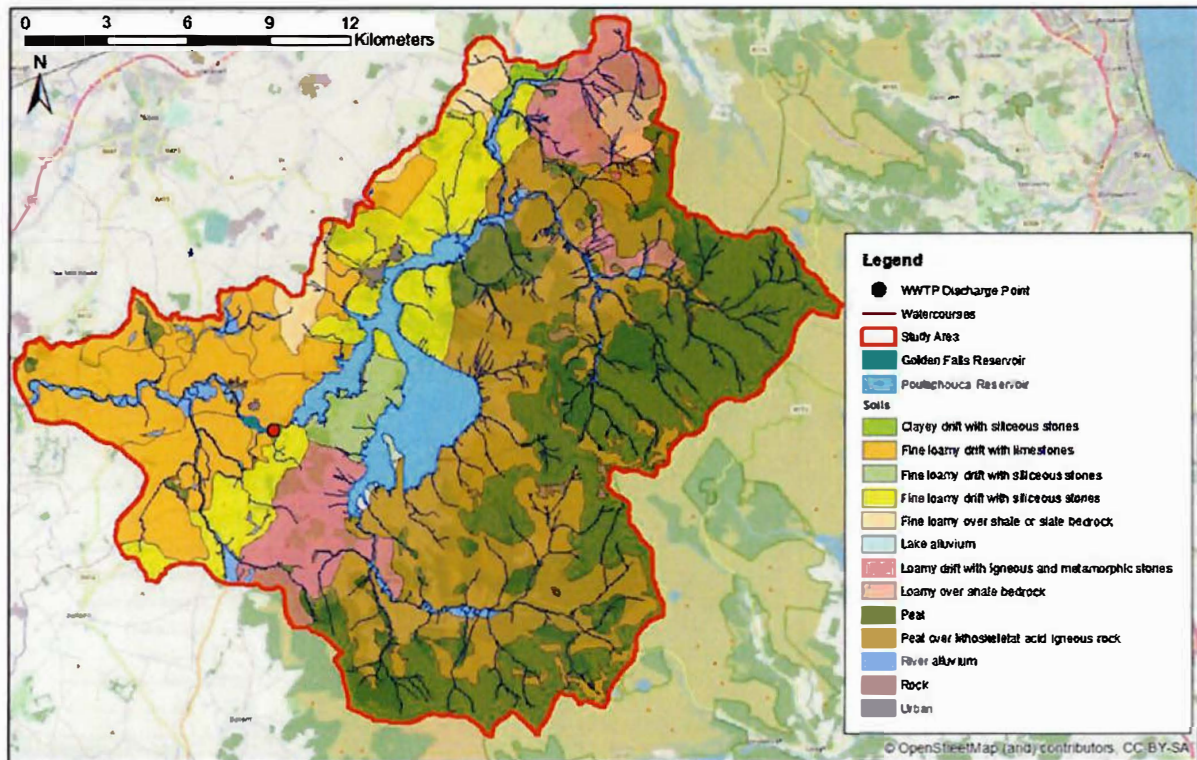
The division in catchment land use largely reflects the soil types (Figure 7) which have developed from differing geology (Figure 8). The eastern side of the catchment is underlain by granite and other igneous rocks while the western side of the catchment is underlain by metasediments and volcanics. The

different bedrock permeability and topography results in peat soils in the eastern side of the catchment while the western side of the catchment is dominated by fine loamy drift with alluvium along the river valleys.



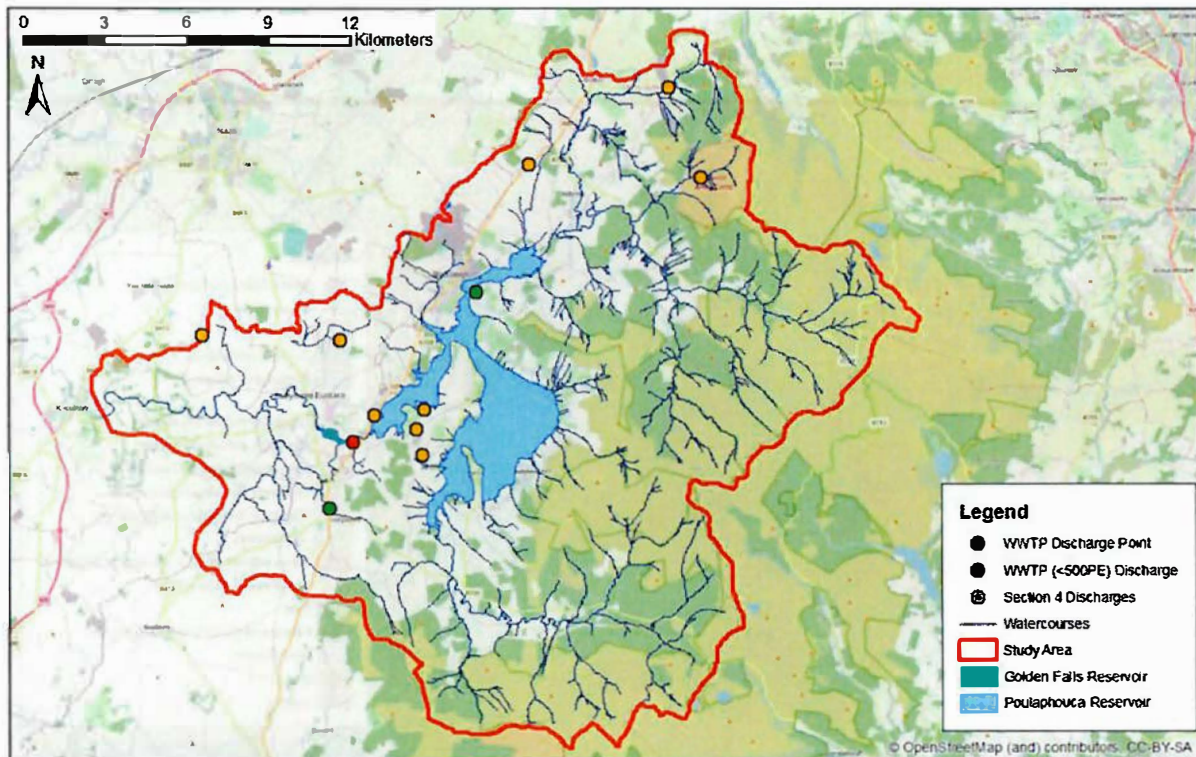
**Figure 7: Study Area Geology**





**Figure 8: Study Area Soils**

The rural nature of this section of the River Liffey catchment means that the Blessington WWTP discharge point is the largest discharge in the catchment. However, there are nine Section 4 discharge points and two WWTP serving less than 500 PE also discharging within the study area. Two of the Section 4 discharges and one WWTP discharge to watercourses downstream of the Blessington WWTP outfall, however the other eight discharge points are upstream (Figure 9). The impact of these discharges will need to be accounted for by using ambient water quality data from a location upstream of Blessington WWTP discharge point and downstream of the other discharge points when carrying out the water quality analysis.



**Figure 9: Study Area Catchment Discharges**

## 2.4 Environmental Receptors

The study area includes part of Wicklow Mountains Special Area of Conservation (SAC) and Special Protected Area (SPA). However, these areas are upstream of Blessington WWTP discharge point and are designated for habitats and species associated with the peat bogs and moorlands in this area. The discharge from Blessington WWTP will not impact on these designated sites because they are located upstream of the discharge and are not water dependant habitats. Poulaphouca Reservoir is also a designated SPA due to the presence of waterbirds (Greylag Goose and Lesser Black-backed Gull) however the designation does not extend to the Golden Falls reservoir and Poulaphouca reservoir is upstream of the discharge point. There are no nature reserves within the study area.

The River Liffey and Golden Falls reservoir at the discharge point are not designated as nutrient sensitive environments. There is some recreational use of Golden Falls reservoir associated with the water ski club, however the reservoir is not a designated bathing water. The river and reservoir are not designated as a salmonid watercourse.

Poulaphouca Reservoir, Golden Falls reservoir and the surrounding watercourses are designated as drinking water sources. Poulaphouca reservoir is used as a water supply for Ballymore Eustace water treatment plant, however the intake is upstream of the Blessington WWTP discharge point. The River Liffey, Golden Falls Reservoir and other tributaries are designated for protection of the drinking water abstraction at Leixlip but this is approximately 54km downstream of Golden Falls reservoir so there is minimal potential for impacts arising from the Blessington WWTP discharges. The designation for drinking water protection is the only sensitive environmental designation at Blessington WWTP



discharge point.

## 2.5 Legislative Context

### 2.5.1 Urban Wastewater Treatment Directive

The Urban Wastewater Treatment Directive (UWWTD, 2007)<sup>1</sup> requires regulators to limit pollution of receiving waters (i.e. Golden Falls Reservoir) due to wastewater discharges. This report aims to provide the level of information required to determine the impact of the discharges from the Blessington WWTP. In addition, this report provides information on receiving water flows through this section of the River Liffey in response to the Environmental Protection Agency's request for information (see Sections 1 and 4).

### 2.5.2 European Communities Environmental Objectives (Surface Waters) Regulations 2009

The Water Framework Directive (WFD, Directive 2000/60/EC) defines the ecological status of waterbodies as high, good, moderate, poor or bad. Under WFD, member states are required to prevent pollution of waterbodies and work to improve water quality toward a minimum of good status. The WFD was enacted into Irish Law through the European Communities Environmental Objectives (Surface Waters) Regulations 2009<sup>2</sup> (amended in 2015 and 2019, and hereafter "the Surface Water Regulations").

The Surface Water Regulations set standards which can be used to identify the current status of waterbodies which may be affected by discharges from Blessington WWTP and to determine the impacts of the discharge on future water quality. The standards are set for ecological community assemblage and for the physio-chemical parameters that affect it. Table 2 shows the physio-chemical standards for good and high ecological status in rivers and lakes - the discharges from Blessington WWTP are to a lake waterbody currently considered to be at moderate status under WFD (Section 3.5).

### 2.5.3 European Union (Wastewater Discharge) Regulations (2020)

The EPA issues licences for wastewater discharges under the European Union (Wastewater Discharge) Regulations (2020)<sup>3</sup>. These regulations aim to ensure that wastewater discharges do not have adverse impacts on the environment, taking into account the above Directive and Regulations. This is achieved by taking a "combined approach," whereby *"the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Regulations, and the limits determined under statute or Directive for the purpose of achieving the environmental objectives established for surface waters."*

Table 2: Water Quality Standards for Rivers and Lakes under the Surface Water Regulations

Waterbody	Parameter	Classification System	High-Good boundary	Good-Moderate
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<sup>1</sup> <http://www.legislation.gov.uk/nisr/2007/187/regulation/7/made>

<sup>2</sup> Statutory Instruments SI No 77/2019 <http://www.irishstatutebook.ie/eli/2019/si/77/made/en/print>, accessed 19 June 2020

<sup>3</sup> <http://www.irishstatutebook.ie/eli/2007/si/684/made/en/print>, accessed 19 June 2020

Type		boundary	
Rivers	BOD (mg/l)	Mean	1.3
		95%ile	2.2
	Total Ammonia (mg/l)	Mean	0.04
		95%ile	0.09
	MRP (mg/l)	Mean	0.025
		95%ile	0.045
Lakes	pH	Mean	Hard Water (CaCO <sub>3</sub> >100mg/l) = 6-9 Soft Water (CaCO <sub>3</sub> <100mg/l) = 4.5-9
	Dissolved Oxygen (%)	95%ile value	80-120%
	Total Ammonia (mg/l)	Mean	0.04
		95%ile	0.09
Lakes	Total Phosphorus (mg/l)	Mean	0.01
		95%ile	0.025
	pH	Mean	Hard Water (CaCO <sub>3</sub> >100mg/l) = 6-9 Soft Water (CaCO <sub>3</sub> <100mg/l) = 4.5-9
	Dissolved Oxygen (%)	95%ile value	80-120%

## 2.6 Ambient Water Quality

Extensive water quality data are available at four locations upstream and downstream of the Blessington WWTP discharge point (Figure 10). The most upstream monitoring point is immediately upstream of Poulaphouca dam, while the other three are within the Golden Falls reservoir.

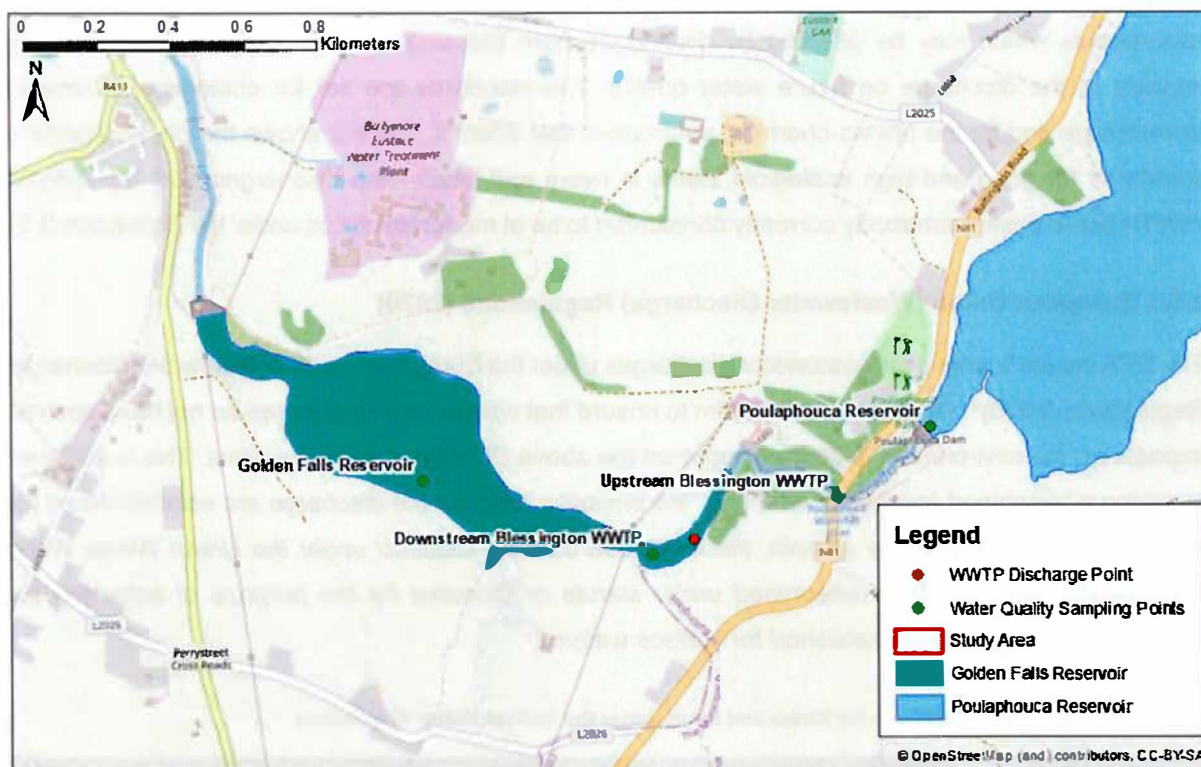


Figure 10: Water Quality Monitoring Locations

Figure 11 shows the timeseries of ammonia concentrations for all four locations. There was a reduction

## Water Quality Impact Assessment:

### Blessington

Blessington WWTP

Water Quality Impact Assessment



in ammonia concentrations within Golden Falls Reservoir between 2016 and 2018 followed by a slight increase in ammonia concentrations recorded at all monitoring locations from 2018 onwards. The post-2018 data appear consistent over time and show mean ammonia concentrations 56% lower than the pre 2016 period. Water quality statistics from 2018 onwards are representative of current water quality and are summarised in Table 3.

It is important to note when considering downstream ambient concentrations that the completed upgrade of the Blessington WWTP in January 2023 represented a step-change in BOD and ammonia loadings to the receiving waters (as demonstrated in Figure 3 above). As such, downstream sample data collected prior to January 2023 is no longer representative of current effluent loading conditions in receiving waters. The data however has been presented here for transparency purposes.

The mean and 95%ile ammonia concentrations upstream of Blessington WWTP discharge point meet the EQS for high indicative quality for both lakes and rivers (0.018mg/l and 0.04mg/l respectively). Ammonia concentrations increase downstream of the WWTP discharge point and at Golden Falls but still meet the EQS for high indicative quality.

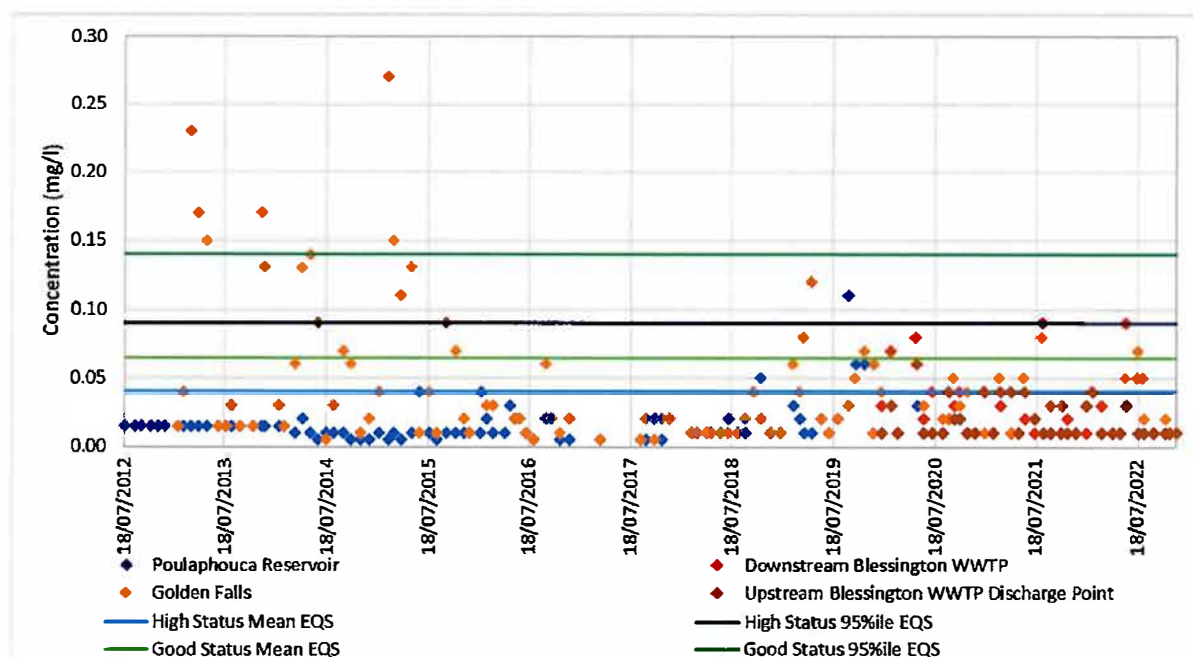


Figure 11: Ammonia Concentrations at Ambient Water Quality Monitoring Locations

Table 3: Ambient Water Quality Summary (2018-2023) and EQS Standards for Rivers and Lakes

	Poulaphouca Reservoir	Upstream Blessington WWTP	Downstream Blessington WWTP	Golden Falls Reservoir	High Status WFD EQS	Good Status WFD EQS
Mean Ammonia (mg/l)	0.019	0.018	0.028	0.027	0.040	0.065
95%ile Ammonia (mg/l)	0.051	0.040	0.083	0.071	0.090	0.140
Mean BOD (mg/l)	0.93	1.09	1.16	1.16	1.30	1.50
95%ile BOD (mg/l)	2.24	2.40	2.95	3.00	2.20	2.60



## Water Quality Impact Assessment:

### Blessington

Blessington WWTP

Water Quality Impact Assessment

Mean Orthophosphate as MRP (mg/l)	0.011	0.012	0.015	0.012	0.025	0.035
95%ile Orthophosphate as MRP (mg/l)	0.030	0.030	0.030	0.021	0.045	0.075
Mean Total Phosphorus (mg/l)	0.016	0.013	0.017	0.019	0.010	0.025
95%ile Dissolved Oxygen (%)	107	104	109	109	80-120	
pH	7.5	7.5	7.5	7.5	7-9	

Figure 12 shows the timeseries BOD concentrations for all four locations. BOD concentrations were low in both Poulaphouca Reservoir and Golden Falls Reservoir prior to 2018 but increased at both locations in subsequent years (mean concentrations increased by 38% in Poulaphouca Reservoir and 41% in Golden Falls Reservoir). The post-2018 data appear consistent over time and give an average BOD concentration upstream of Blessington WWTP discharge point of 1.09mg/l, thereby meeting the mean EQS for high indicative quality for BOD in rivers, and a 95%ile of 2.40mg/l, which meets the EQS (2.60mg/l) for good indicative quality in rivers (Table 3). Both the mean and 95%ile BOD concentrations increase downstream of the discharge, with the downstream mean concentration continuing to meet the EQS for high indicative quality for BOD in rivers, while the downstream 95%ile concentration fails to meet the EQS for good indicative quality (note that the upstream 95%ile concentration is already within 10% of the Good/Moderate threshold and at risk of failing to meet good indicative quality)

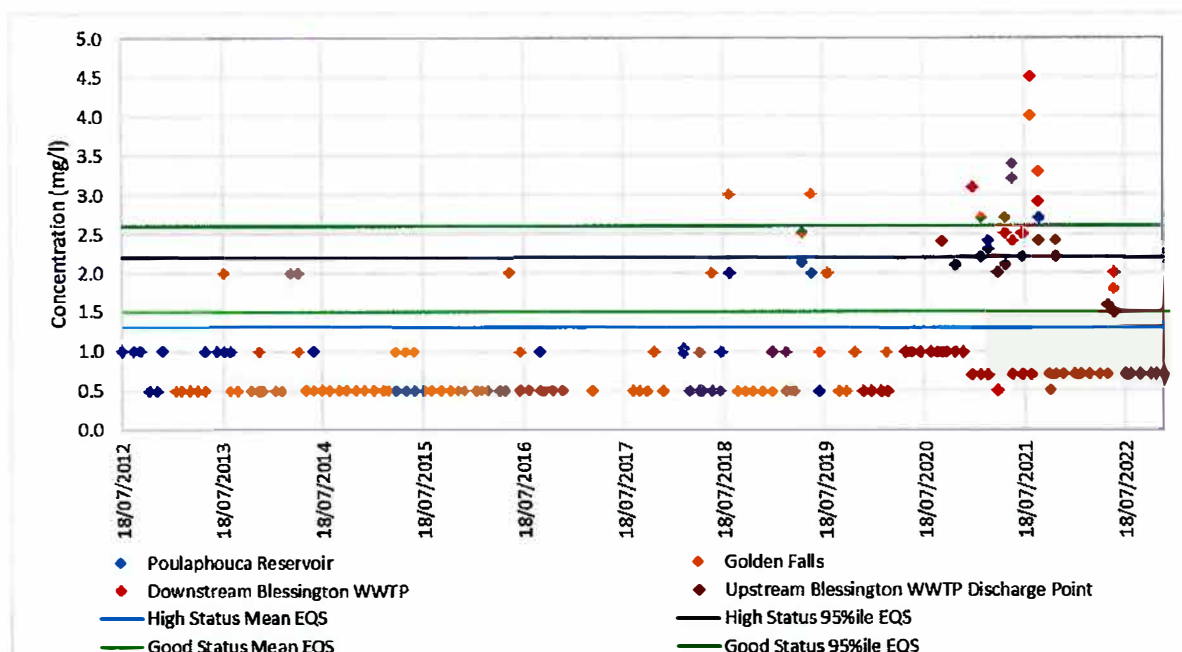


Figure 12: BOD Concentrations at Ambient Water Quality Monitoring Locations

Phosphate concentrations are regulated using orthophosphate concentrations (MRP) in rivers and total phosphorus concentrations in lakes. Concentrations of phosphate in the final treated effluent from Blessington WWTP are regulated through an ELV applied for orthophosphate concentrations only

(Section 2). Figure 13 shows the orthophosphate concentrations recorded at all water quality monitoring points and Figure 14 shows the total phosphorus concentrations. As with ammonia and BOD, the data in Figures 13 and 14 show lower concentrations in both Poulaphouca Reservoir and Golden Falls Reservoir prior to 2018 and increases at both locations in subsequent years. Mean orthophosphate concentrations in both reservoirs are 33% higher in the post-2018 period than in the pre-2018 period and total phosphorus concentrations are 40% higher in Poulaphouca Reservoir and 38% higher in Golden Falls Reservoir.

The post-2018 data (Table 3) give an average orthophosphate concentration of 0.012mg/l and a 95%ile concentration of 0.030mg/l upstream of Blessington WWTP discharge point, thereby meeting the respective EQSs for high indicative quality for rivers. Mean orthophosphate concentrations increase to 0.015mg/l downstream of the discharge point but still meet the mean EQS for high indicative quality. There is no change in the 95%ile orthophosphate concentration.

The mean total phosphate concentrations (0.013mg/l) upstream of the discharge meets the mean EQS for good indicative quality. Concentrations slightly increase downstream of the discharge to 0.017mg/l but still meets the EQS for good indicative quality

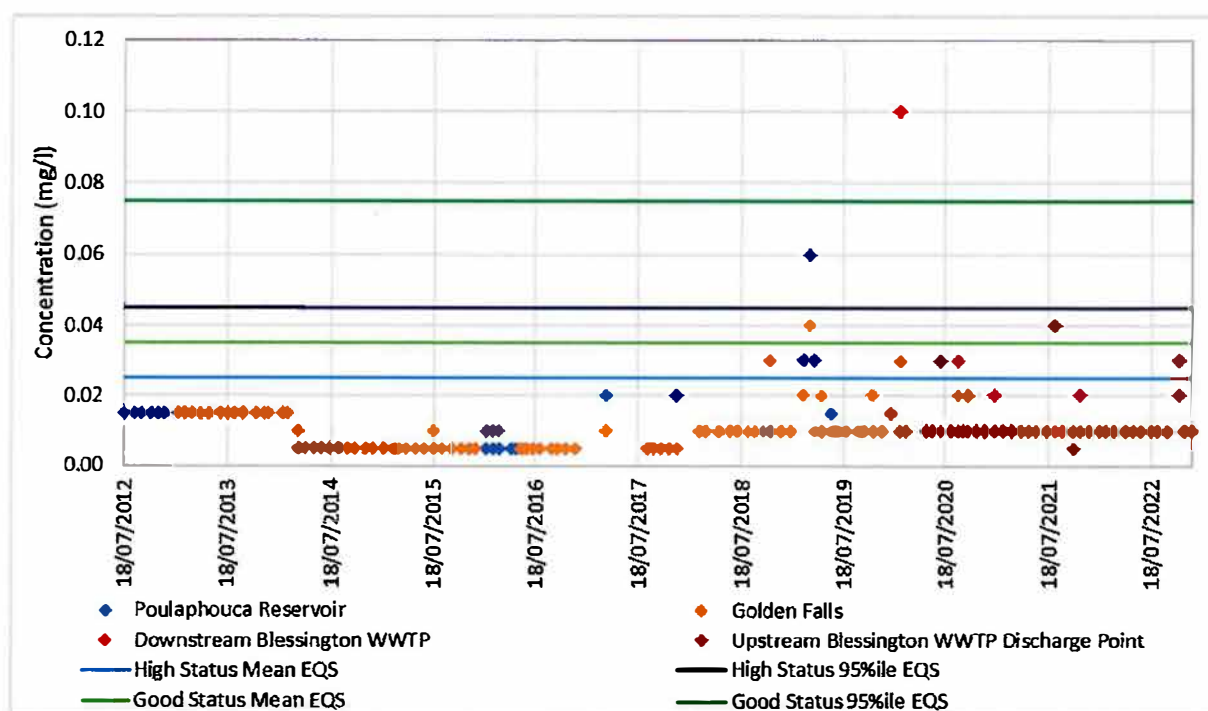


Figure 13: Orthophosphate Concentrations at Ambient Water Quality Monitoring Locations

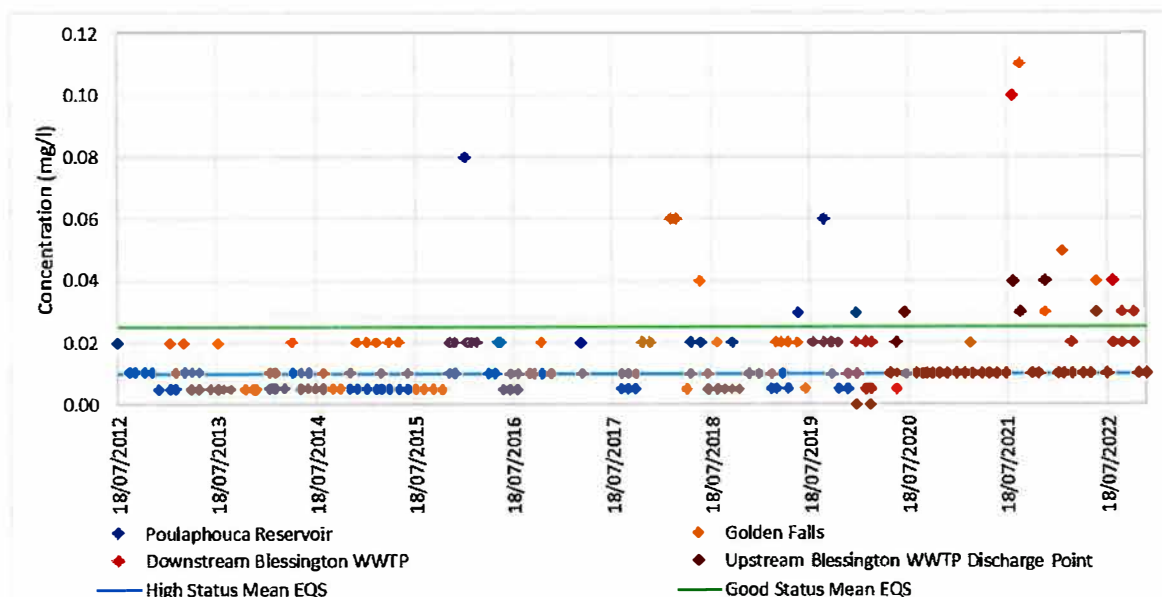


Figure 14: Total Phosphate Concentrations at Ambient Water Quality Monitoring Locations

Figures 15 and 16 show the pH and dissolved oxygen data from each monitoring point. The pH at all locations is well within the upper and lower limits required under the Surface Water Regulations from 2015 onwards. The data from Poulaphouca reservoir indicate high pH values prior to 2015, however these data may be erroneous because the pH at Golden Falls was lower during this period and in all subsequent data the pH at Poulaphouca Reservoir and Golden Falls is the same. The current mean pH is 7.5 at all monitoring locations (Table 3), which is compliant with the requirements of the Surface Waters Regulations, as amended, and shows no significant change from Blessington WWTP discharge. The 95%ile dissolved oxygen levels are also similar at all locations (Table 3) and comply with the requirement for High Status indicative water quality.

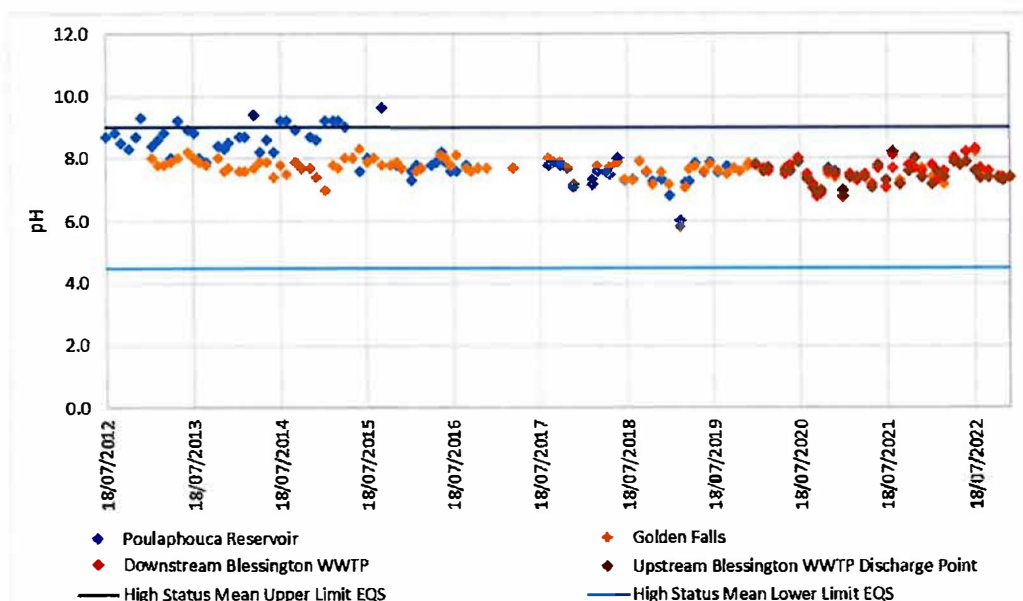


Figure 15: pH Recorded at Ambient Water Quality Monitoring Locations



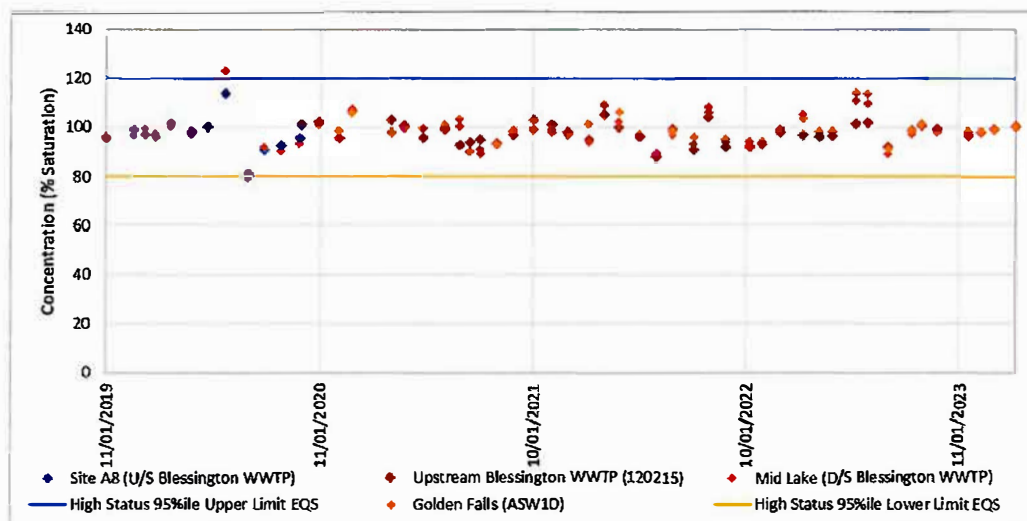


Figure 16: Dissolved Oxygen Saturation at Ambient Water Quality Monitoring Locations

Golden Falls Reservoir and the section of the River Liffey between Poulaphouca Reservoir and Golden Falls Reservoir were given the following overall ecological status classification by the EPA over the last three river basin management plan cycles:

- 2010 to 2015: River Liffey at moderate ecological status, Golden Falls Reservoir unclassified
- 2013-2018: River Liffey at moderate ecological status, Golden Falls Reservoir unclassified (both at risk)
- 2016 to 2021: River Liffey at good ecological status, Golden Falls Reservoir at moderate ecological status

The EPA Water Maps website<sup>4</sup> shows that both the River Liffey and Golden Falls Reservoir were classified as “at risk” of failing to achieve good status in the first two monitoring periods, however only Golden Falls Reservoir was considered to be at risk in the most recent cycle. Neither the River Liffey nor Golden Falls Reservoir have high status objectives. The EPA assessment of significant pressures on either the River Liffey between Poulaphouca dam and Golden Falls Reservoir, and on Golden Falls Reservoir itself, only identifies pressures from hydromorphology and from urban wastewater. Based on the available water quality data upstream and downstream of Blessington WWTP discharge point, it would appear that the principle pressure on ecological status is the hydromorphological changes associated with Poulaphouca and Golden Falls dams.

<sup>4</sup> <https://gis.epa.ie/EPAMaps/Water> accessed 4 August 2023

### 3 HYDROLOGICAL ANALYSIS

Flows through the Poulaphouca Reservoir and Golden Falls Reservoir system are managed by the ESB and the flow duration curve for this section of the River Liffey is therefore significantly altered by anthropogenic influences. Daily mean flow (pass forward flow from the dams) and reservoir level data between 1950 and 2013 were provided for Poulaphouca Dam and Golden Falls Dam by the ESB and the timeseries is shown in Figure 17.

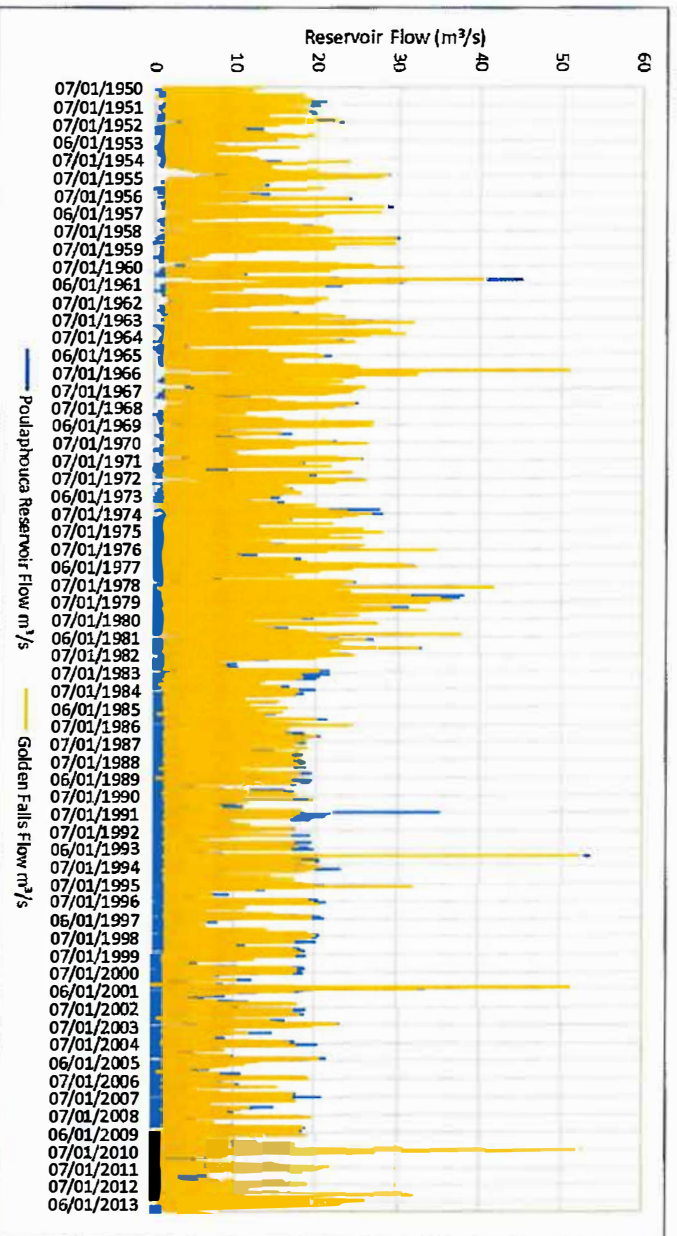


Figure 17: Dam Flow Timeseries for Poulaphouca Reservoir and Golden Falls Reservoir

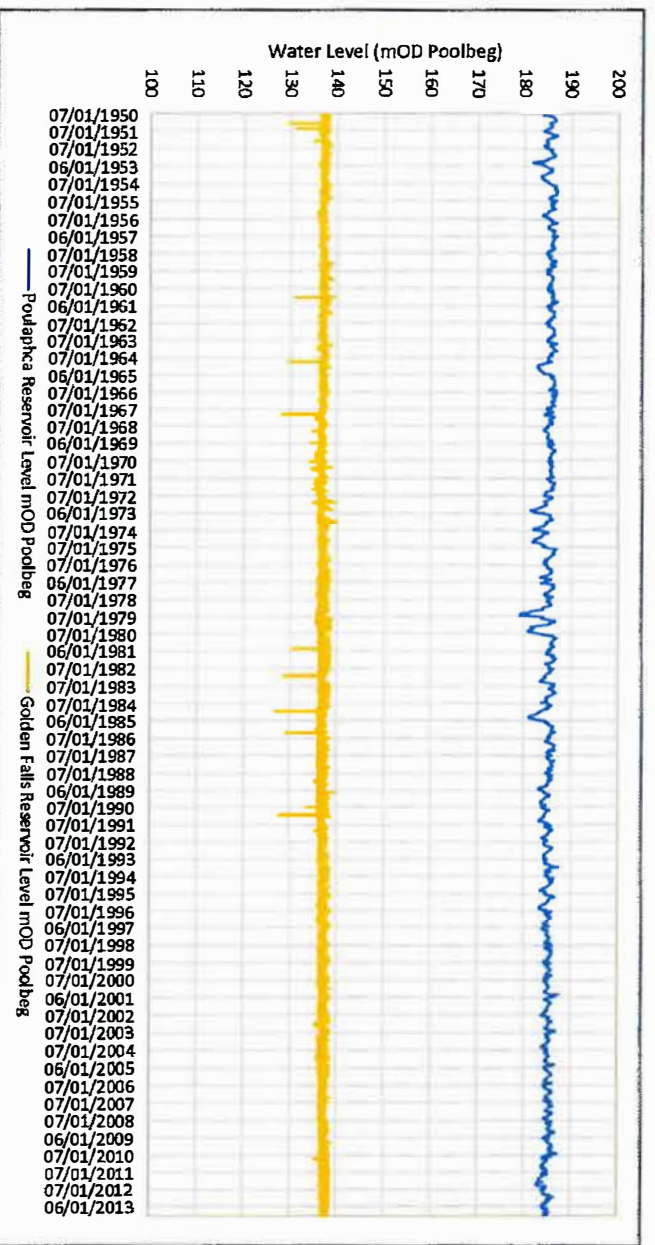
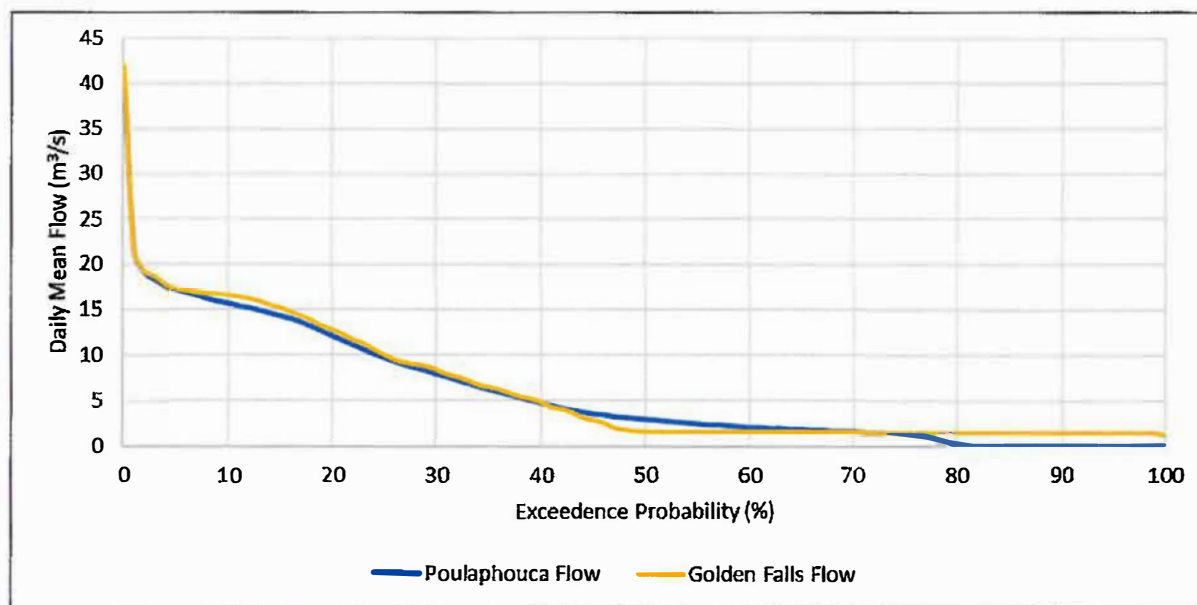


Figure 18: Lake Level Timeseries for Poulaphouca Reservoir and Golden Falls Reservoir

Figure 18 shows that the flows released from the reservoirs track closely, as would be expected given the location of the Golden Falls reservoir immediately downstream of the Poulaphouca reservoir. The flows through the system can reach up to 52.8m<sup>3</sup>/s, although average pass forward flow rates have reduced since 1984. The reservoir level data in Figure 18 show no significant corresponding change in reservoir level showing that the change in reservoir management is towards lower discharge rates which are sustained over longer periods. Water levels in Poulaphouca reservoir are maintained between 187.5-182.9mODP with an average of 185.3mODP while levels in Golden Falls Reservoir are maintained between 136.0-140.0mODP with an average of 137.3mODP.

The calculated flow duration curves at both locations are shown in Figure 19 and annual flow statistics are provided in Tables 4 and 5. The flow duration curve has been calculated using the data from 1985 onwards as this is representative of current operating conditions. The most important difference between the discharges from both dams is that flows from Poulaphouca Reservoir fall to zero for 20% of the time while flows from Golden Falls Reservoir are maintained at a minimum of 1.5m<sup>3</sup>/s (Figure 17 and Figure 19). Reservoir levels in Golden Falls reduce slightly during the periods of zero flow from Poulaphouca Reservoir.



**Figure 19: Flow Duration Curves for Poulaphouca Dam and Golden Falls Dam (1985-2013)**

The 1985-2013 average flow is 7.24m<sup>3</sup>/s for Poulaphouca Dam (excluding periods of zero flow) and 9.2m<sup>3</sup>/s for Golden Falls Dam. The 1985-2013 Q<sub>95</sub> flow is 0m<sup>3</sup>/s for Poulaphouca Dam and 1.5m<sup>3</sup>/s for Golden Falls Dam.

With reference to the Environmental Protection Agency's request for information in Section 1, this hydrological analysis shows that there is not a consistent flow of 1.5m<sup>3</sup>/s at the WWTP discharge point. The impact of the discharge will need to be assessed under two scenarios, one where there is flow between the two reservoirs and one where there is no flow entering Golden Falls Reservoir from Poulaphouca reservoir. These analyses are carried out in Section 5.



# Water Quality Impact Assessment:

## Blessington

### Blessington WWTP

#### Water Quality Impact Assessment



Table 4: Annual Flow Statistics for Pass Forward Flows from Poulaphouca Reservoir

Year	Flow (m³/s)												
	Max	Min	Q <sub>5</sub>	Q <sub>10</sub>	Q <sub>20</sub>	Q <sub>30</sub>	Q <sub>40</sub>	Q <sub>50</sub>	Q <sub>60</sub>	Q <sub>70</sub>	Q <sub>80</sub>	Q <sub>90</sub>	Q <sub>95</sub>
1950	21.8	0.30	18.0	17.0	14.8	11.8	8.53	6.82	5.51	3.90	2.31	1.40	0.76
1951	23.0	0.00	17.3	15.3	12.4	10.7	8.59	6.88	4.88	3.26	2.12	1.14	0.69
1952	19.2	0.11	13.8	9.83	7.29	5.93	4.98	3.41	2.60	2.10	1.69	1.04	0.72
1953	22.5	0.44	13.4	12.5	10.4	8.18	6.69	4.90	4.14	3.55	2.80	1.82	1.19
1954	28.8	0.00	20.1	18.0	15.2	13.5	11.3	8.42	6.27	4.75	3.06	1.82	0.91
1955	29.2	0.57	15.3	11.2	8.11	6.36	4.77	4.07	3.36	2.83	2.16	1.35	1.13
1956	25.4	0.34	18.2	16.3	12.5	8.95	6.66	4.69	3.32	2.37	1.88	1.50	1.22
1957	29.7	0.00	19.8	18.9	15.7	14.1	12.7	10.9	8.40	6.68	3.43	1.50	0.79
1958	29.5	0.00	18.4	15.5	9.45	6.03	3.71	3.05	2.44	1.84	1.25	0.91	0.82
1959	30.3	0.00	22.0	20.2	17.4	14.4	12.0	9.00	4.67	2.38	1.62	1.03	0.66
1960	45.1	0.00	27.9	24.3	20.2	15.6	10.6	5.59	2.93	1.99	1.29	1.00	0.93
1961	20.6	0.44	15.7	13.6	10.6	8.42	6.45	4.82	2.93	2.19	1.65	1.25	1.05
1962	31.6	0.00	23.6	21.9	18.7	15.7	11.0	7.50	4.90	2.29	1.55	0.95	0.83
1963	28.0	0.00	21.7	19.8	16.9	13.5	10.1	5.54	3.20	2.30	1.60	1.20	0.93
1964	21.9	0.50	18.3	15.6	12.3	9.80	7.58	5.50	3.56	2.30	1.50	1.00	0.90
1965	50.6	0.60	26.2	22.0	19.1	16.8	14.1	11.2	7.96	5.82	3.88	2.04	1.60
1966	25.6	0.40	20.4	18.8	16.8	14.5	11.8	9.10	5.90	3.10	1.80	1.50	1.02
1967	24.9	0.10	19.6	17.6	14.1	10.2	7.20	4.50	2.90	1.90	1.30	0.90	0.80
1968	25.6	0.40	21.1	18.8	15.0	11.7	8.00	6.00	4.40	2.90	2.10	1.44	0.92
1969	24.1	0.00	17.6	15.5	11.9	9.20	6.84	5.00	3.70	2.70	1.90	1.30	0.90
1970	25.6	0.10	18.3	16.5	12.9	8.60	5.90	4.60	3.90	2.70	1.70	1.24	1.00
1971	25.9	0.00	19.9	17.5	14.4	12.0	9.50	7.80	6.20	4.25	2.50	1.30	0.90
1972	18.6	0.00	13.5	11.5	9.32	7.38	6.04	4.60	3.60	2.80	2.00	1.20	0.80
1973	27.9	0.00	20.9	18.9	16.1	13.3	10.8	7.60	4.76	2.42	1.40	0.06	0.00
1974	25.5	0.00	15.8	12.3	8.40	5.02	3.50	2.10	1.40	0.70	0.00	0.00	0.00
1975	34.3	0.00	17.0	13.0	7.20	4.35	2.90	1.90	1.10	0.25	0.00	0.00	0.00
1976	31.6	0.00	21.2	17.6	14.0	9.80	6.36	3.70	2.30	1.30	0.60	0.00	0.00
1977	37.6	0.00	22.3	19.5	15.6	12.9	9.38	6.80	3.60	2.30	1.28	0.42	0.00
1978	36.7	0.00	25.1	21.1	15.6	10.3	6.04	3.70	2.10	1.30	0.16	0.00	0.00
1979	25.1	0.00	17.7	14.2	9.00	6.00	4.50	3.25	2.10	1.50	0.70	0.00	0.00
1980	32.9	0.00	19.7	17.1	14.0	11.6	9.48	7.40	6.10	3.90	2.50	0.88	0.00
1981	24.1	0.00	17.7	15.8	12.1	7.76	5.00	3.30	2.00	1.20	0.30	0.00	0.00
1982	21.6	0.00	18.3	16.6	14.6	12.2	9.94	5.90	3.70	2.30	1.30	0.04	0.00
1983	19.7	0.00	16.0	14.5	12.3	9.25	6.50	4.95	3.50	2.30	1.00	0.00	0.00
1984	21.1	0.00	15.0	11.2	6.92	4.80	3.24	2.20	1.80	1.10	0.10	0.00	0.00
1985	20.4	0.00	16.6	15.1	12.8	10.0	5.68	3.50	2.30	1.30	0.00	0.00	0.00
1986	18.2	0.00	15.9	14.9	12.0	7.98	4.92	2.60	1.40	0.20	0.00	0.00	0.00
1987	18.8	0.00	16.2	15.0	12.4	9.00	6.30	3.70	1.90	0.80	0.00	0.00	0.00
1988	19.5	0.00	16.3	14.7	8.32	3.88	2.50	1.20	0.00	0.00	0.00	0.00	0.00
1989	19.2	0.00	14.6	13.5	10.5	4.60	3.00	2.20	1.10	0.00	0.00	0.00	0.00
1990	35.0	0.00	17.2	15.9	12.6	8.40	5.70	3.60	2.70	1.82	0.00	0.00	0.00
1991	19.3	0.00	14.6	11.7	7.70	4.55	2.70	1.90	1.10	0.00	0.00	0.00	0.00
1992	53.4	0.00	18.7	16.2	12.8	7.08	3.80	2.80	2.00	1.40	0.00	0.00	0.00
1993	22.9	0.00	18.8	17.7	15.4	13.3	10.6	7.80	5.50	2.80	1.80	0.00	0.00
1994	29.5	0.00	17.5	15.5	12.4	7.98	3.70	2.60	2.20	1.70	0.70	0.00	0.00
1995	21.3	0.00	18.4	17.3	10.8	5.75	3.50	2.60	2.10	1.65	0.60	0.00	0.00
1996	21.1	0.00	17.1	15.0	6.64	4.30	3.00	2.40	1.86	1.60	0.98	0.00	0.00
1997	20.5	0.00	17.9	16.9	15.3	12.0	8.22	5.90	3.70	2.30	1.80	0.90	0.00
1998	18.9	0.00	16.8	15.9	14.6	10.3	6.70	3.40	2.60	2.02	1.50	0.00	0.00
1999	18.8	0.00	16.6	15.1	10.7	6.15	3.70	2.80	2.20	1.70	1.00	0.00	0.00
2000	48.2	0.00	30.1	18.3	14.9	11.6	4.64	2.80	2.20	1.80	1.20	0.00	0.00
2001	18.9	0.00	16.2	15.1	10.1	7.66	4.24	2.60	2.00	1.50	1.50	0.00	0.00
2002	22.8	0.00	18.8	16.4	13.2	6.78	4.30	3.00	2.30	1.60	0.00	0.00	0.00
2003	20.3	0.00	13.8	11.1	7.60	4.70	3.40	2.40	1.90	1.50	0.00	0.00	0.00
2004	21.3	0.00	17.3	14.9	8.70	6.18	3.84	2.70	2.00	1.80	1.30	0.00	0.00
2005	18.8	0.00	14.8	12.3	6.14	3.28	2.40	2.10	1.80	1.60	1.08	0.00	0.00
2006	20.8	0.00	16.4	15.4	12.0	8.80	7.30	4.80	2.40	1.90	1.60	1.10	0.00
2007	18.9	0.00	15.9	15.3	9.30	7.50	6.00	3.75	3.00	2.00	1.50	0.00	0.00
2008	18.4	0.00	16.9	16.4	15.2	9.90	8.60	6.00	3.20	2.00	1.50	0.00	0.00
2009	46.4	0.00	28.8	22.3	16.0	11.4	5.76	3.00	1.90	1.60	0.40	0.00	0.00
2010	20.2	0.00	17.0	15.7	10.8	6.36	3.44	2.00	1.66	1.50	0.80	0.00	0.00
2011	29.8	0.00	20.6	16.4	14.4	11.1	7.20	4.20	2.00	1.65	1.40	0.00	0.00
2012	25.8	0.00	17.3	16.2	12.0	9.23	3.20	1.80	1.60	0.00	0.00	0.00	0.00



# Water Quality Impact Assessment:

## Blessington

Blessington WWTP

### Water Quality Impact Assessment



Table 5: Annual Flow Statistics for Pass Forward Flows from Golden Falls Reservoir

Year	Flow (m³/s)												
1950	19.8	1.40	18.0	17.3	15.1	11.9	8.86	6.60	5.44	3.40	1.50	1.50	1.50
1951	22.6	1.50	17.7	15.8	12.6	10.7	8.50	6.80	5.10	3.00	1.57	1.50	1.50
1952	19.5	1.50	12.7	10.3	7.10	6.00	5.10	3.60	2.50	1.50	1.50	1.50	1.50
1953	23.4	1.50	13.6	12.4	10.7	8.60	6.94	5.40	4.00	3.30	2.08	1.50	1.50
1954	28.6	1.50	20.1	18.2	15.7	13.3	11.4	9.10	6.42	4.72	2.70	1.50	1.50
1955	28.5	1.50	13.7	11.0	8.10	6.25	5.20	4.20	3.30	2.68	1.50	1.50	1.50
1956	27.8	1.50	18.0	16.4	12.7	8.78	6.90	4.80	3.45	1.80	1.50	1.50	1.50
1957	29.6	1.50	20.6	19.0	15.6	14.1	12.7	11.0	8.20	6.88	1.86	1.50	1.50
1958	29.5	1.50	18.7	15.7	9.94	5.50	3.90	2.70	1.78	1.50	1.50	1.50	1.50
1959	30.4	1.50	21.9	20.2	17.4	14.5	11.7	8.50	4.20	1.50	1.50	1.50	1.50
1960	40.6	1.40	28.9	24.4	20.2	15.6	10.5	5.20	1.78	1.50	1.50	1.50	1.50
1961	21.3	1.50	15.3	13.7	10.9	8.68	6.14	4.60	2.30	1.80	1.80	1.60	1.50
1962	32.0	1.37	24.1	21.8	18.4	16.0	11.6	7.80	4.96	1.55	1.50	1.50	1.50
1963	30.8	1.30	21.8	19.9	16.8	13.8	10.2	6.20	2.90	1.80	1.50	1.50	1.50
1964	24.9	1.40	18.6	15.7	11.9	9.60	7.70	5.40	3.80	1.52	1.50	1.50	1.50
1965	51.0	1.40	26.9	22.2	19.8	17.4	14.1	11.3	7.92	6.10	4.28	1.60	1.50
1966	25.7	1.40	21.9	19.7	16.8	14.4	12.1	9.50	6.16	3.42	1.50	1.50	1.50
1967	24.6	1.50	19.8	17.6	14.5	10.7	7.30	4.45	1.80	1.50	1.50	1.50	1.50
1968	26.7	1.40	21.0	19.0	15.2	11.7	8.20	6.30	4.56	3.12	1.50	1.50	1.50
1969	26.2	1.40	17.7	16.2	12.1	9.50	6.90	5.40	4.12	2.42	1.50	1.50	1.50
1970	25.4	1.40	18.4	16.7	13.2	7.88	5.74	4.60	3.86	3.00	1.60	1.50	1.50
1971	25.9	1.40	19.7	17.9	14.4	12.1	9.50	7.75	5.80	4.40	1.75	1.50	1.50
1972	19.8	0.36	13.6	11.5	9.10	7.48	5.84	4.80	3.66	2.20	1.50	1.50	1.50
1973	26.6	1.40	21.3	19.7	16.8	13.4	10.8	7.80	5.40	3.02	1.80	1.50	1.50
1974	28.1	1.20	16.2	13.0	8.52	5.58	4.20	2.50	1.60	1.50	1.50	1.50	1.50
1975	34.7	1.50	17.2	13.3	7.70	4.80	3.50	1.80	1.70	1.50	1.50	1.50	1.50
1976	32.1	1.50	22.1	18.2	14.6	10.7	7.10	4.60	2.88	1.56	1.50	1.50	1.50
1977	41.7	1.40	22.8	20.0	16.5	13.1	10.7	8.20	4.50	2.28	1.50	1.50	1.50
1978	36.5	1.50	25.5	22.2	16.9	12.2	6.94	4.30	2.00	1.50	1.50	1.50	1.50
1979	27.5	1.50	19.1	14.7	10.1	7.20	5.30	4.10	2.90	1.80	1.60	1.50	1.50
1980	37.7	1.50	19.5	17.9	15.3	12.5	10.4	8.55	6.26	4.46	3.18	1.77	1.50
1981	24.7	1.50	18.6	16.3	13.2	9.43	6.07	4.10	2.53	1.55	1.55	1.55	1.50
1982	20.4	0.75	17.8	17.1	16.6	13.1	10.2	6.85	4.83	3.45	1.75	1.55	1.50
1983	17.9	1.20	16.7	15.4	13.0	10.3	8.20	5.80	4.20	2.40	1.60	1.50	1.50
1984	20.0	0.60	16.9	11.7	7.90	5.98	4.10	2.80	1.60	1.50	1.50	1.50	1.50
1985	24.2	1.50	16.9	16.5	14.2	10.4	7.00	4.40	2.90	1.60	1.50	1.50	1.50
1986	18.8	1.50	16.9	16.3	12.8	9.30	6.40	2.80	1.50	1.50	1.50	1.50	1.50
1987	18.0	0.80	17.0	16.7	13.5	9.90	7.00	4.45	1.75	1.50	1.50	1.50	1.50
1988	18.2	0.47	16.9	16.6	8.52	4.10	1.72	1.50	1.50	1.50	1.50	1.50	1.50
1989	17.5	1.42	16.5	14.5	10.2	4.00	1.50	1.50	1.50	1.50	1.50	1.50	1.50
1990	18.1	1.20	16.9	16.6	12.8	8.80	5.54	2.00	1.50	1.50	1.50	1.50	1.50
1991	17.2	1.35	16.1	12.5	9.00	5.05	1.80	1.50	1.50	1.50	1.50	1.50	1.50
1992	52.8	1.50	18.3	16.6	13.0	6.46	2.82	1.60	1.50	1.50	1.50	1.50	1.50
1993	20.3	1.50	19.3	18.0	16.6	14.1	11.5	8.10	5.26	1.92	1.50	1.50	1.50
1994	31.9	1.50	18.0	16.7	13.1	7.50	3.20	1.50	1.50	1.50	1.50	1.50	1.50
1995	20.5	1.50	19.0	17.9	11.0	6.05	1.90	1.50	1.50	1.50	1.50	1.50	1.50
1996	19.6	1.50	18.3	15.6	7.42	3.70	1.50	1.50	1.50	1.50	1.50	1.50	1.50
1997	20.0	1.50	18.1	17.2	16.0	13.2	8.70	5.80	3.40	1.50	1.50	1.50	1.50
1998	18.3	1.40	16.9	16.7	15.0	10.1	6.10	1.60	1.50	1.50	1.50	1.50	1.50
1999	17.8	0.00	16.7	16.0	11.9	6.35	1.70	1.50	1.50	1.50	1.50	1.50	1.50
2000	51.2	1.50	31.7	19.2	16.1	10.8	5.40	1.50	1.50	1.50	1.50	1.50	1.50
2001	18.1	0.75	16.6	15.6	10.1	8.10	5.00	1.55	1.50	1.50	1.50	1.50	1.50
2002	22.8	1.50	19.6	16.9	13.7	7.70	3.90	1.50	1.50	1.50	1.50	1.50	1.50
2003	17.5	1.50	14.0	11.6	8.40	4.60	1.55	1.50	1.50	1.50	1.50	1.50	1.50
2004	20.5	0.75	17.2	13.8	9.10	6.50	3.62	1.55	1.50	1.50	1.50	1.50	1.50
2005	19.2	1.40	15.5	12.9	6.12	1.68	1.50	1.50	1.50	1.50	1.50	1.50	1.50
2006	17.7	1.50	16.7	16.1	11.7	8.90	7.50	5.30	1.50	1.50	1.50	1.50	1.50
2007	19.6	1.50	16.9	15.7	9.20	7.90	6.30	3.05	1.50	1.50	1.50	1.50	1.50
2008	18.8	1.30	17.1	16.6	14.8	9.68	8.90	5.30	1.66	1.50	1.50	1.50	1.50
2009	51.8	1.40	29.3	23.3	16.3	12.4	4.00	1.50	1.50	1.50	1.50	1.50	1.50
2010	22.0	1.50	18.2	15.9	13.2	6.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
2011	32.2	1.30	21.5	17.5	15.4	12.0	8.60	3.00	1.50	1.50	1.50	1.50	1.50
2012	21.7		18.7	16.9	12.2	9.26	1.55	1.50	1.50	1.50	1.50		

## 4 TIERED WATER QUALITY ASSESSMENT

### 4.1 Introduction

A Tiered Assessment<sup>5</sup> approach has been taken to first assess the significance of the Blessington WWTP discharge, then determine whether the proposed ELVs will have detrimental environmental impacts. The Tiered Assessment is carried out as follows:

- Tier 0 – state whether pollutants subject to EQS limits within the receiving watercourse are present within the effluent. If they are present, then proceed to Tier 1.
- Tier 1 – state whether the concentrations of pollutants in the effluent exceeds the EQS. If they exceed EQS then proceed to Tier 2<sup>6</sup>.
- Tier 2 – carry out simplified calculations to estimate the potential extent of the mixing zone and progress to Tier 3 assessment where the mixing zone estimate is unreasonably large or mixing dynamics are expected to be complex.
- Tier 3 – carry out complex detailed modelling of the outfall and receiving watercourses. This may include additional environmental monitoring and survey followed by 1D, 2D or 3D water quality modelling to understand the shape and size of the mixing zone, seasonal variation in water quality along the watercourse and the duration of impacts. If the impact is still judged to be significant then proceed to Tier 4.
- Tier 4 – Using the complex modelling techniques developed in Tier 3, investigate additional treatment or discharge location options as well as potential off-site mitigation measures to upstream water quality to increase dilution, including improvement works at upstream discharges. Other analyses that may be carried out under Tier 4 include an ecological impact assessment of the environmental receptors, including the vulnerability to contaminants in the discharge and the likely extent of actual environmental detriment which may arise from the discharge. Ecological analyses should be carried out in Consultation with the Uisce Éireann Environmental and Ecological Assessment team. These may be required where BAT approaches are considered necessary.

The following Sections provide details of approaches to be taken under Tiers 0 to 3. A Tier 4 analysis was found to be unnecessary at this site.

### 4.2 Tier 0 Assessment

The list of relevant pollutants in Blessington WWTP effluent has been determined based on the legislation determined to be relevant in Section 3.3. These substances are:- total ammonia, BOD,

<sup>5</sup> The Tiered Assessment Process is outlined in "Technical Background Documents on Identification of Mixing Zones," December 2010, issued to support identification of mixing zones under EU Directive 2009/105/EC

<sup>6</sup> In nearly all cases a minimum of a Tier 2 assessment will be required

orthophosphate, total phosphorus, pH and dissolved oxygen. All these substances are present in the effluent, however changes in the dissolved oxygen concentration in the receiving watercourse are generally affected by the addition of nutrients (particularly orthophosphate), which can result in eutrophication, rather than the direct addition of dissolved oxygen in the effluent. Concentrations of ammonia, BOD, pH and phosphate will therefore be assessed further at Tier 1 but further assessment of dissolved oxygen is not required.

### 4.3 Tier 1 Assessment

The concentrations of each relevant parameter are checked against EQS values for each pollutant in Table 6. Current effluent concentrations and proposed ELV concentrations exceed the EQS for ammonia, orthophosphate, total phosphate and BOD but current and proposed pH is within the allowable range under the Surface Waters Regulations (alkalinity data for Golden Falls Reservoir show concentrations of  $\text{CaCO}_3$  to be consistently below 100mg/l, therefore the soft water pH range has been used). A Tier 2 analysis is therefore not required for pH but is required for all other parameters.

**Table 6: Tier 1 Water Quality Analysis**

Parameter	Classification System	High-Good boundary	Good-Moderate boundary	Current Effluent Concentration	ELV	Tier 1 Outcome
<b>BOD (mg/l)</b>	Mean	1.3	1.5	9.04	20.0	Fail
	95%ile	2.2	2.6			
<b>Total Ammonia (mg/l)</b>	Mean	0.04	0.065	4.12	5.0	Fail
	95%ile	0.09	0.14			
<b>MRP (mg/l)</b>	Mean	0.025	0.035	0.30	1.00	Fail
	95%ile	0.045	0.075			
<b>Total Phosphorus (mg/l)</b>	Mean	0.01	0.025	0.79	None	Fail
<b>pH</b>	Mean	4.5-9		7.6	6-9	Pass

### 4.4 Tier 2 Assessment

Blessington WWTP discharges into a section of the River Liffey which is classified as a river for the purposes of the Surface Waters Directive, however at this location the hydraulic gradient of the waterbody is controlled by the impoundment at Golden Falls. As a result, at the discharge point, this section of the River Liffey will behave as a lake, with a hydrodynamic environment similar to that of the Golden Falls lake waterbody immediately downstream. A simplified Tier 2 water quality assessment process for lakes is usually made based on an assessment of mixing zone size based on the volume of water required to reduce the concentration of pollutant in the outfall to below the EQS. However, this simplified approach is not applicable to the Blessington discharge due to the limited channel width of the River Liffey/Golden Falls reservoir at the discharge point. The simplified process also does not take into account the input of flows from Poulaphouca Reservoir and the management of flows through the



**Water Quality Impact Assessment:**

**Blessington**

Blessington WWTP

Water Quality Impact Assessment



reservoirs by ESB. As a result, Uisce Éireann has adopted a Tier 3 analysis for this site.

#### 4.5 Tier 3 Assessment

Complex modelling has been carried out at Tier 3 to fully understand the impacts of the discharge from Blessington WWTP on receiving waters. In this case the 1-D mixing zone model CORMIX, developed by the University of Cornell and supported by the United States Environmental Protection Agency<sup>7</sup>, has been used to assess the size of the mixing zone when flows are being passed forward from Poulaphouca Reservoir to Golden Falls Reservoir because this takes into account jet mixing, advection and dispersion of the effluent plume within the receiving waters.

Cormix has been used to assess impacts under mean flow conditions as described in sections 5.5.1 – 5.5.3. The impact of the discharge when flows are not being passed forwards from Poulaphouca Reservoir are analysed in section 5.5.4.

##### 4.5.1 Average Reservoir Inflow Modelling: Input Data

CORMIX uses information on the ambient conditions, effluent composition and outfall geometry to calculate the size of the mixing zone, which is the area over which the concentrations of pollutants in the effluent are diluted to below the EQS. The CORMIX input data are set out in Table 7.

Table 7: CORMIX Modelling Input Data

Input Category	Variable	Input Data														
Scenario	Current Average Flow	Uses current average effluent flow rates and quality (Section 2) to model current discharge impacts														
	Future Average Flow	Uses scaled effluent flow rates and ELV limits (Section 2) to model future discharge impacts														
	Season	Summer & Winter														
Effluent	Flow Rate	0.01m <sup>3</sup> /s for the current scenario, 0.015m <sup>3</sup> /s for the future scenario (Section 2)														
	Effluent Density	Modelled as freshwater														
	Excess Discharge Concentration (mg/l)	Excess concentration = effluent concentration – mean ambient concentration (Table 3)														
		<table> <tr> <th>Parameter</th><th>Current Mean</th><th>ELV</th></tr> <tr> <td>Ammonia</td><td>4.96</td><td>4.98</td></tr> <tr> <td>BOD</td><td>8.76</td><td>18.91</td></tr> <tr> <td>Orthophosphate</td><td>0.39</td><td>0.99</td></tr> <tr> <td>Total Phosphate*</td><td>0.72</td><td>1.99</td></tr> </table>	Parameter	Current Mean	ELV	Ammonia	4.96	4.98	BOD	8.76	18.91	Orthophosphate	0.39	0.99	Total Phosphate*	0.72
Parameter	Current Mean	ELV														
Ammonia	4.96	4.98														
BOD	8.76	18.91														
Orthophosphate	0.39	0.99														
Total Phosphate*	0.72	1.99														
Ambient	CORMIX Adjusted Average Depth	3.96m (Appendix B)														
	Depth at Discharge	4.05m (Appendix B)														
	Flow Rate (m <sup>3</sup> /s)	7.24														
	Current Direction	240° (Channel flows southwest at discharge point)														
	Wind Speed	5m/s (Casement Wind Gauge, see below)														
	Appearance	Slight meander														
	Manning's Bed Friction Factor (n)	0.035 (channel is clean but winding)														
	Temperature	20°C in summer, 5°C in winter (max/min from EPA data)														
	Average Density	Modelled as freshwater														
	Port Type	Single port														
Outfall	Nearest Bank	Left (Appendix B)														
	Distance to Nearest Bank	16m (Appendix B)														
	Port Diameter	250mm (Appendix A)														

<sup>7</sup> <http://www.cormix.info/>

## Water Quality Impact Assessment:

### Blessington

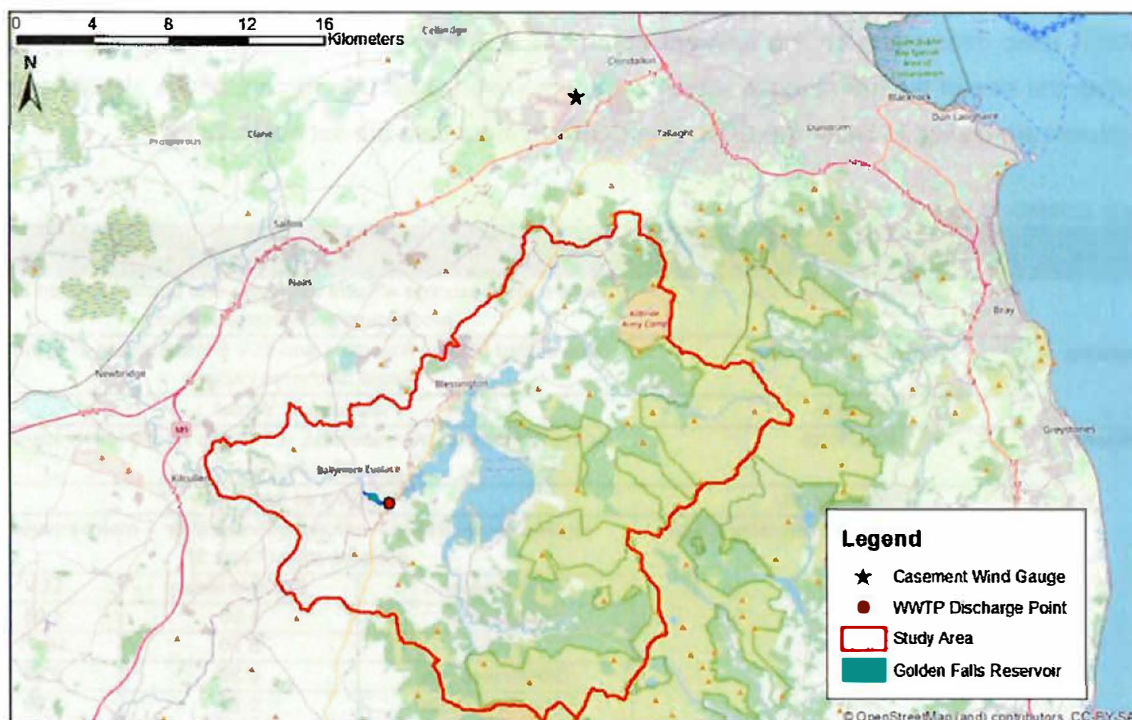
#### Blessington WWTP

#### Water Quality Impact Assessment

Vertical Angle		0°										
Port Height Above Channel Bottom (m)		1.35m (Appendix B)										
Mixing Zone	Excess EQS	Excess concentration = EQS - ambient concentration (Table 3)										
	<table><tr><th>Parameter</th><th>All Scenarios</th></tr><tr><td>Ammonia</td><td>0.022</td></tr><tr><td>BOD</td><td>0.210</td></tr><tr><td>Orthophosphate</td><td>0.013</td></tr><tr><td>Total Phosphate*</td><td>0.012</td></tr></table>		Parameter	All Scenarios	Ammonia	0.022	BOD	0.210	Orthophosphate	0.013	Total Phosphate*	0.012
	Parameter	All Scenarios										
	Ammonia	0.022										
	BOD	0.210										
	Orthophosphate	0.013										
	Total Phosphate*	0.012										
Region of Interest (m)		1000m										
Output Steps per Module		500										

\*there is no ELV for total phosphorus in effluent from Blessington WWTP, but the observed effluent quality data shows that effluent total phosphate concentrations are usually double the orthophosphate concentration, therefore an ELV approximation of 2mg/l total phosphate has been used in the calculation.

The wind speed of 5m/s given in Table 7 is based on recorded wind data from the closest wind gauge, at Casement (Figure 20). The prevailing wind direction at this gauge is from the southwest and the average (50%ile) wind speed is 5m/s.



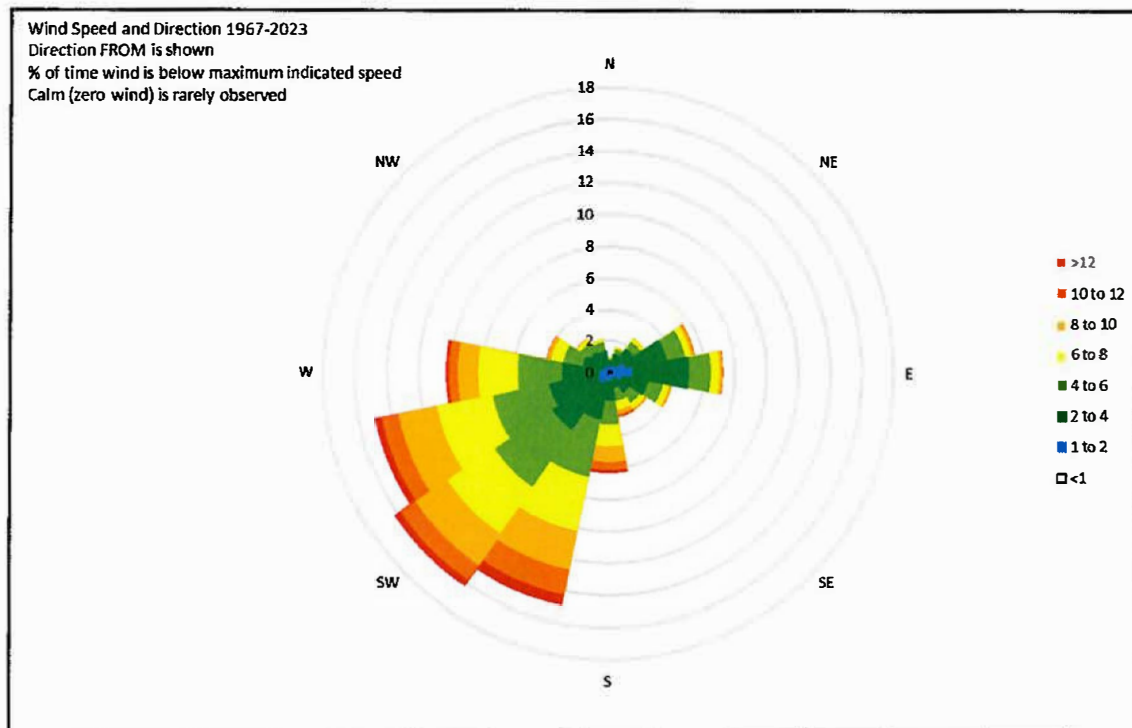


Figure 20: Casement Wind Gauge Location (Top) and Wind Rose (Bottom)

The bathymetry data (average depth, depth at discharge, distance to nearest bank and port height above the channel bottom) were informed by a bathymetric survey carried out in March 2023. The survey report is provided in Appendix B and shows that the Golden Falls reservoir occupies a submerged river valley with a deep central channel with broader, shallow areas on either side (Figure 21). The north side is shallower than the south side, with average water depths of less than 3m on the north side and 5m on the south side on the day of survey. Water depths within the central channel area reach 10m but this occurs over a fairly small area.



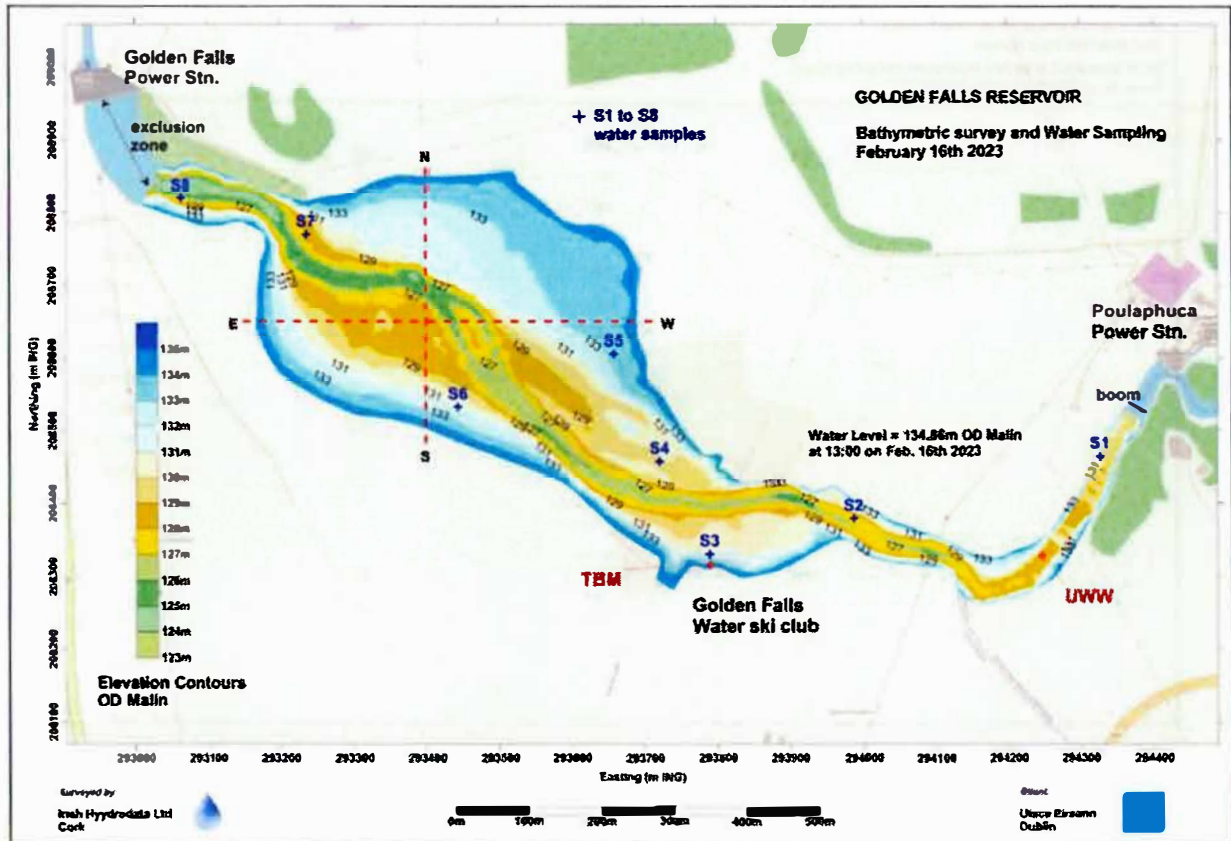


Figure 21: Golden Falls Reservoir Bathymetry  
Note: TBM = Temporary Benchmark, UWW = Blessington WWTP Discharge Location

The channel cross section at the WWTP discharge point (UWW in Figure 21) is shown in Figure 22. The WWTP outfall is approximately 1.35m above the deepest section of the channel at this location and 16m away from the left bank. The depth at the outfall is 4.05m and the average depth across the river cross section is 3.96m.

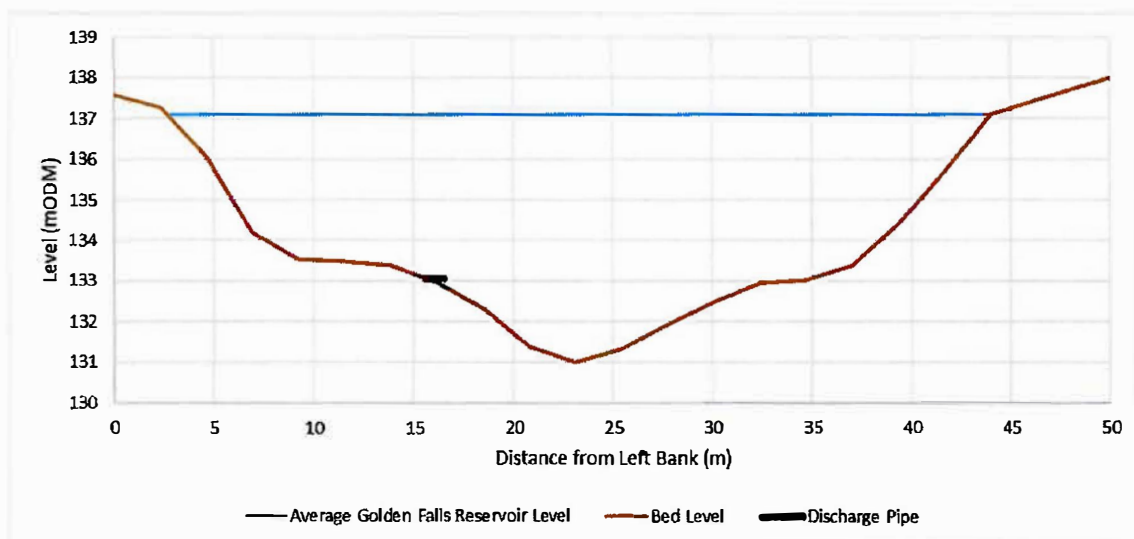


Figure 22: Golden Falls Reservoir Cross Section at Blessington WWTP Discharge Point

The water quality data taken during the survey did not show significant stratification of the water column in terms of temperature, dissolved oxygen, or chemical parameters in the deepest area of the lake. The CORMIX modelling methodology is therefore considered to be an appropriate method of assessing mixing within the reservoir. There was a slight increase in total organic nitrogen and total nitrogen (for which there are no EQSs) and total phosphate downstream of Blessington WWTP but no significant change in ammonia or orthophosphate and the change in total phosphate concentration was not sufficient to breach EQS values for lakes. Based on data presented in the survey report there were no clear impacts of the discharge observed during the survey period.

#### 4.5.2 Average Reservoir Inflow Modelling: Modelled Scenarios

The mixing zone for Blessington WWTP has been modelled for an average flow from Poulaphouca Reservoir to Golden Falls Reservoir of 7.24m<sup>3</sup>/s (see Section 4). CORMIX modelling requires a measurable ambient flow rate, however the hydrological analysis in Section 4 shows that zero flow may be passed between reservoirs for up to 20% of the time. This will result in extremely low ambient flow velocities at the discharge point and the resulting water quality impacts are assessed using an alternative methodology in Section 5.5.4.

Both the receiving waters and the effluent are modelled as freshwater and will therefore have similar density. Mixing dynamics are likely to be similar in both the summer and winter, and therefore separate seasonal model runs are not required. Summer season mixing will be simulated based on an ambient water density of 998kg/m<sup>3</sup>. The complete list of model scenarios used in the CORMIX modelling is set out in Table 8 and the model log is provided in Appendix C.

**Table 8: CORMIX Model Run Scenarios**

Scenario	WWTP Flow Rate (m <sup>3</sup> /s)	Effluent Quality	Season	Reservoir Flow Rate (m <sup>3</sup> /s)
1	0.010	Current average	Summer	7.24
2	0.015	Future ELV	Summer	7.24

#### 4.5.3 Average Reservoir Inflow Modelling: Model Results

Table 9 gives the mixing zone dimensions, delineating the local area within which the EQS is exceeded. The dimensions are given in terms of the distance from the outfall and the maximum cross-section diameter (width) of the plume. The plumes are mapped in Figures 23-26.

**Table 9: CORMIX Model Run Results**

Reservoir Flow Condition	Average Flow (7.24m <sup>3</sup> /s)	
Scenario	1	2
Effluent Flow and Concentration Scenario	Current Average	Future ELV



## Water Quality Impact Assessment:

### Blessington

Blessington WWTP

Water Quality Impact Assessment

Ammonia Mixing Zone Length (m)	380	236
Ammonia Mixing Zone Max Width (m)	7	11
BOD Mixing Zone Length (m)	56	127
BOD Mixing Zone Max Width (m)	3	5
Ortho-P Mixing Zone Length (m)	31	113
Ortho-P Mixing Zone Max Width (m)	2	4
Total P Mixing Zone Length (m)	104	171
Total P Mixing Zone Max Width (m)	4	8

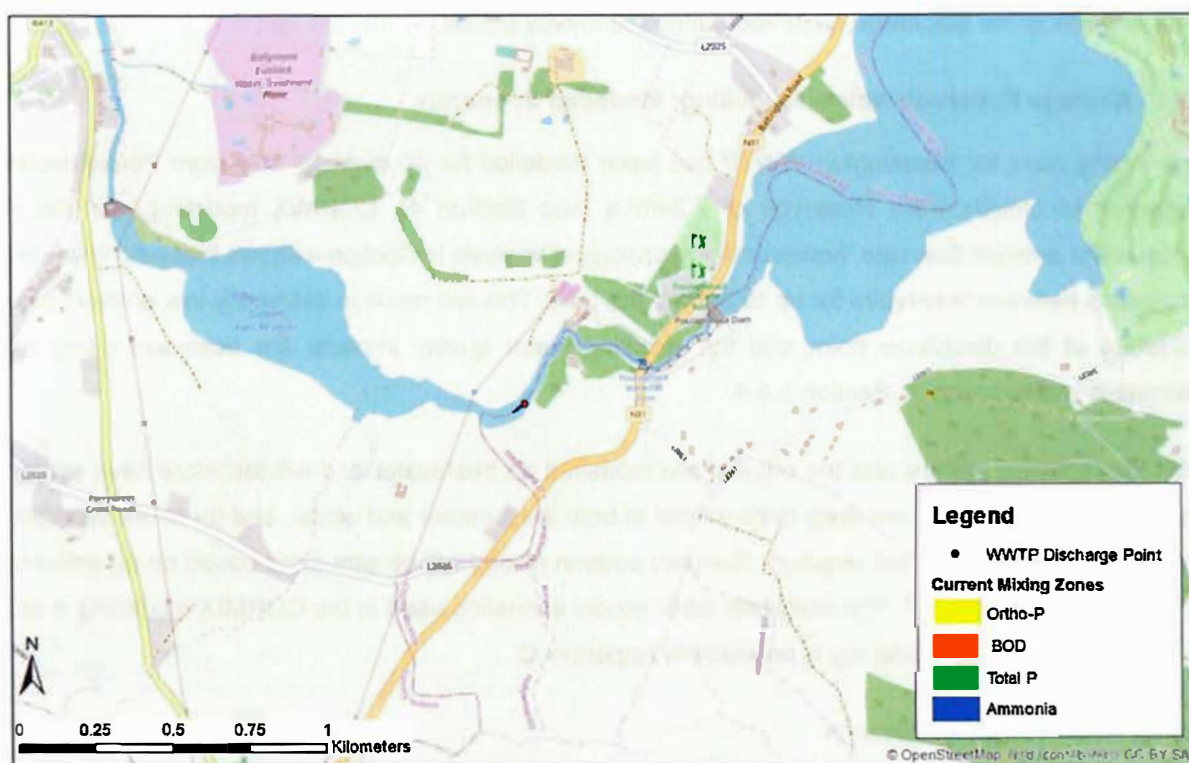


Figure 23: Effluent Mixing Zones (Current Average Effluent Flows, Average Reservoir Flows)

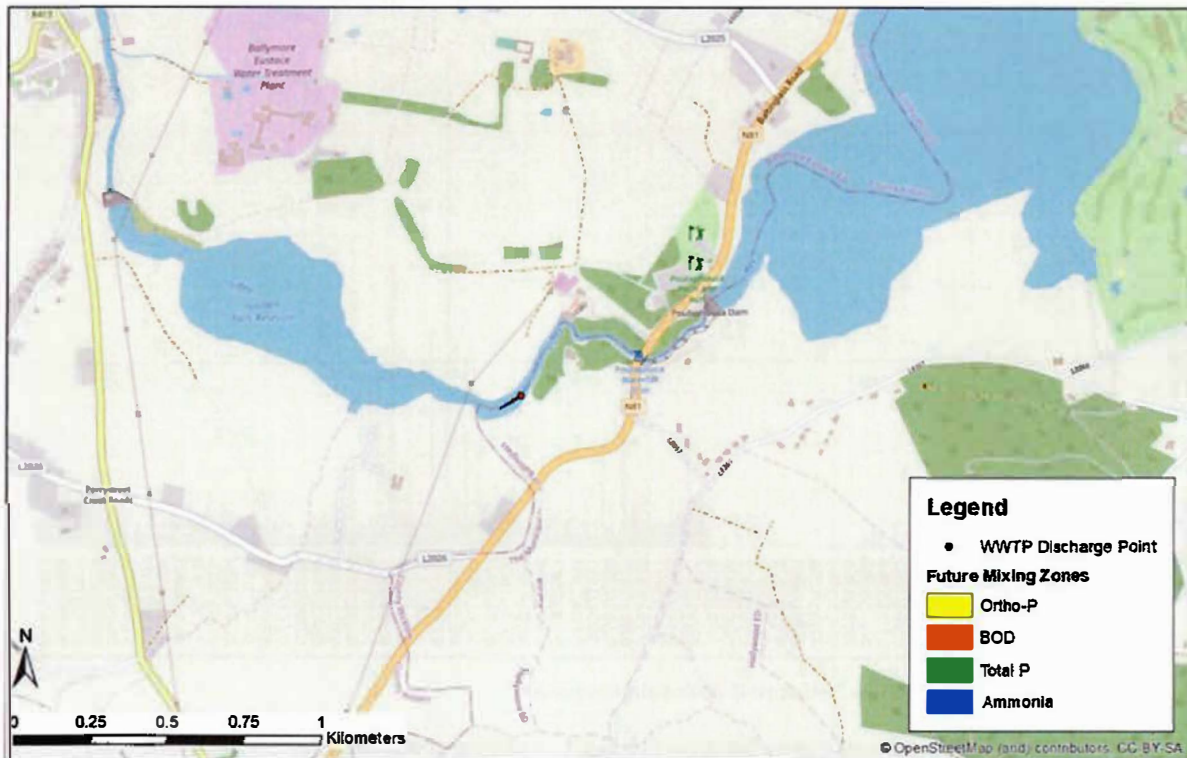
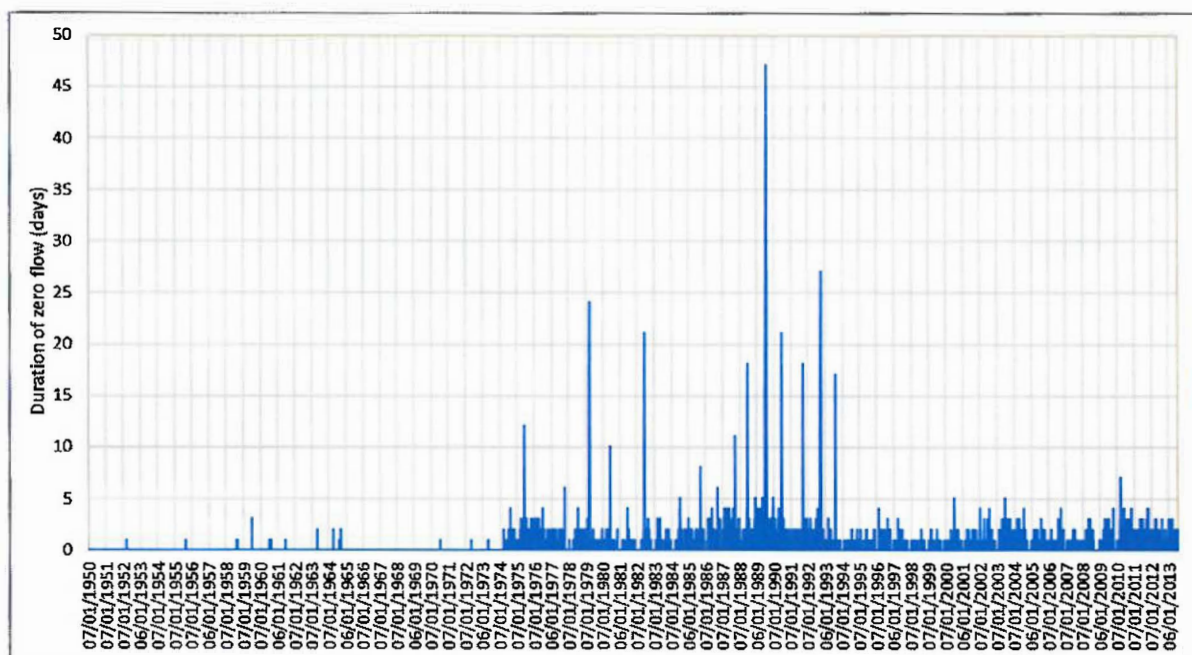


Figure 24: Effluent Mixing Zones (Future Average Effluent Flows, Average Reservoir Flows)

The modelled mixing zones are extremely narrow and extend along the deepest section of the channel. The ammonia mixing zone extends for a maximum of 47m downstream of the outfall under current effluent flow conditions and 84m under future effluent flow conditions. The current scenario mixing zones during average flow conditions are small due to rapid dilution within the receiving waters. The mixing zones extend further downstream as effluent rates increase, however the largest mixing zone extent (the future ammonia mixing zone) occupies less than 0.2% of the total Golden Falls Reservoir area. Since the mixing zone does not reach the downstream end of the reservoir for any modelled scenario, the discharge is not expected to impact on any waterbody downstream of Golden Falls.

#### 4.5.4 Zero Reservoir Inflow Modelling

As shown in Section 4, zero flow is transferred between Poulaphouca Reservoir and Golden Falls Reservoir for 20% of the year while a minimum pass forward flow of 1.5m<sup>3</sup>/s is always maintained from Golden Falls Reservoir. The zero flow condition is usually sustained for 1 to 2 days under the current operating regime which has been in place since 1994, although on one occasion the flow from Poulaphouca Reservoir was zero for seven days (Figure 27). The water level and volume in Golden Falls Reservoir will gradually reduce during times of zero inflow from upstream.



**Figure 255: Duration of Zero Inflow Period to Golden Falls Reservoir**

The CORMIX modelled carried out in Section 5.5.1-5.5.3 above is not representative of the zero inflow scenario because the river flow velocities at the WWTP discharge point will be extremely low. The discharged effluent will slowly spread and mix through a large area of the Golden Falls Reservoir which has an extremely large dilution volume. This is not well represented by the CORMIX model which mainly represents momentum-driven mixing in the immediate vicinity of the discharge point. The overall frequency of the zero flow condition is such that the 95%ile water quality condition may be affected by the accumulation of pollutants and reduced dilution within Golden Falls Reservoir during times of zero flow from Poulaphouca Reservoir.

A separate dynamic mass balance approach has therefore been used to assess the impacts on 95%ile water quality in Golden Falls Reservoir due to discharges from Blessington WWTP during times of zero inflow from upstream. This approach has been used to assess water quality in terms of 95%ile concentrations of ammonia, orthophosphate and BOD. Total phosphate has not been considered for this analysis because there is no 95%ile EQS value for this substance. The impacts of the discharge in terms of total phosphate are considered for average conditions only, and the average condition at Golden Falls reservoir is for flows between the two reservoirs to be sustained, as represented by the CORMIX modelling carried out above.

Analysis of the flow data shows that zero inflow to Golden Falls reservoir has only been maintained for a period of seven days on two occasions in the 28-year period from 1985 to 2013. In this case a 7 day zero flow scenario has been modelled to provide a conservative impact assessment. The return period of this assessment scenario is therefore estimated at 1 in 14 years.

The dynamic mass balance approach was applied by diluting the effluent volume discharged over full



24 hour period at the current average discharge rate of  $0.01\text{m}^3/\text{s}$  within the starting reservoir volume of  $961,828\text{m}^3$  measured during the bathymetric survey (Appendix B). Average effluent pollutant concentrations and upstream reservoir ambient concentrations (Section 3.4) were assumed. Further mass balance calculations were carried out at daily timesteps in which the Golden Falls Reservoir volume was reduced based on a single outflow rate of  $1.5\text{m}^3/\text{s}$ , offset by the addition of flow from the WWTP, and ambient reservoir concentrations were set at the concentrations calculated for the previous timestep. This allowed pollutant concentrations to gradually rise in the reservoir as dilution volumes reduced and background concentrations increased. The future scenario impacts were modelled using a constant WWTP effluent discharge point of  $0.015\text{m}^3/\text{s}$  and effluent concentrations set at ELV values. The results are shown in Figures 26-28 and compared with 95%ile EQS values given in Table 2.

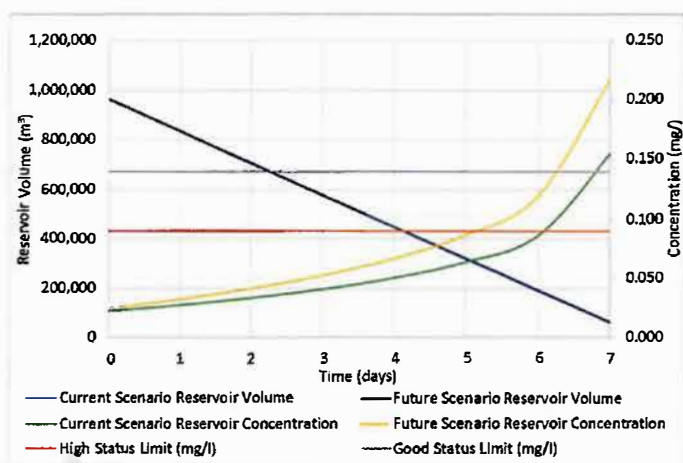


Figure 26: Zero Inflow Scenario Results for Ammonia

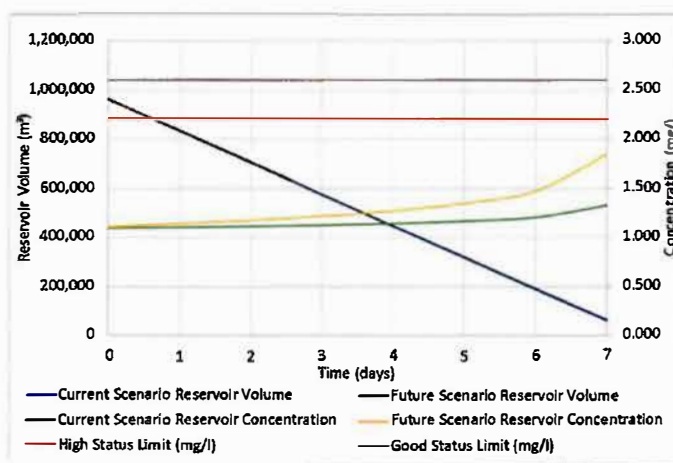


Figure 27: Zero Inflow Scenario Results for BOD

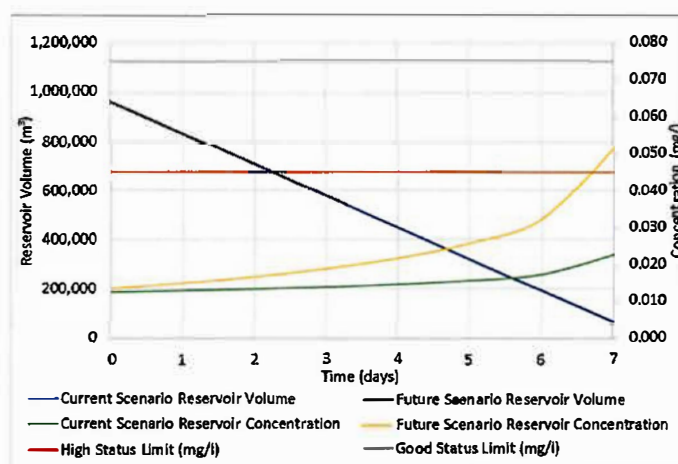


Figure 28: Zero Inflow Scenario Results for Orthophosphate

The results show that modelled concentrations of BOD increase slightly over the seven-day period for which the calculations have been carried out, but concentrations remain compatible with the achievement of high status EQS for 95%ile concentrations in rivers under both the current and future scenarios.

The modelled concentrations of orthophosphate increase slowly for the first 4-5 days before rising more

quickly after 6 days as reservoir volumes approach the minimum, however these also remain compatible with the achievement of Good Status EQS for 95%ile concentrations in rivers. The High status EQS would be exceeded after 7 days under the future scenario only.

The concentrations of ammonia increase slowly for the first 4-5 days before rising more quickly after 6 days as reservoir volumes approach the minimum. The modelled concentrations exceed the good status EQS after 6-7 days under both current and future scenarios. Modelled concentrations exceeded the High Status 95%ile EQS after 5 and 6 days under the future and current scenarios respectively.

Analysis of the flow data shows that zero inflow to Golden Falls reservoir has only been maintained for up to seven days on two occasions in the 28-year period from 1985 to 2013. This is therefore an extreme condition and the occasional transient exceedance of EQS values under these very rare conditions would not result in a deterioration of status as the modelling demonstrates the impacts do not persist for long enough to affect compliance with long term 95%ile water quality standards.

#### **4.5.5 Discharge Impact Significance**

The water quality modelling carried out above shows that, where there is flow between Poulaphouca and Golden Falls Reservoir, the mixing zone for effluent discharged from Blessington WWTP is extremely small. The area over which concentrations of ammonia, orthophosphate and BOD are exceed the high status EQS for mean concentrations occupies less than 1% of the total area of Golden Falls Reservoir, and future increases in effluent discharge rates will not significantly increase the size of the mixing zone. Similarly, the area over which the good status EQS for mean total phosphate is exceeded is less than 0.5% of the Golden Falls Reservoir area (the high status EQS for mean total phosphate is exceeded upstream of the discharge point). The mixing zone does not extend to the downstream limit of Golden Falls reservoir and will therefore have no significant impact on waterbodies downstream.

Flows are not transferred between reservoirs for 20% of the time and this may impact the 95%ile concentrations of ammonia, BOD and orthophosphate as the volume of water contained within Golden Falls Reservoir is reduced. Dynamic mass balance calculations of a 7-day zero flow event show that reservoir concentrations will increase during times of extended zero flow, however the modelling has demonstrated that EQS exceedance of Good Status only occurs after a period of 6.25 days of zero flow.

Analysis of the flow data shows that zero inflow to Golden Falls reservoir has only been maintained for a seven day period on two occasions in the 28-year period from 1985 to 2013. This is therefore, statistically, an extreme condition and the occasional transient exceedance of EQS values under these very rare conditions would not result in a deterioration of status as the modelling demonstrates the duration of any EQS exceedances under these conditions would not persist for long enough to affect compliance with 95%ile water quality standards.

Furthermore, the modelling method for the zero inflow scenario is considered to be conservative as it does not take into account addition of water and dilution capacity due to two small tributaries entering Golden Falls reservoir downstream of the WWTP discharge point.

Blessington WWTP primary outfall is the only known discharge point to Golden Falls Reservoir. The discharged effluent will therefore not have cumulative impacts due to contributions from other outfalls downstream. The cumulative impact arising from upstream discharges are taken into account in the above impact assessment by the use of ambient monitoring data measured at an appropriate location.

The assessment of the impact of the Blessington WWTP on receiving waters has demonstrated that the recent upgrade of the treatment works has had a positive impact on receiving water quality. Modelling has been carried out under both mean and zero flow conditions and has demonstrated that the existing and future (9,000PE) wastewater discharges from treatment works are compatible with the achievement of the WFD objectives of the receiving waters.



## 5 SUMMARY AND CONCLUSIONS

A water quality assessment has been carried out to assess the impacts of the proposed increase in effluent flow from Blessington WWTP and to determine whether the existing ELVs will remain appropriate in future.

A Tiered Assessment has been carried out to assess the current and potential future impacts of WWTP discharges on water quality in Golden Falls Reservoir. The Tier 0 assessment identifies that the contaminants of concern are ammonia, BOD, orthophosphate and total phosphate. The Tier 1 assessment confirms that these substances are present in the effluent at concentrations which exceed the EQS. A simplified water quality impact assessment at Tier 2 is inappropriate in this location due to the complex hydrology, reservoir morphology and the need to consider different modes of mixing within the reservoir. A more complex Tier 3 modelling study has therefore been carried out.

The modelling has been carried out to reflect the request for information made by the Environmental Protection Agency concerning the minimum flows in the vicinity of the discharge. A detailed review of the available ESB flow data show that there is significant variation in flow between Poulaphouca and Golden Falls Reservoirs, however zero flow is passed between the reservoirs for up to 20% of the time. Under these conditions the ambient flow velocities at the discharge point would approach zero. The impact of the discharge has therefore been assessed using two methods: CORMIX modelling has been used to analyse mixing zone extents during times of inflow from Poulaphouca Reservoir, and a mass balance approach has been used to analyse impacts on 95%ile water quality during times of zero inflow. In line with existing upstream water quality, the mixing zone extents in CORMIX were defined where concentrations of ammonia, orthophosphate and BOD locally exceed the applicable high EQS values and where total phosphate concentrations locally exceed the good status EQS.

The CORMIX results show that the mixing zones will be small when water is flowing from Poulaphouca Reservoir to Golden Falls Reservoir. The future increase in effluent flow rate will result in a slightly longer mixing zone, however the mixing zone still occupy less than 1% of the reservoir area and will not approach the Golden Falls Dam.

The results of the dynamic mass balance calculations show that the transient increases in concentrations under zero flow periods are not sustained long enough to allow reservoir concentrations of BOD, ammonia or orthophosphate to approach the relevant 95%ile EQS for lakes or rivers except under extreme conditions which have a frequency in the order of 1 in 14 years. A continuous flow at the discharge point is not required to allow the receiving water quality to meet EQS limits under the current reservoir operating regime.

Blessington WWTP primary outfall is the only known discharge point to Golden Falls reservoir. The discharged effluent will therefore not have cumulative impacts on reservoir water quality due to contributions from other outfalls downstream. The impact of the Blessington WWTP discharge point on

## Water Quality Impact Assessment:

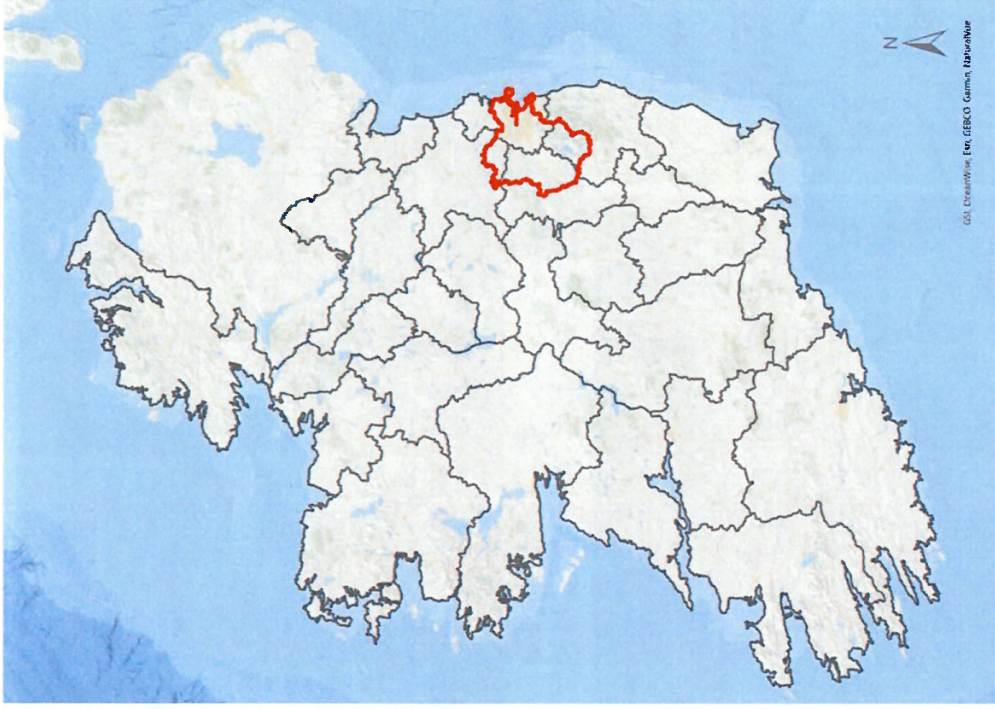
### Blessington

Blessington WWTP

### Water Quality Impact Assessment



water quality in Golden Falls reservoir is not expected to cause problems for municipal water treatment. The discharge is not considered to have significant impact on water quality under the current or future scenario based on the current ELV values. Changes to ELVs or further investigation of the water quality impacts at Tier 4 are not required.



Cycle 3

# HA 09 Liffey and Dublin Bay Catchment Report, May 2024



Environmental Protection Agency  
An Gníomhaireacht um Chaomhú Comhshoil



## Introduction

This report provides an overview of the water quality in the Liffey and Dublin Bay Catchment, and the pressures impacting on water quality. This report is based on data up to 2021. The latest water quality data, dashboards and maps throughout this report are available on [catchments.ie](https://catchments.ie) and [EPA Water Map](https://epa.maps.ie).

The Liffey and Dublin Bay Catchment includes the area drained by the River Liffey and by all streams entering tidal water between Sea Mount and Sorrento Point, Co. Dublin, draining a total area of 1,616km<sup>2</sup>. The largest urban centre in the catchment is Dublin City. The other main urban centres are Dun Laoghaire, Lucan, Clonee, Dunboyne, Leixlip, Maynooth, Kilcock, Celbridge, Newcastle, Rathcoole, Clane, Kill, Sallins, Johnstown, Naas, Newbridge, Athgarvan, Kilcullen and Blessington.

The Liffey and Dublin Bay catchment is divided into 17 subcatchments with 81 river waterbodies, six lake waterbodies, six transitional waterbodies, five coastal waterbodies and 29 groundwater bodies.

[View the Liffey and Dublin Bay Catchment on the EPA Water Map](#)

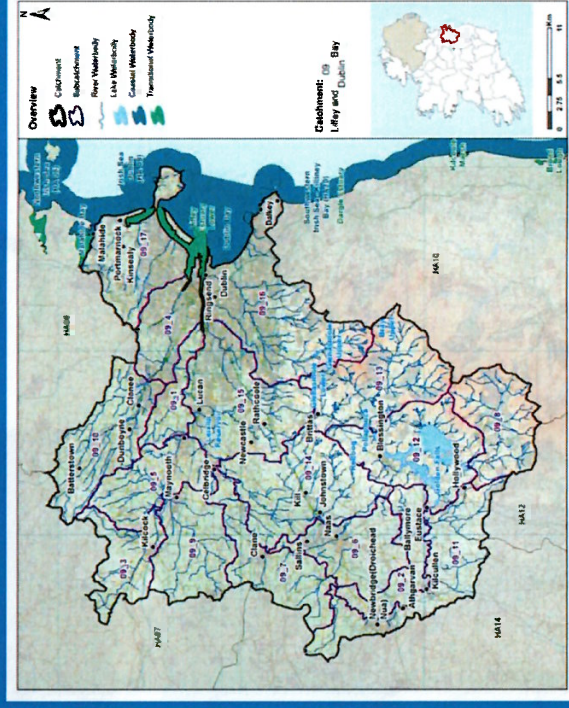
### Previous Catchment Assessments

Previous catchment assessments, which provide additional historic context and information, are archived on [catchments.ie](https://catchments.ie):

- [Cycle 2 Catchment Assessments – published September 2018](#)
- [Cycle 3 Draft Catchment Assessments – published September 2021](#)

### Online Dashboards

Links to online dashboards are provided in this report – these numbers may vary from those in this document as time progress and the online dashboards are updated based on the latest data and scientific assessments.



*Overview of Subcatchments in the Liffey and Dublin Bay Catchment*



Introduction

Water Quality  
Summary

High Status  
Objectives

Water Quality  
Changes

WFD Risk

Significant  
Pressures

Action

Summary  
Information

## Water Quality Summary

The dashboard below provides a breakdown of water quality status for surface and groundwater bodies in the Liffey and Dublin Bay Catchment.

A total of 42% of surface waterbodies were at Good or High Ecological Status in the 2016-2021 monitoring period. Eighty-six percent of groundwater bodies were at Good status.

**Go to EPA Water Maps  
for WFD Status**

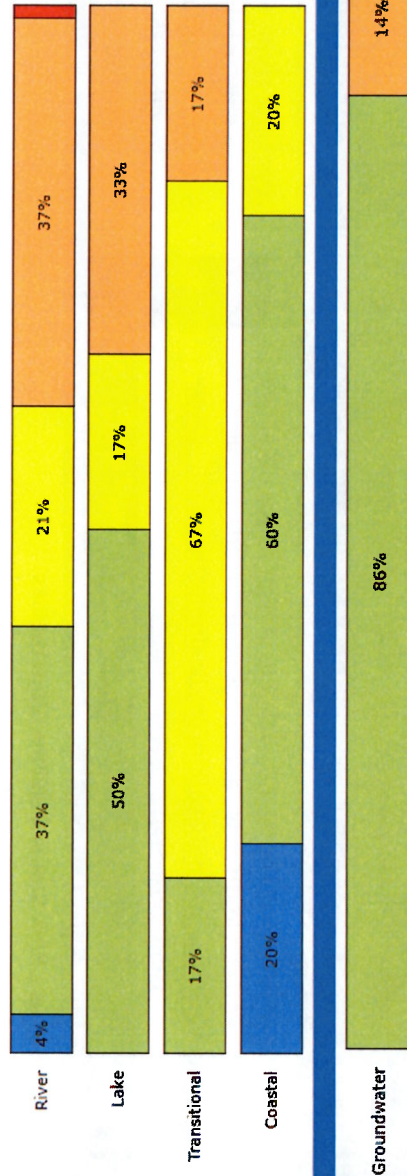
[EPA Water Map](#)

### Water Quality Status

Select Period: SW 2016-2021 ▼ Scale: ☐ National ☒ Catchment ☐ Subcatchment ☐ Local Authority 09 Liffey and Dublin Bay ▼ Unit %

Waterbodies: ☒ All Waterbodies ☐ Monitored Waterbodies only

High ■ Good ■ Moderate ■ Poor ■  
Bad ■ Unassigned ■



Water quality status 2016-2021 for the Liffey and Dublin Bay Catchment. Note canals are also included under the river category.

[View Online Dashboard: https://www.catchments.ie/data/#/dashboard/waterquality](https://www.catchments.ie/data/#/dashboard/waterquality)



Introduction

Water Quality  
Summary

High Status  
Objectives

Water Quality  
Changes

WFD Risk

Significant  
Pressures

Action

Summary  
Information

## High Status Objective Waterbodies

High status waters are prioritised for protection and action.

There are four waterbodies with a **High Ecological Status Objective (HSO)** in the Liffey and Dublin Bay Catchment, with three currently not meeting their environmental objective of High.

Grants for septic tank upgrades may be available in high status objective catchment areas - you can learn more and check your Eircode for eligibility here: <https://www.gov.ie/en/publication/6cc1e-domestic-waste-water-treatment-systems-septic-tanks>

[View HSO river waterbodies in this catchment.](#)  
See *Status and Risk / High Status Objective* for other waterbody types.

### Water Quality Status - High Status Objective Waterbodies

Select Type:

All Surface Waters

Scale: ☒ Catchment ☐ Local Authority

09 Liffey and Dublin Bay

	SW 2007-2009	SW 2010-2012	SW 2010-2015	SW 2013-2018	SW 2016-2021
COCK BROOK_010 (River)	Moderate	High	Good	Good	Good
LEMONSTOWN STREAM_010 (River)	High	High	Good	Good	Good
Northwestern Irish Sea (HA_08) (Coastal)	High	High	Good	High	Good
Southwestern Irish Sea - Killiney Bay (HA10) (Coastal)	High	Good	High	High	High

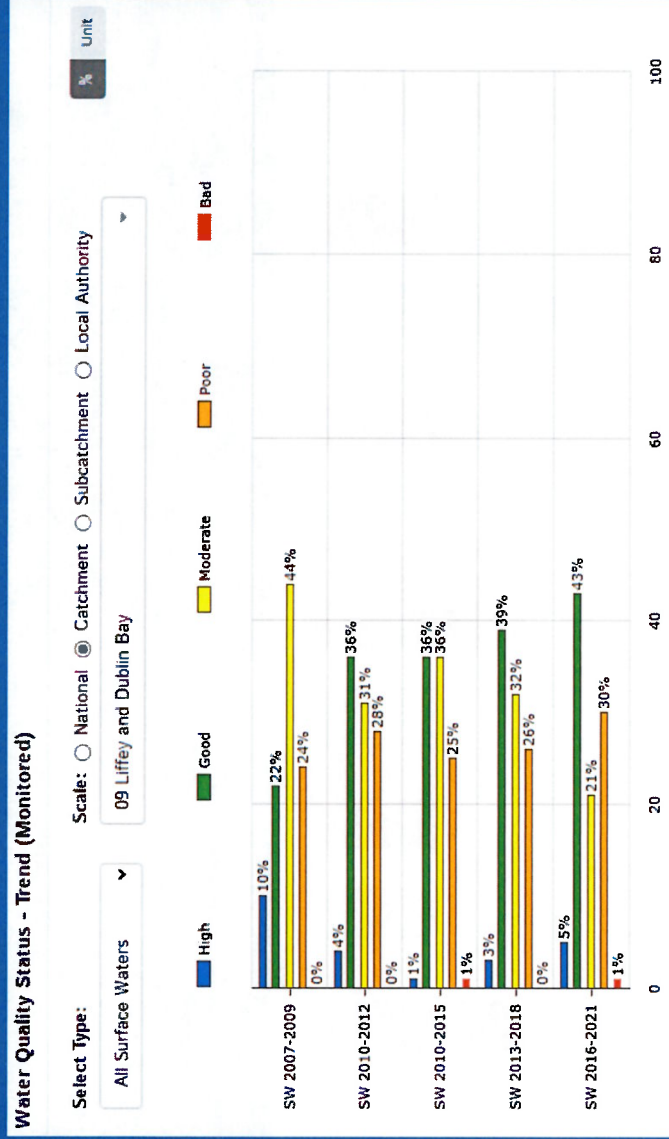
*Water quality status for High Ecological Status Objective waterbodies.*

*View Online Dashboard: <https://www.catchments.ie/data/#/dashboard/waterquality>*



## Water Quality Changes

Below illustrates the changes in ecological status in monitored surface waterbodies over the last five monitoring cycles in the Liffey and Dublin Bay Catchment. Nationally while there have been improvements in some waterbodies, these have been offset by declines elsewhere.



*Ecological status trends for monitored surface waterbodies over the last five monitoring cycles in the Liffey and Dublin Bay Catchment.*

*View online dashboard: <https://www.catchments.ie/data/#/dashboard/waterquality>*

A total of 63 (50%) waterbodies are currently meeting their environmental objective of Good or High Ecological Status, and Good Ecological Potential for canals.

	Total	Achieving Environmental Objectives (2016-2021)	High Status Environmental Objectives Waterbodies	Achieving High Status Environmental Objectives (2016-2021)
Rivers	77	27 (35%)	2	0 (0%)
Canals	4	4 (100%)	0	0 (0%)
Lakes	6	3 (50%)	0	0 (0%)
Transitional Coastal	6	1 (17%)	0	0 (0%)
Groundwater	5	3 (60%)	2	1 (50%)
	29	25 (86%)	0	0 (0%)



## WFD Risk

Introduction

Water Quality  
Summary

High Status  
Objectives

Water Quality  
Changes

WFD Risk

Significant  
Pressures

Action

Summary  
Information

A total of 59 (47%) waterbodies are *At Risk* of not meeting their environmental objective in the Liffey and Dublin Bay Catchment, while 22 (17%) are under *Review* and 46 (36%) are *Not At Risk*.

[Go to EPA Water Map to see WFD Risk for this catchment](#)



WFD Risk for the Liffey and Dublin Bay Catchment based on 2016-2021 data.

[View Online Dashboard: https://www.catchments.ie/data/#/dashboard/waterquality](https://www.catchments.ie/data/#/dashboard/waterquality)

There are currently eight heavily modified waterbodies (HMWBs) in the Liffey and Dublin Bay Catchment: Broadmeadow Water (*At Risk*), Golden Falls (*At Risk*), Glensmole Lower (*At Risk*), Leixlip Reservoir (*Review*), Glensmole Upper (*Not at Risk*), Pollaphuca (*Not at Risk*), Liffey Estuary Lower (*At Risk*) and SANTRY\_020 (*At Risk*).

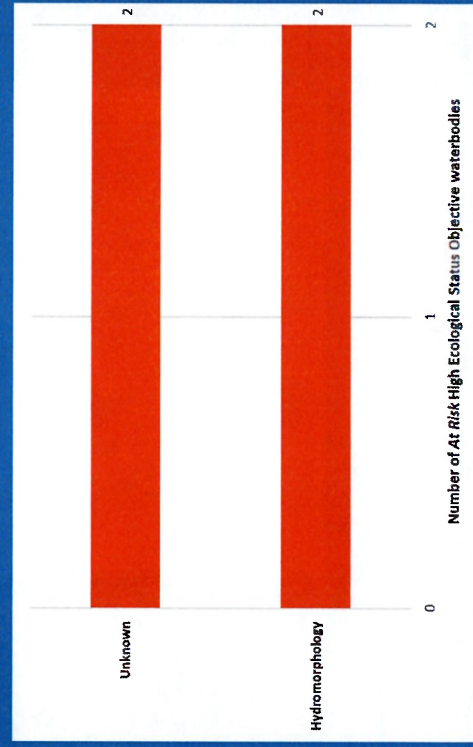
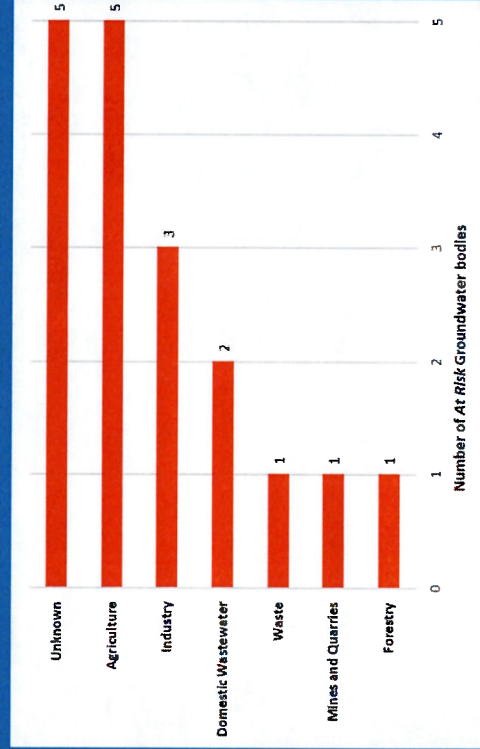
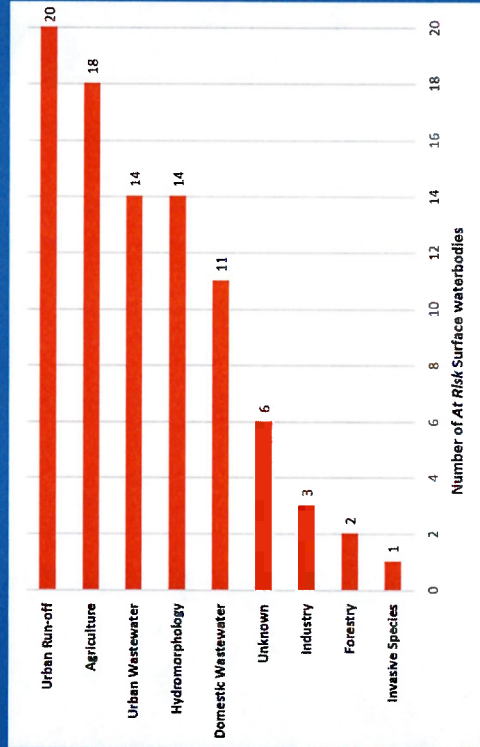
There are four artificial waterbodies in the Liffey and Dublin Bay Catchment: Grand Canal Basin (Liffey and Dublin Bay) (*Not at Risk*), Grand Canal Main Line (Liffey and Dublin Bay) (*Not at Risk*), Grand Canal Naas Line (Liffey and Dublin Bay) (*Review*) and Royal Canal Main Line (Liffey and Dublin Bay) (*Review*).

**The EPA's characterisation outcome report has more information on WFD Risk**



## Significant Pressures driving risk

Significant pressure types impacting the 49 At Risk surface waterbodies and ten groundwater bodies are broken down in the figures below, including significant pressure information for the three At Risk High Ecological Status Objective waterbodies.



The issues driven by these pressures are mainly nutrient pollution, organic pollution and altered morphological condition (habitat) impacts for surface water, and chemical quality diminution for surface water, nutrient pollution and chemical pollution for groundwaters. For more information, see <https://www.catchments.ie/data/#/dashboard/pressure?k=i351zs>.

*Go to the Summary Information section to get significant pressure and issue data for At Risk waterbodies within the Liffey and Dublin Bay Catchment.*

[Click here for more information on significant pressures](#)



Introduction

Water Quality  
Summary

High Status  
Objectives

Water Quality  
Changes

WFD Risk

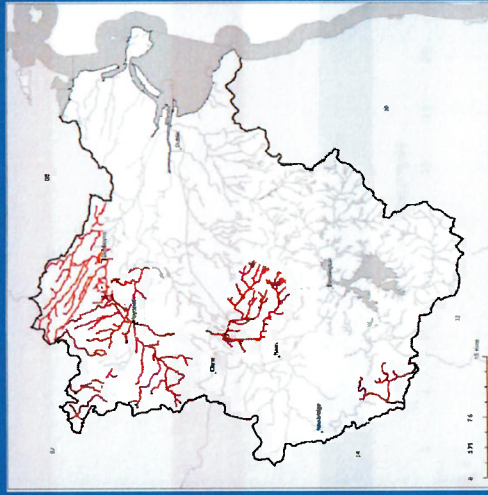
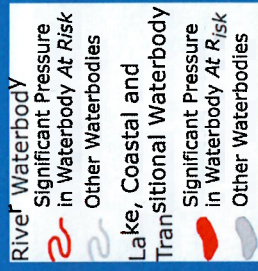
Significant  
Pressures

Action

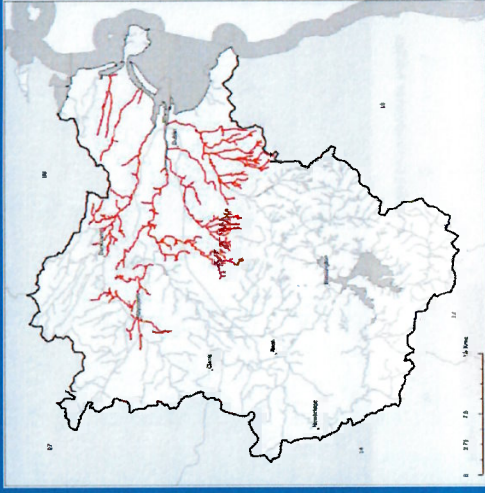
Summary  
Information

## Significant Pressures

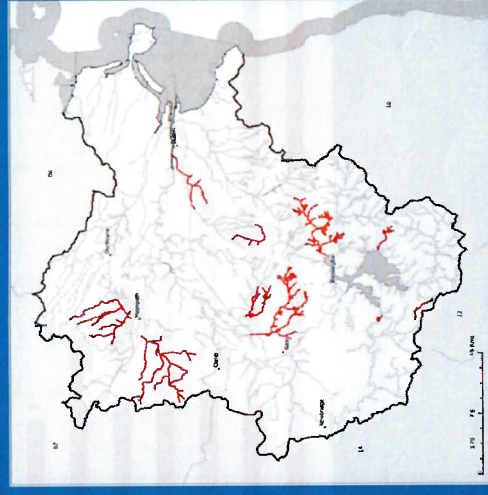
Agriculture is the top significant pressure impacting 39% of the 59 At Risk waterbodies within the Liffey and Dublin Bay Catchment, followed by 34% impacted by urban run-off and 24% by hydromorphological pressures.



i



ii



iii

The catchments.ie dashboards will show all significant pressures identified for this catchment.

[www.catchments.ie/data/#/dashboard/pressure](http://www.catchments.ie/data/#/dashboard/pressure)

Go to the [EPA Water Maps](#) for the locations of all significant pressure types identified for this catchment

Locations of At Risk surface waterbodies impacted by i) Agriculture, ii) Urban Run-off and iii) Hydromorphological Pressures.



Introduction

Water Quality  
Summary

High Status  
Objectives

Water Quality  
Changes

WFD Risk

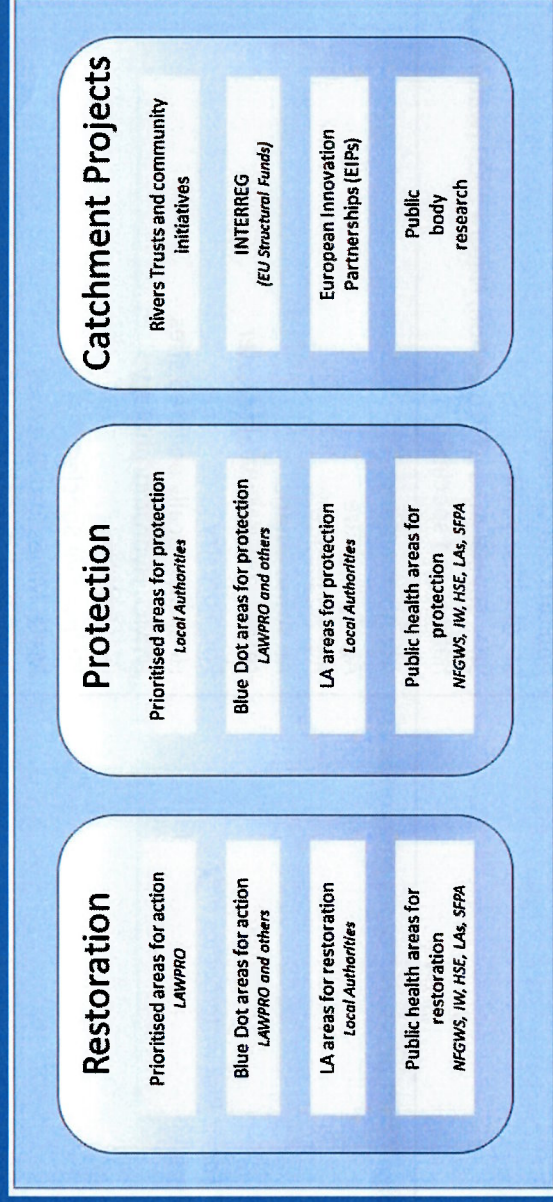
Significant  
Pressures

Action

Summary  
Information

## Priority Areas for Action

A number of waterbodies have been prioritised through the selection of Areas for Action. There were six Priority Areas for Action identified for the second river basin management planning cycle in the Liffey and Dublin Bay Catchment. This has increased to a total of 17 Areas for Restoration, two Areas for Protection and three Catchment Projects for the third cycle. *Go to the summary information section to get Area for Action information for waterbodies within the Liffey and Dublin Bay Catchment.*



### Types of Areas for Action under the third cycle River Basin Management Plan

- View the current progress of Areas for Action and Summary Reports completed by LAWPRO, on catchments.ie and the EPA Water Map:
  - <https://www.catchments.ie/data/#/areaforaction>
  - [https://gis.epa.ie/EPAMaps/default?easting=?&northing=?&lid=EPA:WFD\\_AreasForAction](https://gis.epa.ie/EPAMaps/default?easting=?&northing=?&lid=EPA:WFD_AreasForAction)
- LAWPRO have also published detailed desktop studies on Prioritised Areas for Action (PAAs) which are available their website: <https://lawwaters.ie/desktop-studies/>
- Information on Areas for Action for the second cycle is available in Cycle 2 Catchment Assessments which have been archived on catchments.ie: <https://www.catchments.ie/download/cycle-2-catchment-assessments-published-september-2018/>



Introduction

Water Quality  
Summary

High Status  
Objectives

Water Quality  
Changes

WFD Risk

Significant  
Pressures

Action

Summary  
Information

## Summary information for all waterbodies in the Liffey and Dublin Bay Catchment

The next page provides a table with a breakdown of key information for all waterbodies in this catchment. The key is provided below. Additional information for each waterbody is available on <https://www.catchments.ie/data>, including a breakdown of status, a monitoring schedule for monitored waterbodies and downloadable chemistry results, where available.

<b>Protected Area categories</b>	BW: Bathing Water DW: Drinking Water Fish: Salmonid Waters NSA: Nutrient Sensitive Areas SAC: Special Area of Conservation, Natura 2000 (water dependent habitats and species) SF: Shellfish Area SPA: Special Area of Protection, Natura 2000 (water dependent habitat and species)
<b>Significant pressure* types categories</b>	Ab: Abstractions Ag: Agriculture Aq: Aquaculture At: Atmospheric DWW: Domestic Wastewater For: Forestry HPS: Historically polluted sites HYMO: Hydromorphology Ind: Industry IS: Invasive Species M+Q: Mines and Quarries Peat: Peat Drainage and Extraction UR: Urban Run-Off UWW: Urban Wastewater Was: Waste WT: Water Treatment

\* For At Risk waterbodies only















9	E EA 087020800	TOU6A 080	River	Fingal County Council		Bad	Poor	Poor	Good	2022-2027	At risk	Nutrient, Organic	UK, Ind	Tulla	JA0780, Restoration	View WS Page	View WS on EPA Water Map
9	E EA 087021000	TOU6A 080	River	Fingal County Council		Poor	Poor	Poor	Good	2022-2027	At risk	Nutrient, Organic	UK	Tulla	JA0780, Restoration	View WS Page	View WS on EPA Water Map
9	E EA 087021100	TOU6A 080	River	Fingal County Council		Poor	Poor	Poor	Good	2022-2027	At risk	Nutrient, Organic	UK, UNW	Tulla	JA0780, Restoration	View WS Page	View WS on EPA Water Map
9	E EA 087021150	TOU6A 080	River	Dublin City Council	N/A	Unassigned	Moderate	Poor	Good	2022-2027	At risk	Nutrient, Organic	UNW, UK	Lower Tulla	Dublin City Council, Restoration	View WS Page	View WS on EPA Water Map
8, 9	E EA 080 0100	Swanbrook River	Transitional	Fingal County Council	SAC, SPA, N/A	Moderate	Poor	Moderate	Good	2022-2027	At risk	Nutrient, Organic	UNW, DARTS			View WS Page	View WS on EPA Water Map
9	E EA 080 0180	Moore Estuary	Transitional	Fingal County Council	SAC, SPA	Unassigned	Moderate	Moderate	Good	2022-2027	Review					View WS Page	View WS on EPA Water Map
9	E EA 080 0190	North Bull Island	Transitional	Dublin City Council	SAC, SPA	Unassigned	Moderate	Moderate	Good	2022-2027	Review					View WS Page	View WS on EPA Water Map
9	E EA 080 0200	Tulla Estuary	Transitional	Dublin City Council	SAC, SPA, N/A	Moderate	Moderate	Poor	Good	2022-2027	At risk	Nutrient	UNW			View WS Page	View WS on EPA Water Map
9	E EA 080 0300	Uppony Estuary Lower	Transitional	Dublin City Council	SAC, SPA, N/A	Moderate	Moderate	Moderate	Good	2022-2027	At risk	Nutrient	UNW			View WS Page	View WS on EPA Water Map
9	E EA 080 0400	Uppony Estuary Upper	Transitional	Dublin City Council	N/A	Moderate	Moderate	Moderate	Good	2022-2027	Review	Nutrient				View WS Page	View WS on EPA Water Map



# ALTEMAR

Marine & Environmental Consultancy

Ms. Catherine Flynn  
Administrative Assistant  
An Bord Pleanála  
64 Marlborough Street  
Dublin 1, D01 V902

30<sup>th</sup> May 2024

Altamar  
50 Templecarrig Upper  
Greystones  
Co. Wicklow

**Re: Altamar Response to Third Party Appeals against Decision by Wicklow County Council to grant planning permission for a Large-Scale Residential Development (LRD) on lands at Blessington Demesne, Newpaddocks and Santryhill, Blessington Co. Wicklow (ABP. Ref.319657-24 and WCC PA.Reg.Ref. 23/689)**

Dear Ms. Flynn,

We refer to An Bord Pleanála's correspondence of 8<sup>th</sup> May 2024 and 10<sup>th</sup> May 2024 inviting a response or comment by the applicant on two separate Third Party Appeals submitted to the Board under Ref. 319657-24 for a Large-Scale Residential Development (LRD) on lands at Blessington Demesne, Co. Wicklow. Altamar has been instructed by our client, Cairn Homes Properties Limited, to prepare this response submission in respect to ecological elements of the appeals by;

- Ballymore Eustace Trout and Salmon Anglers' Association
- Ballymore Eustace Community Development Association

We are the project ecologists for the proposed development and submitted the NIS and biodiversity/ecology documentation for the proposed development. I am the lead ecologist for the project and hold a M.Sc. Environmental Science, Trinity College Dublin, BSc (Hons.) in Applied Marine Biology, Heriot-Watt University, National Diploma in Applied Aquatic Science, GMIT and a National Certificate in Science, GMIT.

In relation to the appeal the following should be noted.

- 1) It should be noted that, not forgetting the biodiversity importance of Poulaphouca Reservoir and the fact that it is a Special Protection Area for birds, the lakes in question, that relate to significant portion of the appeals are actually reservoirs, contained by the hydro electric dams, which were built in the late 1930s. Therefore, it is important to point out that these are artificial waterbodies and not naturally formed lakes that developed over geological time. It is also important to note that fish migration patterns have been significantly altered by the presence of hydroelectric dams within the catchment. The presence of these dams has also significantly altered the natural flow and nutrient dynamics of this primarily agricultural catchment. The locations of the lakes are clearly seen on Geohive<sup>1</sup> in relation to the original River Liffey location prior to the construction of these elements. It is also important to note that soils were not removed prior to the flooding of these areas and residual nutrients would be have been retained by the flooding events. In order to understand the causes of algal blooms in these artificial waterbodies a greater understanding of the historical, limnological,

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<sup>1</sup> <https://webapps.geohive.ie/mapviewer/index.html>

sedimentary and chemical elements is required particularly the role that nutrients play in this catchment.

- 2) As outlined in the May 2024 WFD report of the catchment (Cycle 3 HA 09 Liffey and Dublin Bay Catchment Report, May 2024.)<sup>2</sup> *"This report provides an overview of the water quality in the Liffey and Dublin Bay Catchment and the pressures impacting on water quality."* This report includes the Blessington Lakes. As outlined in the report "Agriculture is the top significant pressure impacting 39% of the 59 At Risk waterbodies within the Liffey and Dublin Bay Catchment, followed by 34% impacted by urban run-off and 24% by hydromorphological pressures."
- 3) Irish Water produced an Annual Environmental Report 2023 for the Blessington WWTP which discharges into Goldenfalls. As outlined in the AEP *"The Blessington WWTP upgrade project comprised of an upgrade to the plant to accommodate future loads, to 9,000 p.e., and ensure that the ELV for Ammonia can be met. An Bord Pleanála granted consent for the WwTP on the 26 February 2019. The proposed upgrade works (Phase 1) were carried out under Irish Water's 2020 – 2024 Investment Plan (Revenue Cycle 3). Construction works commenced in Q4 2021. The upgrade works were completed in Q4 2022, with commissioning works undertaken in December 2022, and final snagging undertaken in January 2023."* These upgrade works include tertiary treatment and are post the WFD moderate assessment of Goldenfalls. The treatment type includes treatment type is 3P - Tertiary Phosphate removal. In addition compliance with Ammonia-Total (as N), ortho-Phosphate (as P) - unspecified mg/l, Biochemical Oxygen Demand results pass compliance.  
As outlined in the 2023 AER report *"The WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.  
The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.  
The discharge from the wastewater treatment plant does not have an observable impact on the water quality.  
The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status."*

In relation to treatment efficiency 94% of the phosphate and 88% of the total Nitrogen is removed. It is important to note that Organic Capacity (Person Equivalent) - Remaining is 2081. The proposed development will not result in over capacity of the WwTP based on these figures. In addition, as outlined in the report there were no relevant environmental complaints or incidents in 2023. In relation to Algal blooms and the availability of nutrients monitoring of both o-Phosphate (as P) (Mean mg/l) and Ammonia (as N) (Mean mg/l) is carried out both upstream and downstream of the effluent discharge. It should be noted that both mean o-Phosphate and Ammonia (as N) both fall between the upstream and downstream sampling points potentially indicating efficient treatment of both N and P within the treatment plant. In other words no significant increase in N or P is noted between upstream and downstream sampling points. It can therefore be concluded that due to the efficiency of the WwTP, the WwTP is not significantly increasing the current baseline concentrations of N and P within the catchment. Therefore, the concentration of N & P in the water post treatment would not be seen to increase the concentration of nutrients available for algae within the catchment beyond baseline N & P concentrations which are already within the water. The increase in flows within the WwTP will not breach the capacity of the recently upgraded WwTP.

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<sup>2</sup> <https://catchments.ie/wp-content/files/catchmentassessments/09%20Liffey%20and%20Dublin%20Bay%20Catchment%20Summary%20WFD%20Cycle%20203.pdf>

Table 1. Blessington AER 2023 Nutrient concentrations upstream and downstream of WwTP effluent discharge.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD (Mean mg/l)	o-Phosphate (as P) (Mean mg/l)	Ammonia (as N) (Mean mg/l)
Upstream Monitoring Point	Good	1.0666	0.0146	0.0206
Downstream Monitoring Point	Good	1.0645	0.0141	0.0203
<i>Difference</i>		-0.002	-0.0005	-0.0003
EQS		1.500	0.035	0.065
% of EQS		-0.141%	-1.395%	-0.531%



Figure 1. Upstream and downstream Sampling Points

On the basis that the foul effluent from the Proposed Development will be treated to the required standard in accordance with relevant statutory consents, it is considered that there will be no impact on the quality or WFD status of receiving hydrological receptors including the Deerpark\_09 Stream / River, the Pollaphuca lake waterbody and receiving River Liffey and Golden Falls lake waterbody as a consequence of the Proposed Development. If you have any queries in relation to the above, please do not hesitate to get in contact.

Kindest Regards

Bryan Deegan MCIEEM  
Managing Director  
Altamar Ltd.  
Marine and Environmental Consultants.



# Annual Environmental Report

2023



Blessington

D0063-01

## **CONTENTS**

### **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER**

- 1.1 ANNUAL STATEMENT OF MEASURES
- 1.2 TREATMENT SUMMARY
- 1.3 ELV OVERVIEW
- 1.4 LICENSE SPECIFIC REPORT INCLUDED IN AER

### **2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY**

- 2.1 BLESSINGTON WWTP - TREATED DISCHARGE
  - 2.1.1 INFLUENT SUMMARY - BLESSINGTON WWTP
  - 2.1.2 EFFLUENT MONITORING SUMMARY - BLESSINGTON WWTP
  - 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE
  - 2.1.4 OPERATIONAL REPORTS SUMMARY FOR BLESSINGTON WWTP
  - 2.1.5 SLUDGE/OTHER INPUTS TO BLESSINGTON WWTP

### **3 COMPLAINTS AND INCIDENTS**

- 3.1 COMPLAINTS SUMMARY
- 3.2 REPORTED INCIDENTS SUMMARY
  - 3.2.1 SUMMARY OF INCIDENTS
  - 3.2.2 SUMMARY OF OVERALL INCIDENTS

### **4 INFRASTRUCTURAL ASSESSMENT AND PROGRAMME OF IMPROVEMENTS**

- 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT
  - 4.1.1 SWO IDENTIFICATION AND INSPECTION SUMMARY REPORT
- 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS
  - 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.2 IMPROVEMENT PROGRAMME SUMMARY
  - 4.2.3 SEWER INTEGRITY RISK ASSESSMENT

### **5 LICENCE SPECIFIC REPORTS**

- 5.1 PRIORITY SUBSTANCES ASSESSMENT

### **6 CERTIFICATION AND SIGN OFF**

- 6.1 SUMMARY OF AER CONTENTS

### **7 APPENDIX**

- 7.1 AMBIENT MONITORING SUMMARY

# **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER**

This Annual Environmental Report has been prepared for D0063-01, Blessington, in Wicklow in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

## **1.1 ANNUAL STATEMENT OF MEASURES**

A summary of any improvements undertaken is provided where applicable.

The Blessington WWTP upgrade project comprised of an upgrade to the plant to accommodate future loads, to 9,000 p.e., and ensure that the ELV for Ammonia can be met. An Bord Pleanála granted consent for the WwTP on the 26 February 2019. The proposed upgrade works (Phase 1) were carried out under Irish Water's 2020 – 2024 Investment Plan (Revenue Cycle 3). Construction works commenced in Q4 2021. The upgrade works were completed in Q4 2022, with commissioning works undertaken in December 2022, and final snagging undertaken in January 2023.

## **1.2 TREATMENT SUMMARY**

The agglomeration is served by a wastewater treatment plant(s)

- Blessington WWTP with a Plant Capacity PE of 6000, the treatment type is 3P - Tertiary P removal.



## 1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF3400D0063SW001	Blessington WWTP	Treated	Compliant	N/A

## 1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
There are no Licence Specific Reports included in this AER.

## 2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

### 2.1 BLESSINGTON WWTP - TREATED DISCHARGE

#### 2.1.1 INFLUENT MONITORING SUMMARY - BLESSINGTON WWTP

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
Total Phosphorus (as P) mg/l	12	22	12
COD-Cr mg/l	12	1428	787
Suspended Solids mg/l	12	832	299
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	581	302
Total Nitrogen mg/l	12	131	76
Hydraulic Capacity	N/A	2285	968

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

#### Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional 'Operational Performance Summary'. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

## 2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF3400D0063SW001

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	40	Pass
Suspended Solids mg/l	30	75	N/A	12	N/A	N/A	13	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	20	40	N/A	12	N/A	N/A	2.98	Pass
pH pH units	6	9	N/A	12	N/A	N/A	7.76	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	N/A	N/A	0.658	Pass
ortho-Phosphate (as P) - unspecified mg/l	1	1.2	N/A	12	N/A	N/A	0.311	Pass
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	851	
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	12	N/A	N/A	0.668	
Total Nitrogen mg/l	N/A	N/A	N/A	12	N/A	N/A	9.04	



Notes:

1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

2 – For pH the WWDA specifies a range of pH 6 - 9

### Cause of Exceedance(s):

Not applicable

### Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

## 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF3400D0063SW001

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
Upstream	294714, 208463	RS09L010380	No	No	No	No	Good
Downstream	294164, 208292	RS09L010390	No	No	No	No	Good

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient Monitoring Summary**.

## Significance of Results:

The WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

## 2.1.4 OPERATIONAL PERFORMANCE SUMMARY - BLESSINGTON WWTP

### 2.1.4.1 Treatment Efficiency Report - Blessington WWTP

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TP	3995	235	94
SS	102194	4581	96
COD	268890	13921	95
cBOD	103027	1049	99
TN	26075	3185	88

Note: The above data is based on sample results for the number of dates reported

#### 2.1.4.2 Treatment Capacity Report Summary - Blessington WWTP

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

Blessington WWTP	
Peak Hydraulic Capacity (m <sup>3</sup> /day) - As Constructed	4050
DWF to the Treatment Plant (m <sup>3</sup> /day)	1350
Current Hydraulic Loading - annual max (m <sup>3</sup> /day)	2285
Average Hydraulic loading to the Treatment Plant (m <sup>3</sup> /day)	968
Organic Capacity (PE) - As Constructed	9000
Organic Capacity (PE) - Collected Load (peak week) <sup>Note<sup>1</sup></sup>	6919
Organic Capacity (PE) - Remaining	2081
Will the capacity be exceeded in the next three years? (Yes/No)	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.



—

**There is no Sludge and Other Input data for the Treatment Plant included in the AER.**

## 3 COMPLAINTS AND INCIDENTS

### 3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2023.			

### 3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Uisce Éireann but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

#### 3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
There were no reportable incidents in 2023.			

### 3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	0
Number of Incidents reported to the EPA via EDEN in 2023	0
Explanation of any discrepancies between the two numbers above	N/A



## 4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

### 4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

#### 4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2023 (No. of events)	Total volume discharged in 2023 (m <sup>3</sup> )	Monitoring Status
There are no Storm Water Overflows in this Agglomeration.							

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much wastewater discharge by metered SWOs during the year (m <sup>3</sup> )?	N/A
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	N/A
The SWO Assessment included the requirements of relevant of WWDL schedules?	N/A
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	N/A

## 4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS

### 4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
There are no Specified Improvement Programmes for this Agglomeration.							

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

### 4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

### 4.2.3 SEWER INTEGRITY RISK ASSESSMENT

N/A

## 5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Licence Specific Report	Required by licence	Included in this AER
D0063-01-Priority Substances Assessment	Yes	No



## 6. CERTIFICATION AND SIGN OFF

### 6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for Consideration of a Technical Amendment/Review of the Licence?	Yes
List reason e.g. additional SWO identified	Increase in collected loading
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	Yes
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Date: 05/03/2024

This AER has been produced by Uisce Éireann's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of,

Eleanor Roche

Head of Environmental Regulation.

## 7 APPENDIX

### Appendix

#### Appendix 7.1 - Ambient Monitoring Summary



## Blessington 2023 Ambient Monitoring Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)			
			Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	294714, 208463	RS09L010370	No	No	No	No
Downstream Monitoring Point	294165, 208292	RS09L010390	No	No	No	No

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD (Mean mg/l/l)	o-Phosphate (as P) (Mean mg/l)	Ammonia (as N) (Mean mg/l)
Upstream Monitoring Point	Good	1.0666	0.0146	0.0206
Downstream Monitoring Point	Good	1.0645	0.0141	0.0203
<i>Difference</i>		<i>-0.002</i>	<i>-0.0005</i>	<i>-0.0003</i>
EQS		1.500	0.035	0.065
% of EQS		-0.141%	-1.395%	-0.531%

## 2023 Ambient Monitoring Data

Station Name	Sample Date	Ammonium NH4-N	Biological Oxygen Demand	Chlorophyll	Dissolved Oxygen % Saturation	Dissolved Oxygen	Ortho-Phosphate P	pH	Total Phosphorus P	Total Nitrogen N
		mg/l	mg/l	mg/m3	% Sat.	mg/l	mg/l	pH units	mg/l	mg/l
Site A8 (U/S Blessington WWTP)	30/01/2023	< 0.02	< 1.4	< 4	98	12.2	< 0.02	8	< 0.02	0.92
Site A8 (U/S Blessington WWTP)	20/02/2023	< 0.02	< 1.4	< 7	98	9.8	< 0.02	7.5	< 0.02	0.65
Site A8 (U/S Blessington WWTP)	14/03/2023	< 0.02	< 1.4	< 7	99	12.2	< 0.02	7.5	< 0.02	0.77
Site A8 (U/S Blessington WWTP)	19/04/2023	< 0.02	< 1.4	4.99	100.1	11.26	< 0.02	7.9	< 0.02	0.84
Site A8 (U/S Blessington WWTP)	17/05/2023	0.05	1.4	4.42	101.7	9.98	< 0.02	7.82	< 0.02	0.73
Site A8 (U/S Blessington WWTP)	14/06/2023	0.03	1.5	4.9	102	11	0.02	7.5	< 0.02	1.04
Site A8 (U/S Blessington WWTP)	25/07/2023	< 0.02	< 1.4	7.06	102	9.7	< 0.02	6.9	< 0.02	0.75
Site A8 (U/S Blessington WWTP)	09/08/2023	< 0.02	< 1.4	< 1.0	105.3	10.03	< 0.02	7	< 0.02	0.84
Site A8 (U/S Blessington WWTP)	14/09/2023	0.04	< 1.4	< 1.0	87.6	8.41	< 0.02	7.5	0.02	0.81
Site A8 (U/S Blessington WWTP)	11/10/2023	< 0.02	< 1.4	1.6	100.2	10.34	< 0.02	7.6	< 0.02	0.79
Site A8 (U/S Blessington WWTP)	10/11/2023	< 0.02	< 1.4	1	98.7	10.4	< 0.02	7.7	< 0.02	0.83
Site A8 (U/S Blessington WWTP)	08/12/2023	< 0.02	< 1.4	< 1	91	11	< 0.02	7.1	< 0.02	1.46
	Mean	0.0206	1.0666	3.2349	98.6333	10.5267	0.0146	7.5017	0.0146	0.8692
	95%ile	0.0445	1.4450	5.9215	103.4850	12.2000	0.0168	7.9450	0.0168	1.2290
ASW1D (D/S Blessington WWTP)	30/01/2023	0.02		< 4	96	12.1	< 0.02	7.9	< 0.02	0.82
ASW1D (D/S Blessington WWTP)	20/02/2023	< 0.02	< 1.4	< 7	98	9.9	< 0.02	7.6	< 0.02	0.68
ASW1D (D/S Blessington WWTP)	14/03/2023	< 0.02	< 1.4	< 7	99	12.1	< 0.02	7.4	< 0.02	0.87
ASW1D (D/S Blessington WWTP)	19/04/2023	< 0.02	< 1.4	4.89	100.4	11.17	< 0.02	7.9	< 0.02	0.82
ASW1D (D/S Blessington WWTP)	17/05/2023	0.04	1.5	4.48	100.2	9.93	< 0.02	7.8	< 0.02	0.66
ASW1D (D/S Blessington WWTP)	14/06/2023	0.04	1.3	5.8	102	11.1	< 0.02	7.5	< 0.02	1.04
ASW1D (D/S Blessington WWTP)	25/07/2023	< 0.02	< 1.4	7.56	102	9.6	< 0.02	7.1	< 0.02	0.77
ASW1D (D/S Blessington WWTP)	09/08/2023	< 0.02	< 1.4	< 1.0	104.8	9.95	< 0.02	7.1	< 0.02	0.79
ASW1D (D/S Blessington WWTP)	14/09/2023	0.03	< 1.4	< 1.0	89.2	8.37	< 0.02	7.4	0.02	0.85
ASW1D (D/S Blessington WWTP)	11/10/2023	< 0.02	< 1.4	1.54	101	10.37	< 0.02	7.6	< 0.02	0.72
ASW1D (D/S Blessington WWTP)	10/11/2023	< 0.02	< 1.4	1	97.8	10.1	< 0.02	7.8	< 0.02	0.83
	08/12/2023	< 0.02	< 1.4	< 1	92	11	< 0.02	7.5	< 0.02	0.99
	Mean	0.0203	1.0645	3.3433	98.5333	10.4742	0.0141	7.5500	0.0146	0.8200
	95%ile	0.0400	1.4000	6.5920	103.2600	12.1000	0.0141	7.9000	0.0168	1.0125

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of  $LOD/\sqrt{2}$  was used in calculating the mean and 95%ile concentrations.

The Secretary  
An Bord Pleanála  
64 Marlborough Street,  
Dublin 1  
D01 V902

30<sup>th</sup> May 2024

RE: 220145 Lands at Blessington Demesne, Newpaddocks & Santry Hill, Blessington, Co. Wicklow – Response to 3<sup>rd</sup> Party Appeals by Ballymore Eustace Community Development Association and Ballymore Eustace Trout & Salmon Anglers Association (WCC Ref 23/689)

To Whom It May Concern,

This letter has been prepared in response to the 3<sup>rd</sup> Party Planning Appeals from both the Ballymore Eustace Community Development Association & Ballymore Eustace Trout & Salmon Anglers Association with respect to the Proposed Development at Blessington Demesne, Newpaddocks & Santry Hill, Blessington, Co. Wicklow (hereafter referred to as the 'Site' and 'Proposed Development') which was recently granted planning permission by Wicklow County Council on 16<sup>th</sup> April 2024 (Planning Ref. WCC 23/689).

This response is prepared to address the relevant environmental items raised within the 3<sup>rd</sup> Party Planning Appeals.

**Ballymore Eustace Community Development Association Appeal**

*6. Any proposal that is an environmental risk / threat to the Blessington Lakes – the largest drinking water supply reservoir in the Country and a Special Area of Protection cannot be granted. Any proposal that is a threat to Golden Falls and the downstream Village of Ballymore Eustace cannot be granted.*

The EPA (EPA, 2024) maps the groundwater body (GWB) beneath the Site as the Blessington Gravels (EU Code: IE\_EA\_G\_047). As documented in the Blessington Gravels GWB Report (GSI, 2024), groundwater flow direction is likely to be to the southeast and ultimately discharging to the Pollaphuca lake waterbody (EU Code: IE\_EA\_09\_71). It is noted that the Golden Falls lake waterbody (EU Code: IE\_EA\_09\_53) is located approximately 7km southwest and cross-gradient of the Site and therefore there is no identified hydrogeological connection identified.

**ENVIROGUIDE CONSULTING**

**Head Office**, 3D, Core C, Block 71, The Plaza, Park West, Dublin 12, D12F9TN, Ireland.  
Tel +353 1 565 4730 Email [info@enviroguide.ie](mailto:info@enviroguide.ie) [enviroguide.ie](http://enviroguide.ie)

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The closest EPA mapped (EPA, 2024) surface waterbody to the Site is the Deerpark\_09 Stream / River (River Waterbody Code: IE\_EA\_09L010400). The Deerpark\_09 Stream / River flows in a southerly direction along the northeast boundary of the northern portion of the Site (i.e., the proposed residential area), crossing the Site near the existing roundabout on Oak Drive and continuing to flow southwest approximately 0.06km east of the southern portion of the Site (i.e., the proposed town park area) through an existing pond and wetland area before converging with the Silveroe River (River Waterbody Code: IE\_EA\_09L010400) approximately 2.015km downstream of the Site, and ultimately discharging to the Pollaphuca lake waterbody (EU Code: IE\_EA\_09\_71) a further 0.05km downstream.

The Pollaphuca Reservoir, which is located approximately 0.77km east of the Site at its closest point, exits into the River Liffey (River Waterbody Code: IE\_EA\_09L010400) and Golden Falls Lake waterbody (EU Code: IE\_EA\_09\_53) at the western end of the reservoir and approximately 6.5km southwest of the Site. The River Liffey discharges to the Liffey Estuary Upper (EU Code: IE\_EA\_090\_0400), Liffey Estuary Lower (EU Code: IE\_EA\_090\_0300) and ultimately into the Dublin Bay Coastal Waterbody (EU Code: IE\_EA\_090\_0000) approximately 31.88km northeast of the Site.

During the Construction Phase, all works will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) (DBFL Consulting Engineers, 2023. Construction Environmental Management Plan). Following appointment, the contractor will be required to further develop the CEMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CEMP will be implemented for the duration of the Construction Phase, covering construction and waste management activities that will take place during the Construction Phase of the Proposed Development. Mitigation works will be adopted as part of the construction works for the Proposed Development. These measures will address the main activities of potential impact which include:

- Control and Management of surface water runoff.
- Control of Management of works nears water courses.
- Control of Management of materials from off-site sources.
- Appropriate fuel and Chemical handling, transport and storage.
- Management of accidental release of contaminants at the subject site.

Furthermore, all near stream works will be overseen by an appropriately qualified Environmental/ Ecological Clerk of Works engaged by the appointed contractor. Water quality monitoring of up and downstream locations will be undertaken to determine whether any potential risk to water quality in the Deerpark\_09 Stream / River and downstream associated water bodies during the near stream works.

**ENVIROGUIDE CONSULTING**

**Head Office**, 3D, Core C, Block 71, The Plaza, Park West, Dublin 12, D12F9TN, Ireland.  
Tel +353 1 565 4730 Email [info@enviroguide.ie](mailto:info@enviroguide.ie) [enviroguide.ie](http://enviroguide.ie)

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The mitigation measures outlined in the CEMP and the EIAR will prevent any impact on the receiving groundwater and surface water environment during the Construction Phase of the Proposed Development.

During the Operational Phase of the Proposed Development, prior to discharging to the Deerpark\_09 Stream / River, all surface water runoff will be treated and attenuated in accordance with the principals and objectives of SuDS and the Greater Dublin Sustainable Drainage System (GDSDS). The proposed attenuation and SuDS measures will include the implementation of permeable paving, swales, gullies, underground storage, detention / infiltration basins and vortex flow control devices to provide a sustainable manner in which to disperse surface water from the site, encourage groundwater recharge and provide treatment of run-off and subsequent improvement of discharge quality (refer to the Infrastructure Design Reports (DBFL Consulting Engineers, 2023. Blessington Demesne Phase 2 - Infrastructure Design Report and DBFL Consulting Engineers, 2023. Blessington Inner Link Street - Infrastructure Design Report) submitted with the planning application for further detail). Furthermore, all surface water outflow from the Site passes through petrol interceptors prior providing further treatment prior to discharging offsite. Therefore, it is considered that there will be no impact on the quality or WFD status of receiving hydrological receptors including the Deerpark\_09 Stream / River, the Pollaphuca lake waterbody and receiving River Liffey and Golden Falls lake waterbody during the Operational Phase of the Proposed Development.

Foul water from the site will ultimately be treated at the Blessington WWTP (EPA Licence No. D0063-01) before ultimately discharging to the River Liffey (River Waterbody Code: IE\_EA\_09L010400), upstream of the Golden Falls Lake waterbody (EU Code: IE\_EA\_09\_53). The WWTP is operated under existing statutory consents and the most recent available data in the 2023 AER verifies that discharge from the WWTP was compliant. Foul water from the Proposed Development will only be discharged to public sewer under agreement from Uisce Eireann (UE) (formerly referred to as Irish Water) and other applicable statutory consents verifying capacity at the WWTP for the Proposed Development. Therefore, on the basis that the foul effluent from the Proposed Development will be treated to the required standard in accordance with relevant statutory consents, it is considered that there will be no impact on the quality or WFD status of receiving hydrological receptors including the Deerpark\_09 Stream / River, the Pollaphuca lake waterbody and receiving River Liffey and Golden Falls lake waterbody during the Operational Phase of the Proposed Development.

*7. Climate Impacts: By Irish Waters own admission, the Liffey drinking water supply to the Greater Dublin Area will fall by 50 Megaliters per day as a result of Climate Change and drought. That supply already takes 40% of the total flow of the River. Therefore, how is it sustainable to keep adding more wastewater to the equation. The Liffey cannot take any more wastewater, therefore the Blessington WWTP cannot discharge more than what is permitted under D0063-01. In fact even at this limit, the discharge has never been fully compliant and Ballymore Eustice Community Development Association would argue that the discharge location in its entirety should be decommissioned in favour of building a new pipeline to the coast, should Blessington be further developed to the scale envisaged.*

**ENVIROGUIDE CONSULTING**

**Head Office**, 3D, Core C, Block 71, The Plaza, Park West, Dublin 12, D12F9TN, Ireland.

Tel +353 1 565 4730 Email [info@enviroguide.ie](mailto:info@enviroguide.ie) [enviroguide.ie](http://enviroguide.ie)

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As mentioned above, foul water from the Proposed Development will be treated at the Blessington WWTP which operates in accordance with EPA Licence No. D0063-01. The Blessington WWTP is operated with relevant statutory approvals and the available 2023 AER indicates that discharges from the WWTP were compliant with the ELVs specified in the discharge license. The 2023 AER confirms the capacity of the plant will not be exceeded in the next three years. Importantly, the AER notes the following in relation to significance of results:

*'The ambient monitoring result meet the required EQS.*

*A deterioration in water quality has been identified, however it is not known if it is or is not caused by the WWTP. Other cause of deterioration in water quality in the area are unknown.*

*The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive Status.'*

Foul water from the Site will only be discharged to the UE network under the appropriate consents from UE. The UE CoF letter (UE COF Reference: CDS20005303) states that the wastewater connection is feasible subject to infrastructure upgrades (i.e., 'upsizing approx. 750m of existing sewer from the development to the point at which the downstream sewer is 600mm in diameter'). These upgrades will be completed as per UE requirements in advance of any connection to UE infrastructure.

Therefore, on the basis that the foul effluent from the Proposed Development will be treated to the required standard in accordance with relevant statutory consents, it is considered that there will be no identified impact on the receiving environment associated with foul discharges from the Proposed Development via the Blessington WWTP. It is important to note that decisions regarding the operation and location of UE's infrastructure, including the suggestion to decommission the current discharge location in favour of building a new pipeline to the coast, fall outside the remit of the Applicant. Such decisions are under the purview of UE and relevant regulatory authorities. The Applicant's role is to ensure that the Proposed Development complies with all existing statutory requirements and infrastructure capabilities.

*12. As Blessington grows, so too does the threat of pollution to Pollaphuca Reservoir from urban surface water runoff. Pollaphuca Reservoir is already on a pollution knife edge due to mismanagement of the catchment, and the proliferation of yearly algal blooms caused by nutrients from various runoffs including urban runoff. Surface waters from Blessington are simply discharged to the local streams which are directly flowing to the Pollaphuca Reservoir. There is a stream adjacent to the WWTP also – when things go bad, which they will based on 5.5km forward feed pipe during storm weather, it is expected that emergency flows will enter this stream? Is the ABP 100% confident this has never happening before and wont happen into the future.*

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*Again to reiterate / summarise the point – the forward feed discharge main (which is a pressure main) at 250mm pipe diameter was installed around 1985, when Blessington had c3,600pe, which was capped at 6000pe and which now operates at around c7,000pe in an unauthorized manner, and which must also cater for changes in Climate Change and increased heavy rainfall events, without any spill into the wider environment, which in this instance would directly impact on Pollaphuca Reservoir which is the main supply of water for the Dublin Region, is an SPA and already in itself on a knife edge.*

As mentioned above, surface water from the Proposed Development will not be 'simply' discharged to the local streams which are directly flowing to the Pollaphuca Reservoir. Rather, Instead, all surface water runoff will be treated and attenuated according to the principles and objectives of Sustainable Urban Drainage Systems (SuDS) and the Greater Dublin Sustainable Drainage System (GSDS) before discharging into the Deerpark\_09 Stream/River. Key measures include:

- Flow Control Devices: Surface water discharge will be limited to greenfield runoff rates ensuring the current discharge rate from the site is maintained.
- SuDS Features and Petrol Interceptors: These will treat and manage runoff prior to discharging offsite.

Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no impacts on water quality and quantity (flow regime) during the Operational Phase of the Proposed Development.

The capacity of the Blessington WWTP was upgraded from 6,000 PE to 9,000 PE in January 2023. It is also noted that storage tanks are provided in the Blessington WWTP to provide storage for surface water during the more extreme storm events.

The 2023 AER states that the ambient monitoring results for samples collected upstream and downstream of the point of discharge from the Blessington WWTP meet the required surface water quality standards. The 2023 AER also confirms that discharges from the WWTP do not negatively impact the WFD status of the receiving waterbodies. Furthermore, the Blessington WWTP Water Quality Impact Assessment (UE, 2023), submitted by UE to the EPA in September 2023 in support the licence review application for the increased discharge from 6,000 PE to 9,000 PE, concludes that the discharge of treated effluent from the Blessington WWTP will not have a significant impact on water quality under current or future scenarios, based on the current licensed Emission Limit Values (ELVs). For more detailed information regarding water quality, particularly concerning algal bloom issues, please refer to the response by the project ecologist (Altermar) included with this submission response.

The Blessington WWTP is operated under existing statutory consents and as mentioned above, foul water from the Site will only be discharged to the UE network under the appropriate consents from UE. Therefore, on the basis that

**ENVIROGUIDE CONSULTING**

Head Office, 3D, Core C, Block 71, The Plaza, Park West, Dublin 12, D12F9TN, Ireland.

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the foul effluent from the Proposed Development will be treated to the required standard in accordance with relevant statutory consents, it is considered that there will be no impact on the quality or WFD status of receiving hydrological receptors including the Deerpark\_09 Stream / River, the Pollaphuca lake waterbody and receiving River Liffey and Golden Falls lake waterbody or on the closest hydraulically connected Natura 2000 sites, in particular the Pollaphuca Reservoir SPA.

In summary, the Proposed Development incorporates robust measures to manage surface water and foul effluent sustainably and compliantly to ensure there will be no adverse impacts on the Pollaphuca Reservoir and the wider receiving environment.

#### Ballymore Eustace Trout & Salmon Anglers' Association Appeal

The upgrades to the Blessington WWTP were granted planning permission by ABP and works to same were completed in January 2023. The Blessington WWTP operates in accordance with EPA Licence No. D0063-01. It is understood that the discharge licence this is currently under review by the EPA for the increased discharge from 6,000 PE to 9,000 PE. The Blessington WWTP Water Quality Impact Assessment (UE, 2023), submitted by UE to the EPA in September 2023 in response to the Regulation 18(3)(b) request for information in support of the licence review application. The assessment included a detailed review of the available flow data at the point of discharge and modelling to assess the potential impacts of existing and future wastewater discharges.

Based on available ESB flow data, the assessment identified that there is significant variation in flow between Pollaphuca and Golden Falls Reservoirs, with zero flow between the reservoirs up to 20% of the time. The impact of these discharges from the Blessington WWTP was assessed using two modelling methods:

- **CORMIX Modelling:** This analysis showed that the mixing zones are small when water flows from Pollaphuca Reservoir to Golden Falls Reservoir. Even with future increases in effluent flow rates, these zones remain small, occupying less than 1% of the reservoir area and not approaching the Golden Falls Dam.
- **Mass Balance Approach:** This method revealed that transient increases in concentrations during zero flow periods are not sustained long enough for reservoir concentrations of Biochemical Oxygen Demand (BOD), ammonia, or orthophosphate to approach the relevant 95th percentile Environmental Quality Standards (EQS) for lakes or rivers, except under extreme conditions with a frequency of approximately once in 14 years. The method identifies that continuous flow at the discharge point is not required for the receiving water quality to meet EQS limits under the current reservoir operating regime.

The report (UE, 2023) concludes that the discharge of treated effluent from the Blessington WWTP will not have a significant impact on water quality or the achievement of the WFD objectives of the receiving waters under existing

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and future wastewater discharges from the treatment works. A constant minimum flow of  $1.5\text{m}^3/\text{s}$  in the vicinity of the primary point is therefore not required to allow the receiving water quality to meet the receiving water quality EQS limits.

Foul water from the Proposed Development will only be discharged to public sewer under agreement from UE and other applicable statutory consents verifying capacity at the Blessington WWTP for the Proposed Development. The UE CoF letter (UE COF Reference: CDS20005303) states that the wastewater connection is feasible subject to infrastructure upgrades (i.e., 'upsizing approx. 750m of existing sewer from the development to the point at which the downstream sewer is 600mm in diameter'). These upgrades will be completed as per UE requirements in advance of any connection to UE infrastructure.

Therefore, on the basis that the foul effluent from the Proposed Development will be treated to the required standard in accordance with relevant statutory consents, it is considered that there will be no impact on the receiving water quality and no significant impact on the receiving WFD status associated with the discharge of foul water from the Proposed Development.

## Conclusion

Based on the above information, including compliance with statutory consents and the implementation of robust surface water management measures, it is considered that there will be no impact on receiving water quality and no significant impact on the receiving Water Framework Directive (WFD) status associated with the discharge of surface water and foul water from the Proposed Development.

We trust that this letter provides you with the necessary information and should you have any queries, then please do not hesitate to contact the undersigned.

Kind Regards,



Gareth Carroll BA BAI MEnvSc CEnv  
Principal Consultant

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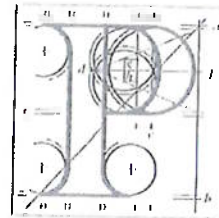
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Our Case Number: ABP-319657-24

Planning Authority Reference Number: 23689

Your Reference: Cairn Homes Properties Limited



An  
Bord  
Pleanála

MacCabe Durney Barnes  
20 Fitzwilliam Place  
Dublin 2  
D02 YV58

MacCabe Durney Barnes  
Received on

13/05/24

Date: 10 May 2024

**Re:** Large scale residential development consisting of 329 residential units, extension of the Blessington Inner Relief Road, new roundabout, new junction, road signage and all ancillary site development works. An Environmental Impact Assessment Report and a Natura Impact Statement were submitted with the application.  
Site (c. 25.14 ha) on lands within townlands of Blessington Demesne, Newpaddocks and Santryhill, Blessington, Co. Wicklow

Dear Sir / Madam,

Enclosed is a copy of a further large-scale residential development appeal under the Planning and Development Act, 2000, (as amended).

As you are aware, the planning authority's decision in the matter is already the subject of an appeal to the Board. Under section 129 of the Planning and Development Act, 2000, (as amended), as a party to the appeal you may make submissions or observations in relation to the enclosed appeal(s) in writing to the Board within 4 weeks beginning on the date of this letter.

**Please note when making a response/submission only to the appeal it may be emailed to [appeals@pleanala.ie](mailto:appeals@pleanala.ie) and there is no fee required.**

Any submissions or observations received by the Board outside of that period shall not be considered and where none have been validly received, the Board may determine the appeal without further notice to you. Please quote the above appeal reference number in any further correspondence.

Yours faithfully,

*P.P. Dillon Colclough*

Catherine Flynn  
Administrative Assistant  
Direct Line: 01-8737143

LRD06

<b>AN BORD PLEANÁLA</b>	
LDG- _____	
ABP- _____	
04 JUN 2024	
Fee: € _____	Type: _____
Time: <u>16.25</u>	By: <u>hand.</u>

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Láithreán Gréasáin  
Ríomhphost

Tel  
LoCall  
Fax  
Website  
Email

(01) 858 8100  
1800 275 175  
(01) 872 2684  
[www.pleanala.ie](http://www.pleanala.ie)  
[bord@pleanala.ie](mailto:bord@pleanala.ie)

64 Sráid Maoilbhríde  
Baile Átha Cliath 1  
D01 V902

64 Marlborough Street  
Dublin 1  
D01 V902