

Greater Dublin Drainage Project Addendum

**Environmental Impact Assessment Report Addendum:
Volume 2A Part A of 6**

Chapter 3A The Need for the Proposed Project

Uisce Éireann

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Greater Dublin Drainage Project Addendum

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3. The Need for the Proposed Project

3.1 Introduction

As detailed in Chapter 1A (Introduction) in Volume 2A Part A of this Environmental Impact Assessment Report (EIAR) Addendum, we have reviewed Chapter 3 (The Need for the Proposed Project) in Volume 2 Part A of the EIAR submitted with the original 2018 planning application, in light of:

- Changes to the baseline environment and the requirement for updated assessment, particularly in relation to the applicability of the flow and load assessment; and
- Changes to the law, policy, and industry standards and guidance in the intervening period.

Table 3.1 includes a summary of the elements which were incorporated into the planning design for the Greater Dublin Drainage Project (hereafter referred to as the Proposed Project) following direction at the Oral Hearing in 2019 and the subsequent planning conditions applied to the 2018 planning application submission. A full description is included in Chapter 4A (Description of the Proposed Project) in Volume 2A Part A of the EIAR Addendum. The remaining elements of the Proposed Project included in the 2018 planning application remain unchanged.

Table 3.1: Updated Proposed Project Elements

Updated Element	Outline Description of Updated Element
Ultraviolet (UV) Treatment	<ul style="list-style-type: none"> • UV Treatment is to be included in the treatment process at the proposed wastewater treatment plant (WwTP) in the northern section of the WwTP site. • The UV treatment system will be designed for the expected flows at the plant and will be installed on the final effluent line. UV treatment will be in operation 24 hours a day, 365 days a year. • The UV system will consist of a minimum of three and a maximum of four treatment units located below or partially below ground level with an above-ground Motor Control Centre (MCC) (in a kiosk) along with minor maintenance and control equipment (e.g. shut-off button, frame for supporting, retracting and cleaning of UV lamps etc.).
River Mayne Culvert Extension	<ul style="list-style-type: none"> • Extension of the River Mayne Culvert on the proposed access road to the WwTP by 4m (from 21m to 25m) to cater for the full width of the future north south link road.

This Chapter of the EIAR Addendum discusses the ‘Engineering’ Need for the Proposed Project. The ‘Planning’ Need is discussed in the Addendum Planning Report which is included as a standalone document in this Addendum submission to An Bord Pleanála (ABP).

3.2 Background

The origins of the Proposed Project within the Greater Dublin Strategic Drainage Study (GSDSDS) (Dublin Drainage Consultancy 2005) have not changed, and as such, the project history outlined in this Section of the EIAR in the 2018 planning application remains unchanged.

3.3 Greater Dublin Drainage Study – Assessment of Future Growth

As outlined in Section 3.2, the origins of the Proposed Project within the GSDSDS (Dublin Drainage Consultancy 2005) have not changed. The GSDSDS and its outcomes, including the determination that additional wastewater treatment capacity would be required, remain valid. Therefore, there are no changes to the information presented in this Section of the EIAR in the 2018 planning application.

3.4 Upgrade of the Existing Wastewater Treatment Plants

Table 3.2 presents the current status of the existing wastewater treatment plants (WwTPs) within the study area, based on latest available 2022 data.

Table 3.2: Status of Recommended Upgrade Works on Wastewater Treatment Plants (Updated)

WwTP	Design Population Equivalent (2002)	2022 Installed Capacity (Population Equivalent)	Ultimate Design Capacity ¹	Status of Upgrade Work	Comment
Ringsend	1,640,000	1,640,000 ¹	2,100,000 by end of 2023 2,400,000 by end of 2025	Ongoing	Planning permission received for PA29S.301798.
Shanganagh Bray	167,400	186,000	250,000	Complete	Available space to increase capacity but not currently required
Osberstown	80,000	130,000	130,000	Complete	
Leixlip	90,000	150,000	150,000	Complete	
Portrane	35,000	65,000	65,000	Complete	
Malahide	20,000	27,000	27,000		Uisce Éireann review confirmed 27,000 PE (population equivalent), which represents an increase of 6,000 PE from that reported in the 2018 EIAR.
Balbriggan and Skerries	30,000	70,000	70,000	Complete	
Swords	60,000	70,000	90,000	Ongoing	Previous capacity upgrades were expected to achieve an increase to 90,000PE however only 70,000PE has been realised to date. Further upgrades to achieve 90,000PE will be brought on stream in the near future.
Total	2,122,400	2,338,000	3,182,000		

Note 1: Expressed as average day population equivalent (PE)

3.4.1 Ringsend Wastewater Treatment Plant

Since the preparation and submission of the 2018 planning application, a planning application for upgrade works at Ringsend WwTP was also submitted to ABP in June 2018 under case reference number PA29S.301798. ABP granted planning permission for the Ringsend WwTP Upgrade Works in April 2019 and works are currently progressing. Work to increase the population equivalent (PE) to 2.1 million is expected to be completed by the end of 2023, with further works associated with increasing capacity further to 2.4 million PE, due to be completed by the end of 2025.

3.5 Review of Projected Future Organic Load on Existing Wastewater Treatment Plants

3.5.1 Background

Under the 2018 planning application, the population and load projections from the GSDSDS (Dublin Drainage Consultancy 2005) were assessed using the 2016 Census data (Central Statistics Office 2016). Since the submission of the 2018 planning application, a new Census was undertaken in 2022, for which summary data is currently available (Central Statistics Office 2023). As part of this Addendum Chapter, the population and load projections have been reviewed using the available 2022 Census summary data, to confirm whether the projections remain valid. Otherwise the approach taken in this Addendum Chapter remains consistent with the 2018 planning application.

3.5.2 Existing Loading and Projected Treatment Capacity Requirements

Residential Population

As outlined in Section 3.5.1, existing population figures have been derived from the available information from the 2022 Census (Central Statistics Office 2023) with these results compared against the projections developed as part of the assessment for the 2018 planning application. The 2022 population figures were

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found to be in-line with the projections of 'Growth Scenario 3 – Most Likely', as presented in the EIAR in the 2018 planning application. Therefore, the growth rates remain the same as presented in the EIAR in the 2018 planning application. However, the baseline year has changed from 2018 to 2022 which results in minor variations in loading at 2050. These variations are considered to be within allowable tolerance levels.

Industrial

Uisce Éireann has completed a comprehensive review of the licenced discharges in the intervening years since the submission of the 2018 planning application providing detail on the current existing industrial discharges in 2022. This data is further supplemented by the latest 2022 Annual Environmental Reports for the industries located in the catchments of the eight WwTPs examined within the Greater Dublin Area (GDA). Collectively this information has been incorporated into the updated flow and load calculations.

The headroom allowance referenced in the 2018 planning application has been removed, in order to reflect the position that headroom is only applied to future projections (and cannot be applied to the past). Additionally, the 2018 assessment accounted for a 150,000 PE load reaching Ringsend WwTP from the Significant Industrial Customer (SIC) which were predicted to commence in 2019. These works have not yet been completed, and therefore, this allocation has been discounted from the total combined loadings for 2022. However, in line with the 2018 planning application, both of these considerations remain part of the total combined loadings for the 2025, 2031 and 2050 horizons.

Commercial / Institutional

The estimation of the existing load contribution from commercial and institutional sources (e.g. shops, offices, schools) remains as presented in this Section of the EIAR in the 2018 planning application. Future commercial and institutional loadings continue to be assumed to grow in line with population growth rates.

Combined Loadings

The combined existing loadings and future projected treatment capacity requirements in each catchment for 'Growth Scenario 3 – Most Likely', as presented in the EIAR in the 2018 planning application, are summarised in Table 3.3.

Table 3.3: Projected Treatment Capacity Requirements¹ in Catchments of Existing WwTPs (Updated)

WwTP	2022 Installed Capacity	Ultimate Design Capacity ¹	Population Equivalent Load 2022 ²	Projected Treatment Capacity Required (PE) 2025	Projected Treatment Capacity Required (PE) 2031	Projected Treatment Capacity Required (PE) 2050
Ringsend ⁴	1,640,000 ¹	2,400,000	1,839,660	1,946,425	2,446,574	2,763,104
Shanganagh Bray	186,000	250,000	134,240	165,417	176,255	205,362
Osberstown ⁵	130,000	130,000	99,966	102,100	108,300	124,800
Leixlip ³	150,000	150,000	140,458	92,420	98,094	113,331
Portrane	65,000	65,000	35,740	44,305	47,283	55,280
Malahide ⁷	27,000	27,000	21,520	22,231	23,725	27,735
Balbriggan and Skerries ⁵	70,000	70,000	43,442	53,854	57,473	67,193
Swords	70,000	90,000	59,101	72,777	77,531	90,298
Total	2,338,000	3,182,000	2,374,127	2,499,529	3,035,235	3,447,103

Note 1: Expressed as average day PE

Note 2: The PE Load stated at 2022 for the Ringsend WwTP is the annual mean organic load. All other loads are peak week loads. (source: Uisce Éireann 2023)

Note 3: All projected loadings include a 20% headroom allowance. Uisce Éireann are currently considering a partial diversion of flow and load out of this catchment and into the Ringsend catchment.

Note 4: The projected growth in the Ringsend catchment includes for a diversion of flow and load out of the Leixlip and Malahide catchment.

Note 5: The SAPMAP data was originally used to provide loading from towns. This data is currently unavailable for 2022 loadings as full Census 2022 data has not been released.

Note 6: The WwTP projections have been rounded to the nearest 100.

Note 7: Uisce Éireann are currently considering a partial diversion of flow and load out of this catchment and into the Ringsend catchment.

In line with the 2018 planning application, Table 3.3 confirms that even with all of the WwTPs upgraded to their ultimate design capacity, the projected future total treatment capacity requirement in these catchments will

exceed the combined total installed design capacity between 2031 and 2035 (dependent on actual growth realised), and therefore, additional wastewater treatment capacity is required to cater for these catchments. The predicted future wastewater treatment capacity deficit in the study area will continue to be concentrated on the Ringsend WwTP.

As with the previous 2018 planning application, the recommendation that the additional wastewater treatment required is most effectively provided by the construction of a single new WwTP (i.e. the proposed WwTP element of the Proposed Project), remains valid.

3.5.3 Conclusion

The review of the 2018 planning application in light of the new population and industrial loading data has confirmed that there is no basis for amending the previous recommendations outlined in this Section of the EIAR in the 2018 planning application.

3.6 Water Services Strategic Plan

There have been no updates to the Water Services Strategic Plan (WSSP) (Uisce Éireann 2015) since the submission of the 2018 planning application. Therefore, there are no changes to the information presented in this Section of the EIAR in the 2018 planning application.

3.7 National Wastewater Sludge Management Plan

There have been no updates to the National Wastewater Sludge Management Plan (NWSMP) (Uisce Éireann 2016) since the submission of the 2018 planning application. Therefore, there are no changes to the information presented in this Section of the EIAR in the 2018 planning application.

3.8 Assessment of Projected Treatment Requirements at the Proposed Wastewater Treatment Plant

3.8.1 Ringsend Wastewater Treatment Plant Drainage Catchment

The organic loading data for the Ringsend WwTP has been revised since the submission of the 2018 planning application to incorporate the most recent actual loading data in 2022. The organic loading on Ringsend WwTP, as of 2022, was approximately 1.839 million PE (average daily load), compared to 1.808 million PE in 2016.

It is noted that daily load measurements at Ringsend WwTP continue to show wide fluctuations and variability. On completion of the current ongoing upgrade of the Ringsend WwTP, the plant will have an installed treatment capacity of 2.4 million PE. Further expansion of the Ringsend WwTP beyond this level is not currently feasible.

3.8.2 Projected Required Treatment Capacity in the Ringsend Wastewater Treatment Plant Catchment

The projected required treatment capacity in the Ringsend WwTP catchment under the three growth scenarios presented in this Section of the EIAR in the 2018 planning application have been assessed against the actual 2022 loadings, following the publication of the 2022 Census summary data (Central Statistics Office 2023). A comparison of the projected load for 'Scenario 3 – Most Likely Growth' outlined in the 2018 planning application against the actual 2022 load demonstrated that these were within 1.5% of each other, and the previous projections therefore remain valid.

Table 3.4: Summary of Projected Treatment Capacity Requirement (Updated)

Growth Scenario	Base Year	Design Year			
	2022	2025	2031	2040	2050
Scenario 1 - Planned Growth - Low	1,839,660	1,933,453	2,397,176	2,515,240	2,647,991
Scenario 2 - Planned Growth - High	1,839,660	1,943,392	2,434,943	2,580,373	2,701,451
Scenario 3 - Most Likely Growth	1,839,660	1,946,425	2,446,574	2,592,914	2,763,104

Note 1: Expressed as Average Day PE

Note 2: The WwTP projections have been rounded to the nearest 100.

3.8.3 Appraisal of Ringsend Wastewater Treatment Plant’s Treatment Capacity

Examination of the updates to Section 3.8.2 indicate that the projected treatment capacity required at Ringsend WwTP will still exceed the proposed installed treatment capacity of 2.4 million PE between 2025 and 2031 depending on the actual growth rate realised in the catchment.

The continued constraints on the future expansion of Ringsend WwTP and capacity constraints in the sewer network serving the Ringsend WwTP catchment remain relevant. Therefore, future development within this catchment still cannot be catered for by Ringsend WwTP alone. The Proposed Project is therefore still required to provide the necessary additional wastewater treatment facilities through the construction of a new proposed WwTP in the townland of Clonshagh (Clonshaugh) in north County Dublin.

3.9 Proposed Flow and Load Diversion to the New Proposed Wastewater Treatment Plant

The approach to the assessment of proposed diversions of the new proposed WwTP remains as set out in this Section of the 2018 planning application.

3.9.1 Projected Utilisation of Treatment Capacity Provided at the Proposed Wastewater Treatment Plant

The projected utilisation of the treatment capacity to be provided at the proposed WwTP out to the year 2050 has been reassessed and the updated figures are provided in Table 3.5.

Table 3.5: Development of Required Treatment Capacity at the Proposed Wastewater Treatment Plant (Updated)

	Design Year			
	2025	2031	2040	2050
9C Sewer, including Load Transferred from Leixlip WwTP	243,304	380,104	396,959	416,561
NFS Sub-Catchments West of proposed WwTP	66,169	80,604	85,755	91,745
Total Treatment Capacity Required	309,473	460,708	482,714	508,306

Examination of the updates to Section 3.8.2, the projected utilisation of the treatment capacity at the proposed WwTP out to the year 2050 remains unchanged, and therefore, the treatment capacity that will be provided at the proposed WwTP is determined to remain at 500,000 PE, as outlined in the EIAR in the 2018 planning application.

[Sludge Hub Centre](#)

As the treatment capacity at the proposed WwTP and the other regional plants contributing to the Sludge Hub Centre (SHC) out to the year 2050 remains unchanged, there are no changes to the required sludge treatment capacity to be provided under the Proposed Project, as outlined in this Section of the EIAR in the 2018 planning application.

Regional Biosolids Storage Facility

There are no changes to the purpose of the Regional Biosolids Storage Facility (RBSF), as outlined in this Section of the EIAR in the 2018 planning application, and therefore, there are no changes to this Section. The proposed RBSF will still be used solely for storage purposes only and no treatment of the biosolids will take place at the facility. The need for the proposed RBSF is set out in the NWSMP (Uisce Éireann 2016), which has not been amended since the 2018 planning application submission, and therefore remains valid.

It should be noted that since the submission of the 2018 planning application, the proposed RBSF was granted planning permission by ABP (Case Reference Number PA29S.301798), as part of the Ringsend Wastewater Treatment Plant Upgrade Project, in April 2019.

3.10 Planning Need

The 'Planning' Need is discussed in the Addendum Planning Report which is included as a standalone document in this Addendum submission to ABP.

3.11 References

Central Statistics Office (2016). 2016 Census Results

Central Statistics Office (2023). Census 2022 Summary Results. May 2023

Dublin Drainage Consultancy (2005). Greater Dublin Strategic Drainage Study

Uisce Éireann (2015). Water Services Strategic Plan

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