



Leixlip Water Treatment Plant, Co. Dublin

Upgrade Works

Appropriate Assessment Screening Report



CONSULTING ENGINEERS

1 Galway Business Park, Dangan, Galway

173 Ivy Exchange, Granby Place, Parnell Square West, Dublin 1

Innovation House, Moneen Road, Castlebar

Unit 1203, Building 1000, Gateway Business Park, New Mallow Road, Cork

CLIENT	Irish Water
PROJECT NO.	4041
PROJECT TITLE	Leixlip WTP Upgrades
REPORT TITLE	Appropriate Assessment Screening Report

REV.	STATUS	AUTHOR	REVIEWED BY	APPROVED BY	ISSUE DATE
0	Preliminary Design Stage	EG	GK	JB	02/03/2021
1	Preliminary Design Stage	EG	GK/JO	JB	23/04/2021
2	Updated following Client Review	EG	JOC	JB	31/05/2021
3	Updated description and imagery	EG	MG	JB	22/09/2021
4	Update following Client meeting	SN	MG	JB	30/09/2021

TABLE OF CONTENTS

1	Introduction & Background to Project.....	1
1.1	Background.....	1
1.2	The Requirement for Appropriate Assessment.....	1
1.3	Natura 2000 sites.....	1
1.4	The Aim of this report.....	2
2	The Appropriate Assessment Process.....	3
2.1	Guidance.....	3
2.2	Stages of Article 6 Assessment.....	3
2.3	Report Format.....	4
3	Description of the Project.....	5
3.1	Description of the Receiving Environment.....	5
3.2	Proposed Design.....	9
4	European Sites.....	10
4.1	Designated Sites in the Vicinity of the Project.....	10
5	Potential Impacts on European Sites.....	13
5.1	Cumulative Impacts With Other Plans/Projects.....	13
6	Discussions and Conclusion.....	15
7	Additional References.....	16

1 INTRODUCTION & BACKGROUND TO PROJECT

1.1 Background

Ryan Hanley was commissioned by Glan Agua, on behalf of Irish Water, to prepare a Stage 1 Appropriate Assessment (AA) Screening Report for proposed works to install acid and lime dosing facilities at Leixlip Water Treatment Plant (WTP), Co. Dublin.

The purpose of the AA screening is to determine the likely significant effects, if any, that the proposed project may have, alone or in combination with other plans or projects, on European sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) in view of their conservation objectives, within the potential zone of influence (ZOI) of the works.

This report constitutes Appropriate Assessment Screening for proposed upgrade works at Leixlip WTP, Co. Dublin in accordance with Article 6.3 of the EU Habitats Directive (92/43/EEC).

1.2 The Requirement for Appropriate Assessment

The requirement for Appropriate Assessment is set out in the EU Habitats Directive (92/43/EEC) in Article 6 (3) which states:

“Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site’s conservation objectives.”

The Habitats Directive is transposed in Ireland by the European Communities (Birds and Natural Habitats) Regulations, 2011 consolidating the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities Birds and Natural Habitats (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in recent CJEU Judgements (hereafter referred to as the Habitats Regulations) and the Planning and Development Amendment Act, 2010.

1.3 Natura 2000 sites

There are two types of EU site designation, the SAC and the SPA. SACs are designated for the conservation of flora, fauna and habitats of European importance and SPAs for the conservation of bird species and habitats of European importance. These sites form part of “Natura 2000” a network of protected areas throughout the European Union.

Annex I of the Habitats Directive lists certain habitats that must be given protection. Certain habitats are deemed ‘priority’ and have greater protection. Such Irish habitats include but are not limited to raised bogs, active blanket bogs, turloughs, heaths, lakes and rivers. Annex II of the Directive lists species whose habitats must be protected and includes but are not limited to Lesser Horseshoe Bat, Otter, Salmon, Pearl Mussel and White-clawed Crayfish.

The Birds Directive aims to protect all wild bird species naturally occurring within the European Union. Emphasis is placed on the protection of habitats for migratory and endangered species. Endangered

species within the European Union are listed under Annex I of the Birds Directive. Member states must designate SPA's for the survival of Annex I species and for all migratory birds.

1.4 The Aim of this report

This Screening for Appropriate Assessment (Stage 1) has been prepared in accordance with current guidance and provides the information required in order to establish whether or not the proposed development is likely to have significant effects on the European Sites in the context of their conservation objectives and specifically on the habitats and species for which the Sites have been designated.

By undertaking the ecological impact assessment in a step-by-step manner in relation to the habitats and species of the European Sites, this report seeks to inform the screening process required as the first stage of the process pursuant to Article 6.3 of the EU Habitats Directive.

2 THE APPROPRIATE ASSESSMENT PROCESS

2.1 **Guidance**

Article 6(3) of the EU Habitats Directive (92/43/EEC) defines the requirement for Appropriate Assessment of certain plans and projects. In order to inform the requirements of this Screening Report the following guidance documents have been referred to:

- DoEHLG Circular NPWS 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities;
- DoEHLG (2010) Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environmental Heritage and Local Government;
- European Commission (2018) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC;
- European Commission (2000) Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg. European Commission;
- European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC;
- European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/49/EEC; clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission; and
- European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No.477 of 2011).

2.2 **Stages of Article 6 Assessment**

The European Commission's guidance promotes a staged process, as set out below, the need for each being dependent upon the outcomes of the preceding stage:

1. Screening;
2. Appropriate Assessment;
3. Assessment of Alternative Solutions; and
4. Assessment where no alternative solutions remain and where adverse impacts remain.

The final stage is the Imperative Reasons of Over-riding Public Interest (IROPI test) and requirement for compensatory measures.

Within this staged process a hierarchy of avoidance, mitigation, and compensatory measures is promoted by the Habitats Directive.

Stage 1 of the process is intended to identify whether the project is 'likely to have a significant effect' upon a European site, referred to as 'Screening for Appropriate Assessment'.

If the screening process identifies effects to be significant, potentially significant or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA). Screening is undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan or project. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no impact.

Section 177U of the Planning and Development Act 2010 states that; *“the competent authority shall determine that an appropriate assessment of the proposed development is not required if it can be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will not have a significant effect on a European site.”*

Stage 2 of the process considers any potential impacts in greater detail including whether further mitigation measures are required. If an adverse impact upon the site’s integrity cannot be ruled out, then Stage 3 will need to be undertaken to assess whether alternative solutions exist. If no alternatives exist that have a lesser effect upon the European Site/s in question, the project can only be implemented if there are ‘imperative reasons of overriding public interest’, as detailed in Article 6(4). In essence, the work at Stage 1 will determine whether further stages of the process are required.

This report includes the testing required under Stage 1: Screening for Appropriate Assessment.

2.3 Report Format

In complying with the obligations under Article 6(3) and to be consistent with the Guidance for Planning Authorities, this report has been structured as follows:

- Description of the Plan/Project;
- Identification of European Sites, and the associated Conservation Objectives, which may be potentially affected;
- Identification and description of individual and cumulative impacts likely to result from the Plan/Project;
- Assessment of the significance of the impacts identified above; and
- Exclusion of site where it can be objectively concluded that there will be no significant effects.

3 DESCRIPTION OF THE PROJECT

3.1 **Description of the Receiving Environment**

The proposed upgrade works are to the Leixlip WTP, which is located along the banks of the River Liffey within the functional area of South Dublin County Council. The southern site boundary is beside the M4 and the northern site boundary is running adjacent to R148 Leixlip Road. The aerial image (Figure 3.1) illustrates that the upgrade works lie in an area of predominantly made ground such as treatment buildings, reservoirs, treatment tanks, pumping stations and tarmacked areas. The WTP site is further surrounded by agricultural lands of pasture and grassland. Areas of hedgerows and treelines line the agricultural lands, no vegetation removal is proposed as part of the works.

The purpose of the project is to provide enhanced coagulation and pH control through:

- 1) Demolition of existing Workshop and (defunct) Activated Carbon Building adjacent the 'old' / northern Treatment Plant Building;
- 2) Construction of a Sulphuric Acid Storage and Dosing Facility Building (single storey up to approximately 8.7 metres in height) adjacent the 'new' / southern Treatment Plant Building;
- 3) Construction of a Lime Storage & Dosing Facility Building (single storey up to approximately 11 metres in height) adjoining the 'old' / northern Treatment Plant Building, associated external storage silos (2 no.) with external staircase (up to approximately 12.3 metres in height) partially enveloped with a perforated metal architectural screen, and ancillary plant and equipment;
- 4) Reconfiguration and repurposing for use as a De-Alkalisation Plant of existing (disused) High-Lift Pump Hall within the 'old' / northern Treatment Plant Building;
- 5) The construction of a new ancillary Workshop Building (single storey up to approximately 4.5 metres in height) to the rear / south of the 'old' / northern Treatment Plant Building;
- 6) Temporary and enabling works to facilitate construction and continued / uninterrupted operation of the Treatment Plant site;
- 7) Associated network of underground pipelines / connections, and redirection of existing where necessary, throughout the site; and,
- 8) Provision of additional car parking (to the rear / south of the 'old' / northern Treatment Plant Building), modification and extension of existing drainage, utility and services infrastructure and connections to serve and facilitate new and reconfigured buildings, and all other associated and ancillary development and works above and below ground level.

The following temporary works are envisaged in order to develop the outlined permanent works:

- Sheet piling and bracing at the Lime Building area may be required – the silos are to be placed in a depressed bund, approximately 1m below existing ground level, in order to reduce the visual impact of the height of the structures; this will be investigated through the detailed design of the project;

visual impact of the height of the structures; this will be investigated through the detailed design of the project;

- Works Compound – there shall be 1 No. compound to be located at the location of the existing compound for the UV works. This shall be utilised for the future works including parking arrangements and pedestrian access;
- Temporary heras type security fencing shall be erected on all works zones and public interfaces;
- A Temporary Traffic Management Plan (TTMP) will be developed at construction stage to manage construction traffic access & egress from the site;
- Trench boxes may be required for ducting runs and pipelines. Localised dewatering of trenches may be required at construction stage. All dewatering arising from the excavations will be passed through siltation boxes and silt bags with the filtered water outlet discharging to the local sewer network; and
- Spoil will be removed off-site as required by a licensed haulier to a licensed waste facility. The works do not cross any watercourses. The nearest watercourse to the works area is the River Liffey which is located approximately 70m north of the works area at its nearest point (Figure 3.2).

The National Biodiversity Data Centre (NBDC) website¹ was searched, specifically the 2 km² grid square O03C which contains the water treatment plant, to determine the presence of any invasive species listed on the Third schedule in the vicinity of the proposed works or any species protected under Annex II. No invasive plant species were identified within the 2km Grid Square O03C, but the invasive Eastern Grey Squirrel (*Sciurus carolinensis*) was identified. Annex II Protected species, Otter (*Lutra Lutra*) and Freshwater White-clawed Crayfish (*Austropotamobius pallipes*) were also identified within the 2km Grid Square O03C. In addition, a field survey of the WTP site was undertaken. The site was surveyed by John O'Connor, a Ryan Hanley Ecologist on the 10th February 2021 for the presence of invasive species. The survey confirmed that no invasive species listed on the Third schedule were on site.

¹ <https://maps.biodiversityireland.ie/>



Figure 3.1 Aerial photo showing proposed work sites and receiving environment.



Figure 3.2 Watercourses in the surrounding environment

3.2 Proposed Design

The proposed development will consist of the construction of the following elements:

1. **Demolition** of the following structures to provide room for Lime Dosing facilities:
 - The existing workshop to the rear of the control building at Old Leixlip WTP; and
 - The existing activated carbon building to the rear of the control building at Old Leixlip WTP.
2. Construction of a new **Sulphuric Acid Storage and Dosing Facility**, to be located inside the fence of the New Leixlip WTP expansion site, consisting of a compartmentalised building, containing tankage within bunds for storage of 96% sulphuric acid, contained tanker delivery arrangements, acid dosing pumps for separate dosing of raw water discharged to the Old and New Leixlip WTPs, separate pumped carrier water systems. Acid building roof water will be connected to the existing surface water drainage system, pending capacity assessment of same. The delivery hard-standing area for trucks, external to the building will be separately discharged to a sub-surface contained storage tank;
3. Construction of a new **Lime Storage & Dosing Facility**, to be located to the rear of the existing Administration Building at the Old Leixlip Plant, consisting of 2 No. large lime silos and mixing equipment, to be located in a new building;
4. Conversion of the disused Old High-Lift Pump Room into a proposed **De-Alkalisiation Plant** for the treatment of dilution and carrier water, to limit CaCO_3 deposition in batching tanks; and
5. Construction of 1 No. **Workshop Building**, to replace the one to be demolished.

The proposed development will not alter the intake/inlet of water from the Liffey nor the outlet to the public water network, rather will link into the existing networks/infrastructure within the site.

In order to complete the above works, the following ancillary works are required to enable the works described above:

1. Construction of an acid dosing chamber on the existing 1400mm raw water supply;
2. Relocation of key pipework infrastructure to the front of the control building at Old Leixlip WTP;
3. Construction of associated site development works and interconnecting pipework, with all services connected to existing public services at this location;
4. Construction of car parking;
5. Construction of ancillary chambers;
6. Relocation of existing services (particularly electrical lines) at Old Leixlip WTP;
7. Relocation of existing sewer pipelines at New Leixlip WTP; and
8. Site investigation to confirm location of all services.

4 EUROPEAN SITES

4.1 Designated Sites in the Vicinity of the Project

Section 3.2.3 of the Guidance for Planning Authorities (DoEHLG, 2010) states a screening assessment should include any European site within or adjacent to the project area and any European site within the likely zone of impact of the project. A distance of 15km is currently recommended in the case of plans (derived from UK guidance; (Scott Wilson et al., 2006)). For projects, the Guidance states this distance could be much less than 15km and in some cases less than 100m (DoEHLG, 2010), but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects.

Given the size, scale and nature of this project and the proposed construction methodology it is considered for the purpose of this screening exercise that the likely zone of impact is the zone immediately around the construction site and any connected sites downstream of the works, where distances would be dependent on the qualifying interests of the site. European sites within 15km of the works have also been reviewed. Figure 4.1 displays European sites within a 15km buffer zone of the proposed works.

Each European Site was assessed to determine potential interactions with the proposed WTP upgrade works (Table 4.1). Any connectivity (e.g., hydrological or ecological linkage) with other sites not within the 15km radius was also considered. This included European sites within Dublin Bay (e.g., River Tolka Estuary SPA, North Bull Island SPA, North Dublin Bay SAC) that have a potential hydraulic connection to the proposed works via the River Liffey. However, it was concluded that these European sites are well outside the ZOI due to the distance from the proposed works and were not considered further.

Table 4.1 below details European Sites within 15km of the proposed pipeline rehabilitation works and whether a potential interaction has been identified.

Table 4.1 European sites within 15km of the proposed development and potential for interaction with the proposed works.

European Site Name	Site Code	Distance from Works	Potential Interaction
Rye Water Valley/Carton SAC	001398	200m NW	Yes, owing to proximity of the works.
Glenasmole Valley SAC	001209	14km SE	No, owing to distance/lack of hydrological or other connectivity interactions are not likely.

From the assessment outlined in Table 4.1 above, there is potential for interaction between the proposed works and the Rye Water Valley/Carton SAC stemming from the proximity of the works. As such, this SAC is considered for further assessment with regards to its Conservations Objectives and Qualifying and/or Special Conservation Interests and the remaining European Sites are screened out.

Rye Water Valley/Carton SAC

The Rye Water Valley/Carton SAC is located approximately 200m north west of the proposed works. The Rye Water Valley/Carton SAC is located between Leixlip and Maynooth, in Counties Meath and Kildare, and extends along the Rye Water, a tributary of the River Liffey.

The Qualifying Interests for Rye Water Valley/Carton SAC are listed below:

- Petrifying springs with tufa formation (*Cratoneurion*);
- *Vertigo angustior* (Narrow-mouthed Whorl Snail); and
- *Vertigo moulinsiana* (Desmoulin's Whorl Snail).

The Conservation Objectives of Rye Water Valley/Carton SAC is to maintain the favourable conservation condition of Annex I and/or the Annex II species for which Rye Water Valley/Carton SAC has been selected (as detailed above).

Ecological connectivity (such as use of the works site by qualifying interests of a European Site) are not considered likely owing to the nature of the proposed works being entirely within the boundary of Leixlip WTP in an existing hardstanding area and a small section of amenity grass enclosed by hardstanding areas (see Section 3.1; Figure 3.1). The Site Synopsis for the Rye Water Valley/Carton SAC indicates the Narrow-mouthed Whorl Snail (*Vertigo angustior*) and Desmoulin's Whorl Snail (*Vertigo moulinsiana*) occur in marsh vegetation near Louisa Bridge which is over 1.5kms from the works area as the crow flies.

With regard to potential visual/noise disturbance impacts, the nearest designated site is the Rye Water Valley/Carton SAC. The qualifying interests of this site are *Vertigo* spp snails and Petrifying springs. Even if located at the closest point to the works (ca. 200m), none of the qualifying interests are sensitive to visual or noise disturbance and therefore there is no potential for significant effects arising from disturbance impacts to this site.

No hydrological connection is identified between the proposed works and any watercourse. Given the intervening site areas, kerbing around the site, intervening dry woodland habitat, and the scale of the proposed works, it is not considered that there is any potential for pollutants to flow overland to the nearest watercourse, the River Liffey. The Rye Water Valley/Carton SAC is also upstream of the River Liffey and there is no potential for pollutants to flow upstream to the SAC. Therefore, the likelihood of the proposed works having a potential effect on the SAC via runoff is unlikely. The works are also of minor scale and will be temporary in nature.

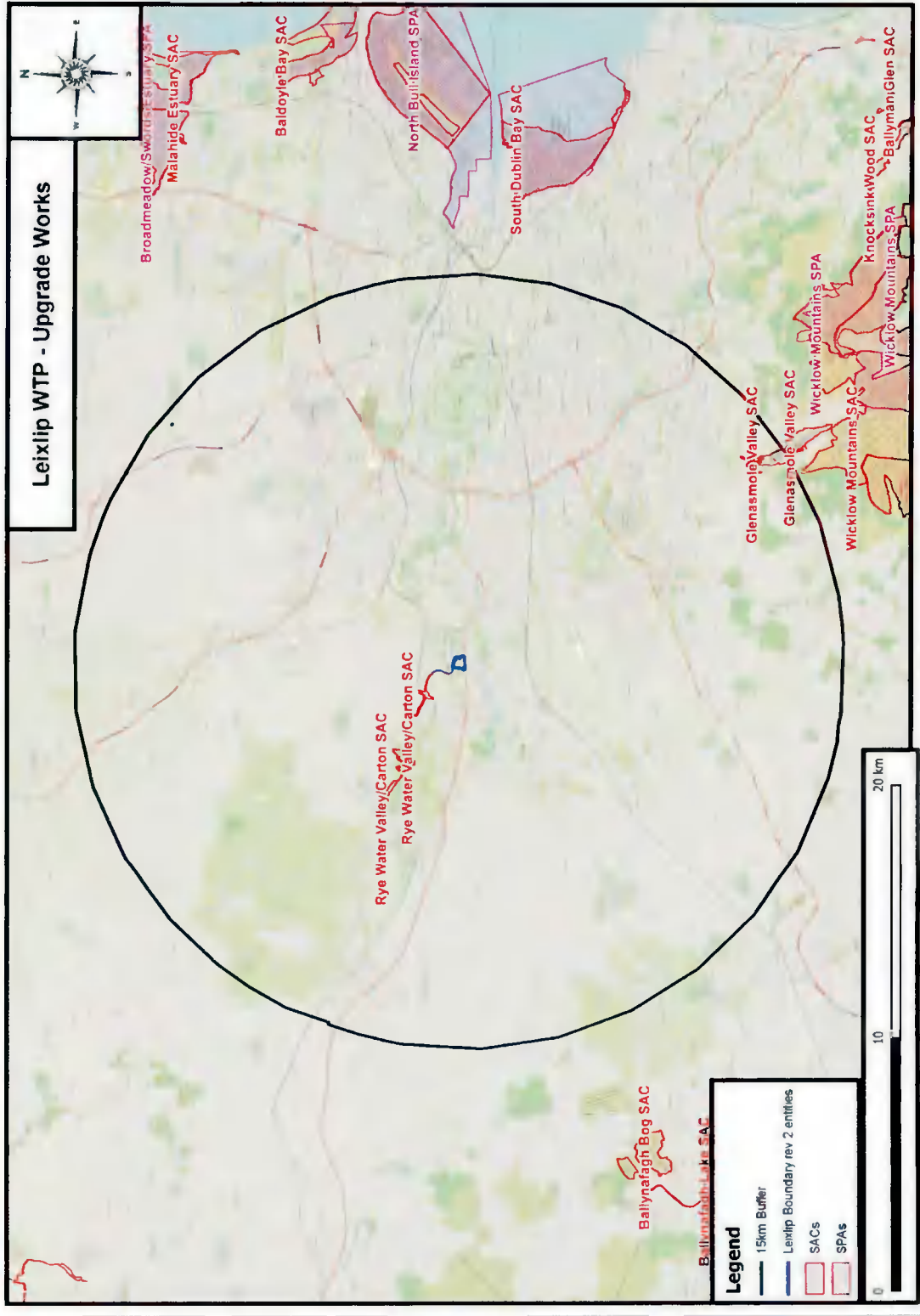


Figure 4.1 Designated Sites Locations

5 POTENTIAL IMPACTS ON EUROPEAN SITES

In order to determine whether the project is likely to have a significant effect, the project and its potential impacts are assessed and followed by a determination if the effect identified could be significant.

If the effects of a proposal are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated then the process must proceed to a full Appropriate Assessment and the provision of a Natura Impact Statement.

A desk review has been carried out to determine if potential Source » Pathway » Receptor chains which could have a likely significant effect on the qualifying interests and conservation objectives of the Rye Water Valley/Carton SAC. No hydrological connectivity was identified between the works area as there are no watercourses within the boundary of Leixlip WTP, the River Liffey is located approximately 70m north of the proposed works at its nearest point. Potential impact could arise from runoff, hence impeding on water quality due to construction phase activities; however, as previously stated, the intervening site areas, kerbing around the site, intervening dry woodland habitat, and the small scale of the proposed works, would enable the adequate dilution of any runoff which may arise from the works area. The Rye Water Valley/Carton SAC is also upstream of the River Liffey and there is no potential for pollutants to flow upstream to the SAC. Owing to this, potential impact on the SAC is unlikely.

Due to the nature of the works being temporary in duration and taking place within the confines of the existing Leixlip WTP, interaction with the Rye Water Valley/Carton SAC is considered unlikely.

It is concluded that there will be no potential for construction or operational impacts on the surrounding European sites due to the small scale, nature, location, and duration of the works. Hence, significant effects are not considered likely.

5.1 **Cumulative Impacts With Other Plans/Projects**

In order to fully assess the potential impact of the proposed development on European Sites, the project must be assessed alone or in combination with existing activities and proposed plans for the region. Eplanning.ie, the Kildare County Development Plan 2017-2023 and the South Dublin County Council Development Plan 2016-2022 were consulted in order to determine if there were any other plans or projects in the area which could result in cumulative impacts.

Kildare County Development Plan and South Dublin County Council Development Plan carried out a Strategic Environmental Assessment (SEA) reports and Natura Impact Reports (NIR). The NIRs identified policies and objectives which were not likely to cause significant effects and screened them out. The NIRs also identified policies and objectives which had a potential likely significant effect and as a result, amendments were made to a number of policies and objectives to mitigate against likely significant effects and to ensure the protection and conservation of qualifying interests and special conservation interests for European Sites. Therefore, the Kildare County Development Plan and South Dublin County Council Development Plan in combination with the proposed works will not have any likely significant effects on the integrity of European Sites.

Local planning applications were also reviewed utilising eplanning.ie. No recent planning applications of relevance were identified in the lands around Leixlip WTP that could align with the proposed works in terms of timings and impacts to result in cumulative impacts.

Given that interactions between the proposed works and any European site have not been identified, cumulative impacts are not assessed further.

Overall, it is concluded that other plans and projects in combination with the proposed rehabilitation works at Leixlip WTP, Co. Dublin will not have any likely significant effects on the integrity of the qualifying interests and conservation objectives of the European sites.

6 DISCUSSIONS AND CONCLUSION

Potential impacts during the works in Leixlip WTP, Co. Dublin have been considered in the context of the Rye Water Valley/Cartron SAC and its qualifying interests and conservation objectives.

The proposed works will involve the demolition of 2 no. buildings at the Old Leixlip WTP and construction of a new Sulphuric Acid Storage Building & Dosing Facility, a new Lime Storage Building & Dosing Facility, a new workshop and a reconfiguration of a disused High-Lift Pump Hall into a De-Alkalisiation Plant to feed the proposed Lime Dosing system. The works do not cross any watercourses and no instream works will be carried out; therefore, no hydrological pathway exists.

The works do not take place within the boundary of any European Site nor are the works near enough to cause an interaction or impact as there is no direct hydrological connection between the proposed works site and any SAC or SPA. Owing to distance, lack of hydrological connection or ecological connectivity and owing to the nature, size, and scale of the proposed works, it is concluded that no designated sites will be impacted by the proposed works at Leixlip WTP, Co. Dublin.

The proposed construction works are temporary and localised in nature. Stemming from this, interactions with Conservation Objectives, Qualifying and/or Special Conservation Interests with any European site are also considered unlikely. No impacts on designated sites will arise as a result of the operation phase of the project.

This Screening report evaluates the objective information presented in the Project Description, taking consideration of the proposed works elements; however, the evaluation does not presuppose that the construction requirements specified in the design, or to be implemented on site by the Contractor, are integral to avoid or reduce harmful effects on any European site. Therefore, it is considered that in accordance with Article 6(3) of the Habitats Directive, the works in Leixlip WTP, Co. Dublin will have no significant effects and Stage 2 of the Appropriate Assessment process (Natura Impact Statement) is not required.

7 ADDITIONAL REFERENCES

Kildare County Development Plan 2017-2023.

South Dublin County Council Development Plan 2016-2022.

DoEHLG (2010) Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environmental Heritage and Local Government.

Eplanning website: <http://www.eplanning.ie/KildareCC/searchtypes> Accessed February 2021.

Eplanning website: <http://www.sdublincoco.ie/Planning/Applications> Accessed February 2021.

NPWS (2020) NPWS.ie Accessed February 2021.

NPWS (2020) Conservation Objectives: Rye Water Valley/Carton SAC 001398. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013) Site Synopsis: Rye Water Valley/Carton SAC 001398. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Scott Wilson and Levett-Therivel, (2006) Appropriate Assessment of Plans. Scott Wilson, Levett-Therivel Sustainability Consultants, Treweek Environmental Consultants and Land Use Consultants.