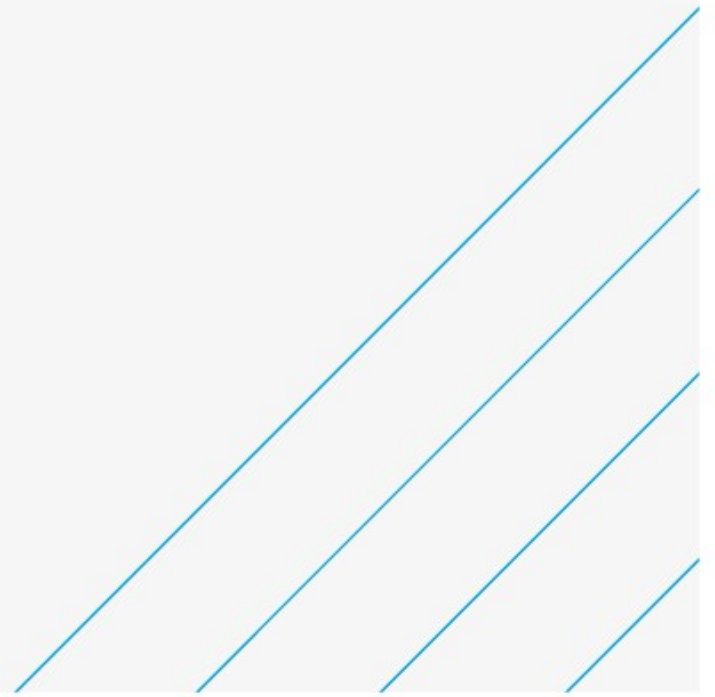


Extension to N40 (South Ring Road) off-ramp at westbound approach to Mahon, J10 Appropriate Assessment Screening

Cork City Council

March 2023



Notice

This document and its contents have been prepared and are intended solely as information for Cork City Council and use in relation to the Extension to N40 (South Ring Road) off-ramp at westbound approach to Mahon, J10.

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1. Introduction

Cork City Council (CCC) have appointed Atkins to prepare an Appropriate Assessment (AA) Screening Report for the construction and operation of a proposed extension to the N40 (South Ring Road) off-ramp at the westbound approach to Mahon, J10 (“the proposed works”). The proposed works are not directly connected with or necessary to the management of any designated sites for nature conservation.

This report comprises the Appropriate Assessment Screening Report in respect of the proposed works and is intended to assist Cork City Council, in its capacity as the competent authority in this case, by providing it with sufficient evidence to make a properly informed determination as to whether or not Appropriate Assessment under Article 6(3) of the Habitats Directive (92/43/EEC) is required in respect of the proposed works.

1.1. Description of the Proposed Works

The N40 in Cork City has 11 junctions along its length. It extends from the Poulavone Interchange, east of Ballincollig to the Jack Lynch Tunnel, Westbound. The Mahon Junction (J10) provides connectivity to Blackrock, Mahon and Jacob’s Island. Current seven-day average traffic on this section of the N40 comprises of 36,460 (4.7% HGV) for Eastbound movement and 37,760 (4.7% HGV) for Westbound movement.

The current westbound (coming from the Jack Lynch Tunnel) off-ramp at Mahon Junction (J10) is relatively short and has limited capacity to accommodate vehicles queueing to access the Mahon area. There are times when the off-ramp traffic (heading to Mahon) spills beyond the existing off-ramp/auxiliary lane and into the hard shoulder, an issue that may become more frequent after the Dunkettle Interchange is fully operational.

It is proposed to address this stacking issue (or traffic queuing issue) by fully utilising the existing N40 road width (or road footprint area) to increase the length of the off-ramp. This will provide an enhance off-ramp layout thereby improving the safety and functionality of the off-ramp layout to Mahon.

The proposed works will use the westbound nearside road channel (Kerb) and will reconfigure the existing layout to provide a hard strip, auxiliary lane, two through lanes and an offside lane measuring 12.5m kerb-to-kerb. The works will extend into the existing central wide median and will replace the existing barrier with a restraint barrier.

The Site Location Map and Site Plan of the proposed works is displayed in Figure 1.1 – Figure 1.2. The cross section of both the existing eastbound and proposed westbound lanes is illustrated in Figure 1.3.

1.1.1. Summary of Works

The location and extent of the proposed project are presented in Figure 1.1 and Figure 1.2. The works which will commence directly east of Mahon Junction (J10), will maintain the southern channel and then transition northwards into the existing N40 central median to form a three-lane platform that comprises of two N40 through lanes and an extended off-ramp.

The new westbound cross-section will comprise of 3 lanes (2 x through lanes and 1 x auxiliary lane) and will extend east from the tip of the off-ramp for 0.75km. This arrangement utilises fully the existing 3.0m wide hard shoulder to provide an extended auxiliary lane measuring 600m.

The build-out into the central median measures approximately 1.7m and extends the overall road platform from 10.8m to 12.5m.

Excavation into the central median is approximately 4,264m³. The excavated material will comprise of Class U1, there will be no hazardous material excavated in the works. Planed material comprises the removal for the pavement surface course (45mm of Hot Rolled Asphalt) (area of planning is ca. 8,240m²).

Both nearside and offside construction will comprise of road builds, including bound and unbound pavements and sealed (surface and sub-soil) drainage system that connects into the existing drainage system and outfalls to existing drainage outfalls to Lough Mahon.

The off-ramp extension works will tie into the existing off-ramp and in the offside channel it will transition into the existing N40 as per TII Publications.

The N40 J10 off-ramp extension Project will include:

- Temporary Traffic Management

- Earthworks excavation and road planning. The excavated material is extracted from the central median and is required to facilitate the construction of the road box extension; Volume of excavation is 4,264m³.
- Excavation of channel drains manholes.
- Installation of a sealed drainage system that utilises the existing sealed drainage system and will upgrade the existing sealed drainage system where necessary. It is not planned to provide new outfalls, but instead to fully utilise the existing N40 outfalls.
- Installation of geomembranes. This consists of the replacement of existing geomembrane liners which will be replaced along the median.
- Installation of capping material and unbound subbase.
- Bound pavement layers (base layer, binder course and surface course) to step and match into existing pavement structure. A new wearing course is proposed along the extent of the works, this will replace the existing surface course which has exceeded its design life.
- Construction of slip-form concrete surface water channel along the offside hard strip and kerb and gully along the nearside hard strip.
- Provide an upgraded safety barrier in the median.
- Construction of a new gantry off-ramp sign.
- Landscape/Profile verge and median to match into existing.
- Provide road markings similar to existing and compliant with TSM Chapter 7¹.
- Associated Works.

1.1.1.1. Site Compound

It will be the responsibility of the Contractor to determine a suitable location for the site compound within the proposed project area, but away from any identified environmental sensitive receptors (watercourses, designated sites etc) so as to avoid potential impacts to the environment and the general public. The final proposed site compound location will not be permitted within a European site. It is planned that an existing Local Authority (Cork City Council) depot in the locality, will be utilised during the construction phase to store similarly inert materials for incorporation in the proposed project. Materials will be brought to site on a periodic basis as required directly from suppliers. Parking for operatives will be at the main compound only. Operatives will be transported from the compound to the works area. No parking will be allowed within the temporary works area or on-street.

¹ https://www.trafficsigns.ie/_files/ugd/971679_914c75a55daf403482f34c68d35d3894.pdf

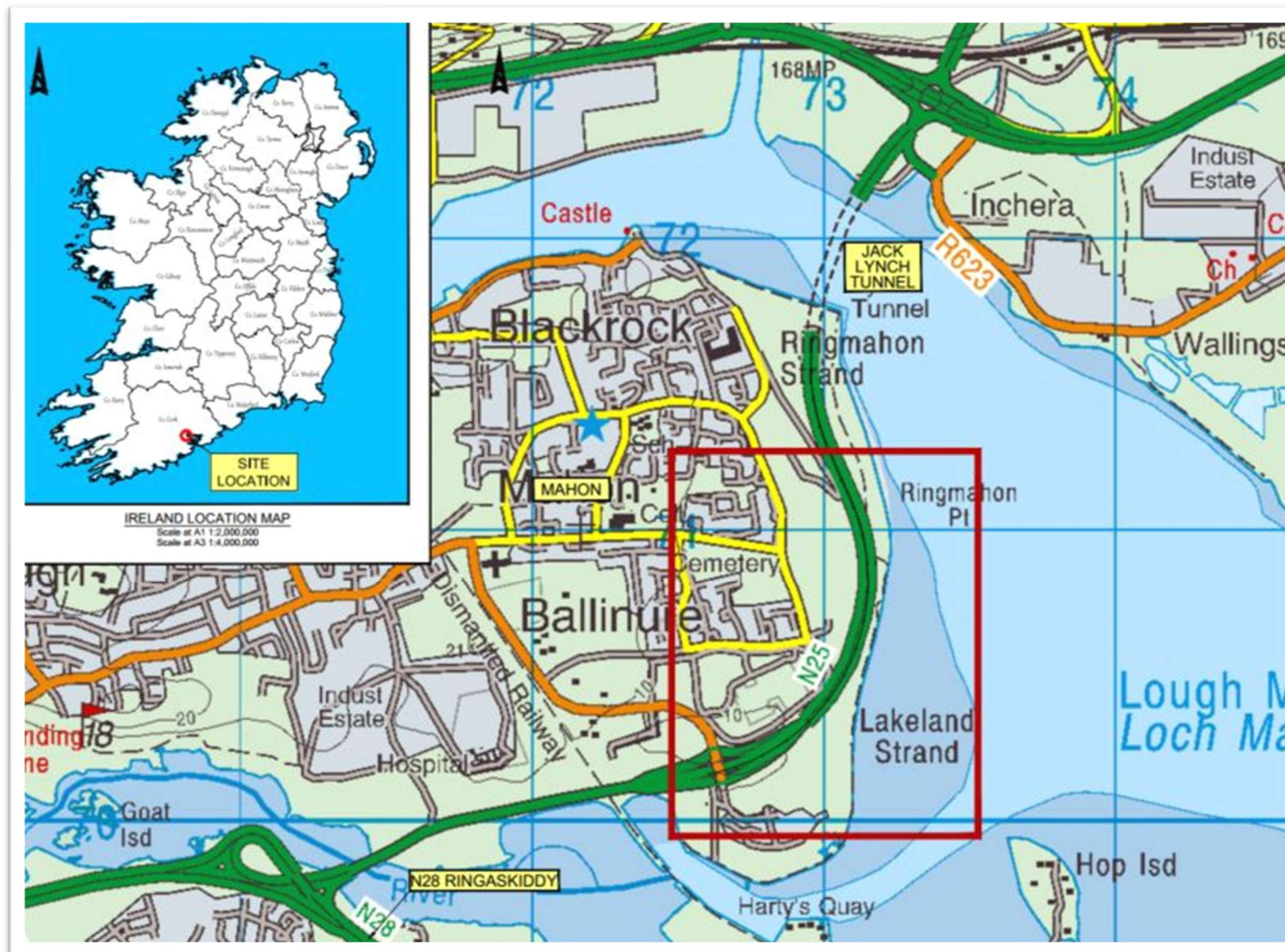


Figure 1.1 Site Location Map

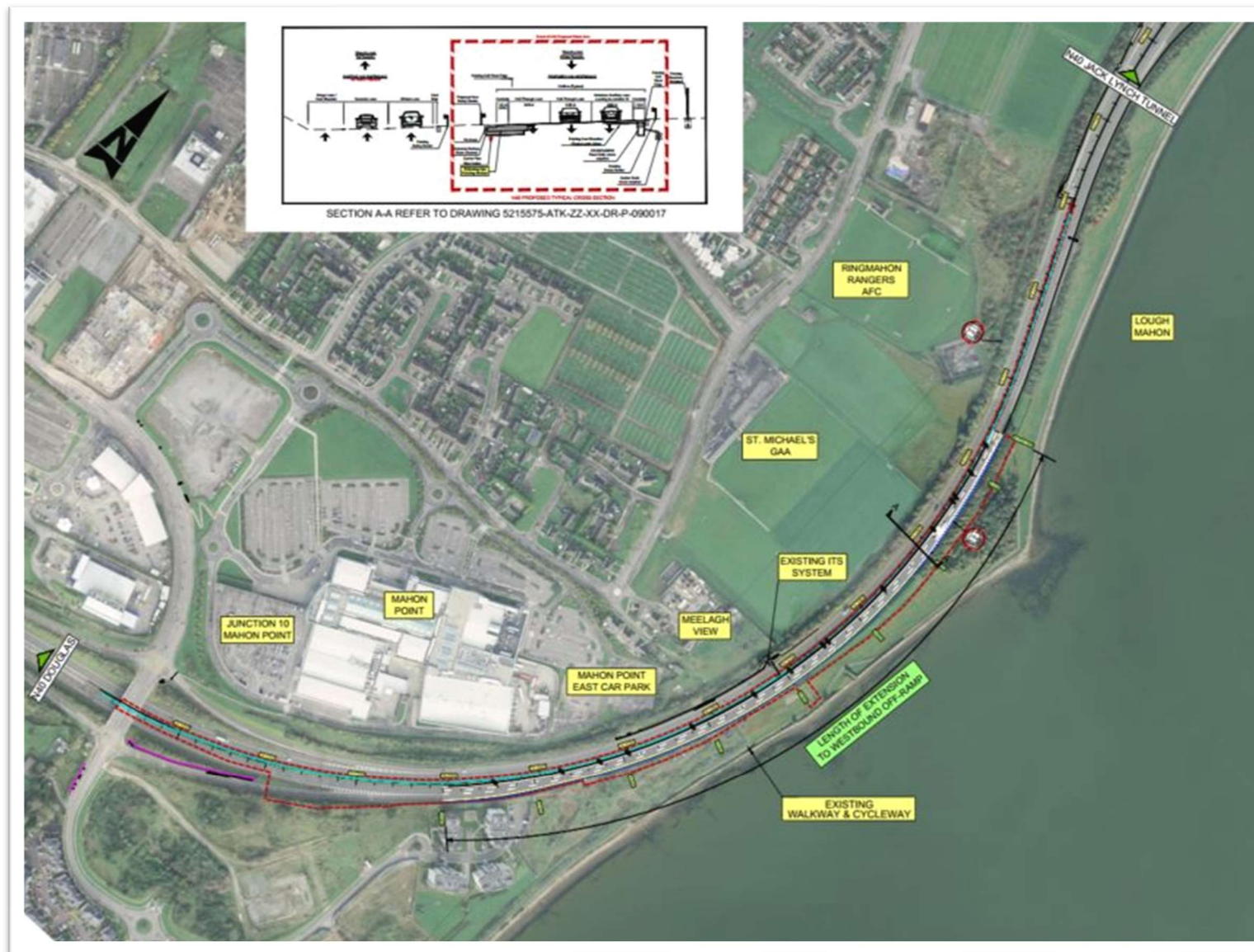


Figure 1.2 Plan Layout

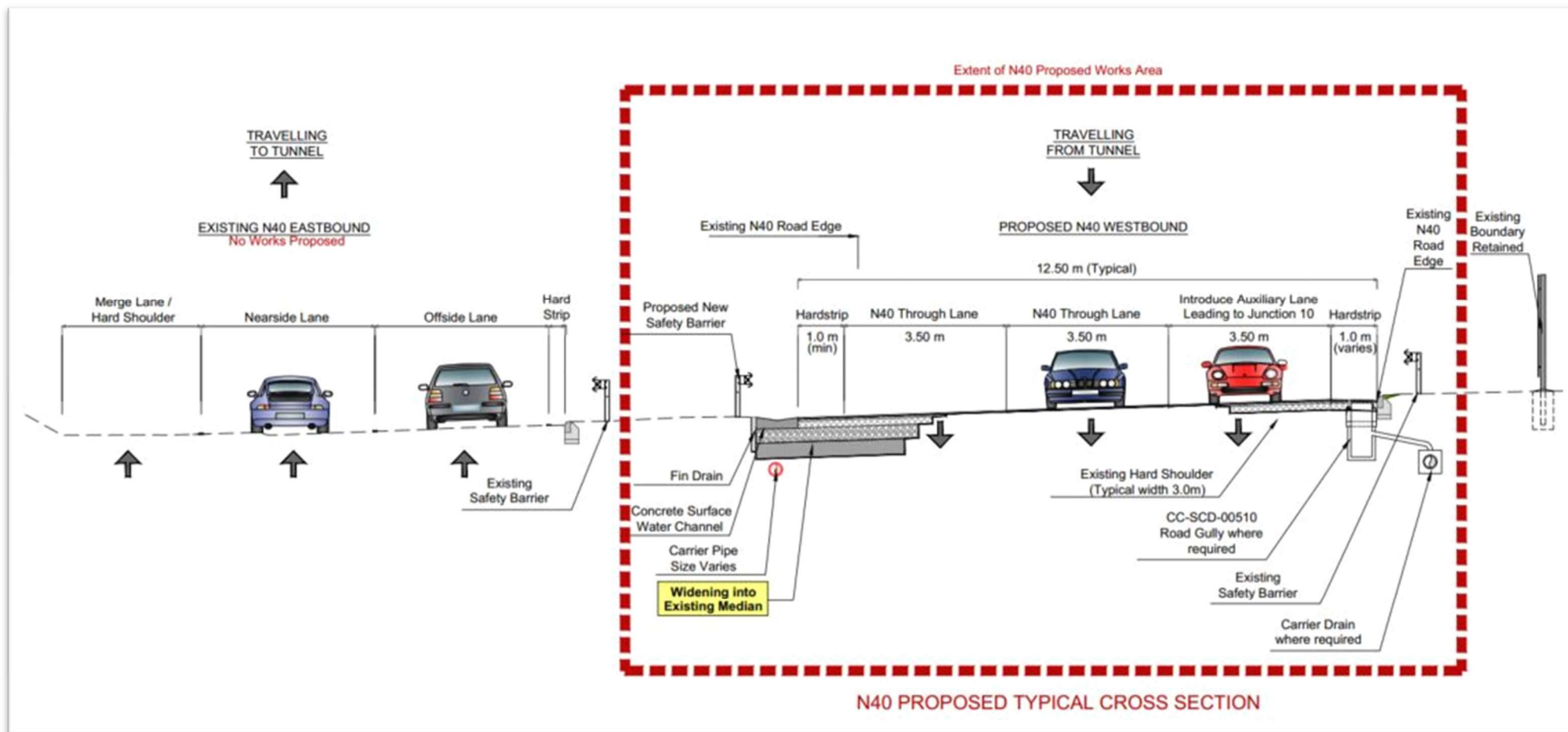


Figure 1.3 Proposed N40 Westbound Cross Section.

1.2. Construction Methodology

Two lanes will be maintained under temporary traffic speed restrictions while works are undertaken in the central median. Access and egress to the works area will be controlled through designated entry points along the westbound carriageway.

The works will commence with the establishment of the traffic management system, agreed with the Contracting Authority.

Utilities and services will be identified and protected; works will then commence with the removal of the existing safety barrier that falls within the works zone. Excavation works will then be undertaken for the widened road box to formation level (assumed to be 1.2m deep) and this will be stepped into the existing bound/unbound carriageway.

Drainage, kerbing, safety barrier and utility work will be undertaken concurrently with a new surface course and inlay course extended across the entire road platform. Works will conclude with new road markings that define the new auxiliary lane and associated through lanes.

The proposed works are anticipated to take approximately four months to complete.

1.2.1. Drainage

The design of the proposed N40 surface water drainage system is based on the following operational requirements and sensitive environmental considerations as follows: -

- To enhance and upgrade the existing drainage surface drainage system to avoid surface flooding on the road which could result in traffic delays or accidents. The proposed surface drainage system will be designed to accommodate a one-year storm in-bore without surcharge. The design will be checked against a five-year storm intensity to ensure that surcharge levels do not exceed the levels of chamber covers,
- Provide adequate subsurface drainage, to lower the water table in areas where the road is in cut, to prevent structural damage of the road pavement,
- Dispose of surface water run-off at the two existing outfalls at Chainage 10,700 and ch. 11,040, having regard to the impact of the stormwater on the receiving waters,
- Selection of suitable collection and conveyance techniques - suitable type and capacity to collect run-off from the proposed road,
- Minimise the potential impact of the road and indeed of the surface water drainage system itself on the hydrological conditions of the surrounding area and on the receiving watercourses,
- Consideration of potential for overland flow from surrounding areas (median and verge) towards the road,
- Consideration of water quality and pollution requirements,
- Presence of sensitive and protected habitat types adjoining the N40; and
- Implications of climate change.

1.2.1.1. Proposed Surface Water Drainage

In response to the above design parameters, the proposed surface water drainage system has been designed iteratively using the requirements set out in TII publication '*Drainage Systems for National Roads*' (DN-DNG-03022). The drainage system has been designed to provide a system which treats run-off from the proposed road while also conveying flow to existing outfalls. The existing road alignment and its surface water collection and drainage system is divided into 2 no. drainage catchments (Catchment 1 and Catchment 2). The proposed surface water drainage network utilises these same catchment zones and will comprise of: -

- 0.7km of new surface water channel offside and kerb & gully nearside to enhance and serve the proposed works.
- 2 No. existing outfall balancing chamber systems to existing outfalls.
- Pollution control where there is a net increase in catchment.

A surface water channel (SWC) system is being proposed for carrying the catchment volume of water while reducing the need of extensive network of carrier pipes. This system will provide an economical alternative to edge channels for positive drainage. In the central reserve, the level of the back of channel is set below the carriageway allowing flooding to occur within width of the central reserve. This safeguards against flows from the surcharged channel overtopping the central reserve and flowing into the carriageway.

The following section includes a brief description of each N40 catchment, its location along the proposed works and the proposed outfall location.

Catchment 1

Catchment 1 is located at the western end of the proposed project from ch. 10.300 to ch. 10,750. The existing catchment covers an area of approximately 4,792m² and the proposed works is 5,956m², an increase of 24%.

As a result of the net area increase in the reconfigured Catchment 1, this will result in an increase in pollution load and risk of spillage; therefore, a pollution control system is required. A Class 1 By-Pass Hydrocarbon Interceptor Klargester NSBE075 Hydrocarbon Interceptor which typically measures 5.8m x 2m will be installed within Cork City Council owned lands between the N40 and 10,700 outfall. This is an integral part of the design of works and is in line with TII guidance on the design of drainage systems for national roads.

Catchment 2

Catchment 2 is located at the eastern end of the proposed project from ch. 10.750 to ch. 11,025. The existing catchment covers an area of approximately 3,792m² and the proposed works is 3,392 m², a decrease of -12%.

Catchment 2 discharges to the existing outfall at 11,040, the reconfigured network results in a total catchment reduction of -12%; therefore, because there is a reduction in catchment area which also results in a reduction in pollution load and risk of spillage, a pollution control measure is not proposed.

2. Scope of Study

2.1. Legislative Context

Natura 2000

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (“the Habitats Directive”) is a legislative instrument of the European Union (EU) which provides legal protection for habitats and species of Community interest. Article 2 of the Directive requires the maintenance or restoration of such habitats and species at a favourable conservation status, while Articles 3 to 9, inclusive, provide for the establishment and conservation of an EU-wide network of special areas of conservation (SACs), known as Natura 2000, which also includes special protection areas (SPAs) designated under Article 4 of Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (“the Birds Directive”). Both SACs and SPAs are commonly referred to as “European sites” or “Natura 2000 sites”.

SACs are selected for natural habitat types listed on Annex I to the Habitats Directive and the habitats of species listed on Annex II to the Habitats Directive. SPAs are selected for species listed on Annex I to the Birds Directive and other regularly occurring migratory species. The habitats and species for which a Natura 2000 site is selected are referred to as the “qualifying interests” of that site and each is assigned a “conservation objective” aimed at maintaining or restoring its “favourable conservation condition” at the site, which contributes to the maintenance or restoration of its “favourable conservation status” at national and European levels.

Appropriate Assessment

Article 6 of the Habitats Directive deals with the management and protection of Natura 2000 sites. Articles 6(3) and (4) set out the decision-making process, known as “Appropriate Assessment” (AA), for plans or projects in relation to Natura 2000 sites. Article 6(3) states: -

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

The first sentence of Article 6(3) provides a basis for determining which plans and projects require AA, i.e. those “*not directly connected with or necessary to the management of [one or more Natura 2000 sites] but likely to have a significant effect thereon, either individually or in combination with other plans or projects*”. In *Waddenzee* (C-127/02), the Court of Justice of the European Union (CJEU) ruled that significant effects must be considered “likely” if “*it cannot be excluded, on the basis of objective information*”, that they would occur. This clearly sets a low threshold, such that AA is required wherever there is a reasonable possibility of significant effects on a Natura 2000 site. In the same judgment, the CJEU established that the test of significance relates specifically to the conservation objectives of the site concerned, i.e. “significant effects” are those which, “*in the light, inter alia, of the characteristics and specific environmental conditions of the site*”, could undermine the site’s conservation objectives. In addition to the effects of the plan or project on its own, the combined effects arising from the plan or project under consideration and other plans and projects must also be assessed (see Section 6.1 below for more details).

The last part of the first sentence of Article 6(3) defines AA as an assessment of the “*implications [of the plan or project] for the site in view of the site’s conservation objectives*”. In the second sentence, Article 6(3) requires that, prior to agreeing to a plan or project, the competent authority must “ascertain” that “*it will not adversely affect the integrity of the site concerned*”. In *Sweetman v. An Bord Pleanála* (C-258/11), the CJEU ruled that a plan or project “*will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of sites*”.

On that basis, EC (2018) described the “integrity of the site” as “*the coherent sum of the site’s ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated*”. As such, the “integrity” of a specific site is defined by its conservation objectives and is “adversely affected” when those objectives are undermined. In *Waddenzee*, the CJEU ruled that the absence of adverse effects can only be ascertained “*where no reasonable scientific doubt remains*”.

The “precautionary principle” applies to all of the legal tests in AA, i.e. in the absence of objective information to demonstrate otherwise, the worst-case scenario is assumed. Where the tests established by Article 6(3) cannot be satisfied, Article 6(4) applies (see explanation in Section 2.2 below).

Competent authority

The requirements of Articles 6(3) and (4) are transposed into Irish law by, inter alia, Part 5 of the European Communities (Birds and Natura Habitats) Regulations, 2011 (as amended) (“the Habitats Regulations”) and Part XAB of the Planning and Development Act, 2000 (as amended) (“the Planning and Development Acts”). As per the second sentence of Article 6(3), it is the “competent national authorities” who are responsible for carrying out AA and, by extension, for determining which plans and projects require AA. The competent authority in each case is the authority responsible for consenting to or licensing a plan or project, e.g. local authorities, An Bord Pleanála, Transport Infrastructure Ireland (TII) or a Government Minister. In all cases, it is the competent authority who is ultimately responsible for determining whether or not a plan or project requires AA and for carrying out the AA, where required.

2.2. Appropriate Assessment Process

The Appropriate Assessment (AA) process can be described as being made up of three distinct stages, as described below, the need to progress to each stage being determined by the outcome of the preceding stage.

Stage 1: Screening – This stage involves a determination by the competent authority as to whether or not a given plan or project required AA. As explained in Section 2.1, AA is required in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site, but for which the possibility of likely significant effects on one or more Natura 2000 sites cannot be excluded. In *People Over Wind* (C-323/17), the CJEU ruled that measures intended to avoid or minimise harmful effects on a Natura 2000 site cannot be considered in making this determination. Consideration of the potential for in-combination effects is also required at this stage.

Stage 2: Appropriate Assessment – This stage involves a detailed assessment of the implications of the plan or project, individually and in combination with other plans and projects, for the integrity of the Natura 2000 site(s) concerned. This stage also involves the development of appropriate mitigation to address any adverse effects and an assessment of the significance of any residual impacts following the inclusion of mitigation. In *Kelly v. An Bord Pleanála* (IEHC 400), the High Court ruled that a lawful AA must contain complete, precise and definitive findings based on examination and analysis, and conclusions and a final determination based on an evaluation of the findings. In the same judgment, the High Court stressed that, in order for the findings to be complete, precise and definitive, the AA must be carried out in light of best scientific knowledge in the field and cannot have gaps or lacunae. In *Holohan v. An Bord Pleanála* (C-461/17), the CJEU clarified that AA must “*catalogue the entirety of habitat types and species for which a site is protected*” (i.e. the qualifying interests of the site) and assess the implications of the plan or project for the qualifying interests, both within and outside the site boundaries, and other, non-qualifying interest habitats and species, whether inside or outside the site boundaries, “*provided that those implications are liable to affect the conservation objectives of the site*”. The proposer of a plan or project requiring AA furnishes the competent authority with the scientific evidence upon which to base its AA by way of a Natura Impact Statement (NIS) or Natura Impact Report (NIR). If it is not possible to ascertain that the plan or project will not adversely affect one or more Natura 2000 sites, authorisation can only be granted subject to Article 6(4).

Stage 3: Article 6(4) – If a plan or project does not pass the legal test at Stage 2, alternative solutions to achieve its aims must be considered and themselves subject to Article 6(3). If no feasible alternatives exist, authorisation can only be granted where it can be demonstrated that there are imperative reasons of overriding public interest (IROPI) justifying its implementation. Where this is the case, all compensatory measures must be taken to protect the overall coherence of Natura 2000.

The three stages described above are illustrated in Figure 2.1, below.

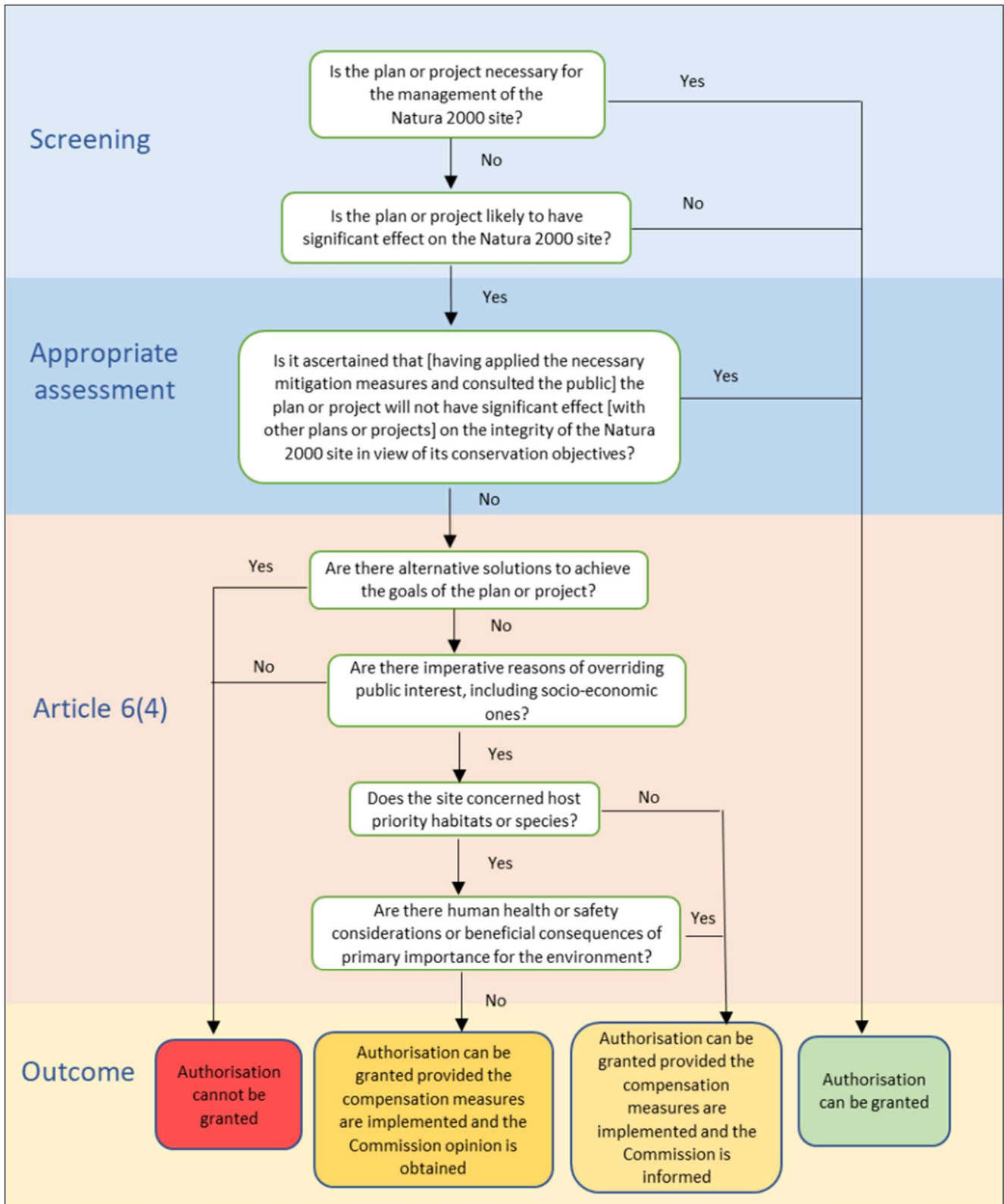


Figure 2.1 Stages of the Appropriate Assessment process (EC, 2021a).

3. Methods

3.1. Legislation and Guidance

This report was prepared with due regard to the relevant European and Irish legislation, case law and guidance, including but not limited to: -

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna. *Official Journal of the European Communities* L 206/7-50.
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. *Official Journal of the European Union* L 20/7-25.
- European Communities (Birds and Natural Habitats) Regulations, 2011. *S.I. No. 77/2011* (as amended) (“the Habitats Regulations”).
- Planning and Development Act, 2000. *No. 30 of 2000* (as amended) (“the Planning and Development Acts”).
- Planning and Development Regulations, 2001. *S.I. No. 600/2001* (as amended) (“the Planning Regulations”).
- EC (2018). *Managing Natura 2000 sites: The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC*. European Commission, Brussels.
- EC (2021a). *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC*. *C(2021) 6913*. European Commission, Brussels.
- EC (2021b). *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive*. *C(2021) 7301*. European Commission, Brussels.
- DEHLG (2010a). *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Revised 11/02/2010*. Department of the Environment, Heritage and Local Government, Dublin.
- DEHLG (2010b). *Circular NPW 1/10 & PSSP 2/10. Dated 11/03/2010*. Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2012a). *Marine Natura Impact Statements in Irish Special Areas of Conservation. A Working Document. April 2012*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.
- NPWS (2021). *Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland. National Parks & Wildlife Service Guidance Series 1*, Department of Housing, Local Government and Heritage, Dublin.
- Mullen, E., Marnell, F. and Nelson, B. (2021). *Strict Protection of Animal Species – Guidance for Public authorities on the Application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a Public authority. National Parks & Wildlife Service Guidance Series 2*, Department of Housing, Local Government and Heritage, Dublin.
- OPR (2021). *Appropriate Assessment Screening for Development Management. OPR Practice Note PN01*. Office of the Planning Regulator, Dublin.
- *Applications for Approval for Local Authority Developments made to An Bord Pleanála under 177AE of the Planning and Development Act, 2000, as amended (Appropriate Assessment) – Guidelines for Local Authorities* <<https://www.pleanala.ie/getmedia/0f385f48-7e84-43e3-b405->

[1201e490740a/Applications-for-approval-for-LA-Developments-S177AE-EN.pdf](#)>. Pleanála, Dublin.

An Bord

- Case law, including *Waddenzee* (C-127/02), *Sweetman v. An Bord Pleanála* (C-258/11), *Kelly v. An Bord Pleanála* (IEHC 400), *Commission v. Germany* (C-142/16), *People Over Wind* (C-323/17), *Holohan v. An Bord Pleanála* (C-461/17), *Eoin Kelly v. An Bord Pleanála* (IEHC 84) and *Heather Hill* (IEHC 450).
- Sundseth, K. and Roth, P. (2014) *Article 6 of the Habitats Directive – Rulings of the European Court of Justice*. Ecosystems LTD (N2K Group), Brussels.

3.2. Desk Study

A desktop study was carried out to collate information available on European sites in the vicinity of the proposed project. These areas were viewed using Google Earth, Google maps² and Bing maps³ (last accessed on 08/03/2023).

The National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) online databases were reviewed concerning European sites and their features of interest in the vicinity of the proposed project.

The locations and boundaries of Natura 2000 sites in relation to the proposed works were reviewed on the *NPWS Designations Viewer* (NPWS, 2022c). Information on the qualifying interests and the structures and functions of the relevant Natura 2000 sites was found in the Site Synopsis, Natura 2000 Standard Data Form, Conservation Objectives and supporting documents for each site. Reporting under Article 17 of the Habitats Directive (NPWS, 2019a-c; ETC/DB, 2022a) and Article 12 of the Birds Directive (NPWS, 2022d; ETC/BD, 2022b) provided further information on the habitats and species concerned at the national level.

Spatial and other data regarding rivers and other waterbodies were obtained from the Environmental Protection Agency (EPA) using its online facility *EPA Maps: Water* (EPA, 2022). Other sources consulted included the National Biodiversity Data Centre (NBDC) *Biodiversity Maps* (NBDC, 2022), the Ordnance Survey Ireland (OSi) *GeoHive Map Viewer* (OSi, 2022) and the *Environmental Sensitivity Mapping Tool* (ESM Webtool, 2022).

Other plans and projects in the surrounding area were identified using the Cork City Council planning enquiry system. Search criteria were implemented to identify other plans and project with potential, in combination with the proposed works, to adversely affect the integrity of European sites.

3.3. Statement of Authority

This report was prepared by Sinéad Kinsella. This report was authorised and reviewed by Paul O'Donoghue.

Sinéad Kinsella has a BSc in Applied Freshwater and Marine Biology. She has experience in preparing Appropriate Assessment Screening Reports, Natura Impact Statements and prepares Ecological Impact Assessment Reports and undertakes a range of ecological surveys (e.g. mammal and bat surveys) for a range of proposed developments.

Paul O'Donoghue is an Associate Director at Atkins. Paul holds a BSc (Zoology), MSc (Behavioural Ecology) and a PhD (Avian Ecology and Genetics). Paul is a Chartered member of the Society for the Environment (CEnv) and a Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Paul has over 18 years' experience in ecology; including extensive experience in the preparation of Habitat Directive Assessments / Natura Impact Statements (i.e. Appropriate Assessment under Article 6(3) of the EU Habitats Directive).

² <https://www.google.ie/maps>

³ <http://www.bing.com/maps/>

4. Existing Environment

Tramore River⁴ / Douglas Estuary, which is located ca. 380m to the south of the proposed works site outfalls to Lough Mahon. The River Lee is located ca. 320m to the north of the proposed works site and outfalls to Lough Mahon proximate to the site boundary. Lough Mahon, a sea lough in the north-western part of Cork Harbour. A small terrestrial buffer (ca. 36m) lies between the proposed works site and Lough Mahon at the northern edge of the site boundary and Jacob's Island lies between the proposed site boundary and Lough Mahon (ca. 406m) at the southern edge of the site boundary.

4.1. Desktop Review

The proposed works site is located c. 148m from Jacob's Island and c. 372m from Lough Mahon at the furthest point across Jacob's Island and c. 30m from Lough Mahon at the closest points. The proposed works site is comprised solely of the N40 road. To the south of the site is the confluence between the Douglas River Estuary and Cork Harbour, which is encompassed by Cork Harbour Special Protection Area (Site code: 004030). To the north of the site is the confluence between the River Lee and Cork Harbour.

The proposed works site does not lie within a Natural Heritage Area. Natural Heritage Areas (NHAs) are nationally designated sites, which are considered important for the habitat, species or geological heritage. NHAs are legally protected under the Wildlife Amendment Act 2000. However, c. 25-380m from the proposed works site boundary is the Douglas Estuary pNHA (001046); the pNHA is notable for wintering waterbirds as well as areas of saltmarsh habitat.

The NPWS site synopsis for Douglas Estuary lists the estuary as a Wildfowl Sanctuary (site code WFS-67; see - <https://www.npws.ie/protected-sites/wildfowl-sanctuaries>).

There are no freshwater features within the proposed works area. The Tramore / Douglas River enters the Douglas River Estuary and Cork Harbour to the south of the proposed site. Thus, the proposed site is adjoined to the east, south and northeast by transitional waters. This area known as Lough Mahon is classed as being eutrophic by the EPA and being of Moderate status under the Water Framework Directive. Lough Mahon has a surface area of approximately 12.23km² stretching from Mahon to Passage West (CRFB, 2008), with its volume changing over the tidal cycle. The harbour is classified as transitional waters (Inner Harbour) and coastal waters (Outer Harbour).

ERU (1989) found that "*many of the environmental parameters measured in the harbour show a gradient extending from the upper harbour and estuarine areas, through the lower Harbour to the Harbour mouth. Thus, going in this direction, BOD loadings, phosphate, nitrate, and ammonia levels, bacteria levels, and levels of contaminants in the water, sediments and biota all show a general decrease in values as the Harbour mouth is reached. Dissolved oxygen levels, on the other hand, show an increase along the same gradient*" (from T.J. O'Connor & Associates (2009)). This pattern of water quality change has also been found in more recent studies (see e.g. Hartnett and Nash, 2015; see also McGovern *et al.* (2020) which provides a detailed summary of background water quality within different sections of Cork Harbour; much of it derived from Costello *et al.*, 2001, prior to the commissioning of Carrigrennan WWTP).

Currently, the harbour's Water Framework Directive ecological status is defined as Moderate, with its chemical status categorised as Good (2016-2021; source: EPA Maps). Between 2008 and 2018, dissolved inorganic nitrogen (as N); orthophosphate (P) and chlorophyll trends were all downwards, indicating gradual improvements to water quality (source: EPA Maps). This may to some extent reflect the developments being undertaken under the Cork Main Drainage Project which was largely completed in 2004 and achieved the cessation of the discharges of untreated sewage into the Lee Estuary and Lough Mahon (as was predicted in modelling by O'Kane and Barry, 2007 as quoted in Mott McDonald (2008)). However, recent EPA data (source: EPA Maps) categorise water quality in much of the harbour and lower River Lee as being of Intermediate status (2018- 2020); in contrast areas such as Lough Mahon and Douglas Estuary are categorised as Eutrophic.

The proposed works site at the Extension to N40 (South Ring Road) off-ramp at westbound approach to Mahon (J10) is not located within any European sites. The proposed site is hydrologically connected via

⁴ Also known as the Douglas River.

surface water surface water drainage outfalls to Lough Mahon within Cork Harbour, within which is located Cork Harbour SPA (site code: 004030) and Great Island Channel SAC (001058). Cork Harbour SPA, the closer of the two sites, is located c. 30m at the closest distance and c. 380m at the greatest distance (across Jacob's Island) from the proposed works site.

The NBDC mapviewer does not record any invasive plant species listed on the 3rd Schedule of the Natural Habitats Regulations, 2011 (SI 477 of 2011) within the works area.

5. Connectivity to Natura 2000 sites

5.1. Zone of Influence

The “Zone of Influence” of a plan or project is the area which may experience ecological effects as a result of its implementation, including any ancillary activities. The various impacts of a plan or project will each have their own characteristics, e.g. nature, extent, magnitude, duration etc. Accordingly, the area subject to each impact (“zone of impact”) will vary depending on characteristics of the impact and the presence of pathways for its propagation. Ecological features within or connected to one or more zones of impact could, depending on their sensitivities, be affected by the plan or project under consideration. The area containing such features may be regarded as the Zone of Influence. As such, in establishing the Zone of Influence for a plan or project, regard must be had to the characteristics of its potential impacts, potential pathways for impacts and the sensitivities of ecological features in the receiving environment.

In its guidance on selecting Natura 2000 sites to include in AA, *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities* (DEHLG, 2010a) recommends inclusion of sites in the following three categories: -

- Any Natura 2000 sites within or adjacent to the plan or project area,
- Any Natura 2000 sites within the Zone of Influence of the plan or project (generally within 15km for plans, to be established on a case-by-case basis for projects, having regard to the nature, scale and location of the project, the sensitivities of the ecological receptors and the potential for in-combination effects), and
- Following the precautionary principle, any other Natura 2000 sites for which the possibility of significant effects cannot be excluded, e.g. for a project with hydrological impacts, it may be necessary to check the full extent of the catchment for Natura 2000 sites with water-dependent qualifying interests.

In addition, *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC, 2021a) recommends consideration of Natura 2000 sites hosting fauna which could move to the plan or project area or its zone(s) of impact, and the potential for the plan or project to sever ecological connectivity within or between Natura 2000 sites. *Appropriate Assessment Screening for Development Management* (OPR, 2021) emphasises the importance of employing the source-pathway-receptor model (rather than arbitrary distances such as 15km) when selecting Natura 2000 sites for inclusion in AA.

In this instance, due to the character of the road and surrounding land uses, the zone of impact is considered to be restricted to a narrow corridor around the works area. The potential for any impacts within a zone of up to 150m from the works has therefore been considered for mobile species such as otter and birds. Much of the proposed works area is extensively screened from the estuary by the intervening developments on Jacob’s Island (Plate 5.1). At the eastern end, the section of road running from ‘The Yanks’ west to the apartments on Jacob’s Island is bordered by a low grassy berm (Plate 5.2) which screens activities at road level. Along this stretch the road is ca. 30-60m from the estuary, with a public walkway between the road and the estuary (on the far side of the palisade fence visible on Plate 5.2).

While there are no watercourses within the proposed works area, it is located close to Cork Harbour, to which it is also connected via the existing drainage network. As noted the adjoining part of Cork Harbour (Lough Mahon) is part of Cork Harbour SPA, a site designated in the main for wintering waterbirds (which are largely on site between September – March). The potential for negative impacts on water quality on the adjoining SPA must therefore be considered to be within the potential zone of influence of the proposed works.

A number of bird species for which Cork Harbour is designated are known to feed in fields and areas of amenity grassland, such as the playing fields in Mahon. This includes Oystercatcher (*Haematopus ostralegus*), Curlew (*Numenius arquata*) and Black-tailed Godwit (*Limosa limosa*). The potential for negative ex-situ impacts on field feeding waders is therefore also considered.



Plate 5.1 View from N25 over estuary at western end of the works area close to Jacob’s Island ((c) Google Earth).



Plate 5.2 View from N25 over estuary at eastern end of the works area ((c) Google Earth).

In summary, the Zone of Influence for the proposed works on the Extension to N40 (South Ring Road) off-ramp at westbound approach to Mahon (J10) is therefore, taken to be areas with potential ecological connectivity to the zones of impact of the proposed works.

In addition to European site within Cork Harbour, consideration was also given to sites in the wider landscape. Sites considered include Mullaghanish Bog SAC (site code: 001890), St. Gobnet’s Wood SAC (site code: 000106), The Gearagh SAC (site code: 000108), Ballymacoda (Clonpriest and Pillmore) SAC (site code: 000077), Mullaghanish to Musheramore Mountains SPA (site code: 004162), The Gearagh SPA (site code: 004109), Ballycotton Bay SPA (site code: 004022) and Ballymacoda Bay SPA (site code: 004023) However, given the location and scale of proposed works; the nature of works to be undertaken; the lack of a hydrological connection from these sites to the proposed works site; or the lack of dependency of the qualifying interests on the zone of impact of the works, none of these sites are predicted to be at risk of negative impacts. These sites are therefore not considered further.

Based on the above examination of the Zone of Influence, two Natura 2000 sites has been selected for inclusion in the screening assessment: -

- Cork Harbour SPA (site code: 004030)
- Great Island Channel SAC (site code: 001058)

The Location of the Proposed Works in relation to Cork Harbour SPA and Great Island Channel SAC are displayed in Figure 5.1 and 5.2 below.



Figure 5.1 Location of the Proposed Works on the N40 (red outline) in relation to Cork Harbour SPA (green area) (Source: EPA Mapviewer).



Figure 5.2 Location of the Proposed Works on the N40 (red outline) in relation to the Great Island Channel SAC (orange) (Source: EPA Mapviewer).

Table 5.1 outlines the qualifying interests of these Natura 2000 sites and discusses whether further consideration is necessary in relation to the potential for likely significant effects on this SAC and/or SPA of the proposed works.

Table 5.1 Natura 2000 sites within the potential Zol of the proposed works.

Natura 2000 Site	Site Code	Distance	Qualifying Interests	Within Zone of Influence (Zol)
Great Island Channel SAC	001058	Ca. 3.5km via straight-line distance	Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330]	Yes – The proposed works are located ca. 3.5km from this SAC, which is designated for aquatic habitats. The proposed works are adjacent (ca.30m away) to Lough Mahon, which is hydrologically connected to this SAC. Therefore, further consideration of this site is necessary.
Cork Harbour SPA	004030	ca. 30m	Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] Great Crested Grebe (<i>Podiceps cristatus</i>) [A005] Cormorant (<i>Phalacrocorax carbo</i>) [A017] Grey Heron (<i>Ardea cinerea</i>) [A028] Shelduck (<i>Tadorna tadorna</i>) [A048] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Shoveler (<i>Anas clypeata</i>) [A056] Red-breasted Merganser (<i>Mergus serrator</i>) [A069] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Common Gull (<i>Larus canus</i>) [A182] Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183] Common Tern (<i>Sterna hirundo</i>) [A193] Wetland and Waterbirds [A999]	Yes – The proposed works are located at their closest ca. 30-60m from this SPA, which is designated for a number of waterbirds and an aquatic habitat. Therefore, further consideration of this site is necessary.

5.2. Brief Description of Natura 2000 Sites

5.2.1. Great Island Channel SAC

The Great Island Channel SAC is described as follows: -

'The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (= priority; numbers in brackets are Natura 2000 codes): -*

[1140] Tidal Mudflats and Sandflats

[1330] Atlantic Salt Meadows

*The main habitats of conservation interest in Great Island Channel SAC are the sheltered tidal sand and mudflats and the Atlantic salt meadows. Owing to the sheltered conditions, the intertidal flats are composed mainly of soft muds. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nephtys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algal species occur on the flats, especially *Ulva lactuca* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially at Rosslague and Belvelly.*

*The saltmarshes are scattered through the site and are all of the estuarine type on mud substrate. Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Greater Sea-spurrey (*Spergularia media*), Lax-flowered Sea-lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Sea Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*).*

The site is extremely important for wintering waterfowl and is considered to contain three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point. Shelduck is the most frequent duck species with 800-1,000 birds centred on the Fota/Marino Point area. There are also large flocks of Teal and Wigeon, especially at the eastern end. Waders occur in the greatest density Version date: 24.09.2013 2 of 2 001058_Rev13.Doc north of Rosslare, with Dunlin, Godwit, Curlew and Golden Plover the commonest species. A population of about 80 Grey Plover is a notable feature of the area. All the mudflats support feeding birds; the main roost sites are at Weir Island and Brown Island, and to the north of Fota at Killacloyne and Harper's Island. Ahanesk supports a roost also but is subject to disturbance. The numbers of Grey Plover and Shelduck, as given above, are of national importance. The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 waterfowl and contains internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896), along with nationally important numbers of nineteen other species. Furthermore, it contains large Dunlin (12,019) and Lapwing (12,528) flocks. All counts are average peaks, 1994/95 – 1996/97. Much of the site falls within Cork Harbour Special Protection Area, an important bird area designated under the E.U. Birds Directive.

While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.

The site is of major importance for the two habitats listed on Annex I of the E.U. Habitats Directive, as well as for its important numbers of wintering waders and wildfowl. It also supports a good invertebrate fauna.'

Qualifying Interests

The Great Island Channel SAC is designated for the following habitats: -

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]

Conservation Objectives

The site-specific conservation objectives for Great Island Channel SAC and the specific attributes and targets defining the objectives for each qualifying interest are detailed in NPWS (2014b). The overall aim is to maintain or restore the favourable conservation status of the habitats for which this SAC is designated.

The site-specific conservation objectives of the qualifying interests of the SAC within the ZOI of the proposed works are as follows: -

- To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Great Island Channel SAC
- To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Great Island Channel SAC

Threats and Pressures

The potential threats, as identified by EUNIS⁵ and NPWS (2013), for the Great Island Channel SAC are given in Table 5.4 below: -

'While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.'

Table 5.2 Threats, pressures and activities with negative impacts on the Great Island Channel SAC (NPWS 2013, Eionet 2022).

Rank	Threats and pressures [code]	Threats and pressures [type]	Location
High	J02.01.02	reclamation of land from sea, estuary or marsh	inside
Medium	A08	Fertilisation	outside
High	E01	Urbanised areas, human habitation	outside
Medium	I01	invasive non-native species	inside
Medium	K02.03	eutrophication (natural)	inside
Medium	A04	grazing	inside
High	F01	Marine and Freshwater Aquaculture	inside
High	D01.02	roads, motorways	inside

⁵ <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0001058>

Table 5.3 Qualifying Interests of the Great Island Channel SAC within the Zol of the proposed works.

Qualifying Interest	Comment	Within Zol
Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]	These qualifying interests of the Great Island Channel SAC are aquatic habitats. Given that the proposed works site is located in close proximity to Lough Mahon, the estuary of the Douglas / Tramore River and that surface water run-off from the N40 outfalls to Lough Mahon, these habitats are considered to be within the Zol of the proposed works.	Yes

5.2.2. Cork Harbour SPA

Cork Harbour SPA is described as follows: -

'Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poul nabibe inlets.

*Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nephtys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Some shallow bay water is included in the site. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.*

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Mallard, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Greenshank, Black headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (1,896) and Redshank (2,149) - all figures given are five year mean peaks for the period 1995/96 to 1999/2000. Nationally important populations of the following 19 species occur: Little Grebe (57), Great Crested Grebe (253), Cormorant (521), Grey Heron (80), Shelduck (2,009), Wigeon (1,791), Teal (1,065), Mallard (513), Pintail (57), Shoveler (103), Red-breasted Merganser (121), Oystercatcher (1,809), Golden Plover (3,342), Grey Plover (95), Lapwing (7,569), Dunlin (9,621), Bar-tailed Godwit (233), Curlew (2,237) and Greenshank (46). The Shelduck population is the largest in the country (over 10% of national total). Other species using the site include Mute Swan (38), Whooper Swan (5), Pochard (72), Gadwall (6), Tufted Duck (64), Goldeneye (21), Coot (53), Ringed Plover (73), Knot (26) and Turnstone (113). Cork Harbour is an important site for gulls in winter and autumn, especially Black-headed Gull (3,640), Common Gull (1,562) and Lesser Black-backed Gull (783), all of which occur in numbers of national importance. Little Egret and Mediterranean Gull, two species which have recently colonised Ireland, also occur at this site.

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

Cork Harbour has a nationally important breeding colony of Common Tern (102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common

Tern. The site provides both feeding and roosting sites for the various bird species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary.'

Qualifying Interests

- Little Grebe (*Tachybaptus ruficollis*) [A004]
- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Cormorant (*Phalacrocorax carbo*) [A017]
- Grey Heron (*Ardea cinerea*) [A028]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Pintail (*Anas acuta*) [A054]
- Shoveler (*Anas clypeata*) [A056]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Common Gull (*Larus canus*) [A182]
- Lesser Black-backed Gull (*Larus fuscus*) [A183]
- Common Tern (*Sterna hirundo*) [A193]
- Wetland and Waterbirds [A999]

Conservation Objectives

The site-specific conservation objectives for Cork Harbour SPA and the specific attributes and targets defining the objectives for each qualifying interest are detailed in NPWS (2014a). The overall aim is to maintain or restore the favourable conservation status of the species for which this SPA is designated.

The site-specific conservation objectives of the qualifying interests of the SPA within the ZOI of the proposed works are as follows: -

- To maintain the favourable conservation condition of Little Grebe in Cork Harbour SPA;
- To maintain the favourable conservation condition of Great Crested Grebe in Cork Harbour SPA;
- To maintain the favourable conservation condition of Cormorant in Cork Harbour SPA;
- To maintain the favourable conservation condition of Grey Heron in Cork Harbour SPA;
- To maintain the favourable conservation condition of Shelduck in Cork Harbour SPA;
- To maintain the favourable conservation condition of Wigeon in Cork Harbour SPA;
- To maintain the favourable conservation condition of Teal in Cork Harbour SPA;
- To maintain the favourable conservation condition of Pintail in Cork Harbour SPA;
- To maintain the favourable conservation condition of Shoveler in Cork Harbour SPA;
- To maintain the favourable conservation condition of Red-breasted Merganser in Cork Harbour SPA;
- To maintain the favourable conservation condition of Oystercatcher in Cork Harbour SPA;
- To maintain the favourable conservation condition of Golden Plover in Cork Harbour SPA;
- To maintain the favourable conservation condition of Grey Plover in Cork Harbour SPA;
- To maintain the favourable conservation condition of Lapwing in Cork Harbour SPA;
- To maintain the favourable conservation condition of Dunlin in Cork Harbour SPA;
- To maintain the favourable conservation condition of Black-tailed Godwit in Cork Harbour SPA;
- To maintain the favourable conservation condition of Bar-tailed Godwit in Cork Harbour SPA;
- To maintain the favourable conservation condition of Curlew in Cork Harbour SPA;
- To maintain the favourable conservation condition of Redshank in Cork Harbour SPA;
- To maintain the favourable conservation condition of Greenshank in Cork Harbour SPA;
- To maintain the favourable conservation condition of Black-headed Gull in Cork Harbour SPA;
- To maintain the favourable conservation condition of Common Gull in Cork Harbour SPA;
- To maintain the favourable conservation condition of Lesser Black-backed Gull in Cork Harbour SPA;
- To maintain the favourable conservation condition of Common Tern in Cork Harbour SPA;
- To maintain the favourable conservation condition of the wetland habitat in Cork Harbour SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

Threats and Pressures

The potential threats, as identified by EUNIS⁶, for Cork Harbour SPA are given in Table 5.4 below.

Table 5.4 Threats, pressures and activities with negative impacts on the Cork Harbour SPA (Eionet 2022).

Rank	Threats and pressures [code]	Threats and pressures [type]	Location
Medium	G01.06	skiing, off-piste	inside
Medium	A08	Fertilisation	outside
High	F01	Marine and Freshwater Aquaculture	inside
Medium	D03.02	Shipping lanes	inside
Low	E01.03	dispersed habitation	outside
High	D03.01	port areas	outside
High	E01	Urbanised areas, human habitation	outside
High	D01.02	roads, motorways	outside
Medium	G01.01	nautical sports	inside
Medium	G01.02	walking, horse riding and non-motorised vehicles	inside
Medium	F02.03	Leisure fishing	inside
High	E02	Industrial or commercial areas	outside

⁶ <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0004030>

Table 5.5 Qualifying Interests of Cork Harbour SPA.

Qualifying Interest	Comment	Within Zol
<p>Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] Great Crested Grebe (<i>Podiceps cristatus</i>) [A005] Cormorant (<i>Phalacrocorax carbo</i>) [A017] Grey Heron (<i>Ardea cinerea</i>) [A028] Shelduck (<i>Tadorna tadorna</i>) [A048] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Shoveler (<i>Anas clypeata</i>) [A056] Red-breasted Merganser (<i>Mergus serrator</i>) [A069] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Common Gull (<i>Larus canus</i>) [A182] Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183] Common Tern (<i>Sterna hirundo</i>) [A193]</p>	<p>There is a small terrestrial buffer (ca. 30-60m) between the proposed works site on the N40 and Cork Harbour SPA. Noise and disturbance may occur from machinery and human presence during the proposed works. Although the proposed works are located along the N40 road, there is potential for the bird species, which this SPA is designated for, to come in to contact with the zone of impact of the proposed works. Therefore, these species are considered to be within the Zol.</p>	<p>Yes</p>
<p>Wetland [A999]</p>	<p>Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl (NPWS 2015). Given that the proposed works are located in close proximity (ca. 30-60m) from Cork Harbour SPA, that this is an aquatic habitat and that surface water run-off from the proposed works site will outfall to Lough Mahon, this qualifying interest is considered to be within the Zol of the proposed works.</p>	<p>Yes</p>

5.3. Likelihood of Significant Effects on Natura 2000 sites

5.3.1. Identification of Potential Impacts

The available information on Natura 2000 sites was reviewed to establish whether or not the proposed works are likely to have a significant effect on the conservation objectives of the sites concerned. The likelihood of impacts on the qualifying interests of the European sites identified in this report is based on information collated from the desk study, site visits and other available existing information.

The likelihood of impacts occurring are established in light of the nature, extent and scale of the proposed works, the location of the works with respect to Natura 2000 sites and their qualifying interests, and the conservation objectives of the European sites.

This screening report has been prepared following the source-pathway-receptor model. The potential impacts are summarised into the following categories for screening purposes.

- Direct impacts refer to habitat loss or fragmentation arising from land-take, or direct disturbance or mortality of species. Direct impacts can be as a result of a change in land use or management, such as the removal of agricultural practices that prevent scrub encroachment, or activities associated with construction.
- Indirect impacts refer to those which can arise through remote connectivity, for example by means of a watercourse, via groundwater, via air (e.g. dust) or via other emissions from a project site (e.g. noise and light). Indirect and secondary impacts do not have a straight-line route between cause and effect. It is potentially more challenging to ensure that all the possible indirect impacts of the project – in combination with other plans and projects - have been established. These can arise, for example, when a development alters the hydrology of a catchment area, which in turn affects the movement of groundwater to a site and the qualifying interests that rely on the maintenance of water levels. Deterioration in water quality can occur as an indirect consequence of development, which in turn changes the aquatic environment and reduces its capacity to support certain plants and animals. The introduction of invasive species can also be defined as an indirect impact. Disturbance to fauna can arise directly through the loss of habitat (e.g. displacement of roosting bats) or indirectly through noise, vibration and increased activity associated with construction and operation.

5.3.2. Assessment of Significance of Effects

As described in Section 1, the proposed works involve the removal of the safety barrier within the works zone, excavation works (ca. 1.2m deep), kerbing, setting up of the safety barrier and utility work will be undertaken concurrently with a new surface course and inlay course.

The significance of effects on Cork Harbour SPA and Great Island Channel SAC are evaluated in view of the relevant conservation objectives in Table 5.6 and 5.7, respectively.

Table 5.6 Evaluation of effects on Cork Harbour SPA (LSE-likely significant effect).

Conservation objective	Species	Description of effects	LSE
<p><i>To maintain the favourable conservation condition of: -</i></p> <p><i>Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, and Redshank in Cork Harbour SPA.</i></p>	<p>Little Grebe</p> <p>Great Crested Grebe</p> <p>Cormorant</p> <p>Grey Heron</p> <p>Shelduck</p> <p>Wigeon</p> <p>Teal</p> <p>Pintail</p> <p>Shoveler</p> <p>Red-breasted Merganser</p> <p>Oystercatcher</p> <p>Golden Plover</p> <p>Grey Plover</p> <p>Lapwing</p> <p>Dunlin</p> <p>Black-tailed Godwit</p> <p>Bar-tailed Godwit</p> <p>Curlew</p> <p>Redshank</p> <p>Black-headed Gull</p> <p>Common Gull</p> <p>Lesser Black-backed Gull</p>	<p>The attributes of these conservation objectives relate to population trend and distribution.</p> <p>The proposed works site is located in close proximity to the boundary of Cork Harbour SPA (c. 30m at the closest point and c. 380m at the furthest point). It is largely built land and associated landscaping. It does not support wetland habitats that might be used by birds for which the SPA has been designated. While a number of species are known to feed in the playing fields at Ringmahon (i.e. ex-situ) the works area does not support suitable habitat in which these species might feed nor does it directly adjoin such areas.</p> <p>The road corridor is screened by intervening lands on Jacobs Island for much of its length (Plate 5.1). In these areas disturbance of birds using the estuary is not anticipated.</p> <p>At the eastern end of the scheme the works area is separated by a low grass berm (Plate 5.2) which largely blocks views from road level of the estuary immediately adjoining the shoreline. Furthermore, there is a public walkway along the estuary between the works and birds using the estuary. This together with heavy traffic along the N25 is such that there are existing significant patterns of traffic / human disturbance and associated noise. Disturbance of birds using the estuary is not anticipated.</p> <p>As referenced in Section 1.2.1.1, surface water run-off from the proposed works site will continue to outfall to Lough Mahon via the existing drainage outfall following completion of works. During construction all works are contained within the footprint of the existing N40. Discharge of silt laden waters to the estuary via the drainage network is not permitted.</p> <p>In relation to Catchment 1; as a result of the net area increase in this catchment, this will result in an increase in pollution load within Catchment 1. A Class 1 By-Pass Hydrocarbon Interceptor Klargestor NSBE075 Hydrocarbon Interceptor which typically measures 5.8m x 2m will be installed within Cork City Council owned lands between the N40 and ch. 10,700 outfall.</p> <p>In relation to Catchment 2, this catchment discharges to the existing outfall at 1ch. 1,040, the reconfigured network results in a total catchment reduction of -12%; therefore, because there is a reduction in catchment area which also results in a reduction in pollution load and risk of spillage, a pollution control measure is not required.</p>	<p>No</p>

Conservation objective	Species	Description of effects	LSE
		<p>Given the installation of the proposed pollution control system by Cork City Council, which is as an integral part of the design, there will be no significant effect from the proposed scheme on these qualifying interests of Cork Harbour SPA.</p>	
<p><i>To maintain the favourable conservation condition of Common Tern in Cork Harbour SPA</i></p>	<p>Common Tern</p>	<p>The attributes of this conservation objective relate to breeding population abundance, productivity rate, distribution, prey biomass available, barriers to connectivity and disturbance at the breeding site.</p> <p>The main attribute that could be affected by the proposed works on the N40 is disturbance at the breeding site. However, Common Tern do not breed in Lough Mahon immediately adjoining the works area. The nearest breeding colony is on artificial nesting platforms north of Marino Point (on the eastern side of Little Island); and on the roof of the Martello Tower close to the railway line at Marino (west of Belvelly) (both sites are >5km from the works. Proposed works will not disturb birds using these sites.</p> <p>As noted above birds feeding in the harbour will be screened from works by Jacob’s Island and a low grass berm. Disturbance of foraging birds is not anticipated.</p> <p>Furthermore, as above, no negative impacts on water quality with the harbour are anticipated during construction or operation following completion of works.</p> <p>No negative impacts on Common tern in Cork Harbour are anticipated from the proposed N40 works.</p>	<p>No</p>
<p><i>To maintain the favourable conservation condition of the wetland habitat in Cork Harbour SPA as a resource for the regularly-occurring migratory waterbirds that utilise it</i></p>	<p>Wetlands</p>	<p>The attributes of this conservation objective relate to habitat area. The proposed works site is not located within the SPA. The proposed works are entirely within the footprint of the existing N40.</p> <p>There are no works proposed within Cork Harbour SPA. No wetland habitats within Cork Harbour will be impacted by the proposed works.</p> <p>As referenced in Section 1.2.1.1, surface water run-off from the proposed works site will continue to outfall to Lough Mahon via the existing drainage outfall following completion of works. During construction all works are contained within the footprint of the existing N40. Discharge of silt laden waters to the estuary via the drainage network is not permitted.</p> <p>In relation to Catchment 1; as a result of the net area increase in this catchment, this will result in an increase in pollution load within Catchment 1. A Class 1 By-Pass Hydrocarbon Interceptor Klargestor NSBE075 Hydrocarbon Interceptor which typically measures 5.8m x</p>	<p>No</p>

Conservation objective	Species	Description of effects	LSE
		<p>2m will be installed within Cork City Council owned lands between the N40 and ch. 10,700 outfall.</p> <p>In relation to Catchment 2, this catchment discharges to the existing outfall at 1ch. 1,040, the reconfigured network results in a total catchment reduction of -12%; therefore, because there is a reduction in catchment area which also results in a reduction in pollution load and risk of spillage, a pollution control measure is not required.</p> <p>Given the installation of the proposed pollution control system by Cork City Council, which is as an integral part of the design, there will be no significant effect from the proposed scheme on these qualifying interests of Cork Harbour SPA.</p>	

Table 5.7 Evaluation of effects on Great Island Channel SAC (LSE-likely significant effect).

Conservation objective	Habitat	Description of effects	LSE
<i>To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Great Island Channel SAC</i>	Mudflats and sandflats not covered by seawater at low tide	<p>The attributes of this conservation objective relate to habitat area and community distribution. The proposed works are entirely within the footprint of the existing N40. There will be no works within Great Island Channel SAC, which is located ca. 3.5km to the east. Furthermore, there will be no works within any areas of mudflat in Cork Harbour.</p> <p>Given the nature of the proposed works within the existing footprint of the N40, the distance from the proposed works to this SAC (ca. 3.5km) and that no works will be carried out within or close to any watercourses / waterbodies, there will be no impact on the attributes of this conservation objective.</p> <p>As referenced in Section 1.2.1.1, surface water run-off from the proposed works site will continue to outfall to Lough Mahon via the existing drainage outfall following completion of works. During construction all works are contained within the footprint of the existing N40. Discharge of silt laden waters to the estuary via the drainage network is not permitted.</p> <p>In relation to Catchment 1; as a result of the net area increase in this catchment, this will result in an increase in pollution load within Catchment 1. A Class 1 By-Pass Hydrocarbon Interceptor Klargestor NSBE075 Hydrocarbon Interceptor which typically measures 5.8m x 2m will be installed within Cork City Council owned lands between the N40 and ch. 10,700 outfall.</p> <p>In relation to Catchment 2, this catchment discharges to the existing outfall at 1ch. 1,040, the reconfigured network results in a total catchment reduction of -12%; therefore, because there is a reduction in catchment area which also results in a reduction in pollution load and risk of spillage, a pollution control measure is not required.</p> <p>Given the installation of the proposed pollution control system by Cork City Council, which is as an integral part of the design, there will be no significant effect from the proposed scheme on these qualifying interests of Cork Harbour SPA. Therefore, there will be no significant effect.</p>	No
<i>To restore the favourable conservation condition of Atlantic salt meadows (Glauco-Puccinellietalia maritimae) in Great Island Channel SAC</i>	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	<p>The attributes of this conservation objective relate to habitat area, habitat distribution, physical structure (sediment supply, creeks and pans, flooding regime, zonation, vegetation height, vegetation cover, typical species and sub-communities, negative indicator species – <i>Spartina anglica</i>).</p> <p>The proposed works are entirely within the footprint of the existing N40. There will be no works within Great Island Channel SAC, which is located ca. 3.5km to the east. Furthermore, there will be no works within any areas of saltmarsh in Cork Harbour.</p> <p>Given the nature of the proposed works, the distance from the proposed works to this SAC (ca. 3.5km) and that no works will be carried out within or close to any watercourses / waterbodies, there will be no impact on the attributes of this conservation objective.</p> <p>As referenced in Section 1.2.1.1, surface water run-off from the proposed works site will continue to outfall to Lough Mahon via the existing drainage outfall following completion of works. During construction all works are contained within the footprint of the existing N40. Discharge of silt laden waters to the estuary via the drainage network is not permitted.</p> <p>In relation to Catchment 1; as a result of the net area increase in this catchment, this will result in an increase in pollution load within Catchment 1. A Class 1 By-Pass Hydrocarbon Interceptor</p>	No

Conservation objective	Habitat	Description of effects	LSE
		<p>Klargester NSBE075 Hydrocarbon Interceptor which typically measures 5.8m x 2m will be installed within Cork City Council owned lands between the N40 and ch. 10,700 outfall.</p> <p>In relation to Catchment 2, this catchment discharges to the existing outfall at 1ch. 1,040, the reconfigured network results in a total catchment reduction of -12%; therefore, because there is a reduction in catchment area which also results in a reduction in pollution load and risk of spillage, a pollution control measure is not required.</p> <p>Given the installation of the proposed pollution control system by Cork City Council, which is as an integral part of the design, there will be no significant effect from the proposed scheme on these qualifying interests of Cork Harbour SPA.</p> <p>Therefore, there will be no significant effect.</p>	

6. Potential In-combination Effects

6.1. Requirement for Assessment

The requirement for AA arising out of Article 6(3) of the Habitats Directive covers plans and projects that, “*either individually or in combination with other plans or projects*”, are likely to have a significant effect on one or more Natura 2000 sites. This means that AA is required for any plan or project that, in combination with other plans or projects, would have a significant effect on one or more Natura 2000 sites, irrespective of the presence or absence of such effects from that plan or project on its own. Therefore, regardless of the significance of the effects of the plan or project individually, the potential for significant effects in combination with other plans and projects must be considered in all cases.

6.2. Approach and Methodology

The objective of this requirement is to capture significant effects potentially arising from the cumulation or other interaction of non-significant effects from multiple plans and projects. Consequently, the assessment of potential in-combination effects is not a pair-wise assessment, rather, it considers the totality of the effects arising from all plans and projects affecting the Natura 2000 site(s) in question. In identifying the plans and projects to be included in this assessment, it is important to define an appropriate geographical scope and timescale over which potential in-combination effects are to be considered and the sources of information to be consulted, as described below. It is also important to consider the nature of the interactions between effects, which may be additive, antagonistic, synergistic or complex.

6.2.1. Geographical Scope

In defining the geographical scope for identifying potential in-combination effects, it is important to remember that effects are evaluated in view of the conservation objectives of the Natura 2000 site(s) concerned. As such, two or more effects relating to the same conservation objective for a given Natura 2000 site would combine even if their geographical extents did not overlap. For example, the loss of a small area of an Annex I habitat type listed as a qualifying interest of a Natura 2000 site would combine with the loss of an entirely unconnected area of the same habitat type from a remote part of the same site to produce an in-combination effect, the significance of which would need to be evaluated in view of the relevant conservation objective. On that basis, the scope of the assessment of in-combination effects extends to all plans and projects affecting the same conservation objectives as the plan or project under consideration, irrespective of whether those effects are significant or not.

6.2.2. Timescale

As stated in Section 1.2, the proposed works are predicted to take approximately four months to complete. As explained in the preceding sections, impacts potentially arising from the proposed works include disturbance to habitats and species, as well as impacts on water quality. Any non-significant effects arising from disturbance to habitats or species, or water quality impacts, will be brief or temporary, i.e. there will be full recovery of any effects within one year. On this basis, plans and projects which were scheduled to be built at the same time as the proposed project were considered.

6.2.3. Sources of Information

The following sources of information were consulted to gather information on other plans and projects: -

- Local authority development plans and their AA documents
- Local authority online planning enquiries (Cork City Council)
- EIA Portal (DHLGH, 2022)

Potential in-combination effects with the following plans and projects were considered during the preparation of this report. The search of Cork City Council was based on a map-based search (MyPlan.ie).

The Cork City Development Plan 2022-2028⁷ sets out how the city will grow and develop over the next six years, while complementing a longer 2040 vision. The main objectives of the Plan are as follows: -

- To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species;
- Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function;
- Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species;
- Enhance biodiversity in line with the National Biodiversity Strategy and its targets; and
- To protect, maintain and conserve the City's natural capital.

The Plan contains a number of Biodiversity objectives, which includes the protection and enhancement of designated sites and areas of natural heritage and biodiversity and the habitats, flora and fauna for which it is designated, and to protect, enhance and conserve designated species. An Appropriate Assessment Screening Report was prepared for the Plan, which assessed the Plan regarding its potential to adversely affect the integrity of European sites. The findings of the AA were integrated into the Plan, ensuring that potential adverse effects have been and will be avoided, reduced or offset (CAAS, 2022). As outlined in the Plan, this AA Screening report is being prepared to ensure that the proposed works will not have likely significant effects on European sites. Given the elements outlined above, the Cork City Council Development Plan 2022-2028 is not anticipated to have any significant effect in combination with the proposed works.

Farmers and landowners may also undertake general agricultural operations in areas adjacent to the proposed works and along the river, which could potentially give rise to impacts of a similar nature to those arising from the proposed works. This could potentially result in additional an increased risk to water quality. Many agricultural operations are periodic, not continuous in nature, and qualify as Activities Requiring Consent (ARCs) that require consultation with the NPWS in advance of the works, e.g. reclamation, infilling or land drainage within 30m of the river, removal of trees or any aquatic vegetation within 30m of the river, and harvesting or burning of reed or willow (NPWS, 2022a). Agricultural operations must also comply with the European Communities (Environmental Impact Assessment) (Agriculture) Regulations, 2011 (as amended) in relation to: -

- Restructuring of rural land holdings,
- Commencing use of uncultivated land or semi-natural areas for intensive, and
- Land drainage works on lands used for agriculture.

A Natura Impact Statement (NIS) is required under Regulation 9 if it is likely to have a significant effect on a Natura 2000 site. The drainage or reclamation of wetlands is controlled under the Planning and Development (Amendment) (No. 2) Regulations, 2011 and the European Communities (Amendment to Planning and Development) Regulations, 2011. Therefore, the in-combination effects of agricultural operations and the proposed works are not likely to be significant.

A Strategic Environmental Assessment (SEA) and Natura Impact Report (NIR) was prepared for the draft Cork City Development Plan, which assessed the CDP and its potential to adversely affect the environment as a whole and the integrity of Natura 2000 sites⁸. This sets out in full the approach to the Appropriate Assessment, how aspects of the Plan were considered and how the Plan will be implemented and delivered while protecting European sites; thus, ensuring that potential impacts were avoided, reduced or offset. Thus, the finding of the assessments was that the Plan will not adversely affect the general biodiversity and the integrity of Natura 2000 sites due to the incorporation of mitigation measures into the Plan as a result of the assessment processes. A summary of the Screening Assessment is presented in Table 5.2 of the NIR. Chapter 6.0 of the NIR further outlines the consideration of In-Combination Impacts. Of particular relevance here is Section 6.4 - Coastal and

⁷ Cork City Council Development Plan 2022-2028 <https://www.corkcity.ie/en/cork-city-development-plan/>

⁸ <https://www.corkcity.ie/en/proposed-cork-city-development-plan-2022-2028/draft-plan-documents/phase-2-draft-development-plan-2022-2028/natura-impact-report-for-appropriate-assessment/>

Marine Habitats and Species. Primary concerns of relevance here include e.g. - pressure on water quality in coastal and transitional waters. Table 6.1 sets out in full the Policy and Plans With Potential To Contribute to In-Combination Effects on EU Sites. Measures for strict protection of watercourses, waterbodies and water quality and expanded upon in Chapter 7.0 Appropriate Assessment; “Policies for zoned land adjoining EU sites have been reviewed to ensure that they provide appropriate caveats highlighting the sensitive location of the site and the likely or potential need for set-backs and screening to ensure the protection of habitats and the avoidance of disturbance to protected species”. Great Island Channel SAC and Cork Harbour SPA are discussed specifically in Section 7.3.2 of the NIR.

Projects that have been granted planning permission in the vicinity of the proposed works within the last 5 years were reviewed through the Cork City Council Cork Planning Enquiry System and the National Planning Application Map Viewer (MyPlan.ie). A summary of the developments within the immediate environs of the site is presented in Table 6.1 below

There are also a number of significant road projects in the environs of Cork Harbour, such as the M8/M40 Dunkettle Interchange Upgrade⁹ (where works are ongoing); as well as proposed schemes such as the M28 Ringaskiddy Road Scheme¹⁰ (not yet on site). A number of Flood Relief Projects are also underway – such as Douglas FRS¹¹, Glashaboy FRS¹² and Middleton FRS¹³. All these schemes are linked to Cork Harbour; however, they have also all been subject to Appropriate Assessment and have conditions attached to their planning permission relating to sustainable development, such as siting of septic tanks, foul surface water and effluent drainage facilities, and clean surface water run-off drainage facilities. The Office of Public Work’s Lower Lee (Cork City) Flood relief scheme¹⁴ is currently in the design / preplanning stage.

There has been significant growth in the development of Greenways and Blueways in recent years. As mentioned there is an existing public walk along the western side of Lough Mahon which runs alongside Jacobs Island. In time this is to be part of the network of Greenways linking Lee to Sea – details of the Lee to Sea Greenway can be viewed at - <https://lee2sea.com/>.

Irish Water are engaged in an ongoing programme of work in Cork Harbour. For example, wastewater from Passage West, Glenbrook and Monkstown now no longer discharges untreated to Cork Harbour. The sewer network has been extended as part of the Cork Lower Harbour Main Drainage Project to connect these area to the Shanbally Wastewater Treatment Plant. In 2020, Irish Water completed the Cobh to Monkstown Estuary Crossing. This involved drilling under the Lee Estuary; these drilled bores allowed the installation of sewer pipelines at a depth of 60m under the Lee Estuary – creating a vital connection between Cobh and Monkstown. (Source: - <https://www.water.ie/projects/local-projects/cork-lower-harbour/news-updates/>). Such measures should result in progressive improvement in water quality within the harbour. As above, in each case these projects have been subject to stand alone Screening for Appropriate Assessment and / or prepared a Natura Impact Statement. As mentioned in Section 1.2.1, there will be no change to the existing outfall rate to Lough Mahon from the proposed works.

⁹ <https://www.dunkettle.ie/>

¹⁰ <https://www.corkrdo.ie/major-schemes/m28-cork-to-ringaskiddy-project/>

¹¹ <https://www.floodinfo.ie/frs/en/douglas/home/>

¹² <https://www.floodinfo.ie/frs/en/glashaboy/home/>

¹³ <https://www.floodinfo.ie/frs/en/middleton/home/>

¹⁴ <https://www.floodinfo.ie/frs/en/lower-lee/home/>

Table 6-1 - Other relevant developments

Application Reference	Applicant(s)	Description	Outcome/Current Status
ABP Ref.: TA28.313216	Estuary View Enterprises 2020 Limited	'The Meadows' Bessborough	Due 25 th July 2022
ABP Ref.: TA28.313206	Estuary View Enterprises 2020 Limited	'The Farm' Bessborough	Due 25 th July 2022
Cork City Council Ref.: 22/40809	Hibernia Star Limited	Construction of an office and hotel development at Jacob's Island, Ballinure, Mahon, Cork	Request for Further Information
ABP Ref.: TR28.310378	Montip Horizon Limited	Amendments to previously permitted strategic housing development reference ABP-301991-18 to increase the number of units from 413 no. units to 437 no. units and amendments to Blocks 4, 7, 8, 9 and 10 at Jacob's Island, Ballinure, Mahon, Cork	Granted (11 th February 2022)
Cork City Council Ref.: 19/38875	O'Flynn Construction Co. Unlimited Company	Construction of 12,004 sq. m of office floorspace at Blackrock Business Park, Bessboro Road, Mahon, Cork	Granted (11 th March 2020)
Cork City Council Ref.: 18/37820 and ABP Ref. PL. 302784	Bessboro Warehouse Holdings Limited	Demolition of the existing buildings and construction of 135 no. residential units at Bessboro Road, Mahon, Cork	Granted (28 th February 2019)
ABP Ref.: TA.301991.	Montip Horizon Limited	Construction of 413 no. apartments, neighbourhood centre, creche, road improvement works including upgrades to the Mahon Link Road (R852) to the North of the N40 interchange to incorporate a dedicated bus lane and all site development works at Jacob's Island, Ballinure, Mahon, Cork	Granted (3 rd October 2018)

7. Conclusion

This Appropriate Assessment Screening Report has examined the details of the proposed works on the Extension to N40 (South Ring Road) off-ramp at westbound approach to Mahon (J10), and the Natura 2000 sites in their Zone of Influence. It has analysed the potential impacts of the proposed works on the receiving natural environment and evaluated their effects, both individually and in combination with other plans and projects, in view of the conservation objectives of the relevant Natura 2000 sites. This report has been prepared in line with the Habitats Directive, as transposed into Irish Law by the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended), relevant case law and guidance from the European Commission, the Department of the Environment, Heritage and Local Government and the Office of the Planning Regulator, on the basis of objective information and adhering to the precautionary principle.

Following the assessment detailed in this report, it can be concluded beyond reasonable scientific doubt that the proposed development will not, either individually or in combination with other plans or projects, give rise to any impacts which would constitute significant effects on Cork Harbour SPA (site code: 004030), Great Island Channel SAC (site code: 001058) or any other Natura 2000 site, in view of their conservation objectives. Therefore, it is the recommendation of the authors of this report that Cork City Council, as the competent authority in this case may determine that Appropriate Assessment is not required in respect of the proposed works. Should the scope of the proposed works change, a new Appropriate Assessment Screening Report and final determination will be required.

8. References

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