TOBIN

# Newtownmoyaghy Road Alignment

# Water Framework Directive (WFD) compliance assessment

## Compliance Assessment

BUILT ON KNOWLEDGE

| Document Control Sheet | |
|---|---|
| Document Reference | Newtownmoyaghy Road<br>WFD Compliance Assessment |
| Client: | Meath County Council |
| Project Reference | 11434 |

| Rev | Description | Author | Date | Reviewer | Date | Approval | Date |
|---|---|---|---|---|---|---|---|
| A | First Issue | MN | 07/05/2026 | JD | 12/05/2026 | UB | 12/05/2026 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## Table of Contents



## Appendices



## List of Tables



## List of Figures

# 1. INTRODUCTION

TOBIN were requested by Meath County Council to complete a Water Framework Directive (WFD) Compliance Assessment for a Proposed Road Development at Newtownmoyaghy, Kilcock, Co. Meath.

This assessment will determine the water bodies with the potential to be impacted, describe the mitigation measures and determine if the proposed development is in compliance with the objectives of the WFD.

The proposed development comprises of lands adjacent to and including the Newtownmoyaghy Road (also known as the Moyglare Road) which is situated approx. 1km north-east of the town centre of Kilcock Co. Meath. The road serves as a busy link road between Kilcock and Maynooth, especially at peak traffic commuter times enabling vehicles to avoid the busy R148. The lands are within the administrative boundary of Meath County Council. The Kildare County Council administrative boundary is located to the north-west of the site.

Surrounding lands comprise of agricultural land and one-off rural housing to the east of the carriageway with a rural dwelling to the west of the carriageway. More urban development is located within the Kilcock settlement area in both local authority areas.

The Newtownmoyaghy Road is classified as a local secondary route however, it is used as a 'bypass' or 'rat run' for vehicles avoiding traffic congestion in Kilcock and Maynooth.

The need for the scheme has been highlighted in the Meath County Development Plan 2021-2027 -Kilcock Environs written Statement – *To examine the feasibility of a new road which will connect the lands at Newtownmoyaghy with the L6219/L2211* and in the Kilcock Local Area Plan 2015-2021.

The Newtownmoyaghy Road is under review by Meath County Council given the safety concerns which have arisen in the area. The existing road edge and verge has collapsed into the adjacent stream at various locations due to what is considered to be erosion from flood events. The study area is also located within a flood risk area as identified on the Kilcock Environs Land Zoning Map and associated CFRAMs maps available from Floodinfo.ie.

It is proposed to upgrade and widen the existing Newtownmoyaghy Road which will result in the diversion of the Newtownmoyaghy Stream to the northeast of the existing channel, adjacent to an existing treeline, within an area of agricultural grassland. The existing channel is a straightened u-shaped (or Trapezoidal) river channel comprised mainly of glide sections with short section of riffle. A number of cattle access point occur on the south of the existing channel with areas of high siltation.

The new channel will then travel south to reconnect to the existing Newtownmoyaghy Stream channel via a box culvert connecting the stream from east to west. The existing mature trees along the east side of the road will be retained, with a minimum amount of tree removal (five trees in total) occurring along the path of the realigned stream. The route of the diversion will pass-through privately-owned lands which will require a land acquisition. The channel will be fenced off to prevent farm animals accessing the channel.


**Figure 1-1: Proposed Development Site Location**

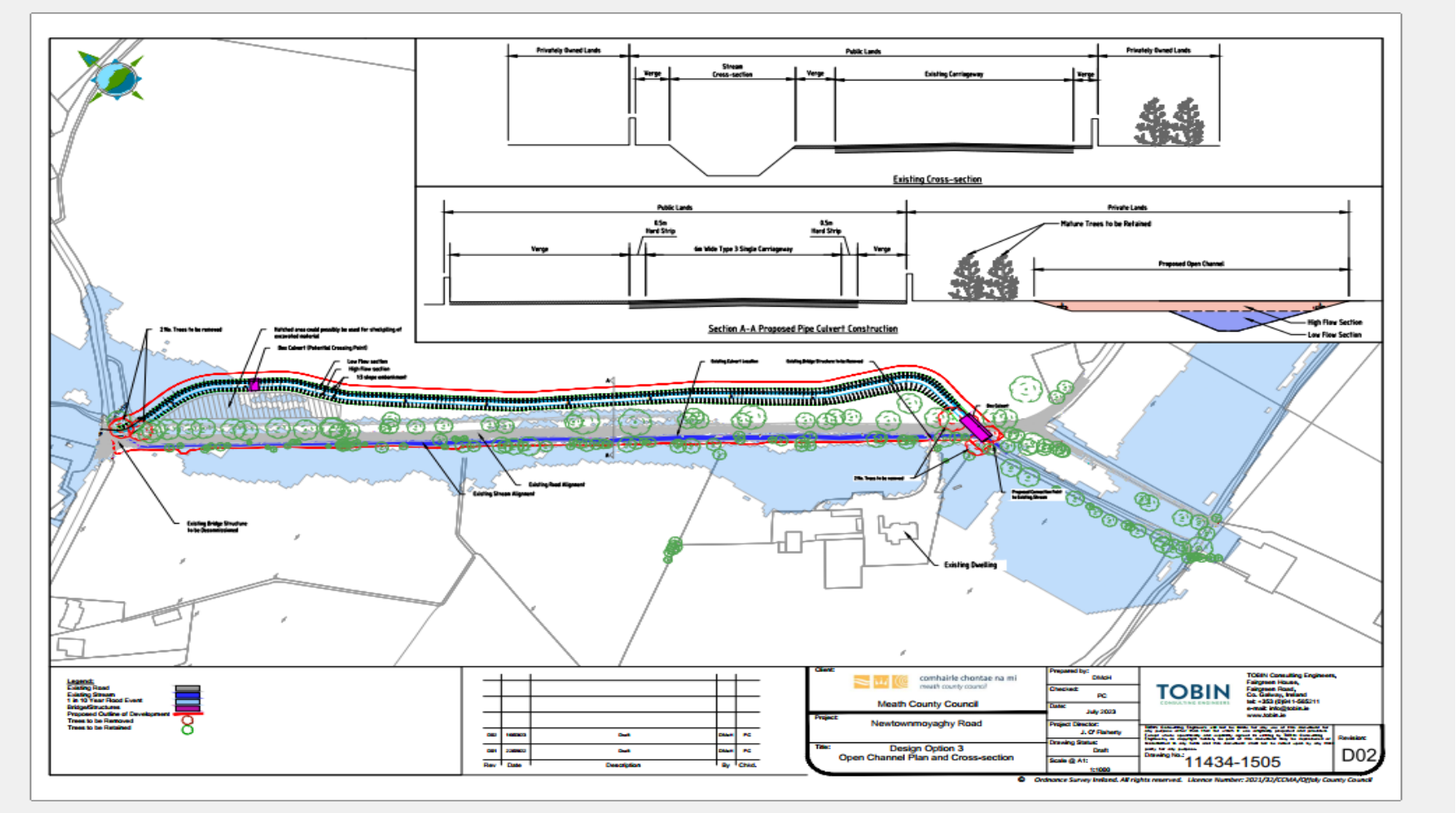


**Figure 1-2: Scheme Plan**

## 1.1 BACKGROUND

The European Union (EU) Water Framework Directive (WFD) (2000/60/EC) was established in 2000 in order to provide a framework for the protection of surface waterbodies (including rivers, lakes, coasts, estuaries and heavily modified waterbodies) and groundwater.

This report provides a WFD Compliance Assessment for the proposed development i.e., Road including the Stream realignment.

This report forms part of the planning application for the proposed development and should be read in conjunction with the PECR and Natura Impact Statement (NIS).

Any new development must therefore ensure that four objectives are satisfied:

- Objective 1: Deterioration in the status of the waterbody or connected waterbodies (within the same catchment) is prevented;
- Objective 2: Impediments to the attainment of GES status for the waterbody are not introduced;
- Objective 3: Attainment of the WFD objectives for the waterbody is not compromised;
- Objective 4: Achievement of the WFD objectives in other waterbodies within the same catchment are not permanently excluded or compromised.

### 1.1.1 Assessment Methods

This WFD Compliance Assessment evaluates the likelihood for the proposed development to have significant effects on WFD parameters of waterbodies. Currently, there is no formal Irish guidance for carrying out WFD assessments for the freshwater environment. The Northern Ireland Environment Agency provides guidance for EIA developments on carrying out a WFD assessment (Northern Ireland Environment Agency, 2012). The UK's Planning Inspectorate (PINS) Advisory Note 18 'Water Framework Directive' June 2017 (PINS 2017) also sets out the stages of a compliance assessment. In principle, the approaches outlined in each of these guidelines are similar. These documents have been used to inform the approach taken for this WFD Compliance Assessment, which is as follows:

- Screening: Identify and record the current status, future objectives and any relevant activities that may influence the waterbodies in the locality of the proposed development.
- Scoping: For each WFD element, record where the construction, operation and/or decommissioning could affect the status.
- Assessment: Evaluate the extent to which activities influence (positively or negatively) the WFD elements; the likelihood of non-temporary effects; the data available and confidence inthe assessment; and any next steps for data collection and evaluation as required.
- Mitigation: Identify where actions may be possible and appropriate to mitigate any negative effects of the development.

The study area was delineated based on site-specific characteristics and includes subbasins of rivers that are hydraulically connected to the proposed development. These subbasins comprise Rye Water_010 And Rye Water_020. The extent of the study area is illustrated in Figure 1-1.

### 1.1.2 Assessment Criteria

This assessment needs to evaluate where activities may influence WFD waterbodies. Evaluation was made against those quality elements that make up the classification of ecological status. Ecological Status is defined as alteration from 'natural' conditions; see the official WFD normative definitions in the box below.

**Table 1-1: Description of elements for the classification of Ecological Status that are recorded for those waterbodies intersected by the proposed development.**

| WFD Element | Description of elements for the classification of Ecological Status |
|---|---|
| Biological Status | Composition and abundance of aquatic flora (including macrophytes and phytobenthos)<br>Composition and abundance of benthic invertebrate fauna<br>Composition, abundance and age structure of fish fauna |
| Chemical Status | Elements that support the biological elements including:<br>• Temperature<br>• pH<br>• Ammonia<br>• Phosphate |
| Hydrology Status | Quantity of water flow<br>Connection to groundwater bodies |
| Morphology Status | River depth and width variation Structure and substrate of the river bed<br>Structure of the riparian zone |

*Source: WFD Directive 2000/60/EC*

This assessment is reliant on identifying those effects that are non-temporary i.e., three years for biological status, Hydrology and Morphology and 12 months for Chemical status.

To inform this assessment the following datasets owned by the EPA and available online have been used:

- Catchment Data - River Waterbodies GIS
- Catchment Data - Lake Waterbodies GIS
- Surface Water Classification Status and Objectives results for 2019-2024
- Groundwater Classification Status and Objectives results 2019-2024

# 2. WFD SCREENING AND SCOPING

The proposed development is located entirely within the Rye Water catchment. The proposed development lies wholly within the Rye Water_SC_020 sub-catchment area and spans two WFD river sub-basins. The majority of the site is within the Rye Water_020 WFD River sub-basin.

The relevant River Sub-Basins are presented in Figure 2-1 below.

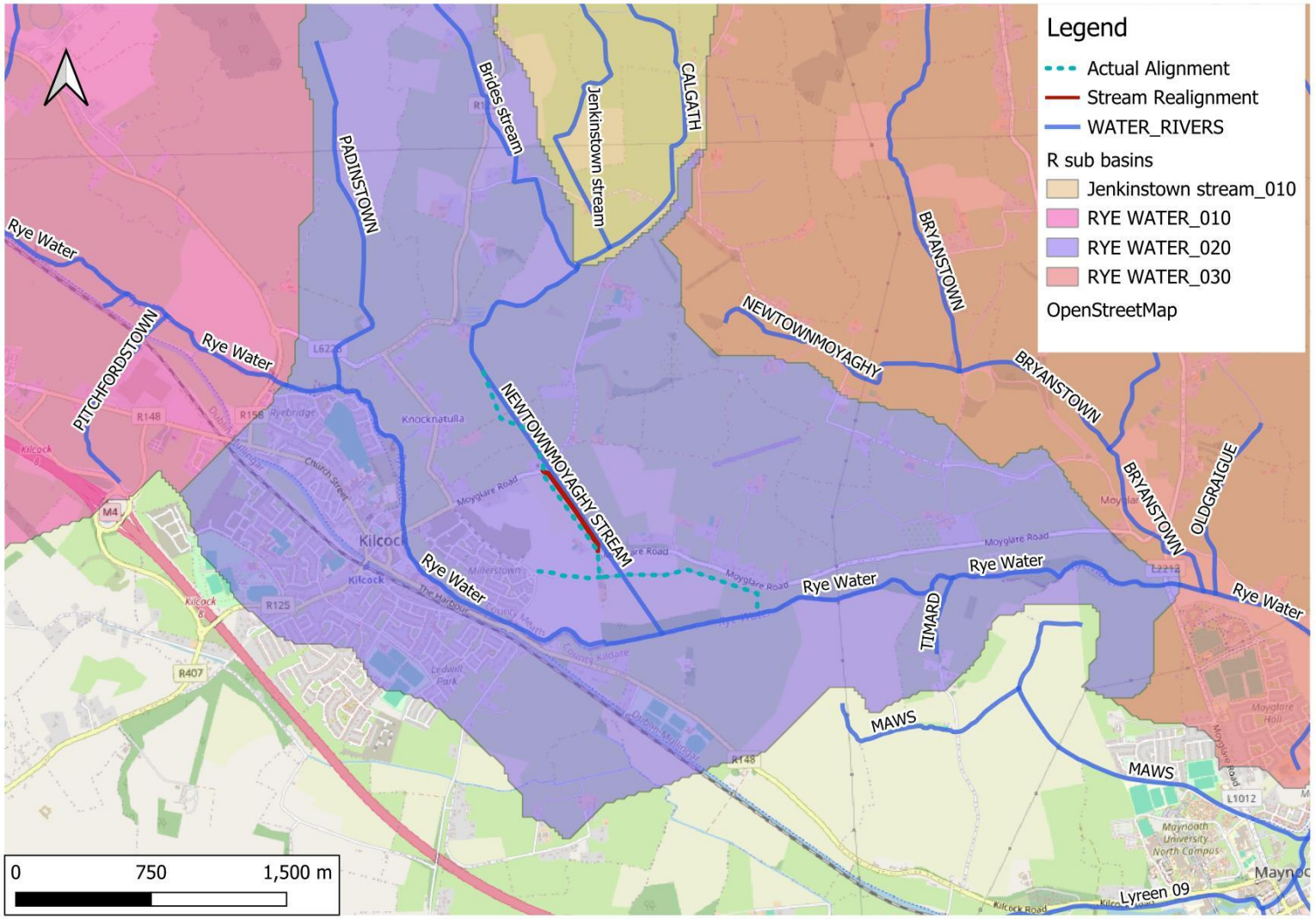


Figure 2-1: River Subbasins

## 2.1 SURFACE WATER BODIES

The proposed development is located within one sub-catchments and two sub-basins, as shown in Figures 2-1.

A section of the Newtownmoyaghy Stream (WFD subbasin code Rye_Water_020: IE_EA_09R010300) will be diverted as part of the proposed development. This stream was assigned 'Good' water quality status for the Water Framework Directive (WFD) 2019-2024 period. The Newtownmoyaghy Stream flows in an easterly direction, ultimately discharging into Dublin Bay, approximately 37km downstream of the proposed development site. The EPA naming of the stream appears to be inconsistent and is alternatively known as the Jenkinstown stream and Newtownmoyaghy stream. In addition, the course of the stream is incorrect on the EPA. The proposed course of the stream appears to follow the proposed diversion as well as a number of other anomalies.

**Table 2-1** lists the WFD waterbodies and the hydrological pathway from the proposed development site to Dublin Bay, and their corresponding water quality status.

**Table 2-1: Hydrological Pathway from the Proposed Development Site**

| WFD Waterbody | WFD Code | Water Quality Status | Highly modified water body |
|---|---|---|---|
| RYE WATER_020 (Newtownmoyaghy Stream) | IE_EA_09R010300 | Good | Yes |
| RYE WATER_030 – Rye Water | IE_EA_09R010400 | Poor | No |
| RYE WATER_040 – Rye Water | IE_EA_09R010600 | Moderate | Yes |
| LIFFEY_150 - Liffey | IE_EA_09L011900 | Good | Yes |
| LIFFEY_160 | IE_EA_09L012040 | Poor | Yes |
| LIFFEY_170 | IE_EA_09L012100 | Poor | Yes |
| LIFFEY_180 | IE_EA_09L012350 | Poor | Yes |
| LIFFEY_190 | IE_EA_09L012360 | Poor | Yes |
| Liffey Estuary Upper | IE_EA_090_0400 | Good | NA |
| Liffey Estuary Lower | IE_EA_090_0300 | Moderate | NA |
| Dublin Bay | IE_EA_090_0000 | Good | NA |

The Newtownmoyaghy is located in the Rye Water_020 Heavily Modified Water Bodies (HMWB). HMWB are water bodies that have had their hydromorphology significantly altered to serve a specified use (e.g. a river may be dammed to become a heavily modified lake that serves as a reservoir). The significant alteration to their hydromorphological condition means that these water bodies cannot achieve Good Ecological Status (GES); instead they have to meet a different environmental objective of Good Ecological Potential (GEP). GEP is the closest that

these water bodies can get to GES taking their significantly altered hydromorphology into account and whilst still providing the beneficial use (e.g. power generation/arterial drainage).

The Newtownmoyaghy area also contains numerous artificial drains that support the drainage of agricultural land. To establish a baseline understanding of historical and current water quality conditions within watercourses hydrologically connected to the proposed development, a review of the EPA's monitoring data was undertaken as part of this WFD assessment. Under the WFD, the EPA is responsible for assessing and classifying the ecological and chemical status of all surface water bodies in Ireland. Each waterbody is assigned one of five status categories: High, Good, Moderate, Poor, or Bad.

Waterbody status assessments are based on the following parameters:

- Biology – the composition and abundance of aquatic plants, macroinvertebrates, and fish communities;
- Chemistry – nutrient concentrations and the presence of harmful or priority substances;
- Hydrology – flow regime and water levels; and
- Hydromorphology – the physical structure and habitat characteristics of the waterbody.

Details of the EPA's water quality monitoring methodologies are provided in *Water Quality in Ireland* 2019-2024 (EPA, 2025) and *How We Assess Water Quality* (EPA, 2022). The biological component is assessed using the Q-value (Biotic Index) system, where values range from Q1 (poor or heavily polluted) to Q5 (high or unpolluted). Q-values reflect the diversity and abundance of macroinvertebrate species sensitive to water quality changes and are a key indicator of ecological status. The Q-values for rivers relevant to the proposed development are shown in Table 2-1.

**Table 2-2 Q-Values at relevant EPA monitoring locations**

| Monitoring Station Details | | | |
|---|---|---|---|
| WFD Sub-catchments | Rye Water_SC_020 | | |
| WFD River Sub Basin | Rye Water_020 | | |
| Station Name | Balfeaghan Br | 500 m d/s Kilcock | Anne's Br |
| Station Code | RS09R010100 | RS09R010200 | RS09R010300 |
| **Date** | **Q-Value** | | |
| 1998 | 3-4 | ND | 3 |
| 2002 | 4 | ND | 3-4 |
| 2005 | 3-4 | ND | 4 |
| 2007 | 4 | ND | 3-4 |
| 2010 | 3-4 | ND | 3-4 |
| 2013 | 3-4 | ND | 3 |
| 2016 | 3-4 | ND | 3-4 |
| 2019 | 3-4 | ND | 4 |
| 2022 | 3-4 | ND | 4 |
| 2025[1] | 3-4 | ND | 4 |

[1] Latest available data

Biological water quality data from EPA monitoring stations within the Rye Water and Liffey catchments indicate generally stable but moderate ecological conditions over the monitoring period (1987–2025). Q-values across most stations ranged between 3-4 and 4, corresponding to Moderate to Good ecological status under the WFD classification. The Annes Bridge station (RS09R010300), located downgradient, consistently achieved Q4 values since 2019, indicating sustained Good Status and a stable aquatic community. Further downstream locations show slightly more variable results, with Q-values fluctuating between 3 and 3-4, suggesting some localised pressures or natural variation affecting water quality. Earlier records (pre-2000) show low ratings (Q1 to 3) at Annes Bridge, reflecting historically worse conditions. No long-term downward trend is evident, but recent results (2019–2025) indicate lower Q values at some locations (Q3–3-4), warranting continued monitoring to ensure no deterioration.

In July 2025 the Rye Water was again mostly in moderate unsatisfactory ecological conditions[2]. The only exception was station 0300 at Anne's Bridge which remained at good ecological conditions despite noted enrichment. This entire river is very obviously enriched with excess nutrients and all stations had excess filamentous algae.

Overall, the data reflect a moderately impacted but ecologically functioning river system, with water quality generally meeting WFD objectives for Good Status near the proposed development area.

[2] https://epawebapp.epa.ie/qvalue/webusers/PDFS/HA9.pdf?Submit=Get+Results

**Rye Water_SC_010 Sub Catchment**

The entirety of the proposed development is located within the Rye Water SC_020 sub catchment. There are four river waterbodies and nine groundwater waterbodies in this subcatchment. Nutrients and hydromorphology are all driving the Risk and Status. The significant pressures that are potentially impacting on the rivers are, SSRS, drainage (hydromorphology), urban runoff and urban waste water.

Both the main channel waterbodies (Rye Water_010 and _020) in this sub-catchment are At Risk based on the continuation of moderate Ecological status in Rye Water_010. The Jenkinstown Stream_010 (Newtownmoyaghy Stream) waterbody has been changed to At Risk based on SSRS and water quality samples undertaken by Meath Co. Co.

The delineation of the AFA and corresponding sub-basins boundaries relevant to the proposed development are shown in Figure 2-1.

## 2.2 GROUNDWATER BODIES

As discussed in the accompanying NIS of the proposed development, the underlying bedrock of the proposed development site is the Lucan Formation. The formation comprises dark-grey to black, occasionally cherty, micritic limestones. There are rare dark coarser grained limestones, interbedded dark-grey calcar limestones. Groundwater and surface water interactions of the Dublin Groundwater body are described as Poorly productive bedrock. In general permeability in these rock units are likely to be low (1-10$m^2$/d) (Creighton *et al.,* 1979).

Under the WFD, Groundwater Bodies (GWBs) are the primary management units used to protect and manage groundwater resources and their connected surface waters. Each GWB represents a distinct volume of groundwater, encompassing recharge and discharge zones with limited flow across boundaries.

The proposed development is located predominantly within the Dublin GWB. According to the Geological Survey Ireland (GSI, 2003a), the Dublin GWB is underlain mainly by Dinantian Lower Impure Limestones, Dinantian Pure Unbedded Limestones, and Dinantian Upper Impure Limestones, which dominate the lowland areas.

In terms of aquifer classification, the majority of the Dublin GWB comprises Ll – Locally important aquifers, moderately productive only in local zones. Small areas underlain by Silurian rocks in the far south and narrow bands of Dinantian (early) sandstones, limestones, and shales along the southern, western, and eastern margins are classified as Pl – Poor aquifers, generally unproductive except for local zones. Thin bands of Pure Bedded Limestones are identified as Lm – Locally important aquifers, generally moderately productive, while a limited area of Pure Bedded Limestone in the northern part of the GWB is classified as Rkd – Regionally important karstified aquifer dominated by diffuse flow.

Recharge within the Dublin GWB is primarily diffuse, derived from rainfall infiltration through soil and subsoil layers. The extent of recharge depends on subsoil permeability, soil thickness, and topography. Due to the relatively low permeability, a significant portion of recharge

discharges rapidly to nearby surface watercourses via the shallow aquifer zones, limiting the available groundwater storage within the GWB.

Overall, the hydrogeological environment underlying the proposed development is characterised by limestone-dominated aquifers with variable permeability influenced by lithological composition, structural deformation, and fault-related fracturing. These factors collectively influence groundwater recharge, flow pathways, and the degree of hydraulic connectivity to surface water features in the surrounding catchments.

Table 2-3 Summary of groundwater bodies and status within study area

| EU_CD Code | Name | GWB status (2013-2018) | GWB status (2019-2024) | WFD Risk (2019-2024) |
|---|---|---|---|---|
| IE_SH_G_040 | Dublin | Good | Good | Not at Risk |

The groundwater environment within the study area is functioning well, with no evidence of widespread deterioration or exceedance of WFD thresholds. Groundwater is often used as a source of drinking water supply. According to Meath County Council and Irish Water, there are no public or group supplies on the proposed development.

The proposed development would not have an impact on the designated GWB water bodies during the construction phase. The proposed development construction is localised and underlain by deep subsoils. The proposed construction works are unlikely to significantly increase pollution concentrations within the groundwater WFD designated water body. The construction works are also unlikely to mobilise significant contamination. The works are therefore unlikely to impact groundwater quality at the scale of the groundwater WFD designated water body. As a result, there will be no change to the status of the chemical elements of the WFD designated water body.

As there are no proposed operational phase discharges there are no likely significant effects on WFD designated GWBs.

## 2.3 LAKE WATER AND TRANSITION BODIES

There are no Lake or transition bodies in the study area.

There are no Register of Protected Areas (RPA) nutrient-sensitive lakes or estuaries hydrologically or hydrogeologically connected with the proposed development, and no RPA-designated shellfish or pearl mussel areas occur within the proposed development boundary.

## 2.4 TRANSITIONAL AND COASTAL WATERS

Transitional and coastal waters are not considered by this WFD Compliance Assessment, having been assessed and scoped out from further assessment by the WFD assessment.

## 2.5 SCOPING AND ASSESSMENT RESULTS

The WFD requires that activities are also in compliance with other relevant legislation, as considered below. The following are looked at as part of the assessment (as mentioned above, in line with guidance a 2 km buffer zone was applied in this assessment):

### 2.5.1 Protected Areas

Nutrient sensitive areas comprise Nitrate Vulnerable Zones and polluted waters designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive areas under the Urban Wastewater Treatment Directive (UWWTD)(91/271/EEC).

- There are no shellfish waters within 2 km of the proposed development;
- There are no bathing water sites within 2 km of the proposed development;
- There are no nutrient sensitive sites within 2 km of the proposed development; and
- There are three SAC's (the Rye Water Valley/Carton SAC, South Dublin Bay SAC and North Dublin Bay SAC) and two SPA's (South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA situated within 5-15 km of the proposed development or are hydrologically connected to the proposed development.

### 2.5.2 Nature Designations

These are areas previously designated for the protection of habitats or species were maintaining or improving the status of water is important for their protection. They comprise the aquatic part of Natura 2000 sites – Special Protection Areas (SPAs) designated under the Birds Directive (79/409/EEC) and Special Areas of Conservation (SACs) designated under the Habitats Directive (92/43/EEC).

A screening for Appropriate Assessment (AA) has been undertaken by TOBIN for the proposed development. The proposed development is not contained within any European protected sites. The closest designated European site is the Rye Water Valley/Carton SAC (Site Code: 001398), located approx. 6km downstream from the proposed development. The SAC is hydrologically linked to the proposed development via the Newtownmoyaghy Stream within the site, and the Dublin Groundwater Body. The site is also hydrologically linked to the South Dublin Bay SAC, the South Dublin Bay and River Tolka Estuary SPA. the AA concluded that '*the possibility for likely significant effects on the Rye Water Valley/Carton SAC [001398], South Dublin Bay and River Tolka Estuary SPA [004024], North Dublin Bay SAC [00206] and North Bull Island SPA [004006] exists as a result of the proposed development*' and that a Stage 2 Appropriate Assessment (NIS) is required.

TOBIN subsequently prepared an NIS for the proposed development which assessed the impacts of the proposed development on the conservation objectives of the above-mentioned European Sites, implemented measures to mitigate these impacts and concluded that '*there is no risk of adverse effects on the qualifying interests or special conservation interests, or on overall site integrity, nor in the attainment of their specific conservation objectives for the Rye Water Valley/Carton SAC, South Dublin Bay and River Tolka Estuary SPA, North Dublin Bay SAC and North Bull Island SPA*'.

### 2.5.3 Hydromorphology

This section provides a summary of the known existing hydromorphology risk issues for the fluvial water bodies. A summary is provided in Table 2-8 below.

Table 2-4: Hydromorphological Assessment

| Assessment Questions | Rye Water (RYE WATER_020) |
|---|---|
| Consider if your activity could impact on the hydromorphology (morphology or water flow of a water body at high status? | No. RWB is not at High Status. |
| Consider if your activity could significantly impact the hydromorphology of any water body? | Yes. Alteration of channel. Surface water drainage flow and volume will not significantly change. |
| Consider if your activity is in a water body that is heavily modified for the same use as your activity? | No. The section of channel is highly modified and straightened along the Moyglare local road. Road is collapsing into the river channel. The proposed channel will improve the stream morphology |

# 3. STAGE 3: COMPLIANCE ASSESSMENT

WFD Compliance Assessment primarily considers the operation of a scheme. However, likely construction impacts are also considered if they have the potential for significant long-term change.

The WFD Compliance Assessment follows the structure of the NIS and PECR in so far as the main phases of the proposed development are considered separately in the first instance. The cumulative impacts on a water body as a result of multiple elements of the proposed development potentially impacting upon them is considered in Step 3 of the assessment.

The activities that may contribute to effects are:

- Construction works – fuel spills, earthworks, construction and upgrade of roads, alteration of the stream.
- Operational Phase – maintenance works.

## 3.1 CONSTRUCTION PHASE

Without mitigation actions, the proposed development has the potential to affect the water quality and hydromorphology of streams at the proposed development.

The factors that can affect water quality and associated aquatic habitats are associated with:

1. Contamination events associated with accidental leaks and spills of fuel or other chemicals;
2. Physical modification to streams including increased flow;
3. Sedimentation of streams; and
4. Introduction of invasive species to streams.

Impacts in this section are thus the residual effects identified in the PECR for each quality element of each WFD water body. The design measures have been incorporated into the SWMP.

All instream works for the channel diversion will be managed under the SWMP, including isolation of the works area from flowing water.

### 3.1.1 Biological Quality Elements

The existing channel is u-shaped with the road collapsing into the channel on one site, limited riparian habitats occur on the existing channel. Potential impacts on biological quality elements are assessed in PECR (Section 6.4). A summary is provided here and includes the likely residual effects following implementation of prevention, mitigation and control measures.

### 3.1.2 Loss of Terrestrial Habitat

As outlined in Section 4.4.2.1 of the PECR and 5.1.1 of the NIS, the upgrade of the Newtownmoyaghy Road and diversion of the Newtownmoyaghy Stream will result in ca. 0.5 hectares (ha) of habitat loss. This habitat is predominantly comprised of agricultural grassland used for sheep grazing, and arable crop fields. In addition to this, it is proposed to remove five trees in order to facilitate the upgrade of the Newtownmoyaghy Road.

### 3.1.3 Introduction or Spread of Invasive Non-Native Species

No Third Schedule invasive plant species were recorded within the proposed development site boundary. Therefore, there is no potential for the proposed development to accidently spread such species to any European sites within the Zone of Influence of the proposed development.

However, in the absence of any mitigation measures, as outlined in Section 4.4.2.3 of the PECR and Section 5.1.2 of the NIS, potential risks associated with the proposed development include the indirect introduction of invasive non-native species to European sites, via contaminated imported substrate material for the proposed new channel, which will connect to the Newtownmoyaghy Stream and flow in an easterly direction 6km towards the Rye Water Valley/Carton River SAC.

A record of mitigation to be implemented as part of the proposed development is set out in PECR (section 6.5.1) and NIS (section 8.1).

### 3.1.4 Chemical and Physico-chemical Quality Elements

Design measures include bunded areas for fuels, spill response protocols include secondary containment, drip trays, supervised refuelling, and impermeable refuelling zones.

### 3.1.5 Runoff of Sediment and/or Construction Pollution

As discussed in Section 4.4.2.4 of the PECR and Section 5.1.3 of the NIS, surface water runoff could also be contaminated by leaks and spills of fuel, oil or other construction material from construction vehicles/machinery if not appropriately managed. This could result in the degradation of water quality and impacts to aquatic fauna and flora.

Site clearance, excavation activities and the stockpiling of material have the potential to result in sediment laden runoff, if not appropriately managed.

In addition, the proposed stream realignment works within the Newtownmoyaghy Stream for the channel diversion, could result in sediment and/or construction pollution discharging downstream, which could pose a risk to water quality in the Newtownmoyaghy Stream and the Rye Water.

Increased silt loading in watercourses can stunt aquatic plant growth, limit dissolved oxygen capacity and overall reduce the ecological quality of watercourses, with the most critical period associated with low flow conditions. Due to the channel shape and collapsing banks, sediment is currently evident in the stream channel.

Measures to mitigate runoff of sediment and/or construction pollution are proposed in Section 4.5.1 of the PECR and Section 8.1.5 of the NIS.

### 3.1.6 Groundwater Impacts

The groundwater vulnerability within the footprint of the proposed development is classified as “Low” groundwater vulnerability.

As discussed in Section 4.4.2.5 of the PECR, borehole logs did not encounter bedrock at any location. The predominant soil type is firm dark grey slightly sandy gravelly clay with some clayey gravel lenses. The strength of the cohesive deposits typically increased with depth and

was firm to stiff or stiff below 2.00m below ground level in the majority of the exploratory holes. The new channel will be excavated to a maximum depth of 2.8m with a 1:3 ratio slope. See Appendix B for the new channel excavation depths.

As discussed in Section 5.1.4 of this NIS, there are no karst features within the proposed development or their immediate surrounds. The site is underlain by the Dublin Groundwater Body (IE_EA_G_008) in the vicinity of the proposed development. This groundwater body was classified as "Good" status in 2021 and the groundwater waterbodies risk score is considered to be "Under Review". Groundwater and surface water interactions of the Dublin groundwater body are described as poorly productive bedrock. In general, permeability in these rock units is likely to be low (1-10$m^2$/d) (Creighton *et al.,* 1979).

Also discussed in the Section 5.1.4 of the NIS, the three qualifying interests of the Rye Water Valley/Carton SAC are located at Leixlip, more than 10km east of the proposed development. Based on the geology, there is no potential groundwater connectivity between the proposed development and the Rye Water Valley/Carton SAC. The proposed development will not affect groundwater levels, groundwater flows, springs or groundwater quality at the Louisa Bridge site, where the qualifying interests have been recorded within the SAC (NPWS, 2013). The development will not affect the springs at Louisa bridge which support the tufa/wetland habitat nor will it affect the flooding regime at this location. The Construction Phase impacts will not be of sufficient magnitude to affect the quality or extent of suitable habitats in the Rye Water Valley/Carton SAC that support the narrow-mouthed whorl snail or the Desmoulin's whorl snail.

### 3.1.7 Hydromorphological Quality Elements

Potential impacts on hydromorphology are assessed in Section 6.5 of the PECR. The realignment will directly affect the channel morphology. The design of the channel at the Newtownmoyaghy stream will accommodate the existing and expected peak flows, preserving natural flow continuity and sediment transport processes. The channel morphology will be improved from the current u- shaped channel and collapsing banks/road to the 2 stage channel.

Mitigation measures detailed in the PECR will be implemented during construction of the stream channel, road and junction accommodation works.

An NIS was undertaken in view of impacts to the following European sites: Rye Water Valley/Carton SAC [001398], South Dublin Bay SAC [000210], South Dublin Bay and River Tolka Estuary SPA [004024], North Dublin Bay SAC [00206] and North Bull Island SPA [004006] and measures to mitigate impacts to hydromorphology are propose in Section 8.1.5.

### 3.1.8 Protected Areas

Potential impacts on Protected Areas are assessed in the AA Screening/NIS and PECR.

There are no Annex I habitats within the proposed development footprint and therefore no direct effects. As there are no records of rare or legally protected plant species present on the proposed development, no mitigation measures are required and no residual effects are predicted..

Following implementation of mitigation measures outlined in PECR and NIS, it is not considered likely that there would be significant effects on the qualifying features of the Protected Areas identified List the protected areas or refer to 2.5.1.and 2.5.2.

The Rye Water Valley/Carton SAC is designated for a number of the qualifying interests including petrifying spring and vertigo spp, previous records of these qualifying interests exists at Louisa Bridge in Leixlip (NPWS, 2013).These are groundwater dependent terrestrial ecosystems, and as discussed in the NIS (Section 5.4.1), the proposed development site will not affect the springs at Louisa bridge nor will it affect the flooding regime at this location.

## 3.2 OPERATIONAL PHASE

### 3.2.1 Biological Quality Elements

Potential impacts on biological quality elements are assessed in PECR. A summary is provided here and includes the likely residual effects following implementation of mitigation and control measures.

The two stage channel has a number of benefits:

1. **Improved flood control** – The upper stage carries excess water during storms, preventing overflow onto surrounding land.
2. **Maintains low-flow conditions** – The lower, narrower channel keeps water depth sufficient during dry periods, preventing stagnation and improving aquatic habitat. This habitat will be further enhanced by the presence of occasional boulders. This approach has been successfully implemented in recent flood relief schemes such as Templemore FRS.
3. **Reduced erosion** – High flows are contained in the wider upper stage, reducing velocity and bank scour compared to a single deep channel.
4. **Better water quality** – Lower velocities in the upper stage allow suspended sediment to settle out/filter out before water returns to the main channel. Evidence has shown an reduction in ortho-phosphate, and
5. **Ecological benefits** – Different flow stages create varied habitats (riffles, pools, banks) supporting more diverse aquatic and riparian species.

The operation of the proposed development would also result in an impact of negligible concern to the distribution and abundance of suitable foraging habitat. No indirect impacts on habitats or protected species are likely as a result of the proposed development.

### 3.2.2 Chemical and Physico-chemical Quality Elements

Potential effects on water quality are assessed in the PECR (Section 4.4.3.4) and NIS (Section 5.2.1). The summary outlines that a standard filter installed along the edge of the new Newtownmoyaghy Road as a result of the proposed development will restrict hydrocarbons from entering the Newtownmoyaghy Stream via surface water run-off. This will result in an improvement of water quality compared to current water quality impacts from the road run-off.

These measures will collectively ensure that the chemical and physico-chemical quality elements of connected water bodies will improve as a result of the proposed development.

### 3.2.3 Hydromorphological Quality Elements

Likely significant effects are assessed in PECR. A summary is provided here and includes the likely residual effects following implementation of mitigation and control measures.

During the operational phase, measures incorporated into the project design, will ensure protection of both surface water and groundwater flow regimes. No additional mitigation measures are required beyond those already established at the design stage. The channel design will maintain existing flow paths and prevent any significant alteration to the hydromorphological characteristics of the receiving water bodies.

### 3.2.4 Protected Areas

Based on the proposed design measures, the impacts on levels and flows on the protected areas listed above would be indistinguishable from baseline conditions; and would meet the WFD requirements under existing and future climate conditions. Furthermore, as outlined in the NIS (Section 5.2.1), the installation of the filter drain along the new roadside edge will restrict hydrocarbons from entering the Newtownmoyaghy Stream via surface water run-off and improve water quality for European sites downstream, resulting in a positive impact on these protected areas. As a result, it is not considered likely that the proposed development would result in any deleterious effects on the qualifying features of these protected areas.

### 3.2.5 Compliance Assessment Summary

The site-specific impacts of the proposed development on the biological, physico-chemical and hydromorphological quality elements of the water bodies are shown in the assessment above and summarised in Table 3-1.

Table 3-1: WFD: Assessment Summary

| Receptor | Potential risk to receptor? | Note the risk issue(s) for impact assessment |
|---|---|---|
| Hydromorphology | No | Surface water drainage flow and volume will be maintained and will not significantly change as a result of the proposed development. Positive effects in terms of channel design occur on a local scale. |
| Biology: habitats | No | The footprint of the proposed development is contained primarily within farmland. There are no likely significant direct or indirect impacts on SACs/SPAs or Annex I Habitats. There are no designated sites altered by the proposed development. |
| Biology: fish | No | The risks to the receptor during construction and operation, is from increased sediment to adjacent streams. Surface water drainage flow and volume will not increase as a result of the proposed development. The construction will not alter the fish status of any streams due to embedded measure*s* to prevent sediment entering waters. |
| Water quality | Yes | Short term, the proposed development will potentially increase sediment discharges. Mitigation measures are detailed in the SWMP to ensure water quality compliance. Potential for minor spills of fuels prevented and mitigated by measures proposed. |
| *Protected areas* | *No* | . No potential for likely significant effects on protected areas. The proposed development is upgradient of a number of SACs and SPAs. A SWMP will be implemented as part of the proposed development. No construction works will occur in SACs/SPAs. The operation of the proposed development will not significantly change the current level of surface water or groundwater volume or flow or substances in waters and will improve water quality travelling downstream to the protected areas |

## 3.3 Assessment of Proposed development Against Programme of Measures

Within each River Basin Management Plan (RBMP), a range of measures or environmental improvements are identified to achieve the objectives and timelines set out under the Water Framework Directive (WFD). As part of the WFD compliance assessment, these measures are reviewed to determine whether the proposed development can support their implementation or if there is potential to hinder their delivery.

The proposed development is located within Liffey catchment, in which several subbasins are identified as Areas for Action (AFAs) under the RBMP to improve ecological conditions. The Rye Water (IE_EA_09R010300) and adjacent waterbodies has been designated as an AFA, aligning with its objective to improve the ecological quality of the associated water bodies and address nutrient and hydromorphological pressures, while supporting opportunities for restoration.

# 4. MITIGATION MEASURES

Construction works area will be minimised to reduce exposed ground that could generate silty water runoff, that once in water bodies could alter the natural composition and structure of the substrate especially during periods of prolonged and/or heavy rainfall Implementation of the mitigation set out in PECR and NIS, will ensure impacts are short-term and localised.

The exposure of soils associated with site preparation has the potential to be a source of fine sediment that could enter water bodies during periods of rainfall. Through implementation of the mitigation set out in the PECR, any direct or indirect risk to the hydromorphology of the water bodies will be minimal.

Due to the location and nature of construction works and the implementation of the mitigation set out in the PECR and NIS, there will be no detrimental effects on hydromorphological quality elements associated with the construction of the proposed development. An improved channel hydromorphology will remain in place during the operational phase.

Through implementation of the mitigation set out in the PECR and NIS, any impacts to water bodies would be temporary and localised. Such discharges will discharge at greenfield runoff rates.

Cumulative impacts may also occur between this proposed development and other proposed/existing developments. Where waterbodies in the same catchments are crossed by multiple projects, any impacts may be additive, and the effects may accumulate downstream of the points where the waterbodies are intersected. There are no likely significant adverse effect on any waterbody as a result of the proposed development.

## 4.1.1 Construction Phase

Mitigation measures to be taken during the construction phase of the road improvement scheme are detailed in Section 6.5.1 of the PECR and Section 8 of the NIS are detailed below.

A suitably qualified Ecological Clerk of Works (ECoW) will be appointed by the Contractor. The ECoW will be available for the duration of the Construction Phase and will ensure that all mitigation measures outlined within this report are implemented during the proposed construction works. The ECoW will monitor the sediment / turbidity levels (e.g. by using a turbidity tube) downstream of the works. The ECoW will take baseline samples before works commence, take daily samples during instream works, and after works have finalised as appropriate and in liaison with the Contractor.

During the construction stage, best practice construction methods as set out in CIRIA C811 'Environmental good practice on site guide' will be implemented in order to prevent water pollution. This will include proper site management during construction, to ensure that all necessary measures are taken to prevent run-off/pollutants from entering any watercourse in the vicinity of the works. Groundwater encountered during construction will be managed and treated in accordance with CIRIA C750 'Groundwater Control: Design and Practice' (CIRIA, 2016).

The construction compound and welfare facility will be located within the existing agricultural lands and set back from the watercourse.

The temporary welfare facilities will not have any discharge to ground or surface waters and will be located a minimum of 30m from the stream. All wastewater will be collected in a tank, and will be emptied as required by a licenced waste collector according to the manufacturer's guidelines.

The following is the expected sequence of activities will be undertaken during the Construction Phase of the proposed development:

- It is anticipated construction will begin in late Q2 of 2025 if planning approval is granted prior to the date, or alternatively Q2 of 2026 (during low flow periods) and is estimated to continue for a duration of six months.
- Traffic will be maintained along the existing carriageway, while the bypass stream is under construction. The existing carriageway will be unimpeded but may have to operate under a stop-and-go system while the existing stream is being infilled during the last two to three months of the Construction Phase.
- Normal working hours during the Construction Phase are expected to be Monday to Friday 08.00 to 17.00 hours.
- Five trees will be removed to facilitate the channel diversion (as shown in **Error! Reference source not found.**).

The construction of the new stream channel is expected to involve:

- The new channel will be excavated to a depth of between 1.3 to 2.8m.
- The new open channel will be excavated with all unsuitable material, removed from site to a licensed landfill facility. The volume of material anticipated to be excavated is 4,375m$^3$ over a two – three week time period. The existing channel will be filled with topsoil and suitable recovered material, subject to meeting suitable grading requirements. Material will be stockpiled on site, outside the 1/10-year flood area, for reuse on infilling the existing channel.
- Silt curtains will be installed instream at the point where the new channel will join back with the Newtownmoyaghy Stream and also between the interface of the stockpiled material and new open channel (see **Error! Reference source not found.**).
- The new channel will be inspected for any silt buildup that may have occurred during construction. Any additional silt found present, will be removed from the channel prior to the diversion.
- Some riffles, pools, and boulders will be incorporated into the channel to provide aquatic habitat enhancement. The substrate of the new channel bed will consist of imported certified clean gravels.
- The bunding of the existing Newtownmoyaghy Stream using sandbags at two points (point A and B) will be carried out (refer to **Error! Reference source not found.**).
- Prior to backfilling of the existing stream and bringing into operation the new channel, aquatic surveys will be undertaken. If deemed necessary, a fish salvage will be undertaken (under licence using electrofishing techniques by certified personnel) along the old channel, which will be isolated due to bunding. Translocation of any fish present

will take place to the Newtownmoyaghy Stream directly downstream of the proposed development.

- After the fish salvage is completed, the stream will be diverted into the newly formed channel during low flow conditions, outside the 1 in 10-year flood event extents. Due to the low flow conditions under which the channel diversion will take place it is unlikely that overpumping will be required, as the diversion of the flow from the old channel to the new channel will be managed in a gradual fashion. It is anticipated that the diversion of the stream using sandbags will take one to two working days.
- The channel will be graded, with topsoil placed, reseeded, and stabilized as necessary with a geocore/geojut material to prevent erosion.
- The channel will be fenced on the eastern bank (boundary of farmland).
- An estimated 15m long box culvert will be installed at where the proposed diversion will pass from the east side of the road to the west side before re-connecting into the existing stream. Two trees will be removed to accommodate the new box culvert. A second box culvert will be installed at Ch. 100m to provide access to the farmland between the existing road and newly diverted stream.

Following the diversion of the stream to the new channel, the Construction Phase of the old channel will include:

- Dewatering of the old stream channel will be undertaken prior to the infilling works.
- The channel will be backfilled with suitable backfill material previously excavated from the new channel and a mix of washed and imported free draining pea-gravel for the filter drain and compacted clause 808 gravel material adjacent to the road surface.

The road upgrade and resurfacing Construction Phase is expected to consist of:

- Resurfacing the road with a 150mm layer of dense bituminous macadam and finished with a double layer finish of tar and chip as existing.
- The road level will be raised in areas where the flood waters are modelled to be in excess of 175mm, by 150 to 175mm, in order to ensure the safety of road users during future flood events. Where the road is raised, an equivalent volumetric of storage to the raised section will be provided for in the newly formed bypass channel.
- A Type 3 Single (6.0m) carriageway and widened grass verge will then be constructed.
- A standard filter drain will be installed with a 400mm slotted pipe along the new roadside edge of the Newtownmoyaghy Road. This will cater for road surface run-off and localised land drainage to the west of the existing road. This water will be directed back to the stream via an outlet head wall. A petrol interceptor will also be installed at the end of the 400mm slotted pipe.

All oils and solvents used during the construction phase of the development will be stored within specially constructed dedicated bunded areas. This will minimise any impact on the groundwater and eliminate/ reduce the risk of overflow into the nearby watercourse.

Refuelling of construction vehicles and the addition of hydraulic oils to vehicles, will take place in a designated area of the site, away from surface water features. Spill kits and hydrocarbon adsorbent packs will be stored in this area of the site and operators will be fully trained in the use of this equipment. All machinery will be regularly maintained and checked for leaks. Any refuelling of construction machinery/ vehicles will not be undertaken within 50m of any surface

water feature. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. A drip tray will be used beneath the fill point during refuelling operations to contain any accidental spillages that may occur.

In addition to the proposed road upgrade works, a new filter drain system will be put in place to provide for road runoff. The new road drainage system will flow into gullies which will connect to a filter drain and a 400mm pipe to the lowest section of the scheme.

In the event that any road run off which is not filtered through filter drains this will be directed through a petrol interceptor before discharging into the Newtownmoyaghy Stream.

All construction waste will be sorted and store in on-site skips, prior to removal by a licenced waste management contractor.

Best practice on-site erosion control measures will be incorporated into the construction phase of the proposed development to reduce the potential for sediment and suspended solids in runoff to surface water in this area. Measures will include the following where appropriate:

- Reduce availability of sediment for erosion - the single most effective method of reducing the volume of sediment created by construction is the immediate capping of all roads with high quality, hard wearing crushed washed aggregate such as limestone laid to a transverse grade. Once water drains transverse across a road constructed from hard wearing aggregate, as opposed to longitudinally on low class aggregate, the level of suspended solids is reduced by an order of magnitude;
- Working near a watercourse – Prior to the construction works commencing, silt fences will be installed, by hand, along banks of the stream. Once the silt fences are installed, 1-1.5 tonne sand bags, wrapped in heavy gauge polythene will be positioned along both ends of the stream connection point, creating a barrier around the construction works. The sandbags will be lifted into place using a mechanical excavator;
- No direct discharge to the stream will be permitted at any time during the works. Any sediment collected by settlement tanks/ silt fencing will be transported off site by a licensed waste operator for appropriate disposal; and,
- Working near watercourses during intense rainfall event (>5mm /hour) will be avoided and work will cease entirely near watercourses when it is evident that there is a threat of pollution occurring.

As with the above mitigation measures, the following standard practice pollution control measures will also be incorporated into the PECR and NIS for the project, which the contractor will be obliged to follow to remove any risk of a pollution incident:

- On completion of the works, all apparatus, plant, tools, offices, sheds, surplus materials, rubbish and temporary erections or works of any kind will be removed from the site;
- All works must follow the guidance set out in the Guidance document entitled: CIRIA guidance note Control of Water Pollution from Construction Sites (CIRIA, 2001);
- A 24-hour, seven-day week Emergency Response protocol will be drawn up and implemented. This must be implementable in the unlikely event of an accidental spillage of chemicals, hydrocarbons or release of sediment to the surface or ground water system;
- Excavated material subject to grading requirements may be suitable for reuse as part of the back fill of the existing stream. All excavated material will be temporarily removed to suitable stockpile areas.
- Stockpiling will be limited to areas where the ground is stable and well drained;

- Spoil disposal areas will be located where the risk of soil erosion and water quality deterioration is minimal and must also have an adequate buffer from aquatic zones;
- Where spoil disposal areas are bunded, the bunds will extend to a level above the top of the spoil;
- Any water discharge from the stockpiles will be monitored. Runoff water will be prevented from flowing directly into nearby watercourses;
- Refuelling of machinery will be carried out on level, hard surfaced designated areas. In the event that refuelling is required outside of these areas, fuel will be transported in a mobile double skinned tank and a spill tray will be employed during re-fuelling operations;
- All machinery will be regularly maintained and checked for leaks. Services will not be undertaken within 50 m of aquatic features. Servicing must be undertaken on level, hard surfaced designated areas;
- An adequate supply of spill kits and hydrocarbon adsorbent packs will be available at labelled stations throughout the sites with all vehicles on-site carrying spill kits. All relevant personnel will be fully trained in the use of the equipment. Any used spill kits will be disposed of appropriately off-site;
- All concrete will be mixed off-site and imported into the site. All concrete browsers will be washed down at a dedicated concrete washout on-site at least 50 m from a drainage ditch or watercourse. Concrete washings will not be disposed of on-site to any surface or ground water feature. All washings will be removed off-site and treated at a licensed facility; and
- All equipment and machinery must be cleaned prior to entry as bio security measure. This is to avoid transfer of invasive species on equipment and machinery which may have been used elsewhere to the receiving catchment. Reference will be made to IFI bio security protocol found at http://www.fisheriesireland.ie/Biosecurity/biosecurity.html.

The combined application of these measures will ensure that inputs to, and subsequent contamination of, the water environment do not occur during normal and/ or emergency conditions. With these mitigation measures in place, the probability of production effects on the hydrology and hydrogeology environment is unlikely.

### 4.1.2 Operational Phase

Mitigation measures to be taken during the construction phase of the road improvement scheme are detailed below as provided in Section 6.5.2 of the PECR and Section 8 of the NIS.

With regard to the operational phase of the proposed road improvement scheme, no significant effects on the local water environment are predicted with the above mitigation measures being adhered to. The predicted impact on surface water and groundwater is considered to be short term, localised and imperceptible.

Any vehicles utilised during the operational phase will be regularly maintained and checked to ensure any damages or leakages are corrected.

Table 4-1: Mitigation Measures matrix

| | Proposed works |
|---|---|
| Utilise existing bridges and access roads | ++ |
| Interceptor drains | ++ |
| Check Dams or similar | ++ |
| Sediment traps, sedimats | ++ |
| Oil water separator – Construction stage | ++ |
| Proprietary Settlement tanks | ++ |
| Weather dependant | ++ |
| Silt Fences | ++ |
| Concrete washout and control measures | |
| Chemical/fuel bunds | |

Taking into consideration biological, physico-chemical and hydromorphological quality elements, following the implementation of design and mitigation measures, it is concluded that it will not compromise progress towards achieving GES or cause a deterioration of the overall GEP of any of the water bodies that are in scope.

Table 4-2: Compliance of the proposed development with the environmental objectives of the WFD

| Environmental Objective | Proposed development | Compliance with the WFD Directive |
|---|---|---|
| No changes affecting high status sites. | There are no likely changes in relation to high status in the study area. (high confidence) | Yes |
| No changes that will cause failure to meet surface water good ecological status or potential or result in a deterioration of surface water ecological status or potential. | After consideration as part of the detailed compliance assessment, the proposed development will not cause deterioration in the status of the water bodies during construction following the implementation of mitigation measures; during operation, no significant impacts are predicted. (high confidence) | Yes |
| No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. | The proposed development will not cause a permanent exclusion or compromise achieving the WFD objectives in any other bodies of water within the River Basin District. (high confidence) | Yes |
| No changes that will cause failure to meet good groundwater status or | The proposed development will not cause deterioration in the status of groundwater bodies. (high confidence) | Yes |

| Environmental Objective | Proposed development | Compliance with the WFD Directive |
|---|---|---|
| result in a deterioration groundwater status. | | |

The WFD also requires consideration of how a new scheme might impact on other water bodies and other EU legislation. This is covered in Articles 4.8 and 4.9 of the WFD.

Article 4.8 states: '*a Member State shall ensure that the application does not permanently exclude or compromise the achievement of the objectives of this Directive in other bodies of water within the same river basin district and is consistent with the implementation of other Community environmental legislation*'.

All water bodies within the study area have been assessed for direct impacts. The proposed development will not compromise the achievement of the objectives of the WFD for any water body in the study area. In addition, the proposed development has been assessed for the potential for cumulative impacts with other proposed developments within 2 km of the study area. No cumulative effects of this project with other developments in the region. A number of housing developments occur in the Rye Water_020 river subbasin however not significant cumulative effects were identified.

#### *4.1.2.1 Hydrology*

These developments include other existing or planned developments in the environs of the proposed development in terms of environmental effects.

With the implementation of the mitigation measures it is concluded that in combination with other proposed developments the proposed development will not compromise the achievement of the objectives of the WFD for any water body. Therefore, the proposed development complies with Article 4.8.

Article 4.9 of the WFD requires that "Member States shall ensure that the application of the new provisions guarantees at least the same level of protection as the existing Community legislation".

The Habitats Directive (1992) European designated sites in the vicinity of the proposed development have been assessed and are presented in the NIS. The NIS concludes that the proposed development will not result in likely significant effects on any protected site, and therefore is compliant with the Habitats Directive.

The Bathing Water Directive (BWD) (2006/7/EC) There are no bathing waters within 2 km of the proposed development.

## 4.2 CONCLUSIONS

The proposed development was assessed against the objectives of the Water Action Plan 2024 (Ireland's third River Basin Management Plan). The project design incorporates a surface water management system that aligns with the Plan's core aims of preventing water pollution and mitigating hydromorphological pressures. Accordingly, the project will not compromise the

implementation of the Plan's programme of measures nor its environmental objectives for the Liffey Catchment.

Considering the potential impacts of the proposed development on biological, physico-chemical, and hydromorphological quality elements, and following the implementation of the design and mitigation measures set out in this report, it is concluded that:

- The project will not compromise progress towards achieving Good Ecological Potential/Status (GEP/GES) nor cause a deterioration in the overall potential/status of any waterbody within scope.
- The project will not compromise the qualifying features of any protected areas and is compliant with all relevant Directives.
- The project is not likely to cause a deterioration in the surface water or groundwater potential/status of any waterbody, nor compromise the ability of any waterbody to meet the objectives of the WFD or the Water Action Plan 2024.
- There are not likely to be any significant discharges of priority substances or other pollutants to groundwater or surface water; therefore, the chemical status of surface and groundwater will not deteriorate.

All proposed measures are compatible with the Programme of Measures envisaged in the Water Action Plan. The ecological potential/status of surface waters is not likely to be significantly affected by any discharge, and there is not likely to be a significant effect on any European or other protected site.

Furthermore, the works will deliver tangible environmental improvements, playing an important role in supporting surface water quality, hydromorphology enhancing biodiversity within the Newtownmoyaghy stream.

It is therefore concluded that the proposed development is compliant with the Water Framework Directive.

# 5. REFERENCES

APEM (2007) Review Of UKTAG Proposed Standard For Suspended Solids

Defra (2009) WFD Expert Assessment of Flood Management Impacts. Defra, London.

EPA, (2024) HA 09 Liffey and Dublin Bay Catchment Report, May 2024

NPWS (2013) Site Synopsis: Rye Water Valley/Carton SAC 001398_Rev13.Doc. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Northern Ireland Environment Agency (2012) Carrying out a Water Framework Directive (WFD) assessment on EIA Developments. NIEA.

UKTAG (2008) UK Environmental Standards and Conditions (Phase 1)

UKTAG (2013) Updated Recommendations on Environmental Standards River Basin Management (2015-21) Final Report. WFD UKTAG

Water Action Plan (2024) A River Basin Management Plan for Ireland

# 6. GLOSSARY

| Term | Definition |
|---|---|
| Artificial waterbody | A body of surface water created by human activity. |
| Aquifer | A subsurface layer or layers of rock or other geological strata of sufficient porosity and permeability to allow either a significant flow of groundwater or the abstraction of significant quantities of groundwater. |
| Coastal waterbody | Surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters. |
| Confidence | Low - Non-expert opinion, unsubstantiated opinion with no supporting evidence.<br>Medium - Expert view grounded in theory but based on limited information, e.g., anecdotal evidence, or historical data.<br>High - Estimation of potential impacts or consequences, with strong theoretical basis, using accepted methods, reliable analysis and<br>accepted within the sector as 'fit for purpose'. This typically includes analytical methods where the methods are strong, and the science is reliable. |
| Groundwater | All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil. |
| Groundwater body | A distinct volume of groundwater within an aquifer or aquifers. |
| Lake waterbody | A body of standing inland surface water. |
| Non-Temporary/Temporary | The requirement is to assess if the activities will have an effect that is non-temporary on the status of the waterbody. The terms are not currently defined within the guidance, however, for the purposes of this assessment 'temporary' is assumed to mean recovery should occur within the period of time the element in question is measured. For example, macro-invertebrates should be measured every 3 years.<br>Therefore, temporary means less than three years for this element. |

| | |
|---|---|
| River basin | The area of land from which all surface run-off flows through a sequence of streams, rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta. |
| River Basin District | The area of land and sea, made up of one or more neighbouring river basins together with their associated groundwaters and coastal waters, which is identified under Article 3(1) of the Water Framework Directive as the main unit for management of river basins. |
| River Basin Management Plan | River Basin Management Plans describe the river basin district, and the pressures that the water environment faces. It shows what this means for the current state of the water environment in the river basin district, and what actions will be taken to address the pressures. It sets out what improvements are possible by 2015 and how the actions will make a difference to the local environment - the catchments, estuaries, the coast and groundwater. |
| River waterbody | A body of inland water flowing on the surface of the land, but which may flow underground for part of its course. |
| Surface water | Inland waters, except groundwater; transitional waters and coastal waters, except in respect of chemical status for which it shall also include territorial waters. |
| Transitional waterbody | Bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are influenced by freshwater flows. |

# Appendix A WFD NORMATIVE DEFINITIONS

**WFD normative definitions**

The WFD provides normative definitions of ecological quality for the purposes of classification of overall ecological status. In surface waterbodies, these are as follows:

***High status***

There are no, or only very minor, anthropogenic alterations to the values of the physico-chemical and hydromorphological quality elements for the surface waterbody type from those normally associated with that type under undisturbed conditions.

The values of the biological quality elements for the surface waterbody reflect those normally associated with that type under undisturbed conditions, and show no, or only very minor, evidence of distortion.

These are type-specific conditions and communities.

***Good status***

The values of the biological quality elements for the surface waterbody show low levels of distortion resulting from human activity but deviate only slightly from those normally associated with the surface waterbody type under undisturbed conditions.

***Moderate status***

The values of the biological quality elements for the surface waterbody type deviate moderately from those normally associated with the surface waterbody type under undisturbed conditions. The values show moderate signs of distortion resulting from human activity and are significantly more disturbed than under conditions of good status.

***Poor status***

Waters show evidence of major alterations to the values of the biological quality elements for the surface waterbody type and the relevant biological communities deviate from those normally associated with the surface waterbody type under undisturbed conditions.

***Bad status***

Waters show evidence of severe alterations to the values of the biological quality elements for the surface waterbody type and large portions of the relevant biological communities normally associated with the surface waterbody type under undisturbed conditions are absent.

www.tobin.ie