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TECHNICAL NOTE

Project	EdgeConnex Ireland Limited
Subject	Additional Information Response Item no. 7 & 11
Author	Liam Bruen
Date	26 November 2021
Ref.	LB/20/11901TN02

This technical note has been updated to address Clarification of Additional Information item number 5: Changes to the previously issued technical note dated 12 July 2021 are in blue text.

Further Information Request Item no. 11

There potentially is a series of drainage ditches/watercourses traversing the site. The applicant is requested to submit a drawing showing all existing watercourses/drainage ditches which traverse the site, and which run around the perimeter of the site. The applicant shall clarify what these drainage systems currently serve, what condition they are in and how they will be modified as part of this development.

Further Information Response

Proposed Development Land site walk and Drainage Assessment.

There are no mapped surface water courses on or bordering the site as seen in Figure 1 below. below taken from the EIAR Hydrology chapter submitted to as part of the EIA.

***Figure 1** Hydrology (Source: EIAR Chapter 6 Hydrology (AWN, 2021))*

Sections 8.18 and 8.19 of the EIAR (Environmental Impact Assessment Report) outlines the external and internal site drainage.

8.18 The existing site is greenfield development where surface water flows via overland drainage ditches and a surface water drain into the Lucan Stream and Griffeen River. There are several drainage ditches that line field boundary hedgerows throughout the development site.

8.19 The Dublin Bay is located c. 21km to the east (i.e., downstream) of the site. The site would have an indirect hydrological connection, through the Lucan Stream, the Griffeen River and the River Liffey, with the following Natura European Sites:

- *South Dublin Bay SAC.*
- *South Dublin Bay and River Tolka Estuary SPA,*
- *North Dublin Bay SAC; and*
- *North Bull Island SPA*

As part of this RFI Response a further site visit was undertaken by Liam Bruen of AWN on the 25th of June 2021. The site visit was undertaken to confirm the internal drainage networks on site and to clarify what these drainage systems currently serve and what condition they were in.

The site visit was undertaken during dry conditions with no presence of surface water in most of the internal ditches. Flow direction was assumed based on the local topography, the interconnections between the ditches and any visible surface water flow where present.

Summary details of the Field Drains are outlined in Table 1.

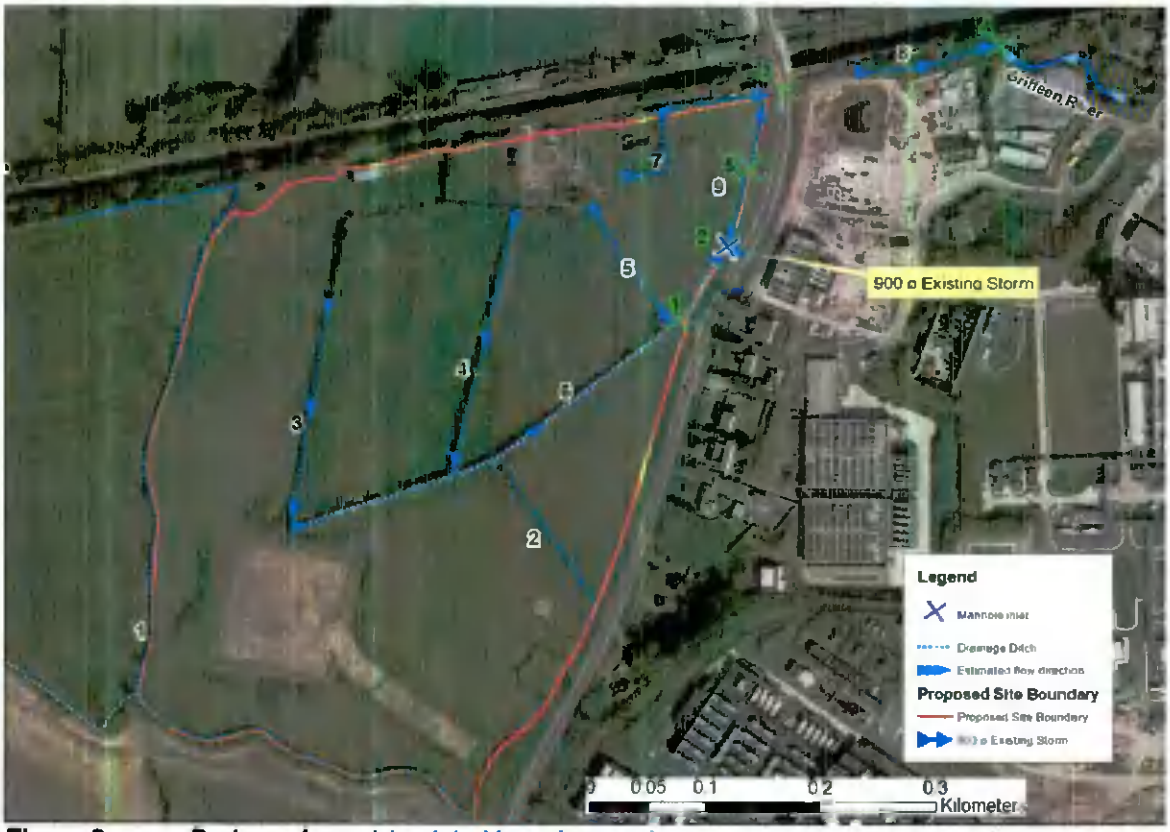

Figure 2 *Drainage Layout (updated base imagery)*

Field Drain	Flow direction	Condition
1	No apparent flow direction.	Land ditch marking field boundary overgrown with vegetation, shallow banks. Located to the west and South the proposed development site boundary. Overgrown vegetation, no outfall within the proposed development site boundary.
2	No flow direction visible.	Land ditch marking field boundary overgrown with vegetation, shallow banks. No water present at time of visit. Ditch is not connected to any other features, assumed discharge to ground.
3	Contour suggests a southern flow direction and connection to Field drain 6.	Land ditch marking field boundary overgrown with vegetation, shallow banks. No water present at time of visit.
4	Contour suggests a southern flow direction and connection to Field drain 6.	Land ditch marking field boundary overgrown with vegetation, shallow banks. No water present at time of visit.
5	Flow is directed south towards Field Drain 6.	Stagnant water visible. Located alongside an old access to dilapidated buildings.
6	North and North-East to Griffeen River.	No water present in upstream of Culvert 1, with some flowing water visible before Manhole Inlet 2; at very low flow rate. Generally overgrown with vegetation. **Point of clarification:** This ditch discharges to an existing 450 diameter storm inlet that connects to the existing 900 diameter storm drain in the bed of the R120 at the location of Manhole Inlet 2. Clarified by topographical survey of the site as shown in Figure 3 and 4 below

Field Drain	Flow direction	Condition
7	East to Griffeen River.	No water present at time of visit. Shallow dish drain for stormwater collection for dilapidated buildings.
8	East to Griffeen River.	Steep sites, Flowing water visible; very low flow rate.
9	North and North-East to Griffeen River.	**Point of clarification:** This section of ditch ***begins*** at the location of Manhole Inlet 2 with some flowing water visible at very low flow rate. Clarified by topographical survey of the site as shown in Figure 3 and 4 below.

Table 1 *Field Drains*

Overall internal ditches shown in Figure 2 are predominantly artificial ephemeral drainage ditches, most of which were dry during the time of the visit so flow direction is assumed. These are manmade ditches to drain the fields and generally marking the field boundaries.

Ditch 1 is not located within the site on the western boundary and is located on the boundary line along the south. It is likely that the ditches (2, 3, 4, 5) primarily drain to ground, or during extended periods of heavy rainfall drain into Field Ditch 6 which flows through the centre of the site and adjacent to the R120 as shown on Figure 2. This ditch, which is outside of the application boundary, discharges to an existing 900 diameter storm drain in the bed of the R120 at the location of Manhole 2, which was constructed under the R120 Upgrade Contract for SDCC. Ditch 7 connects directly with Culvert 4.

The field drains (9 & 7) are hydraulically linked through a series of culverts to drainage Ditch 8 and ultimately the Griffeen River. The storm drain in the bed of the R120 to also connecs to the Griffeen River. The Griffeen combines with drainage Ditch 8 at Culvert 4 before flowing north and converging with the River Liffey which then flows east to the Liffey Estuary c. 15 km downstream of the site.

The RFI Response prepared by Pinnacle Consulting Engineers addresses how these ditches will be modified as part of the Proposed Development.

Clarification of Further Information Request Item No. 5

The response to Item 11 of the Additional Information request is not considered to be satisfactory. The applicant has indicated that there is water present in some of the ditches on the site and that culverts are also present. The applicant is requested to provide a strategy for removing the culverts and also for reinstating any potential watercourses. The filling in of any ditches should be justified in terms of how it would not impact the wider network negatively.

The Planners report accompanying the Clarification of Further information raises Policy G3 the report states:

> *"It is the policy of the Council to promote the natural, historical and amenity value of the County's watercourses; to address the long term management and protection of these corridors and to strengthen links at a regional level".*
>
> Objective 4 of this policy is: *To uncover existing culverts and restore the watercourse to acceptable ecological standards and for the passage of fish, where possible.*
>
> *In the context of the above that applicant is requested to provide a strategy for the site, which seeks to remove culverts and restore potential watercourses. Where ditches are currently dry, the applicant is requested to demonstrate how their removal would not impact on the wider network.!*

Clarification of Further Information Response

The applicant has indicated that there is water present in some of the ditches on the site and that culverts are also present. The applicant is requested to provide a strategy for removing the culverts and also for reinstating any potential watercourses.

It is acknowledged that the development of this greenfield site will result in the infilling of some pre-existing agricultural drainage ditches that previously drained the site. These ditches facilitate the draining surface waters primarily to ground, or during extended periods of heavy rainfall drain into Field Ditch 6. It has been clarified (as part of this further information response) that this Field Ditch 6in fact discharges to an existing 450 diameter storm inlet that connects to the existing 900 diameter storm drain in the bed of the R120 at the location of Manhole Inlet 2. This is clarified by topographical survey of the site as clarified in the above discussion and shown in detail on Figure 3 and Figure 4 below.

Figure 3 Location of stormwater drain (including renumbering of ditches)

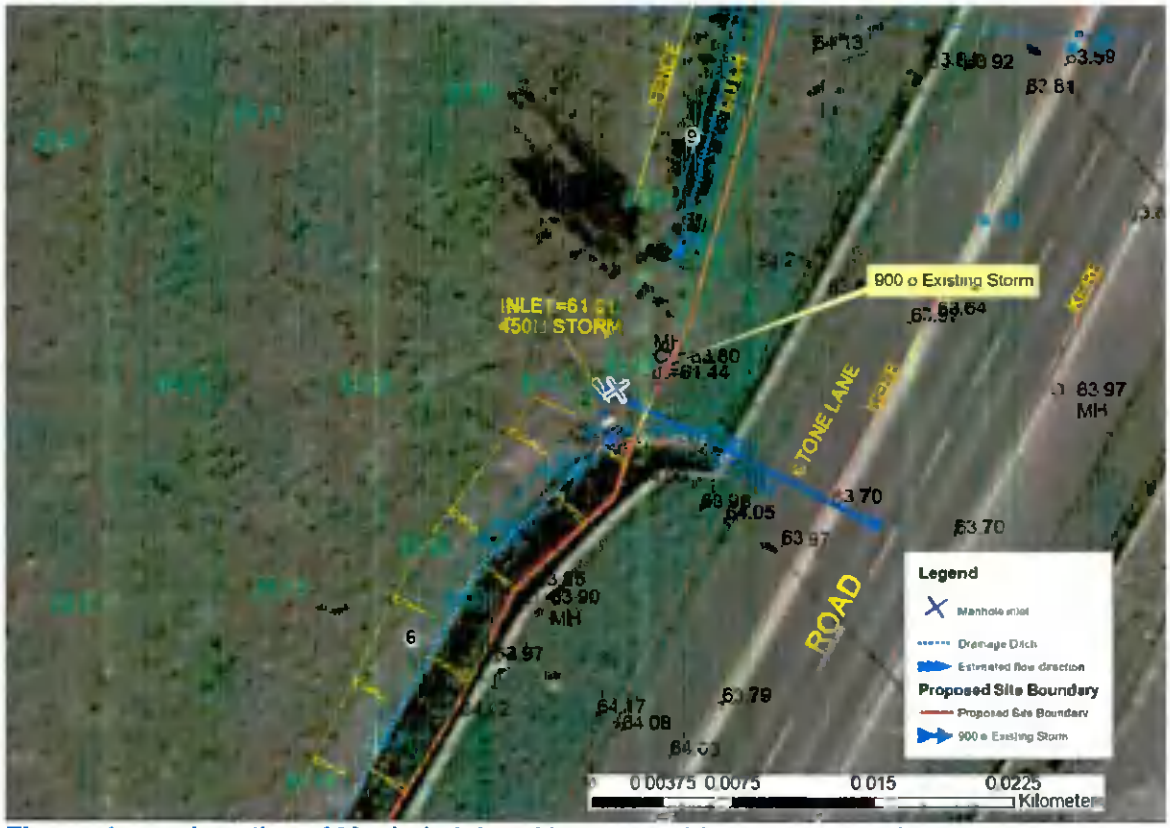

Figure 4 Location of Manhole Inlet with topographical survey overlay

While there is is water present in some of the ditches these are manmade ditches that drain the existing fields and generally marking the field boundaries; these are not 'streams' as such and contain no natural portions from its headwaters to the confluence with the Griffeen River. Furthermore, the EPA Maps do not show these ditches as watercourses

The proposed development will create new hardstanding areas over existing ditches that will be infilled. The designed stormwater network by Pinnacle Consulting Engineers replicates the existing drainage regime; by directing stormwater to an attenuation pond, that restricts outflow at Qbar rural greenfield rates and discharges to an existing stormwater main below the R120. The existing stormwater main ultimately outfalls to the Griffeen River. The sustainable urban drainage systems designed into the site will ensure that there is a negligible impact on water quality and quantity.

To clarify in respect of the culverts, the identified Culverts 2, 3, 4, are beyond the site and effectively in 3rd party ownership and it is not proposed to modify or remove these culverts. This has been confirmed by the georeferenced site boundary provided by the project Architect Henry J Lyons and project Civil Engineers Pinnacle Consulting Engineers.

There is only 1 no. culvert (shown as Culvert 1) within the site boundary. The culvert inlet is within the boundary and the outlet located at the boundary. To the north of Culvert 1, the eastern Field Ditch 6 lies outside of the property boundary (redline).

While it is acknowledged that Objective 4 of Policy G3 is to uncover existing culverts and restore the watercourse to acceptable ecological standards and for the passage of fish, where possible. The proposed landscaping berms will be located at Culvert 1, therefore it is not possible to replace this culvert with an open ditch. Culvert 1 will be replaced by an extended culvert suitably sized to current Office of Public Works (OPW) guidance in accordance with Section 50 of the Arterial Drainage Act 1945. The Clarification-RFI Response prepared by Pinnacle Consulting Engineers addresses the detail on the culvert design.