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An Bord Pleanála Oral Hearing

Greater Dublin Drainage Application

Submission by
Conroy Crowe Kelly Architects & Urban Designers
and
Waterman Moylan Consulting Engineers

on behalf of
Gannon Properties

Tuesday, 26th March 2019

Introduction

This submission is made on behalf of Gannon Properties, owners of the c. 87ha former Belcamp College lands adjacent to the proposed Wastewater Treatment Plant (WwTP) to the south and south-east. The Belcamp lands are zoned for residential and mixed use development and planning permission has been granted for construction of Phase 1 of development comprising 175 dwellings.

The proposed Waste Water Treatment Plant is a regional scheme which has been designed to serve the development of the Greater Dublin Area in the long term and in particular to facilitate development in north Dublin. Gannon Properties acknowledges the need for additional waste water treatment capacity to serve the future growth of the Greater Dublin area and is supportive of the proposed scheme in principle.

Gannon Properties, Conroy Crowe Kelly Architects and Waterman Moylan Engineers have some 30 years experience working together in the North Fringe area – from the original Clare Hall permission in the early 1990's, Clongriffin from 2008 still ongoing, and Belcamp now commencing. We are therefore very familiar with local infrastructure developments and deficits.

1.0 URBAN DESIGN ASSESSMENT OF ACCESS FROM R139 TO WWTP

1.1 Gannon Properties and Belcamp

- 1.2 Gannon Properties are the landowners of an 87 hectare (216 acre) development site at Belcamp, Dublin 17, adjacent to the proposed Wastewater Treatment Plant in Clonshaugh. The zoned Belcamp lands have a development capacity for over 3000 dwellings and associated mixed-uses. A masterplan layout for these lands has been prepared, a copy of which was submitted with our original observation.
- 1.3 Planning permission has been granted for Phase 1 of the Belcamp lands which comprises some 175 units at the eastern end of the holding (Ref. F15A/0609, PL06F.248052). The infrastructure includes the provision of new internal access road running west from the Malahide Road which forms a spine road through the Belcamp development and west across the OS zoned lands, eventually connecting with a future north-south distributor link road to the R139.
- 1.4 The need for a new WwTP in North Dublin is recognised and the provision of same is welcomed. This submission is made in respect of the nature of the access road from the R139.

1.5 Strategic Road Network



Fig. 1.1 - Future Strategic Road Network

- 1.6 The areas in and around Dublin's North Fringe and South Fingal have experienced rapid and extensive development over recent decades, with ever increasing demand on public infrastructure to support the new towns and communities. Clongriffin, Belmayne and Belcamp will accommodate c. 10,000 new homes when complete. The area is only 8km from the city centre.

- 1.7 It has been an objective of successive Fingal and Dublin City Development Plans to provide a strategic road network in the Fingal south fringe and Dublin City north fringe areas which would connect communities east of the Malahide Road to the airport region in an east-west direction, while relieving traffic congestion at the Clarehall Junction. Fingal Development Plan Maps 9 and 11, together with Dublin City Development Plan Mapsets B and C, indicate the alignment of the future road network in the vicinity of the proposed WwTP, which includes the East-West Distributor Road (EWDR) running along the south boundary of the WwTP and a north-south link road connecting the R139 to the EWDR. The north-south link road will provide access and permeability to the zoned lands that surround it to the east and west.
- 1.8 The applicant proposes to build a single lane one-way access road from the R139 to the WwTP on the alignment of the north-south link road described above, which forms one part of the wider strategic road network, as identified in both the DCC Development Plan 2016-2022 and the FCC Development Plan 2017-2023. The WwTP access road is proposed to be fenced off and gated, with access limited to the WwTP only.
- 1.9 The proposal therefore contravenes the objectives of the Fingal and Dublin City development plans, by providing a sub-standard private road on the alignment of a future public road and part of a strategic road network.
- 1.10 **Adjacent Land Use**

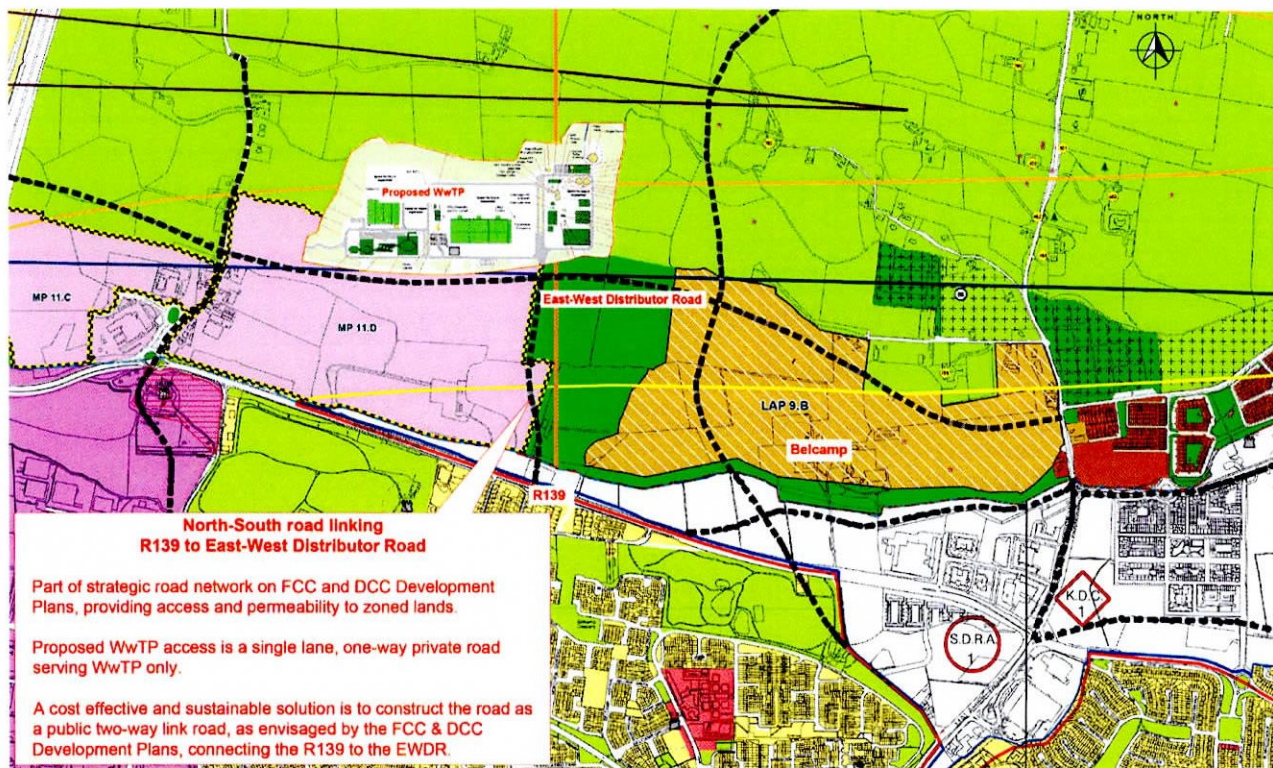
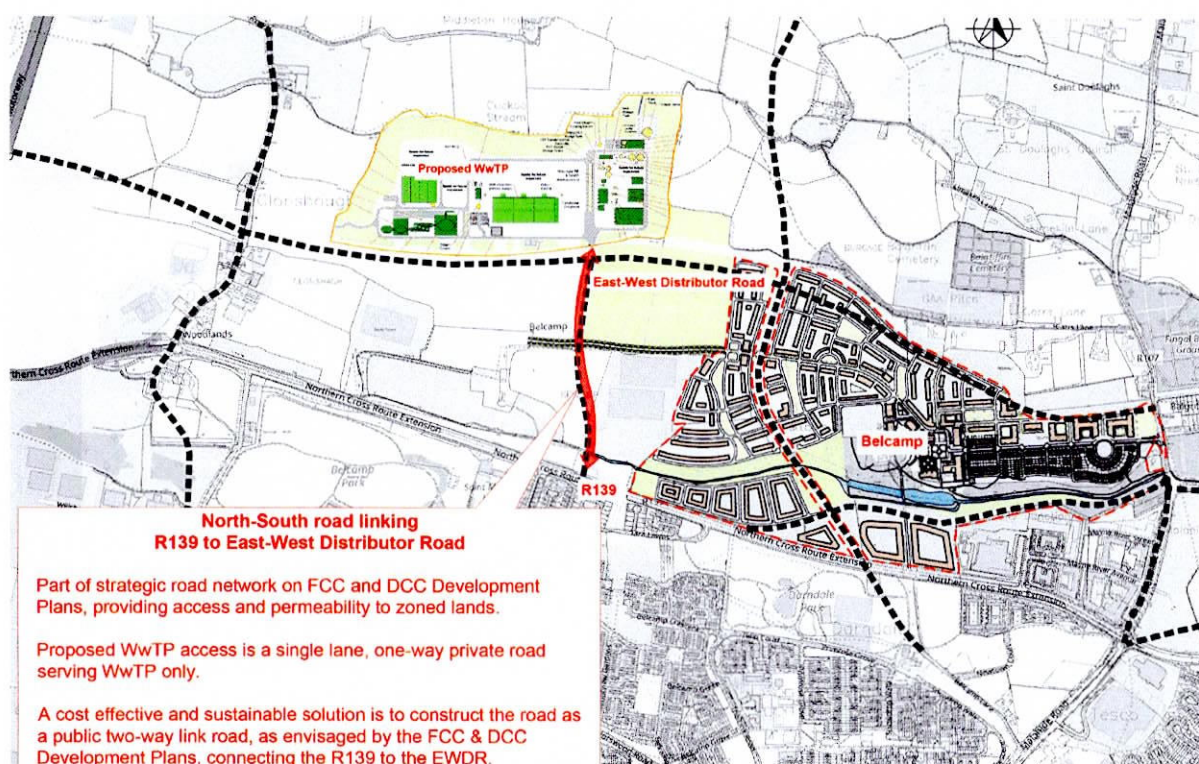


Fig. 1.2 - Adjacent Land Zonings and Strategic Road Network

- 1.11 The lands to the south and south-west of the proposed WwTP are zoned *HT – High Technology*, while lands to the south-east are zoned *OS-Open Space and RA – Residential Area*. The Belcamp lands abut the WwTP at the south-east corner, with the RA lands located approximately 200m from the WwTP. The zoned Belcamp lands have a development capacity for over 3000 dwellings and associated mixed-uses. The masterplan layout for these lands is indicated below in the context of the development plan strategic road objective for the wider area. Planning permission has been granted for the first phase of 175 dwellings at Belcamp, accessed from the existing road network, while the delivery of future phases of the development will rely on the implementation of the future strategic road network, including the north-south link to the R139. The Belcamp masterplan includes the provision of an internal spine road running through the Belcamp development and west across the OS zoned lands to connect with the future north-south link road to the R139.
- 1.12 The proposed WwTP access road, by its design as a private single lane route, will preclude public access to the zoned lands from the R139 and will impair the permeability of those lands as proposed in the early road designs prepared by Atkins for FCC. The access road as proposed will create a barrier between HT zoned lands to the west and OS and RA zoned lands to the east, forcing otherwise short journeys from one side of the road to the other to be re-routed along the busier arteries of the R139 and EWDR, and precluding direct pedestrian and cycle routes between the two sides.
- 1.13 The applicant fails to satisfactorily take account of the zoning of adjoining lands and the interconnectivity between them. The north-south link road is key in opening up the adjacent HT and RA lands for development. The Atkins scheme makes provision for spur roads to the HT lands in the west, and the RA lands in the east. It is a critical piece of road infrastructure in the orderly development of the Dublin North Fringe and Fingal South Fringe area.
- 1.14 Upgrading of the North-South Link Road**
- 1.15 The applicant does not provide information on proposals for the eventual upgrading of the WwTP access road to a public road serving the surrounding lands, nor is it demonstrated how the WwTP will be accessed from the EWDR in the future. Upgrading of the north-south link road will require proposals for a new junction with the R139. The GDD application fails to take sufficient account of the interface of the WwTP with the future EWDR and link road.
- 1.16 The applicant has not satisfactorily addressed our observation on this matter in their response to observations document of 11th January 2019. Instead, reference is made to Section 13.2 of Chapter 13 of the EIAR. Subsection 13.2.5 *Further Road Improvements* states that the proposed project has taken account of the Malahide Road Re-alignment Scheme, but does not

demonstrate how the proposed access road would facilitate upgrading of the network in the future. We understand that up to 25 trucks a day would use the WwTP access road. Upgrading works will impact on the traffic serving the WwTP and re-routing of trucks will be necessary to facilitate the provision of the north-south link road. The application does not include proposals for how this will be managed.



- 1.17 It is considered that the construction of two separate carriageways serving only the WwTP and the GAA lands is short-sighted, and that future works to upgrade these roads and the culvert to the distributor road standard designed by Atkins will be disruptive, difficult and very costly. No provision for road widening nor for widening the culvert over the Mayne River has been made as part of this SID application by Irish Water. It is suggested that the WwTP access road is designed with regard to the objectives of the Fingal County Development Plan and the Atkins scheme, and that this road is constructed as part of the development works for the WwTP.
- 1.18 The red line surrounding the application site extends southwards to include the reservation for the permanent link road upon which the WwTP access road is to be constructed. No information is provided regarding the ownership of the road either in the medium or long term. This raises issues for the construction of the permanent link road with regard to cost, efficiency and practicality.

- 1.19 It is noted that the TII and NTA have not made submissions to the oral hearing, however their remit is in the broader context. The road linking the R139 to the EWDR is a local road providing local access and facilitating permeability of the zoned lands, in compliance with development plan objectives.

1.20 Summary of Urban Design Assessment

- 1.21 The proposed WwTP is an important piece of utilities infrastructure for North Dublin and Gannon Properties are fully supportive of its development. However, we question the proposal to construct a single lane access road on the line of a recognised road proposal objective. The future north-south link road connecting the R139 to the EWDR is an important local road which will provide access and permeability to the zoned lands surrounding it. It's provision is key to facilitating sustainable development in the area and the construction of a private road on the alignment of the link road would contravene the objectives of the FCC and DCC development plans.
- 1.22 We would respectfully suggest that any grant of permission for the WwTP includes a condition that requires the north-south link road connecting the R139 to the EWDR, including the Mayne River culvert, to be constructed to the distributor road standard proposed by the Atkins scheme and in accordance with the objectives of the Dublin City and Fingal County Development Plans.

2.0 CIVIL ENGINEERING ASSESSMENT OF ACCESS FROM R139 TO WWTP

- 2.1 Waterman Moylan provided supplementary observations to the Gannon Properties submission to An Bord Pleanála in August 2018. The observations made by Waterman Moylan related specifically to the road proposals that link the R139 (former N32) north to the proposed WWTP. The detail of the observation already submitted is not repeated here.
- 2.2 Some additional and relevant comments follow that further demonstrate the proposals by Irish Water to service the WWTP from the R139 should be revised to adhere to County Development Plan objectives. If Irish Water proposals are implemented as they are, this would compromise the safety of road users and lead to unnecessary waste of public monies and disruption to the R139. It must be noted that the R139 is the primary north fringe transport artery and disruption to traffic should be minimised.
- 2.3 Furthermore, it will be demonstrated that should the observations presented here be considered by An Bord Pleanála in their assessment of the application, significant benefits to traffic congestion could be achieved at less cost to the public, while ensuring a more timely delivery of a major access required to zoned lands.
- 2.4 Road Safety of R139 Access to WWTP



Figure 2.1: Existing Access Point from R139 to GAA Lands (to North) and Cora Park (to South) showing Red Line for WWTP Access Road

2.5 Figure 2.1 shows the existing access to the GAA lands opposite the access to Cora Park. Saint Michael's Leisure Centre is also situated 150m west of the existing Cora Park access. Right hand turn lanes in the ghost island median are provided for both access points. At present, there is significant pedestrian and cycle activity two and from the Leisure centre and GAA lands onto the R139.

2.6 Included below is figure 2.2, from the Transport and Traffic Brief prepared by Tom Cannon of Irish Water delivered to An Bord Pleanála on 21 March last. Irish Water propose to provide another access point to the R139 opposite the access to Cora Park, at the same point of access as the proposed County Development Plan distributor road.

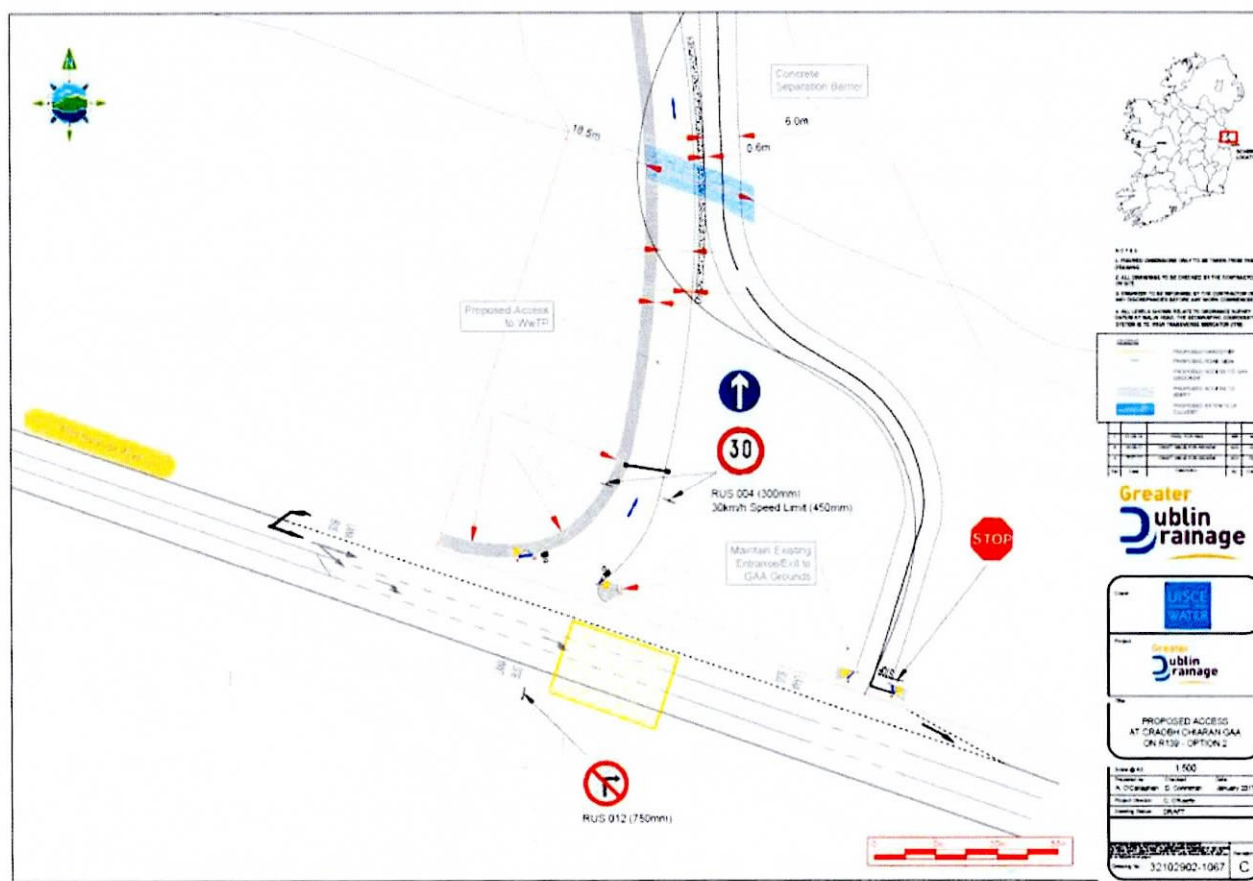


Figure 2.2: Proposed Access from R139 (by Irish Water)

2.7 The proximity of these junctions will significantly reduce the safety of all road users unless the junction at Cora Park is signalised and pedestrians and cyclists provided for. Conflicting right-hand turn movements from GAA lands and Cora Park pose a significant hazard to road users.

- 2.8 Fingal County Council commissioned Atkins in about 2007 to provide road upgrade proposals to serve the development lands in the area from the Malahide Road to the M1. From this, development plan road objectives were derived.
- 2.9 The Atkins "Orange Route" option was selected as the most appropriate and in this vicinity, a link is proposed connecting the R139 to the development lands to the north (IDA Lands and Gannon Lands). The link road to the north, connecting to the East West Distributor Road (EWDR) was designed by Atkins as a three-lane distributor road with footways and cycleways. Its alignment is proposed to meet the R139 opposite Cora Park.
- 2.10 Figure 2.3 below indicated the Atkins route approximately within the red line application boundary for the WWTP access road. The Development Plan distributor road can be delivered within applicant's red line boundary. It can also be seen that the GAA lands can be provided with an access to their lands from the new distributor road, removing the hazard of conflicting access points on the R139. With a four-arm junction signalisation, safe access to and from the GAA lands/Cora Park can be provided, while serving as a safe crossing point for pedestrians and cyclists using the GAA lands or Leisure Centre. The nearest signalised crossing points are 900m to the east and 900m to the west of this junction.



Figure 2.3: Atkins Orange Route Distributor Road shown approx. within Applicant Red Line

2.11 Deliverability of the future Distributor Roads while maintaining Service to WWTP

- 2.12 The current proposal by Irish Water is to provide a 5m wide one-way road from the R139 to the WWTP for vehicles entering the site, and a 5m one-way road to Stockhole Lane for vehicles exiting the WWTP. When operational, significant difficulties will arise to upgrade the 5m carriageway to an 18.5m wide distributor road while maintaining service to the WWTP from the R139. It is likely that the 5m link road will need to be closed for a significant period to accommodate the upgrade works. How the WWTP can still be serviced from the R139 while these upgrade works are ongoing is not addressed by the applicant.
- 2.13 It should also be considered how the EWDR link to Stockhole Lane can be delivered without disrupting service traffic from the WWTP to Stockhole Lane. Figure 2.4 below shows the link to Stockhole Lane proposed as one-way conflicting with the proposed EWDR as it meets Stockhole Lane.

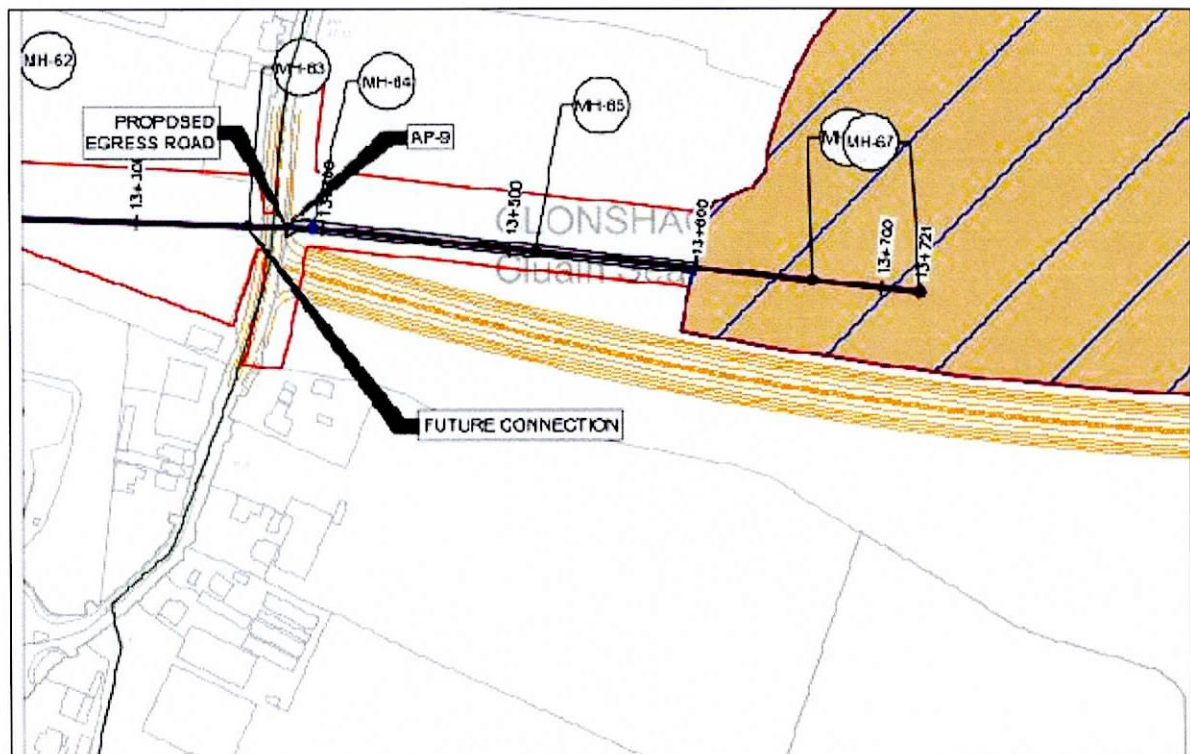


Figure 2.4: WWTP Egress Point to Stockhole Lane

- 2.14 The EWDR junction with Stockhole Lane conflicts with the egress road from the WWTP. When the EWDR junction is being constructed, should a two-way access with the R139 be in place as we have suggested, this would allow the future EWDR junction with Stockhole Lane to be constructed without disruption to service vehicles exiting the WWTP. Service vehicles could exit the site via the R139 while the EWDR junction is delivered at Stockhole Lane. Egress from the WWTP could later be delivered directly onto the EWDR and the egress road, as proposed by Irish Water, could be decommissioned and made available for development. The alignment of

Figure 5: Alignment of new sewer in context of new link from R139 to EWDR.

- 2.18 Even if safe maintenance access could be provided within the 5m carriageway, the ultimate alignment of the manhole covers within the future distributor road could cause serious issues. Unless the manholes are located properly within the alignment of the future 18.5m reservation, maintenance issues will arise. The location of the manholes when they are in place may end up dictating the alignment of the future distributor road. This would be putting the cart before the horse in terms of design.

Figure 2.5 shows the alignment of the diverted sewer from the R139 north to the WWTP. The sewer alignment is currently proposed within the 5m access road. The Atkins orange route is also indicated. This image simply shows that when there is a disconnect in design objectives between the 5m road and the future distributor road, the manholes will not be properly located.

- 2.19 It would be in accordance with proper design procedure, according to Irish Water's own design specification, to consider the reservation of the future distributor link road now and locate the manholes appropriately. Ideally manholes should be in a median or off road where maintenance can be done safely, and traffic accommodated.

2.20 Status of existing 1050mm diameter North Fringe Sewer through Gannon Lands after sewer diversion into the WWTPS

- 2.21 Irish Water has not clarified what will become of the existing 1050mm diameter sewer that is currently laid through their lands south of the river Mayne. When the flows are diverted from MH60 into the WWTP, the downstream sewer through Gannon lands will be redundant over a certain portion of its length.
- 2.22 The developable land within Gannon control, south of the River Mayne, has been seriously reduced as a result of this sewer and the consequent wayleaves Irish Water will require. When an application is submitted by Gannon to provide housing in this area, the sewer will effectively dictate the set out of the housing blocks and roads infrastructure hampering coherent infrastructure and housing strategy.
- 2.22 The alignment of the existing 1050mm sewer is indicated in green in figure 2.6 below. It passes straight through Gannon lands downstream of the sewer diversion point and does not follow the Mayne River as it does further upstream, which would have made available more land to develop. There is also a 375mm sewer laid from Cora Park across the R139 to the 1050mm sewer in Gannon land.

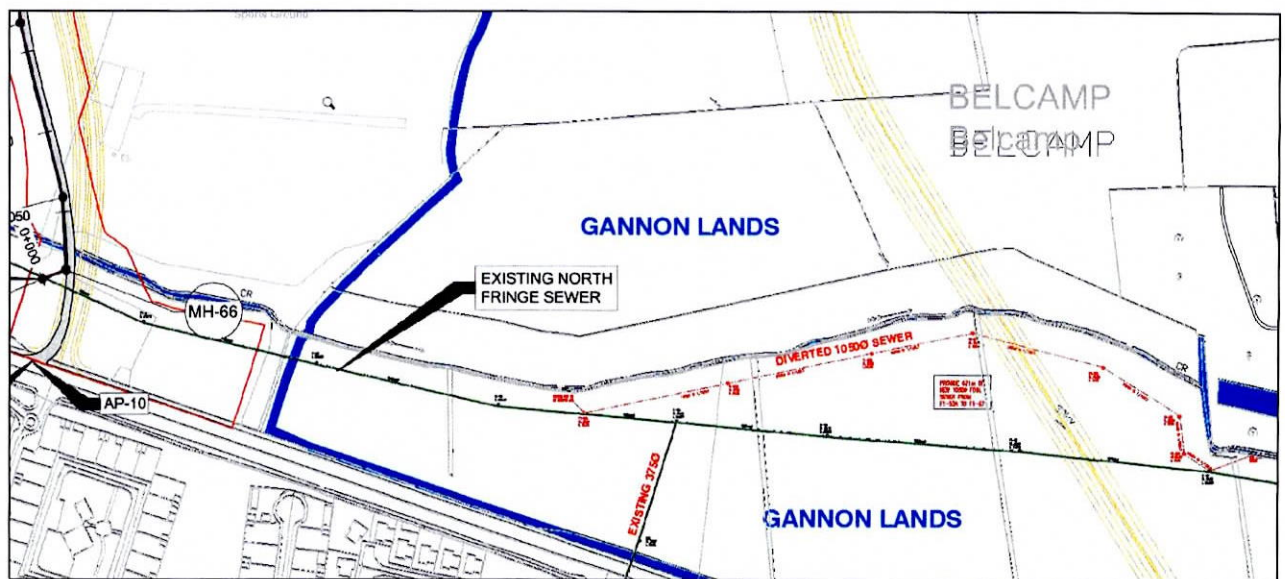


Figure 2.6: Existing North Fringe Sewer downstream of Gannon Lands

- 2.23 If the 1050mm sewer is to become redundant, the abandonment of this sewer would provide for greater flexibility in design and housing layout for those residential zoned lands in Gannon control. The existing 375m sewer could be diverted into the future development sewer network and upsized to accommodate existing flows before discharging back into the 1050mm sewer to the very right of the image above.
- 2.24 Unfortunately the Gannon lands in Belcamp have been impaired by road objectives to serve the greater area, and with the addition of the existing sewer wayleave through the site, the housing blocks become more fragmented and dictated by infrastructure requirements. Addressing the possibility of making this sewer redundant or at the least having the sewer diverted along the alignment of the Mayne River, would go somewhat towards providing a viable housing strategy south of the river.
- 2.25 There are also concerns that the 1050mm sewer, when laid open cut at depths up to 8m, that backfilling, and compaction was not up to standard. The siting of housing blocks on poor backfill will inevitably lead to excessive costs in remediating the soils within the open cut envelope. This situation would be analogous to allowing another party to access your lands which were subsequently contaminated and had to be remediated at cost to the landowner. Consideration should be given to the liability for costs that will be incurred to provide suitable foundations for structures near the sewer.

2.27 Potential for contamination of the River Mayne as a receptor in the event of surcharging of new sewer upstream of Gannon Lands.

2.28 Irish Water identified the diversion point of the existing 1050mm sewer upstream of the Gannon lands. There is a concern that should the WWTP malfunction and the sewers surcharge to ground level, the Mayne River would inevitably become a receptor.

2.29 At a minimum, Irish Water should address what mitigation measures they propose in the event of surcharging of the WWTP sewers upstream of the Belcamp lands.

3.0 Summary conclusions

3.1 The proposed WwTP is an important piece of utilities infrastructure for North Dublin and Gannon Properties are fully supportive of its development. However, we question the proposal to construct a single lane access road on the line of a recognised road proposal objective. The future north-south link road connecting the R139 to the EWDR is an important local road which will provide access and permeability to the zoned lands surrounding it. It's provision is key to facilitating sustainable development in the area and the construction of a private road on the alignment of the link road would contravene the objectives of the FCC and DCC development plans.

3.2 We would respectfully suggest that any grant of permission for the WwTP includes a condition that requires the north-south link road connecting the R139 to the EWDR, including the Mayne River culvert, to be constructed to the distributor road standard proposed by the Atkins scheme and in accordance with the objectives of the Dublin City and Fingal County Development Plans.

3.3 The construction of a private road on the alignment of the link road would contravene the objectives of the FCC and DCC development plans.

3.4 Any grant of permission for the WwTP should include a condition that requires the R139 to the EWDR be delivered by Irish Water in accordance with the objectives and standards of the Dublin City and Fingal County Development Plans.

3.5 The proposed junction at the R139 should amalgamate the WWTP access and GAA lands access in one link road, located opposite Cora Park and be fully signalised with pedestrian and cyclist facilities.

3.6 The deliverability of the WWTP access roads should not conflict with Development Plan objectives for distributor roads and the R139 link road north to the WWTP be delivered in its

final form to provide redundancy and flexibility for uninterrupted service of the WWTP and traffic in the area.

- 3.7 The alignment of the sewer diversion be designed with the future R139 link road north to the WWTP borne in mind.
- 3.8 The existing 1050mm sewer downstream of the diversion point be made redundant or realigned to prevent unnecessary sterilisation of development lands. Similarly, at the Stockhole Lane junction, greater consideration of sewer alignment to prevent developable land sterilisation.
- 3.9 The sharp bend in the diverted sewer north into WWTP may give rise to head losses and increase risk of surcharging of the sewer. Irish Water should be required to address the event of surcharging and resultant pollution of the river Mayne in their submission.

