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AN BORD PLEANALA	
TIME _____	BY _____
28 MAR 2019	
LTR DATED _____	FROM _____

My Name is Terri Gray and I am a resident of Clonsaugh and speak on behalf of the residents.

I would request that An Bord Pleanala review the selection process used to determine Clonsaugh as the designated site and the Southern corridor as the designated pipeline. This part of the project needs to be evaluated closely by the Bord as this the criteria used is not balanced. It is weighted and favours the southern route simply because it is shorter and more cost effective with little regard to impact it will have on a heavily populated area or the special area of conservation.

Some points

1. The criteria set out in the earlier Strategic Environmental Assessment (SEA) (Phase 1) was changed:
  - The requirement to assess 'neighbouring zoning', was removed. This would have made it difficult to get the southern pipeline corridor included as it runs mainly through light industrial zoned lands and adjacent 'highly densely populated areas'.
  - Also removed was the requirement to favour state owned land.  
(Matrix attached)
2. In the Alternative Site Assessment (ASA) it states that **'the preference always has been to avoid impact rather than mitigate'** (Page 118 of Alternative Site Assessment Phase 2) when assessing routes and sites in the methodology. There were 22 sites mentioned in the original report and that was reduced to nine in the next phase, but no details are given as to how or why sites were dismissed. If Irish Water were truly using avoidance the southern outfall through the Baldoyles Special Area of Conservation (SAC) would have been ruled out early on. The northern outfall does not run through any Special Area of Conservation (SAC).
3. Baldoyle SAC is not identified on the study area map (Page 15 Preliminary Screening Outcome Report) it was simply overlooked
4. The southern outfall was never in the 2005 reports. There was an amendment made to change the wording of the outfall to the North Dublin Coast.
5. The iterative process appears deeply flawed in the PHASE Two; sites are considered and marked negatively/favourably based on the pipeline. Therefore, in theory any sites on the southern corridor were always staying to the end as the criteria for assessment was completely biased towards the northern routes being 'least advantageous'. The assessment of the sites based on the pipeline corridor they are situated on is deeply flawed. The southern corridor is shorter, and this is used as a criteria. This criteria based on the shorter distance appears to be used more than once like double counting which is flawed and not a fair comparison, despite the ecological significance of the southern outfall pipe which seems to have been overlooked.
6. There is bias present in the comparison of the southern and northern outfalls. The scale of both maps used is different. The northern outfall is shown covering a



much larger area (this was noted in the Landscape and visual report). This means it captures far more 'sites' of cultural heritage. This is significant as these are then used in the criteria for assessment. The southern looks far less intrusive on cultural criteria, but it is not a fair comparison. It demonstrates that the mapping comparison is flawed.

7. Pipeline section C doesn't appear to have been considered in the schematics for the northern routes. These impacts less than Section D, which would have left Clonshaugh and Cloghran not looking as favourable, as route D passes close to Malahide Estuary SAC.
8. There are clear errors in how the sites are compared in terms of the routes corridors. The Landscape & Visual reports note numerous sections of pipeline corridors effecting designated landscapes and demesne but this is not reflected in the Assessment Matrix. It also downplays the location of hotels close to Clonshaugh and its significance use with tourists travelling to and from the airport.
9. It does not appear that any attempt was made to tweak the corridors to avoid monuments, particularly Dunsloghly Castle, this is important as it is used to negatively mark down the northern routes. Making southern route look more favourable.

Irish Water has advised that the 'Clonshaugh site option is better from an environmental, technical and cost perspective' yet the alternative site selection overlooked a vital special area of conservation, dismissed the heavily population location on the second phase. It would appear to me the study was done to fit around an already pre-determined corridor and site. Therefore the site selection process is flawed and the consultation process meaningless. It would appear that the site was already selected despite a vast number of objections received by residents, businesses and organisations. I would urge the inspector to review the selection process from phase 1 – phase 4 and ensure the comparisons used are correct and that the 'neighbouring zone' and special area of conservation are included as this will change the outcome.



Phase 2 Alternative Sites Assessment and Route Selection - Matrix Assessment

First Iteration on Matrix - List of Sub-Criteria assigned a 'green' colour

Ref	Environmental Criteria	Annabrook	Beldurgen	Clonsilla	Cookstown	Cloghan	Hennessy	Rathfriland	Saucerstown	Tyrrelstown Little
1.0	Cultural Heritage	Annabrook	Beldurgen	Clonsilla	Cookstown	Cloghan	Hennessy	Rathfriland	Saucerstown	Tyrrelstown Little
1.1	Cultural Heritage - Sites									
1.1.1	Potential to impact (direct/indirect) on National Monuments (designated sites)	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (DU005-038)
1.1.2	Potential to impact (direct/indirect) on RMPs (designated sites)	Direct: None Indirect: One imperceptible negative (Gracedieu DU007-015)	Direct: None Indirect: One imperceptible negative (DU007-016)	Direct: None Indirect: Three imperceptible negative (DU015-056, 057 & 059)	Direct: None Indirect: One slight negative (DU007-016)	Direct: None Indirect: One slight negative (DU014-010)	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: Two imperceptible negative (DU008-057, 055)
1.1.3	Potential to impact (direct/indirect) on RPS/NAH (designated sites)	Direct: None Indirect: None	Direct: None Indirect: One imperceptible negative (RPS 323)	Direct: None Indirect: One imperceptible negative (RPS 792)	Direct: None Indirect: One slight negative (RPS 323)	Direct: None Indirect: One slight negative (RPS 805)	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (RPS 246), one imperceptible negative (RPS 283)	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (RPS 245)
1.1.4	Potential to impact (direct/indirect) on CH sites (previously unrecorded sites)	Direct: None Indirect: Four moderate negative (CH 26, 105, 106, 108)	Direct: None Indirect: Two, one moderate negative (CH 30), one slight negative (CH 32)	Direct: None Indirect: Three imperceptible negative (CH 56, 65, 67)	Direct: None Indirect: Two slight negative (CH 30, CH 32)	Direct: None Indirect: None	Direct: None Indirect: Four imperceptible negative (CH 13, 14, 16, 17) & three slight negative (CH 11, 12, 24)	Direct: None Indirect: Three moderate negative (CH 2, 7, 10) & one slight negative (CH 8)	Direct: Three profound negative (CH 38, 39, 40) Indirect: Two moderate negative (CH 41, 42), one slight negative (CH 43), one imperceptible negative (CH 48)	Direct: None Indirect: One slight negative (CH 3) & one imperceptible negative (CH 2)
1.1.5	Potential to impact (direct) on water courses and environs (areas of archaeological potential)	None	One (potentially significant)	None	Three (potentially significant)	One (potentially significant)	One (potentially significant)	One (potentially significant)	Two (potentially significant)	None
1.1.6	Potential to impact (direct/indirect) on historic designed landscapes	Direct: None Indirect: One slight negative (Woodpark)	Direct: None Indirect: One slight negative (Newtown)	Direct: None Indirect: Three slight negative (Spring Hill, Lower Middletown, Upper Middletown)	Direct: None Indirect: One slight negative (Shille House)	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: One slight negative - Saucerstown	Direct: None Indirect: One slight negative (Tyrrelstown House)
1.1.7	Potential to impact (direct) on townland boundaries (cultural heritage significance)	Two moderate negative	None	One moderate negative	Two moderate negative	One moderate negative	One moderate negative	Two moderate negative	Two moderate negative	Two moderate negative
1.2	Cultural Heritage - Pipelines									
1.2.1	Potential to impact on RMPs	32 RMP sites located within corridor	32 RMP sites located within corridor	20 RMP sites located within corridor	32 RMP sites located within corridor	20 RMP sites located within corridor	32 RMP sites located within corridor	32 RMP sites located within corridor	32 RMP sites located within RMP corridor	32 RMP sites located within corridor
1.2.2	Potential to impact on National Monuments	One national monument located within corridor	One national monument located within corridor	No national monuments located within corridor	One national monument located within corridor	No national monuments located within corridor	One national monument located within corridor	No national monuments located within corridor	No national monuments located within corridor	One national monument located within corridor
1.2.3	Potential to impact on RPS/NAH	27 RPS and 12 NIAH sites located within corridor	27 RPS and 12 NIAH sites located within corridor	18 RPS and 6 NIAH sites located within corridor	27 RPS and 12 NIAH sites located within corridor	16 RPS and 7 NIAH sites located within corridor	27 RPS and 12 NIAH sites located within corridor	35 RPS and 19 NIAH sites located within corridor	35 RPS and 19 NIAH sites located within corridor	27 RPS and 12 NIAH sites located within corridor
1.2.4	Potential to impact on CH sites	27 CH sites located within corridor	27 CH sites located within corridor	9 CH sites located within corridor	27 CH sites located within corridor	11 CH sites located within corridor	27 CH sites located within corridor	28 CH sites located within corridor	28 CH sites located within corridor	27 CH sites located within corridor
1.2.5	Potential to impact on historic designed landscapes	22 demesne landscapes located within corridor	22 demesne landscapes located within corridor	14 demesne landscapes located within corridor	22 demesne landscapes located within corridor	15 demesne landscapes located within corridor	22 demesne landscapes located within corridor	23 demesne landscapes located within corridor	23 demesne landscapes located within corridor	22 demesne landscapes located within corridor
1.3	Cultural Heritage - Marine Outfalls									
1.3.1	Potential to impact on RMPs	11 RMP sites located within outfall area	11 RMP sites located within outfall area	No RMP sites located within outfall area	11 RMP sites located within outfall area	No RMP sites located within outfall area	11 RMP sites located within outfall area	11 RMP sites located within outfall area	11 RMP sites located within outfall area	11 RMP sites located within outfall area
1.3.3	Potential to impact on RPS/NAH	28 RPS/NAH sites located within corridor	28 RPS/NAH sites located within corridor	No RPS/NAH sites located within corridor	28 RPS/NAH sites located within corridor	No RPS/NAH sites located within corridor	28 RPS/NAH sites located within corridor	28 RPS/NAH sites located within corridor	28 RPS/NAH sites located within corridor	28 RPS/NAH sites located within corridor
1.3.4	Potential to impact on CH sites	12 CH sites located within outfall area	12 CH sites located within outfall area	1 CH site located within outfall area	12 CH sites located within outfall area	1 CH site located within outfall area	12 CH sites located within outfall area	12 CH sites located within outfall area	12 CH sites located within outfall area	12 CH sites located within outfall area
1.3.5	Recorded shipwreck sites	40 shipwrecks in and within vicinity of the outfall area	40 shipwrecks in and within vicinity of the outfall area	27 shipwrecks in and within vicinity of the outfall area	40 shipwrecks in and within vicinity of the outfall area	27 shipwrecks in and within vicinity of the outfall area	40 shipwrecks in and within vicinity of the outfall area	40 shipwrecks in and within vicinity of the outfall area	40 shipwrecks in and within vicinity of the outfall area	40 shipwrecks in and within vicinity of the outfall area



2.0	Landscape & Visual	Annebrook	Baldangan	Cloneeagh	Cookstown	Cloghan	Howlewooduff	Rathern	Saucerstown	Tyrrelstown Little
2.1	Landscape & Visual - Sites									
2.1.1	Potential to impact on views from scenic routes (designation in Fingal CDP)	Moderate - scenic views located 1.2km NE and 1.3km SW have no visibility but those 2.7km north within HSL zone have elevated clear view towards site	Significant - one 0.5km N with clear views and one 0.5km SE also with clear views - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 4km E and associated with coast	Significant - one 0.5km E with relatively clear views towards the site afforded from here - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 3km NE and associated with coast	Significant - one 0.5km N and one 0.7km NW - clear views available from the nearest of these also longer distance (3km) elevated views from scenic routes to NW	Moderate - one located 0.5km S and although likely to be associated with coastal views it does afford an elevated but brief glimpse of the site in the opposite direction	Significant - One 0.5km S with occasional open and elevated views over site and another 0.8km W with no clear views	Significant - One 1.6km N with clear views over site - two 2km NW and one 1.7km S with fleeting views over site
2.1.2	Potential to impact on areas of 'Highly Sensitive Landscape' (designation in Fingal CDP)	Moderate - HSL located 1.2km N elevated above with some intervisibility	Moderate - HSL located 1.5km N with some intervisibility from higher ground within the HSL	Slight - one 1.3km NE with limited intervisibility	Slight - HSL located 1.6km N with limited intervisibility	Slight - one 1km E with limited intervisibility	Slight - elevated HSL zone located 0.7km NW but separated by M1 motorway	Slight - extensive coastal one located only 0.5km S but within a different landscape and viewing context	Imperceptible - one 2.5km E associated with the coastal landscape	Significant - an extensive one on higher ground 0.5km N of site with strong intervisibility and similar character
2.1.5	Potential to impact on views from settlements	Imperceptible - Crossroads settlement (Ballyoghil) 2.5km W has no view of site	Moderate - Crossroads settlement (Ballyoghil) 1.5km NW and associated dwellings stretch southwards along R108 closer to the site (1km)	Slight - densely populated Nth Dublin suburb of Damdale <1km S, other estates 1km N and E - No clear views afforded toward the site from any of these	Moderate - Crossroads settlement (Ballyoghil) 1.7km NW and associated dwellings stretch southwards along R108 closer to the site (1km)	Moderate - small estate settlement of Ballymacartle 1km SE also clear views available from an estate adjacent to the east of the M1/Swords junction	Slight - settlement of Lusk 1.5km E but no views available - small settlement of Dunganstown 1km SE may be afforded restricted views	Significant - sizeable coastal settlement of Rush 0.8km E	Significant - settlement of Swords 1km SE - extensive new housing development school and community centre at outskirts	Slight - settlement of Lusk 1.5km SW and Rush 2km SE but views not readily available from either
2.1.7	Potential to impact on views from dwellings / local roads	Moderate - A number of dwellings lining local roads < 0.5km E and W and regional road 0.8km S	Slight - Numerous dwellings lining regional road (R108) 0.5km W plus a farmstead 0.3km SE but the site refinement creates a generous buffer	Moderate - some rural dwellings lining local roads to the north and east (houses otherwise mainly clustered in estates)	Slight - Numerous dwellings lining regional road (R108) 0.3km W but the site refinement creates a generous buffer	Moderate - several house clusters 0.5km S at Glabe and <0.5km to the E at Greenwood	Moderate - several dwellings lining local road 0.5km N and old N1 0.5km E	Moderate - several dense clusters of houses at Kingstown 0.5km W, Haytown 0.5km N and Whitestown 0.5km S	Significant - a number of houses on local road 0.5km N have clear views across river and houses lining regional road 0.5km S have elevated views over site	Slight - site surrounded by local roads at distances of 0.3 to 0.7 km but other than for several clusters there is not a high stocking of dwellings
2.1.8	Potential to impact on views from M1 motorway	Slight - M1 passes 0.8km E with possible glimpse of site at apex of bend - view afforded from local road overpass 1km NE	Imperceptible - M1 passes 2.5km E and views of the scheme would not be afforded	Slight - M1 passes 1km W - clear views only afforded from highest point of M1/M50 interchange	Imperceptible - M1 passes 3km E and views of the scheme would not be afforded	Moderate - M1 in minor section of cut with some screen planting - clear elevated view afforded from overpasses N and S	Significant - site is located directly adjacent to E of M1 motorway and filtered views of site through roadside screening will be afforded	Imperceptible - M1 5km W	Imperceptible - M1 2.5km E	Imperceptible - M1 4.5km W
2.1.9	Potential to impact on views from Dublin - Belfast rail line	Imperceptible - rail line 5km E	Imperceptible - rail line 5km E	Imperceptible - rail line 3.5km E	Imperceptible - rail line 5km E	Imperceptible - rail line 3km E	Imperceptible - rail line 3km E	Significant - rail line lies directly adjacent to W	Imperceptible - rail line 6km E	Significant - rail line 0.8km E
2.1.10	Potential to impact on views from other major roads (national or regional roads)	Moderate - regional road (R129) 0.6km S glimpses may be afforded and has limited but elevated view from R129 overpass of M1 2km SE	Significant - Regional roads R108 and R129 bound the site to the W and N respectively at < 0.5km - clear views afforded from some sections and site access from R129	Slight / Significant - heavily used N32 national secondary road 0.3km to S and R107 regional road 1km E - neither has clear views towards site due to roadside screening - Note future malahide Rd realignment adjacent to site	Significant - R108 regional road 0.3km W and clear views afforded from some sections	Imperceptible - R107 regional road 3km E but no views available	Significant - slightly elevated R132 regional road (old N1) 0.5km E affords occasional clear views over site	Significant - R128 regional road 0.5km S with clear views from some sections	Moderate - R106 0.8km W and R125 0.5km S fleeting views available from both	Moderate - R127 regional road on elevated ground 1.3km W and R128 regional road 1.7km S - clear views towards site not readily available from either
2.1.11	Potential to impact on arrival views from Dublin Airport including aerial approach and vehicular egress	Imperceptible - airport 10km S	Imperceptible - airport 8.5km S	Significant - airport 2km NW - clear views not afforded towards the site at ground level but it would be a prominent feature of the low level landing approach from the E	Imperceptible - airport 7.5km S	Significant - airport 1.5km SW - clear views afforded towards the site from elevated M1/airport access road interchange and it would be a prominent feature of the low level landing approach from the E	Imperceptible - airport 10km S	Imperceptible - airport >10km SW	Slight - airport 5km S but views likely to be available on Slight low landing approach from the E	Imperceptible - airport >10km SW
2.1.13	Potential to impact on historic designed landscapes	Moderate - Woodpark demesne 0.15km NE	Imperceptible - No demesne landscapes within or near this site	Moderate - appears to be a number of current or former demesne landscapes including Abbeyville estate in close proximity to the site	Moderate - Skidoo houses surrounded to the north and east by the site at the minimum setback (0.3km)	Slight - Abbeyville Estate 1km E	Imperceptible - No demesne landscapes within or near this site	Slight - Haystown Demesne 0.3km NE	Moderate - Saucerstown Demesne 0.2km W	Imperceptible - No demesne landscapes within or near this site







3.2	Biology - Pipelines										
3.2.1	Potential to impact on Natura 2000 Sites and Natural Heritage Areas	<p>Crosses river upstream of following (c)SAC/SPA(p)NHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA(p)NHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldyle Bay SPA/SAC(p)NHA</p> <p>F - Malahide Estuary SPA/SAC(p)NHA; Rogerstown Estuary SPA/SAC(p)NHA; Balcunin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldyle Bay SAC/SPA(p)NHA</p> <p>F - Also crosses Balcunin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldyle Bay SAC/SPA(p)NHA and Ramsar site</p>	<p>Crosses river upstream of following (c)SAC/SPA(p)NHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA(p)NHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldyle Bay SPA/SAC(p)NHA</p> <p>F - Malahide Estuary SPA/SAC(p)NHA; Rogerstown Estuary SPA/SAC(p)NHA; Balcunin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldyle Bay SAC/SPA(p)NHA</p> <p>F - Also crosses Balcunin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldyle Bay SAC/SPA(p)NHA and Ramsar site</p>	<p>Crosses river upstream of following (c)SAC/SPA(p)NHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA(p)NHA; 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North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldyle Bay SPA/SAC(p)NHA</p> <p>F - Malahide Estuary SPA/SAC(p)NHA; Rogerstown Estuary SPA/SAC(p)NHA; Balcunin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldyle Bay SAC/SPA(p)NHA</p> <p>F - Also crosses Balcunin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldyle Bay SAC/SPA(p)NHA and Ramsar site</p>	
3.2.2	Potential to impact upon ecological buffer zones or Nature Development Areas Identified in the Fingal Development Plan 2011 - 2017	<p>Impinges upon 6 ecological buffer zones (3 No. D; 3 No. G)</p> <p>Impinges upon four nature development areas</p> <p>potentially impinges on 6 No. Nature Development Areas</p>	<p>Impinges upon 6 ecological buffer zones (3 No. D; 3 No. G)</p> <p>Impinges upon four nature development areas</p> <p>potentially impinges on 6 No. Nature Development Areas</p>	<p>Impinges upon 3 ecological buffer zones (Route G)</p> <p>Impinges upon four nature development areas</p> <p>Crosses 1 No. nature development area</p> <p>potentially impinges on 1 No. Nature Development Area</p>	<p>Impinges upon 6 ecological buffer zones (3 No. D; 3 No. G)</p> <p>Impinges upon four nature development areas</p> <p>potentially impinges on 6 No. Nature Development Areas</p>	<p>Impinges upon 5 ecological buffer zones (Route G)</p> <p>Impinges upon five nature development areas</p> <p>Crosses 1 No. nature development area</p> <p>potentially impinges on 1 No. Nature Development Area</p>	<p>Impinges upon 6 ecological buffer zones (3 No. D; 3 No. G)</p> <p>Impinges upon four nature development areas</p> <p>potentially impinges on 6 No. Nature Development Areas</p>	<p>Impinges upon 6 ecological buffer zones (3 No. D; 3 No. G)</p> <p>Impinges upon four nature development areas</p> <p>potentially impinges on 6 No. Nature Development Areas</p>	<p>Impinges upon 6 ecological buffer zones (3 No. D; 3 No. G)</p> <p>Impinges upon four nature development areas</p> <p>potentially impinges on 6 No. Nature Development Areas</p>	<p>Impinges upon 6 ecological buffer zones (3 No. D; 3 No. G)</p> <p>Impinges upon four nature development areas</p> <p>potentially impinges on 6 No. Nature Development Areas</p>	
3.2.3	Potential to impact upon ecological corridor, nature development area or high value habitats	<p>Crosses 10 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 36 rivers or streams</p> <p>Loss of hedgerow habitat along 41km</p>	<p>Crosses 10 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 36 rivers or streams</p> <p>Loss of hedgerow habitat along 41km</p>	<p>Crosses 2 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Crosses 1 No. TPO site</p> <p>Potentially crosses 4 rivers or streams</p> <p>Potentially crosses one area of deciduous woodland</p> <p>Loss of hedgerow habitat along 17km</p>	<p>Crosses 10 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 36 rivers or streams</p> <p>Loss of hedgerow habitat along 41km</p>	<p>Crosses 2 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Crosses 1 No. TPO site</p> <p>Potentially crosses 8 No rivers or streams</p> <p>Potentially crosses 1 No. area of deciduous woodland</p> <p>Loss of hedgerow habitat along 20km</p>	<p>Crosses 10 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 36 rivers or streams</p> <p>Loss of hedgerow habitat along 41km</p>	<p>Crosses 12 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 45 rivers or streams</p> <p>Loss of hedgerow habitat along 54km</p>	<p>Crosses 12 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 45 rivers or streams</p> <p>Loss of hedgerow habitat along 54km</p>	<p>Crosses 10 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 36 rivers or streams</p> <p>Loss of hedgerow habitat along 41km</p>	<p>Crosses 10 No. ecological corridors</p> <p>Potentially crosses 1 No. ecological corridor</p> <p>Impinges upon TPO sites</p> <p>Potentially impinges upon TPO areas</p> <p>Potentially crosses 36 rivers or streams</p> <p>Loss of hedgerow habitat along 41km</p>
3.2.4	Potential to impact on a salmonid system	Crosses 8 No. salmonid systems.	Crosses 8 No. salmonid systems.	Crosses 2 No. salmonid systems.	Crosses 8 No. salmonid systems.	Crosses 3 No. salmonid systems.	Crosses 6 No. salmonid systems.	Crosses 9 No. salmonid systems.	Crosses 9 No. salmonid systems.	Crosses 6 No. salmonid systems.	
3.2.6	Potential to impact on the breeding habitat for Annex 1 species Kingfisher	Portion of route D located along the Broadmeadow River where possible suitable habitat for breeding kingfisher occurs	Portion of route D located along the Broadmeadow River where possible suitable habitat for breeding kingfisher occurs	No suitable riparian habitat for breeding kingfisher	Portion of route D located along the Broadmeadow River where possible suitable habitat for breeding kingfisher occurs	No suitable riparian habitat for breeding kingfisher	Portion of route D located along the Broadmeadow River where possible suitable habitat for breeding kingfisher occurs	Portion of route D located along the Broadmeadow River where possible suitable habitat for breeding kingfisher occurs	Portion of route D located along the Broadmeadow River where possible suitable habitat for breeding kingfisher occurs	Portion of route D located along the Broadmeadow River where possible suitable habitat for breeding kingfisher occurs	
3.2.8	Potential to impact on WEBS identified areas of importance to birds adjacent to Malahide Estuary	<p>Portion of route located within Malahide Estuary WEBS area</p> <p>Portion of route located within 'Skeries Grasslands' WEBS area</p>	<p>Portion of route located within Malahide Estuary WEBS area</p> <p>Portion of route located within 'Skeries Grasslands' WEBS area</p>	No WEBS areas located on pipeline route	<p>Portion of route located within Malahide Estuary WEBS area</p> <p>Portion of route located within 'Skeries Grasslands' WEBS area</p>	No WEBS areas located on pipeline route	<p>Portion of route located within Malahide Estuary WEBS area</p> <p>Portion of route located within 'Skeries Grasslands' WEBS area</p>	<p>Portion of route located within Malahide Estuary WEBS area</p> <p>Portion of 2 No. routes located within 'Skeries Grasslands' WEBS area</p>	<p>Portion of route located within Malahide Estuary WEBS area</p> <p>Portion of 2 No. routes located within 'Skeries Grasslands' WEBS area</p>	<p>Portion of route located within Malahide Estuary WEBS area</p> <p>Portion of route located within 'Skeries Grasslands' WEBS area</p>	
3.3	Ecology - Marine Outfall										
4.0	Hydrology -	Annabrook	Baldurigan	Clewagh	Coquitstream	Cloghan	Newtowncorral	Ratherton	Saundersham	Tyrrelstown Little	
4.1	Hydrology - Sites										
4.1.2	Culverting requirement - used to indicate impact on flood-prone watercourses due to reduced conveyance.	None: No new culvert required.	Moderate: Crossing Ballyoghil River, High importance. Will have permanent impact on small proportion of attribute.	None: No new culvert required	Imperceptible: Culvert might be required for a local minor tributary. Low importance. Will have permanent impact on small proportion of attribute.	None: No new culvert required	Slight: Crossing Ballyoghil Tributary, Medium importance. Will have permanent impact on small proportion of attribute.	Slight: Crossing Collinstown Stream, Medium importance. Will have permanent impact on small proportion of attribute.	Slight: Crossing Broadmeadow Tributary, Medium importance. Will have permanent impact on small proportion of attribute.	None: No new culvert required.	



4.2	Hydrology - Pipelines									
4.2.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	18 river catchments and some coastal areas	18 river catchments and some coastal areas	7 river catchments and some coastal areas	18 river catchments and some coastal areas	9 river catchments and some coastal areas	18 river catchments and some coastal areas	28 river catchments and some coastal areas	28 river catchments and some coastal areas	18 river catchments and some coastal areas
4.3	Hydrology - Marine Outfall									
5.0	Hydrogeology -	Annebrook	Beldurgen	Clonsheagh	Coolteem	Cloghan	Newtowncorduff	Rathbarney	Saucersdown	Tynegall Little
5.1	Hydrogeology - Sites									
5.1.4	Groundwater Supplies - Identification of water supply springs and bored wells based on GSI, EPA & FCC records	None: No Groundwater Supplies within 500m however unconfirmed information from FCC suggests the possibility of additional groundwater abstraction points and wells nearby (Appendix A). If present, well would be of Low importance and would have a permanent impact on a significant proportion of attribute.	Slight: 1x Spring: St. Bridget's Well 400m South. Unconfirmed information from FCC suggests the possibility of additional groundwater abstraction points and wells nearby (Appendix A). Low importance. Will have permanent impact on a significant proportion of attribute.	None: No Groundwater Supplies within 500m	Slight: 1x Spring: St. Bridget's Well 210m South East. Unconfirmed information from FCC suggests the possibility of additional groundwater abstraction points and wells nearby (Appendix A). Low importance. Will have permanent impact on a significant proportion of attribute.	None: No Groundwater Supplies within 500m	Slight: 1x bored well; for agriculture and domestic use with good yields 510m North. Unconfirmed information from FCC suggests the possibility of additional groundwater abstraction points and wells nearby (Appendix A). Low importance. Will have permanent impact on a significant proportion of attribute.	None: No Groundwater Supplies within 500m. Unconfirmed information from FCC suggests the possibility of additional groundwater abstraction points and wells nearby (Appendix A). If present, well(s) would be of Low importance and would have a permanent impact on a significant proportion of attribute.	None: No Groundwater Supplies within 500m	None: No Groundwater Supplies within 500m. Unconfirmed information from FCC suggests the possibility of additional groundwater abstraction points and wells nearby (Appendix A). Low importance. Will have permanent impact on a significant proportion of attribute.
5.1.6	Identification of hydrogeological features from the GSI Karst database	None: No Karst Feature within 2km.	None: No Karst Feature within 2km	Slight: 1x spring: St. Doolaghs Well 1.2km east of the site. Low importance. Will have permanent impact on a significant proportion of attribute.	None: No Karst Feature within 2km	Slight: 1x spring: St. Doolaghs Well 2km south east of the site. Low importance. Will have permanent impact on a significant proportion of attribute.	Slight: 4 x springs: Horlakes Well, St. Catherine's Well, Bridget's Well and St. Macollins Well within 1.8km north east to south east of the site. Low importance. Will have permanent impact on a significant proportion of attribute.	Slight: 1 x spring: Bog Well 1.7km north west of the site. Low importance. Will have permanent impact on a significant proportion of attribute.	None: No Karst Feature within 2km	Slight: 1x spring: Bog Well 700m west of the site. Low importance. Will have permanent impact on a significant proportion of attribute.
6.2	Hydrogeology - Pipelines									
5.2.2	Vulnerability Classification - potential for groundwater contamination	A - predominantly high D - predominantly high F - predominantly low G - predominantly low	A - predominantly high D - predominantly high F - predominantly low G - predominantly low	A - predominantly high B - predominantly low G - predominantly low	A - predominantly high D - predominantly high F - predominantly low G - predominantly low	A - predominantly high B - predominantly low G - predominantly low	A - predominantly high D - predominantly high F - predominantly low G - predominantly low	A - predominantly high D - predominantly high E - predominantly low F - predominantly low G - predominantly low	A - predominantly high D - predominantly high E - predominantly low F - predominantly low G - predominantly low	A - predominantly high D - predominantly high F - predominantly low G - predominantly low
5.3	Hydrogeology - Marine Outfall									
5.3.2	Vulnerability Classification - potential for groundwater contamination	predominantly low	predominantly low	predominantly high	predominantly low	predominantly high	predominantly low	predominantly low	predominantly low	predominantly low
5.3.3	Groundwater Supplies - Identification of water supply springs and bored wells based on GSI, EPA & FCC records	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby	No groundwater supplies within 500m Possible additional groundwater abstraction points and wells nearby	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby	No groundwater supplies within 500m Possible additional groundwater abstraction points and wells nearby	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby
5.3.5	Identification of hydrogeological features from the GSI Karst database	2 No. springs within the corridor	2 No. springs within the corridor	No karst features within 500m of the outfall study area	2 No. springs within the corridor	No karst features within 500m of the outfall study area	2 No. springs within the corridor	4 No. springs within the corridor	4 No. springs within the corridor	2 No. springs within the corridor
6.0	Soils and Geology	Annebrook	Beldurgen	Clonsheagh	Coolteem	Cloghan	Newtowncorduff	Rathbarney	Saucersdown	Tynegall Little
6.1	Soils and Geology - Sites									
6.1.4	Potential to encounter shallow bedrock during construction (interactions with other disciplines during construction - noise, dust etc)	Imperceptible - Limited data, however it does indicate that bedrock is at least 10 mgl across the site. Confirm using ground investigation (rotary coring)	Imperceptible - confirm using ground investigation (rotary coring)	Imperceptible - confirm using ground investigation (rotary coring)	Imperceptible - confirm using ground investigation (rotary coring)	Slight negative - confirm using ground investigation (rotary coring)	Imperceptible - confirm using ground investigation (rotary coring)	Imperceptible - confirm using ground investigation (rotary coring)	Slight negative: 30% Shallow bedrock. Confirm using ground investigation (rotary coring)	Imperceptible - confirm using ground investigation (rotary coring)
6.1.6	Potential to encounter soft ground	Imperceptible: No alluvial deposits mapped within site boundaries however proximity to river indicates soft silts may be present in the northern and southeastern part of the site. Ground investigation to confirm	Imperceptible: No alluvial deposits mapped within site boundaries however proximity to river indicates soft silts may be present in the north, south and west of the site. Ground investigation to confirm	Imperceptible: No alluvial deposits mapped within site boundaries however proximity to river indicates soft silts may be present in the north of the site. Ground investigation to confirm	Imperceptible: No alluvial deposits mapped within site boundaries however proximity to river indicates soft silts may be present in the north of the site. Ground investigation to confirm	Imperceptible: No alluvial deposits mapped within site boundaries however proximity to river indicates soft silts may be present in the north of the site. Ground investigation to confirm	Imperceptible: No alluvial deposits mapped within site boundaries however proximity to river indicates soft silts may be present in the north of the site. Ground investigation to confirm	Imperceptible: No alluvial deposits mapped within site boundaries however proximity to river indicates soft silts may be present in the south west of the site. Ground investigation to confirm	Slight negative: 25% Alluvium Deposits. Potential for soft ground in northeastern corner. Ground investigation to confirm	Imperceptible: No alluvial deposits mapped. Soft ground unlikely to be encountered.



6.2	Soils and Geology - Pipelines									
6.2.1	Potential to Impact on Geological Heritage Sites/County Geological Sites	1 No.	1 No.	No Geological Heritage Sites within corridor	1 No.	No Geological Heritage Sites within corridor	1 No.	1 No.	1 No.	1 No.
6.2.2	Potential to Interact with contaminated land	35 No.	35 No.	24 No.	35 No.	32 No.	35 No.	38 No.	38 No.	35 No.
6.2.4	Potential to encounter shallow bedrock during construction (interactions with other disciplines during construction - noise, dust etc)	A - 95% shallow bedrock (15% bedrock at surface) D - 45% Shallow bedrock (5% bedrock at surface) F - 25% Shallow Bedrock (1% bedrock at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) D - 45% Shallow bedrock (5% bedrock at surface) F - 25% Shallow Bedrock (1% bedrock at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) B - 9% Shallow bedrock (0% bedrock at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) D - 45% Shallow bedrock (5% bedrock at surface) F - 25% Shallow Bedrock (1% bedrock at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) B - 5% Shallow bedrock (0% bedrock at surface) C - 65% shallow bedrock (5% at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) D - 45% Shallow bedrock (5% bedrock at surface) F - 25% Shallow Bedrock (1% bedrock at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) D - 45% Shallow bedrock (5% bedrock at surface) E - 10% Shallow bedrock (1% bedrock at surface) F - 25% Shallow Bedrock (1% bedrock at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) D - 45% Shallow bedrock (5% bedrock at surface) E - 10% Shallow bedrock (1% bedrock at surface) F - 25% Shallow Bedrock (1% bedrock at surface) G - 5% shallow bedrock (0% at surface)	A - 95% shallow bedrock (15% bedrock at surface) D - 45% Shallow bedrock (5% bedrock at surface) F - 25% Shallow Bedrock (1% bedrock at surface) G - 5% shallow bedrock (0% at surface)
6.2.5	Potential impact on karst features	2 No.	2 No.	No karst features within corridor	2 No.	No karst features within corridor	2 No.	2 No.	2 No.	2 No.
6.2.6	Potential to encounter soft ground	A - 1% Alluvium deposits D - Small area of lithosols/Peats (basic); 10% of alluvium deposits F - 5% Alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits D - Small area of lithosols/Peats (basic); 10% of alluvium deposits F - 5% Alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits B - 1% Alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits D - Small area of lithosols/Peats (basic); 10% of alluvium deposits F - 5% Alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits B - 1% Alluvium deposits C - 4% alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits D - Small area of lithosols/Peats (basic); 10% of alluvium deposits F - 5% Alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits D - Small area of lithosols/Peats (basic); 10% of alluvium deposits E - 10% of alluvium deposits F - 5% Alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits D - Small area of lithosols/Peats (basic); 10% of alluvium deposits E - 10% of alluvium deposits F - 5% Alluvium deposits G - 10% Alluvium Deposits	A - 1% Alluvium deposits D - Small area of lithosols/Peats (basic); 10% of alluvium deposits F - 5% Alluvium deposits G - 10% Alluvium Deposits
6.3	Soils and Geology - Marine Outfall									
6.3.1	Potential to Impact on Geological Heritage Sites/County Geological Sites	2 No	2 No	No Geological Heritage Sites within corridor	2 No	No Geological Heritage Sites within corridor	2 No	2 No	2 No	2 No
6.3.2	Potential to Interact with contaminated land	9 No.	9 No.	1 No.	9 No.	1 No	9 No.	9 No.	9 No.	9 No.
6.3.4	Potential to encounter shallow bedrock during construction (interactions with other disciplines during construction - noise, dust etc)	5% shallow bedrock (2% bedrock at surface)	5% shallow bedrock (2% bedrock at surface)	15% shallow bedrock	5% shallow bedrock (2% bedrock at surface)	15% shallow bedrock	5% shallow bedrock (2% bedrock at surface)	5% shallow bedrock (2% bedrock at surface)	5% shallow bedrock (2% bedrock at surface)	5% shallow bedrock (2% bedrock at surface)
6.3.5	Potential impact on karst features	3 No.	3 No.	No karst features within corridor	3 No.	No karst features within corridor	3 No.	3 No.	3 No.	3 No.
6.3.6	Potential to encounter soft ground	1% Alluvium deposits	1% Alluvium deposits	15% Alluvium deposits	1% Alluvium deposits	15% Alluvium deposits	1% Alluvium deposits	1% Alluvium deposits	1% Alluvium deposits	1% Alluvium deposits
7.0	Agroecology & Agriculture - Sites	Annesbrook	Beldurgen	Cloneahigh	Coolestown	Cloghan	Newtonmoreduff	Rethern	Saucerstown	Tyrrelstown Little
7.2	Farming Enterprise	Beef & Horticulture (The majority of the site is used for a beef enterprise)	Tillage, Potatoes & Horticulture	Horticulture & Tillage	Tillage, Horticulture, & Potatoes	Beef	Mixed livestock & tillage	Horticulture & Tillage, (intensive market gardening area)	Tillage, Potatoes & Horticulture	Beef (site is located in an intensive market gardening area)
7.3	Number of landowners impacted within site boundary	1 to 3	1 to 3	3 to 6	1 to 3	3 to 6	1 to 3	7 to 9	1 to 3	1 to 3
7.5	Severance based on site location within overall land holdings	Minor	Minor	Minor	Moderate	Minor	Minor	Moderate	Minor	Imperceptible
7.7	Crop rotation practiced	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
8.0	Noise	Annesbrook	Beldurgen	Cloneahigh	Coolestown	Cloghan	Newtonmoreduff	Rethern	Saucerstown	Tyrrelstown Little
8.4	Construction Phase Impact rating	slight	imperceptible	slight	imperceptible	slight	slight	slight	slight	imperceptible
8.5	Operational Phase Impact rating	slight	imperceptible	slight	imperceptible	slight	slight	slight	slight	imperceptible
9.0	Air and Odour	Annesbrook	Beldurgen	Cloneahigh	Coolestown	Cloghan	Newtonmoreduff	Rethern	Saucerstown	Tyrrelstown Little
9.8	Construction Phase Impact rating	imperceptible	imperceptible	imperceptible	imperceptible	slight	imperceptible	imperceptible	slight	imperceptible
9.10	Operational Phase Impact rating	imperceptible	imperceptible	imperceptible	imperceptible	slight	imperceptible	imperceptible	slight	imperceptible



10.0	People and Communities	Annabrook	Beldurgen	Clonsilla	Cookstown	Claghra	Newlandsford	Rathfriland	Saundersham	Tyrrelstown Little
10.1	Number of residential & commercial buildings 300-500m from site boundary	44	21	83	53	116	33	131	66	50
10.3	Potential to impact on known community amenities and facilities within 1km from site boundary.	Ballyoghil Hedgerow Round (S8 na Scoil) - c. 400m to the SW.	Ballyoghil Hedgerow Round (S8 na Scoil) - c. 200m to the east.	Football grounds c. 700m to the NW, Derralee and Belcamp Parks c. 800m to the SW and SE respectively and Iniall GAA club c. 500m to the south.	Swords Rogantown golf club c. 990m to the south and Ballyoghil Hedgerow Round c. 980m to the NE.	Playground c. 800m to the north (Newtown East) and National Show Centre c. 580m to the west.	None	A 7-a-side football pitch c. 920m to the east.	A school complex c. 400m to south, Swords and Rogantown golf course c. 230m to the NW, Broadmeadow linear park c. 320m to east and damersne parkland c. 620m to the SW.	None
11.0	Traffic	Annabrook	Beldurgen	Clonsilla	Cookstown	Claghra	Newlandsford	Rathfriland	Saundersham	Tyrrelstown Little
11.1	Length of access road required	1230m access road required	580m access road required	320m access road required	930m access road required	290m access road required	640 access road required	820m access road required	650m access road required	1,410m access road required
11.2	Number of crossings required for access road	None	2 river/stream crossings	None	1 ditch/stream crossings	None	1 stream/river crossings	2 stream/river crossings	1 stream/river	1 road crossing
11.3	Potential impact on landowners	Access road impacts on 6 fields	Access road impacts on 3 fields splitting one	Access road impacts on 2 fields however can follow existing track	Access road impacts on 5 fields	Access Road impacts on 2 field	Access Road impacts on 2 fields	2-3 fields impacted upon.	Access road impacts on 2 fields	Access road impacts on 8 fields. Could potentially require demolition of barn
11.4	Works required to provide safe access entrance	Some local widening likely. Boundary treatments required for visibility so some additional landscape probable	Some local widening likely. Visibility ok.	Visibility ok. Can make use of existing field access. Some local road widening probable	Road would likely require widening. To achieve visibility would require significant landscape.	Road on embankment so would need to raise access road on approach to junction	None. Wide road, good visibility	Some local widening likely. Boundary treatments required for visibility so some additional landscape probable	Some local widening likely. Boundary treatments required for visibility so some additional landscape probable	Good visibility achievable with minimal landscape. Can use existing field access.
11.5	Potential impact on surrounding local road network	Can access R132 after approx. 2km of travel on R129.	Can access R132 after approx. 2km of travel on R129.	Access onto local road however not far from N32	Access onto R108. Road not particularly suitable for HGVs. Travel distance to better road moderate	Access onto local road however not far from N32	Easy access to wide road (R132)	Access onto R138 and probable use of R127. Both Roads are not particularly suitable for HGVs	Access onto R125 which is ok. Would likely avoid Swords however resulting in significant travel along lower quality regional roads	Crosses narrow local road to reach access on more suitable road
11.6	Frequency of accidents near entrance	1 accident (minor) near proposed entrance	None	None	None	None	4 accidents (3 minor 1 serious) near proposed entrance	1 accident (minor) approx. 200m from entrance	4 accidents (all minor) located near entrance	None
11.7	Frequency of accidents on surrounding network (indication of general road safety issues)	few accidents on surrounding roads	few accidents on surrounding roads	High accident rate on N32 & R107 (including deaths)	few accidents on surrounding roads	High accident rate on N32 & R107 (including deaths)	Several accidents on R132	Probable use of R127 south of Lusk with high accident rate. If this road wasn't to be used then slight to moderate rating	many accidents on R125 including several deaths	Probable use of R127 south of Lusk with high accident rate. If this road wasn't to be used then slight to moderate rating
11.8	Road link impacted upon by all construction traffic (excluding major routes i.e. R132/N32)	2km (R129)	4km (R128)	450m (Clonsilla Rd)	Two options but both long (R108 & R129 7.8km, R108 & R125 8.9km)	Stackhole Lane / Clonsilla Rd could be used from either direction	None	5.2kms (R127)	3.25km (R125)	6.8km (R127 & R128)
12.0	Planning Policy	Annabrook	Beldurgen	Clonsilla	Cookstown	Claghra	Newlandsford	Rathfriland	Saundersham	Tyrrelstown Little
12.3	Airport Public Safety and Noise Zones on site	N/A	N/A	Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	N/A	N/A	N/A
12.4	Local Objectives on Site	None	None	432 (Prepare Masterplan)	None	None	None	None	GIM8 (new regional park)	None
12.5	Other Local Objectives on Site	None	None	Road objectives	None	None	None	None	Road objective	None
12.8	Airport Public Safety and Noise Zones within 300m of site boundary	N/A	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	N/A	N/A	N/A
12.9	Local Objectives within 300m of site boundary	180 (2 dwellings)	None	432 (prepare roads masterplan)	None	374 (nursing facility)	None	141 (agri-tourism)	GIM8 (active recreational hub)	GIM7 (historic landscape study)
12.10	Other Local Objectives present within 300m of site boundary	None	None	Road objectives	None	Indicative Cycle / Pedestrian Route	None	None	Road objective	None
12.13	Airport Public Safety and Noise Zones within 1km of land parcel boundary	N/A	N/A	Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	N/A	N/A	N/A
12.15	Other Local Objectives present within 1km of Land Parcel Boundary	None	Preserved Views to north and southeast	None	Preserved views to east	Indicative Cycle / Pedestrian Route	Preserved views to north, northeast Road objective to west	Preserved views to south Indicative Cycle / Pedestrian Route Road objective	Road objective Preserved views to south	Preserved views to the north
13.0	Engineering Design - Pipelines	Annabrook	Beldurgen	Clonsilla	Cookstown	Claghra	Newlandsford	Rathfriland	Saundersham	Tyrrelstown Little
13.1	Pipeline Length									
13.1.6	Total Pipeline Length									
	Total Pipeline Length	47,850 m	47,850 m	30,800 m	47,900 m	34,300 m	47,850 m	46,900 m	47,850 m	47,900 m



13.2	Power Requirements									
	Total Power Requirements	10,000 kW	9,700 kW	7,850 kW	9,600 kW	8,550 kW	9,300 kW	9,800 kW	7,100 kW	10,500 kW
13.3	Carbon Emissions									
	Total Carbon (tonnes CO2)	504,008	488,427	385,931	482,905	435,140	482,523	508,325	379,594	547,849
13.5	Access / Right of Way / Wayleaves along Pipeline Corridors									
	Potential restrictions Along Pipeline Corridors to WwTP Sites	11	11	8	11	8	11	12	12	11
13.6	Crossings - Waterways, Rail, etc. along Pipeline Corridors									
	Total Crossings	31	31	17	31	17	31	31	31	31
13.7	Potential to Impact on Physical Infrastructure along Pipeline Corridors									
	More Impact on local Roads	More Impact on local Roads	More Impact on local Roads	Least Impact on Local Roads	More Impact on local Roads	Least Impact on Local Roads	More Impact on local Roads	More Impact on local Roads	More Impact on local Roads	More Impact on local Roads
13.9	Presence of Public Utilities within WwTP sites									
	Public Utilities within the Site	No known public utilities	2 number: ESB (MV) Overhead (10-20kv)	1 number: ESB (MV) Overhead (38kv)	No known public utilities	No known public utilities	1 number: ESB (MV) Overhead (38kv)	No known public utilities	1 Number: ESB (MV) Overhead (38kv). 2 Number: ESB (MV) Overhead (10-20kv)	iv
13.10	Land Ownership and Title along Pipeline Corridors									
	Most Ownerships	Most Ownerships	Least Ownerships	Most Ownerships	Least Ownerships	Most Ownerships	Most Ownerships	Most Ownerships	Most Ownerships	Most Ownerships
13.11	Route Traffic Management									
	Moderate Impact during Construction stage	Moderate Impact during Construction stage	Imperceptible Impact during Construction stage	Moderate Impact during Construction stage	Imperceptible Impact during Construction stage	Moderate Impact during Construction stage	Moderate Impact during Construction stage	Moderate Impact during Construction stage	Moderate Impact during Construction stage	Moderate Impact during Construction stage
	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage	No Impact After Construction Stage
13.12	Construction Risk along Pipeline Corridors									
	Most Variability in Depth to Bedrock	Most Variability in Depth to Bedrock	Least Variability in Depth to Bedrock	Most Variability in Depth to Bedrock	Least Variability in Depth to Bedrock	Most Variability in Depth to Bedrock	Most Variability in Depth to Bedrock	Most Variability in Depth to Bedrock	Most Variability in Depth to Bedrock	Most Variability in Depth to Bedrock
13.13	Operation and Maintenance - WwTP, Pumping Stations & Pipeline ancillaries									
	Most Issues	Most Issues	Least Issues	Most Issues	Least Issues	Most Issues	Most Issues	Most Issues	Most Issues	Most Issues



Phase 2 Alternative Sites Assessment and Route Selection - Matrix Assessment

Second Iteration on Matrix - List of Sub-Criteria assigned an 'amber' colour during the second iteration of the matrix:

Ref	Environmental Criteria	Annabrook	Baldurgen	Cloneahigh	Cookstown	Cloghran	Heafordmoorhuff	Ratherton	Saucerstown	Tyrrelstown Little
1.0	Cultural Heritage	Annabrook	Baldurgen	Cloneahigh	Cookstown	Cloghran	Heafordmoorhuff	Ratherton	Saucerstown	Tyrrelstown Little
1.1	Cultural Heritage - Sites									
1.1.1	Potential to impact (direct/indirect) on National Monuments (designated sites)	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (DU005-038)
1.1.4	Potential to impact (direct/indirect) on CH sites (previously unrecorded sites)	Direct: None Indirect: Four moderate negative (CH 28, 105, 106, 108)	Direct: None Indirect: Two, one moderate negative (CH 30), one slight negative (CH 32)	Direct: None Indirect: Three imperceptible negative (CH 56, 65, 62)	Direct: None Indirect: Two slight negative (CH 30, CH 32)	Direct: None Indirect: None	Direct: None Indirect: Four imperceptible negative (CH 13, 14, 16, 17) & three slight negative (CH 11, 12, 24)	Direct: None Indirect: Three imperceptible negative (CH 2, 7, 10) & one slight negative (CH 8)	Direct: Three profound negative (CH 38, 39, 40) Indirect: Two moderate negative (CH 41, 42), one slight negative (CH 43), one imperceptible negative (CH 48)	Direct: None Indirect: One slight negative (CH 3) & one imperceptible negative (CH 2)
1.2	Cultural Heritage - Pipelines									
1.3	Cultural Heritage - Marine Outfalls									
2.0	Landscape & Visual	Annabrook	Baldurgen	Cloneahigh	Cookstown	Cloghran	Heafordmoorhuff	Ratherton	Saucerstown	Tyrrelstown Little
2.1	Landscape & Visual - Sites									
2.1.1	Potential to impact on views from scenic routes (designation in Fingal CDP)	Moderate - scenic views located 1.2km NE and 1.3km SW have no visibility but those 2.7km north within HSL zone have elevated clear view towards site	Significant - one 0.5km N with clear views and one 0.5km SE also with clear views - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 4km E and associated with coast	Significant - one 0.8km E with relatively clear views towards the site afforded from here - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 3km NE and associated with coast	Significant - one 0.5km N and one 0.7km NW - clear views available from the nearest of these also longer distance (3km) elevated views from scenic routes to NW	Moderate - one located 0.5km S and although likely to be associated with coastal views it does afford an elevated but brief glimpse of the site in the opposite direction	Significant - One 0.5km S with occasional open and elevated views over site and another 0.8km W with no clear views	Significant - One 1.6km N with clear views over site - two 2km NW and one 1.7km S with fleeting views over site
2.1.2	Potential to impact on areas of 'Highly Sensitive Landscape' (designation in Fingal CDP)	Moderate - HSL located 1.2km N elevated above with some intervisibility	Moderate - HSL located 1.5km N with some intervisibility from higher ground within the HSL	Slight - one 1.3km NE with limited intervisibility	Slight - HSL located 1.6km N with limited intervisibility	Slight - one 1km E with limited intervisibility	Slight - elevated HSL zone located 0.7km NW but separated by M1 motorway	Slight - extensive coastal one located only 0.5km S but within a different landscape and viewing context	Imperceptible - one 2.5km E associated with the coastal landscape	Significant - an extensive one on higher ground 0.5km N of site with strong intervisibility and similar character
2.2	Landscape & Visual - Pipelines									
2.3	Landscape & Visual - Marine Outfalls									
3.0	Ecology	Annabrook	Baldurgen	Cloneahigh	Cookstown	Cloghran	Heafordmoorhuff	Ratherton	Saucerstown	Tyrrelstown Little
3.1	Ecology - Sites									
3.1.1	Potential to impact on Natura 2000 Sites and Natural Heritage Areas	Slight: 4.1km upstream of Natura 2000 wetland sites (Rogersown Estuary SPA/SAC)	Slight: 5.3km upstream of Natura 2000 wetland sites (Rogersown Estuary SPA/SAC) and 7.0km upstream of Natura 2000 wetland sites (Malahide Estuary SPA/SAC)	Slight: 4.6km upstream of Natura 2000 wetland sites (Baldy Bay SPA/SAC)	Slight: 7.0km upstream of Natura 2000 wetland sites (Malahide Estuary SPA/SAC)	Slight: 4.3km upstream of Natura 2000 wetland sites (Baldy Bay SPA/SAC)	Moderate: 2.9km upstream of Natura 2000 wetland sites (Rogersown Estuary SPA/SAC)	Significant: 1.0km upstream of Natura 2000 wetland sites (Rogersown Estuary SPA/SAC)	Moderate: 3.0km upstream of Natura 2000 wetland sites (Malahide Estuary SPA/SAC)	Moderate: 2.2km upstream of Natura 2000 wetland sites (Rogersown Estuary SPA/SAC)
3.1.5	Potential to impact on a salmonid system	Moderate - The access road abuts the a tributary of the Ballyoghil River (main channel and tributaries) constitutes a salmonid system.	Moderate - The Ballyoghil River (main channel and tributaries) constitutes a salmonid system and the access road crosses it. However, the Donabate River constitutes a non-salmonid system.	Slight - The Mayne River constitutes a non-salmonid system	Slight - The Donabate River constitutes a non-salmonid system.	Moderate - The Suice River (main channel and tributaries) constitutes a salmonid system.	Moderate - The Ballough River (main channel and tributaries) constitutes a salmonid system and the access road crosses it.	Slight - The Lusk River constitutes a non-salmonid system	Significant - The Broadmeadow River (main channel and tributaries) constitutes a salmonid system and the access road crosses a tributary and site abuts a tributary.	Imperceptible - The Lusk River constitutes a non-salmonid system
3.1.7	Potential to result in the loss of winter Greylag Goose Feeding Areas based in WEBS Data.	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Moderate - Within the normal geographical range of the north Co. Dublin winter Greylag Goose flock. Location is in an area considered likely to be used by the north Co. Dublin winter Greylag Goose flock on occasion	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Significant - Within 'Sheries Grasslands' WEBS area, likely to be a feeding site for the north Co. Dublin winter Greylag Goose flock
3.2	Ecology - Pipelines									
3.3	Ecology - Marine Outfall									



4.0	Hydrology	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
4.1	Hydrology - Sites									
4.1.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	Slight: The Ballough River (water quality Q3/Q4) and Ballyoghill tributary (water quality Q3) are within 170m and 60m of the site respectively. Medium importance. Will have permanent impact on small proportion of attribute.	Slight: Ballyoghill River (200m north), Ballyoghill tributary (40m west) (water quality Q3) and Baldurigan tributary (60m south) of the site (all Q3). Medium importance. Will have permanent impact on small proportion of attribute.	Slight: Medium: Cuckoo River (north) within 50m and Mayne River and Mayne Tributary (south) (water quality Q3) within 370m of the site. Medium importance. Will have permanent impact on small proportion of attribute.	Moderate: Baldurigan River (10m north) and Broadmeadow tributary (10m south) (water quality Q3) of the site. High importance. Will have permanent impact on small proportion of attribute.	Moderate: Sluice River (10m north) and Sluice tributary (230m south) of the site. High importance. Will have permanent impact on small proportion of attribute.	Moderate: Ballough tributary (180m east) and Ballough River (10m west) of the site (water quality Q3). High importance. Will have permanent impact on small proportion of attribute.	Slight: Collinstown Stream (30m west) and Palmerstown Stream (120m southeast) of the site. Medium importance. Will have permanent impact on small proportion of attribute.	Significant: Broadmeadow tributaries (water quality Q3) are within 10m of the site; the site is surrounded by tributaries almost throughout its perimeter. High importance. Will have permanent impact on small proportion of attribute. Will have permanent impact on a significant proportion of attribute.	Imperceptible: Collinstown Stream (120 southwest), Rush Town Stream (360m southwest) and Baldurigan Stream (300m north) of the site. Low importance. Will have permanent impact on small proportion of attribute.
4.2	Hydrology - Pipelines									
4.3	Hydrology - Marine Outfall									
5.0	Hydrogeology	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
5.1	Hydrogeology - Sites									
5.1.3	GSI Groundwater Protection Response matrix	R1	R1	R1	R1	R2	R1	R1	R2	R1
5.2	Hydrogeology - Pipelines									
5.3	Hydrogeology - Marine Outfall									
6.0	Soils and Geology	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
6.1	Soils and Geology - Sites									
6.2	Soils and Geology - Pipelines									
6.3	Soils and Geology - Marine Outfall									
7.0	Agronomy & Agriculture - Sites	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
7.2	Farming Enterprise	Beef & Horticulture (The majority of the site is used for a beef enterprise)	Tillage, Potatoes & Horticulture	Horticulture & Tillage	Tillage, Horticulture, & Potatoes	Beef	Mixed livestock & tillage	Horticulture & Tillage, (intensive market gardening area)	Tillage, Potatoes & Horticulture	Beef (site is located in an intensive market gardening area)
7.8	Overall Impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Major negative impact	Moderate negative impact	Moderate negative impact
8.0	Noise	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
9.0	Air and Odour	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
10.0	People and Communities	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
10.1	Number of residential & commercial buildings 300-500m from site boundary	44	21	83	53	116	33	131	66	50
10.4	Potential to impact on areas of Significant Population Densities	Lusk is c. 3.1km to the east and Ballyboughal (school) is 2.2km to the SW.	Ballyboughal (houses at Doonoge) is c. 0.7km to the NW.	Belcamp and Dandale are c. 0.8km to the south. Dublin Airport entrance and Terminal 1 are c. 2.1km and 2.4km to NW respectively.	Ballyboughal (houses at Doonoge) is c. 1.1km to the NW.	Swords is c. 1.1km to the north. A housing estate at Ballymacarrie is c. 0.8km to the SE. Dublin Airport entrance is c. 1.1km to the SW.	Lusk is c. 1.3km to the east.	Rush is c. 0.7km to the east and Lusk (expenditure at Lough Common) is c. 1.8km to the west.	Swords (Moortown) is c. 1.2km to the SE.	Lusk (school) is c. 1.8km to SW and Rush is c. 1.9km to the SE.
11.0	Traffic	Annabrook	Baldurigan	Clonsheagh	Coolstown	Cloghran	Newtownsconduff	Rathertan	Saucerstown	Tyrrelstown Little
11.4	Works required to provide safe access entrance	Some local widening likely. Boundary treatments required for visibility so some additional landscape probable	Some local widening likely. Visibility ok.	Visibility ok. Can make use of existing field access. Some local road widening probable	Road would likely require widening. To achieve visibility would require significant landscape.	Road on embankment so would need to raise access road on approach to junction	None. Wide road, good visibility	Some local widening likely. Boundary treatments required for visibility so some additional landscape probable	Some local widening likely. Boundary treatments required for visibility so some additional landscape probable	Good visibility achievable with minimal landscape. Can use existing field access.
11.5	Frequency of accidents near entrance	1 accident (minor) near proposed entrance	None	None	None	None	4 accidents (3 minor 1 serious) near proposed entrance	1 accident (minor) approx. 200m from entrance	4 accidents (all minor) located near entrance	None



12.0	Planning Policy	Annabrook	Baldargan	Clonsheagh	Coolstown	Cloghran	Newtownmoreduff	Rathernan	Seaverson	Tyrrelstown Little
12.2	Site Zoning	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech)	RU (Rural)	GB (Greenbelt)	RU (Rural)	RU (Rural)	OS (Open Space) GB (Greenbelt)	RU (Rural)
12.3	Airport Public Safety and Noise Zones on site	N/A	N/A	Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	N/A	N/A	N/A
12.7	Zoning present within 300m of site boundary	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech) OS (Open Space) RA (New Residential)	RU (Rural)	GB (Greenbelt) GE (Enterprise)	RU (Rural) RC (Rural Cluster)	RU (Rural)	OS (Open Space) GB (Greenbelt) RU (Rural) RA (New Residential)	RU (Rural)
13.0	Engineering Design - Pipelines	Annabrook	Baldargan	Clonsheagh	Coolstown	Cloghran	Newtownmoreduff	Rathernan	Seaverson	Tyrrelstown Little
13.1	Pipeline Length									
13.1.6	Total Pipeline Lengths									
13.2	Power Requirements									
	Total Power Requirements	10,000 kW	9,700 kW	7,850 kW	9,600 kW	8,550 kW	9,300 kW	9,800 kW	7,100 kW	10,500 kW
13.3	Carbon Emissions									
	Total Carbon (tonnes CO2)	504,008	488,427	385,831	482,805	435,140	482,523	508,325	378,596	547,848
13.5	Access / Right of Way / Wayleaves along Pipeline Corridors									
13.6	Crossings - Waterways, Rail, etc. along Pipeline Corridors									
13.7	Potential to Impact on Physical Infrastructure along Pipeline Corridors									
13.8	Presence of Public Utilities within WWTs sites									
13.10	Land Ownership and Titles along Pipeline Corridors									
13.11	Route Traffic Management									
13.12	Construction Risk along Pipeline Corridors									
13.13	Operation and Maintenance - WWTs, Pumping Stations & Pipeline infrastructure									



Phase 2 Alternative Sites Assessment and Route Selection - Matrix Assessment

Third Iteration on Matrix - List of Sub-Criteria assigned an 'amber' colour during the third iteration of the matrix

Ref	Environmental Criteria	Annabrook	Baldurgen	Cloneahigh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
1.0	Cultural Heritage	Annabrook	Baldurgen	Cloneahigh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
1.1	Cultural Heritage - Sites								
1.1.1	Potential to impact (direct/indirect) on National Monuments (designated sites)	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (DU005-036)
1.1.2	Potential to impact (direct/indirect) on RMPs (designated sites)	Direct: None Indirect: One imperceptible negative (Gracedieu DU007-015)	Direct: None Indirect: One imperceptible negative (DU007-016)	Direct: None Indirect: Three imperceptible negative (DU015-056, 057 & 058)	Direct: None Indirect: One slight negative (DU007-016)	Direct: None Indirect: One slight negative (DU014-010)	Direct: None Indirect: None	Direct: None Indirect: None	Direct: None Indirect: Two imperceptible negative (DU008-057, 055)
1.1.3	Potential to impact (direct/indirect) on RPS/NAH (designated sites)	Direct: None Indirect: None	Direct: None Indirect: One imperceptible negative (RPS 323)	Direct: None Indirect: One imperceptible negative (RPS 792)	Direct: None Indirect: One slight negative (RPS 323)	Direct: None Indirect: One slight negative (RPS 605)	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (RPS 246), one imperceptible negative (RPS 263)	Direct: None Indirect: One moderate negative (RPS 245)
1.2	Cultural Heritage - Pipelines								
1.3	Cultural Heritage - Marine Outfalls								
2.0	Landscape & Visual	Annabrook	Baldurgen	Cloneahigh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
2.1	Landscape & Visual - Sites								
2.1.1	Potential to impact on views from scenic routes (designation in Fingal CDP)	Moderate - scenic views located 1.2km NE and 1.3km SW have no visibility but those 2.7km north within HSL zone have elevated clear view towards site	Significant - one 0.5km N with clear views and one 0.5km SE also with clear views - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 4km E and associated with coast	Significant - one 0.5km E with relatively clear views towards the site afforded from here - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 3km NE and associated with coast	Significant - one 0.5km N and one 0.7km NW - clear views available from the nearest of these also longer distance (3km) elevated views from scenic routes to NW	Moderate - one located 0.5km S and although likely to be associated with coastal views it does afford an elevated but brief glimpse of the site in the opposite direction	Significant - One 1.6km N with clear views over site - two 2km NW and one 1.7km S with fleeting views over site
2.1.2	Potential to impact on areas of 'Highly Sensitive Landscape' (designation in Fingal CDP)	Moderate - HSL located 1.2km N elevated above with some intervisibility	Moderate - HSL located 1.5km N with some intervisibility from higher ground within the HSL	Slight - one 1.3km NE with limited intervisibility	Slight - HSL located 1.6km N with limited intervisibility	Slight - one 1km E with limited intervisibility	Slight - elevated HSL zone located 0.7km NW but separated by M1 motorway	Slight - extensive coastal one located only 0.5km S but within a different landscape and viewing context	Significant - an extensive one on higher ground 0.5km N of site with strong intervisibility and similar character
2.1.3	Potential to impact on views from heritage/ tourists/ amenity features	Slight - no such features identified in the immediate vicinity of site	Slight - no such features identified in the immediate vicinity of site	Moderate - Potential oblique views from upper storeys of Bewleys Airport Hotel (0.5km W) as well as partly screened views from the Hilton Airport Hotel (1.3km SE) - also GAA grounds to S	Slight - no such features identified in the immediate vicinity of site	Slight - no such features identified in the immediate vicinity of site	Moderate - Pub located on nearest scenic route designation 0.5km NE overlooking the site - new M1 services 1km N - B&B at Dunganstown 1km SE	Moderate - Baldurgen Church on hill 2.5km N with extensive scenic views in the direction of the site	Significant - Baldurgen Castle on hill 1.7km N with extensive scenic views in the direction of the site
2.2	Landscape & Visual - Pipelines								
2.3	Landscape & Visual - Marine Outfalls								



3.0	Ecology	Annabrook	Baldurgh	Cloneahigh	Cookstown	Cloghran	Newtownmoorduff	Rathartan	Tyrrelstown Little
3.1	Ecology - Sites								
3.1.1	Potential to impact on Natura 2000 Sites and Natural Heritage Areas	Slight: 4.1km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC and 7.0km upstream of Natura 2000 wetland sites Malahide Estuary SPA/SAC	Slight: 5.3km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC and 7.0km upstream of Natura 2000 wetland sites Malahide Estuary SPA/SAC	Slight: 4.6km upstream of Natura 2000 wetland sites (Baldyle Bay SPA/SAC)	Slight: 7.0km upstream of Natura 2000 wetland sites (Malahide Estuary SPA/SAC)	Slight: 4.3km upstream of Natura 2000 wetland sites (Baldyle Bay SPA/SAC)	Moderate: 2.9km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC	Significant: 1.0km upstream of Natura 2000 wetland sites (Rogerstown Estuary SPA/SAC)	Moderate: 2.3km upstream of Natura 2000 wetland sites (Rogerstown Estuary SPA/SAC)
3.1.5	Potential to impact on a salmonid system	Moderate - The access road about the tributary of the Ballyboghil River (main channel and tributaries) constitutes a salmonid system.	Moderate - The Ballyboghil River (main channel and tributaries) constitutes a salmonid system and the access road crosses it. However, the Donabate River constitutes a non-salmonid system.	Slight - The Mayne River constitutes a non-salmonid system	Slight - The Donabate River constitutes a non-salmonid system.	Moderate - The Sluce River (main channel and tributaries) constitutes a salmonid system.	Moderate - The Ballough River (main channel and tributaries) constitutes a salmonid system and the access road crosses it.	Slight - The Lusk River constitutes a non-salmonid system	Imperceptible - The Lusk River constitutes a non-salmonid system
3.1.7	Potential to result in the loss of winter Greylag Goose Feeding Areas based in WBS Data.	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Moderate - Within the normal geographical range of the north Co. Dublin winter Greylag Goose flock. Location is in an area considered likely to be used by the north Co. Dublin winter Greylag Goose flock on occasion.	Significant - Within 'Skeries Grasslands' (WBS) area. Likely to be a feeding site for the north Co. Dublin winter Greylag Goose flock
3.1.9	Potential to result in significant loss of winter habitat for Lapwing and Golden Plover and other winter species outside of designated areas (i.e. relatively large, flat open fields of ploughed or fallow arable land or pasture)	Moderate - site includes wet pasture suitable for Lapwing, Golden Plover or other winter waders	Moderate - site includes large arable fields suitable for Lapwing, Golden Plover or other winter waders	Moderate - site includes large pasture fields suitable for Lapwing, Golden Plover or other winter waders	Moderate - site includes large arable fields suitable for Lapwing, Golden Plover or other winter waders	Slight - smallish fields, unlikely to be used regularly by Lapwing and Golden Plover	Slight - smallish fields, unlikely to be used regularly by Lapwing and Golden Plover	Moderate - smallish fields, but proximity to Rogerstown Estuary increases likelihood of site being used by Lapwing and Golden Plover	Significant - site includes large arable fields and pastures suitable for Lapwing, Golden Plover or other winter waders
3.2	Ecology - Pipelines								
3.3	Ecology - Marine Outfall								
3.3.1	Potential to impact on Natura 2000 Sites within survey area footprint	Moderate (main area avoids marine designations)	Moderate (main area avoids marine designations)	Significant (passes through Baldyle SAC)	Moderate (main area avoids marine designations)	Significant (passes through Baldyle SAC)	Moderate (main area avoids marine designations)	Moderate (main area avoids marine designations)	Moderate (main area avoids marine designations)
3.3.2	Potential to impact on Fingal Ecological Network Sites	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Significant Transfer pipeline must pass through Baldyle Coast Ecological Buffer Zone and Portmarnock Golf Course Nature Development Area. These sites are protected in the County Plan and serve to further protect the Baldyle Bay SPA/SAC/pNHA.	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Significant Transfer pipeline must pass through Baldyle Coast Ecological Buffer Zone and Portmarnock Golf Course Nature Development Area. These sites are protected in the County Plan and serve to further protect the Baldyle Bay SPA/SAC/pNHA.	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)
3.3.3	Potential to impact on other potential Annex I habitats (under the Habitats Directive) within the survey area footprint	Moderate (possible, dune habitats and biogenic reefs in north area)	Moderate (possible, dune habitats and biogenic reefs in north area)	Significant (saltmarsh and zostera beds in Baldyle Estuary)	Moderate (possible, dune habitats and biogenic reefs in north area)	Significant (saltmarsh and zostera beds in Baldyle Estuary)	Moderate (possible, dune habitats and biogenic reefs in north area)	Moderate (possible, dune habitats and biogenic reefs in north area)	Moderate (possible, dune habitats and biogenic reefs in north area)



4.0	Hydrology -	Annabrook	Baldurgen	Clonsheagh	Cookstown	Cloghran	Newtownmoorduff	Rathartan	Tyrrelstown Little
4.1	Hydrology - Sites								
4.1.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	Slight: The Ballough River (water quality Q3/Q4) and Ballyboghill tributary (water quality Q3) are within 170m and 60m of the site respectively. Medium importance. Will have permanent impact on small proportion of attribute.	Slight: Ballyboghill River (200m north), Ballyboghill tributary (40m west) (water quality Q3) and Belinstown tributary (60m south) of the site (all Q3). Medium importance. Will have permanent impact on small proportion of attribute.	Slight: Medium: Cuckoo River (north) within 50m and Mayne River and Mayne Tributary (south) (water quality Q3) within 370m of the site. Medium importance. Will have permanent impact on small proportion of attribute.	Moderate: Belinstown River (10m north) and Broadmeadow tributary (1km south) (water quality Q3) of the site. High importance. Will have permanent impact on small proportion of attribute.	Moderate: Sluces River (10m north) and Sluce tributary (200m south) of the site. High importance. Will have permanent impact on small proportion of attribute.	Moderate: Ballough tributary (180m east) and Ballough River (10m west) of the site (water quality Q3). High importance. Will have permanent impact on small proportion of attribute.	Slight: Collinstown Stream (30m west) and Palmerstown Stream (120m southeast) of the site. Medium importance. Will have permanent impact on small proportion of attribute.	Imperceptible: Collinstown Stream (120 southwest), Rush Town Stream (360m southeast) and Balcunnin Stream (930m north) of the site. Low importance. Will have permanent impact on small proportion of attribute.
4.1.2	Culverting requirement - used to indicate impact on flood-prone watercourses due to reduced conveyance.	None: No new culvert required.	Moderate: Crossing Ballyboghill River. High importance. Will have permanent impact on small proportion of attribute.	None: No new culvert required.	Imperceptible: Culvert might be required for a local minor tributary. Low importance. Will have permanent impact on small proportion of attribute.	None: No new culvert required.	Slight: Crossing Ballough Tributary. Medium importance. Will have permanent impact on small proportion of attribute.	Slight: Crossing Collinstown Stream. Medium importance. Will have permanent impact on small proportion of attribute.	None: No new culvert required.
4.1.4	Potential impact on ecologically important and designated sites.	Slight: The rivers discharge into the Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) approx. 4.1km downstream. Medium importance. Will have permanent impact on small proportion of attribute.	Slight: The rivers discharge into the Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) and Malahide Bay (SAC, SPA and pHNA) approx. 5.3 and 7km downstream respectively. Medium importance. Will have permanent impact on small proportion of attribute.	Imperceptible: The Mayne River discharges into Ballykeale Estuary (SPA, SAC and pHNA) approx. 4.6km downstream. Low importance. Will have permanent impact on small proportion of attribute.	Imperceptible: The Belinstown River discharges into Malahide Bay and the Broadmeadow tributary discharges into Broadmeadow Estuary (SAC, SPA, pHNA) approx. 7 and 5km downstream respectively. Low importance. Will have permanent impact on small proportion of attribute.	Imperceptible: The river discharges into Ballykeale Estuary (SAC, SPA and pHNA) approx. 4.3km downstream. Low importance. Will have permanent impact on small proportion of attribute.	Slight: The river discharges into Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) approx. 2.9km downstream. Medium importance. Will have permanent impact on small proportion of attribute.	Moderate: The Collinstown stream discharges into Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) approx. 1km downstream. High importance. Will have permanent impact on small proportion of attribute.	Slight: The Collinstown Stream discharges into Rogerstown Estuary and Rush Town Stream discharges into the Irish sea (unpolluted water quality) approx. 2.2km downstream. Medium importance. Will have permanent impact on small proportion of attribute.
4.2	Hydrology - Pipelines								
4.3	Hydrology - Marine Outfall								
5.0	Hydrogeology -	Annabrook	Baldurgen	Clonsheagh	Cookstown	Cloghran	Newtownmoorduff	Rathartan	Tyrrelstown Little
5.1	Hydrogeology - Sites								
5.1.3	GSI Groundwater Protection Response matrix	R1	R1	R1	R1	R2	R1	R1	R1
5.2	Hydrogeology - Pipelines								
5.3	Hydrogeology - Marine Outfall								
6.0	Soils and Geology	Annabrook	Baldurgen	Clonsheagh	Cookstown	Cloghran	Newtownmoorduff	Rathartan	Tyrrelstown Little
6.1	Soils and Geology - Sites								
6.2	Soils and Geology - Pipelines								
6.3	Soils and Geology - Marine Outfall								
7.0	Agronomy & Agriculture - Sites	Annabrook	Baldurgen	Clonsheagh	Cookstown	Cloghran	Newtownmoorduff	Rathartan	Tyrrelstown Little
7.2	Farming Enterprise	Beef & Horticulture (The majority of the site is used for a beef enterprise)	Tillage, Potatoes & Horticulture	Horticulture & Tillage	Tillage, Horticulture, & Potatoes	Beef	Mixed livestock & tillage	Horticulture & Tillage, (intensive market gardening area)	Beef (site is located in an intensive market gardening area)
7.3	Number of landowners impacted within site boundary	1 to 3	1 to 3	4 to 6	1 to 3	4 to 6	1 to 3	7 to 9	1 to 3
7.8	Overall Impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Major negative impact	Moderate negative impact
8.0	Noise	Annabrook	Baldurgen	Clonsheagh	Cookstown	Cloghran	Newtownmoorduff	Rathartan	Tyrrelstown Little
9.0	Air and Odour	Annabrook	Baldurgen	Clonsheagh	Cookstown	Cloghran	Newtownmoorduff	Rathartan	Tyrrelstown Little



10.0	People and Communities	Annabrook	Baldurán	Cloneahigh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
10.1	Number of residential & commercial buildings 300-500m from site boundary	44	21	83	53	116	33	131	50
10.4	Potential to Impact on areas of Significant Population Densities	Lusk is c. 3.1km to the east and Baldurán (school) is 2.2km to the SW.	Baldurán (houses at Dooroge) is c. 0.7km to the NW.	Belcamp and Dandale are c. 0.8km to the south. Dublin Airport entrance and Terminal 1 are c. 2.1km and 2.4km to NW respectively.	Baldurán (houses at Dooroge) is c. 1.1km to the NW.	Swords is c. 1km to the north. A housing estate at Baldurán is c. 0.8km to the SE. Dublin Airport entrance is c. 1.1km to the SW.	Lusk is c. 1.3km to the east.	Rush is c. 0.7km to the east and Lusk (settlement at Lough Common) is c. 1.8km to the west.	Lusk (school) is c. 1.6km to SW and Rush is c. 1.9km to the SE.
11.0	Traffic	Annabrook	Baldurán	Cloneahigh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
11.1	Length of access road required	1230m access road required	580m access road required	320m access road required	930m access road required	290m access road required	640 access road required	620m access road required	1,410m access road required
11.2	Number of crossings required for access road	None	2 river/stream crossings	None	1 ditch/stream crossings	None	1 stream/river crossings	2 stream/river crossings	1 road crossing
11.3	Potential impact on landowners	Access road impacts on 6 fields	Access road impacts on 3 fields splitting one	Access road impacts on 2 fields however can follow existing track	Access road impacts on 5 fields	Access Road impacts on 2 field	Access Road impacts on 2 fields	2-3 fields impacted upon.	Access road impacts on 8 fields. Could potentially require demolition of barn
11.4	Works required to provide safe access entrance	Some local widening likely. Boundary treatments required for visibility so some additional landtake probable	Some local widening likely. Visibility ok.	Visibility ok. Can make use of existing field access. Some local road widening probable	Road would likely require widening. To achieve visibility would require significant landtake.	Road on embankment so would need to raise access road on approach to junction	None. Wide road, good visibility	Some local widening likely. Boundary treatments required for visibility so some additional landtake probable	Good visibility achievable with minimal landtake. Can use existing field access.
11.6	Frequency of accidents near entrance	1 accident (minor) near proposed entrance	None	None	None	None	4 accidents (3 minor 1 serious) near proposed entrance	1 accident (minor) approx. 200m from entrance	None
11.7	Frequency of accidents on surrounding network (indication of general road safety issues)	few accidents on surrounding roads	few accidents on surrounding roads	High accident rate on N32 & R107 (including deaths)	few accidents on surrounding roads	High accident rate on N32 & R107 (including deaths)	Several accidents on R132	Probable use of R127 south of Lusk with high accident rate. If this road wasn't to be used then slight to moderate rating	Probable use of R127 south of Lusk with high accident rate. If this road wasn't to be used then slight to moderate rating
12.0	Planning Policy	Annabrook	Baldurán	Cloneahigh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
12.2	Site Zoning	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech)	RU (Rural)	GB (Greenbelt)	RU (Rural)	RU (Rural)	RU (Rural)
12.3	Airport Public Safety and Noise Zones on site	N/A	N/A	Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	N/A	N/A
12.7	Zoning present within 300m of site boundary	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech) OS (Open Space) RA (New Residential)	RU (Rural)	GB (Greenbelt) GE (Enterprise)	RU (Rural) RC (Rural Cluster)	RU (Rural)	RU (Rural)
13.0	Engineering Design - Pipeline	Annabrook	Baldurán	Cloneahigh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
13.1	Pipeline Length								
13.1.6	Total Pipeline Length								
	Total Pipeline Length	47,850 m	47,850 m	30,600 m	47,900 m	34,300 m	47,850 m	46,900 m	47,900 m
13.2	Power Requirements								
	Total Power Requirements	10,000 kW	9,700 kW	7,850 kW	9,600 kW	8,550 kW	9,300 kW	9,800 kW	10,500 kW
13.3	Carbon Emissions								
	Total Carbon (tonnes CO2)	504,008	488,427	385,931	482,905	435,140	482,523	508,325	547,849
13.6	Access / Right of Way / Wayleaves along Pipeline Corridors								
13.6	Crossings - Waterways, Rail, etc. along Pipeline Corridors								
13.7	Potential to Impact on Physical Infrastructure along Pipeline Corridors								
13.8	Presence of Public Utilities within WfTP area								
13.10	Land Ownership and Titles along Pipeline Corridors								



13.11	Route Traffic Management								
13.12	Construction Risk along Pipeline Corridors								
13.13	Operation and Maintenance - WwTP, Pumping Stations & Pipeline ancillaries								



Phase 2 Alternative Sites Assessment and Route Selection - Matrix Assessment

Fourth Iteration on Matrix - List of Sub-Criteria assigned an 'amber' colour during the fourth iteration of the matrix

Ref	Environmental Criteria	Annsbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
1.0	Cultural Heritage	Annsbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
1.1	Cultural Heritage - Sites							
1.1.2	Potential to impact (direct/indirect) on RMPs (designated sites)	Direct: None Indirect: One imperceptible negative (Gracedieu DU007-015)	Direct: None Indirect: One imperceptible negative (DU007-016)	Direct: None Indirect: Three imperceptible negative (DU015-056, 057 & 059)	Direct: None Indirect: One slight negative (DU007-016)	Direct: None Indirect: One slight negative (DU014-010)	Direct: None Indirect: None	Direct: None Indirect: None
1.1.3	Potential to impact (direct/indirect) on RPS/NAH (designated sites)	Direct: None Indirect: None	Direct: None Indirect: One imperceptible negative (RPS 323)	Direct: None Indirect: One imperceptible negative (RPS 792)	Direct: None Indirect: One slight negative (RPS 323)	Direct: None Indirect: One slight negative (RPS 605)	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (RPS 246), one imperceptible negative (RPS 263)
1.1.4	Potential to impact (direct/indirect) on CH sites (previously unrecorded sites)	Direct: None Indirect: Four moderate negative (CH 26, 105, 106, 108)	Direct: None Indirect: Two, one moderate negative (CH 30), one slight negative (CH 32)	Direct: None Indirect: Three imperceptible negative (CH 56, 65, 62)	Direct: None Indirect: Two slight negative (CH 30, CH 32)	Direct: None Indirect: None	Direct: None Indirect: Four imperceptible negative (CH 13, 14, 16, 17) & three slight negative (CH 11, 12, 24)	Direct: None Indirect: Three imperceptible negative (CH 2, 7, 10) & one slight negative (CH 8)
1.2	Cultural Heritage - Pipelines							
1.3	Cultural Heritage - Marine Outfalls							
2.0	Landscape & Visual	Annsbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
2.1	Landscape & Visual - Sites							
2.1.1	Potential to impact on views from scenic routes (designation in Fingal CDP)	Moderate - scenic views located 1.2km NE and 1.3km SW have no visibility but those 2.7km north within HSL zone have elevated clear view towards site	Significant - one 0.5km N with clear views and one 0.5km SE also with clear views - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 4km E and associated with coast	Significant - one 0.5km E with relatively clear views towards the site afforded from here - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 3km NE and associated with coast	Significant - one 0.5km N and one 0.7km NW - clear views available from the nearest of these also longer distance (3km) elevated views from scenic routes to NW	Moderate - one located 0.5km S and although likely to be associated with coastal views it does afford an elevated but brief glimpse of the site in the opposite direction
2.1.2	Potential to impact on areas of 'Highly Sensitive Landscape' (designation in Fingal CDP)	Moderate - HSL located 1.2km N elevated above with some intervisibility	Moderate - HSL located 1.5km N with some intervisibility from higher ground within the HSL	Slight - one 1.3km NE with limited intervisibility	Slight - HSL located 1.6km N with limited intervisibility	Slight - one 1km E with limited intervisibility	Slight - elevated HSL zone located 0.7km NW but separated by M1 motorway	Slight - extensive coastal one located only 0.5km S but within a different landscape and viewing context
2.1.3	Potential to impact on views from heritage/ tourists/ amenity features	Slight - no such features identified in the immediate vicinity of site	Slight - no such features identified in the immediate vicinity of site	Moderate - Potential oblique views from upper storeys of Bewleys Airport Hotel (0.5km W) as well as partly screened views from the Hilton Airport Hotel (1.3km SE) - also GAA grounds to S	Slight - no such features identified in the immediate vicinity of site	Slight - no such features identified in the immediate vicinity of site	Moderate - Pub located on nearest scenic route designation 0.5km NE overlooking the site - new M1 services 1km N - B&B at Dunganstown 1km SE	Moderate - Baldurigan Church on hill 2.5km N with extensive scenic views in the direction of the site
2.1.4	Potential to impact on the character of the landscape character	Moderate - rural landscape character of strong integrity within and around the site but motorway 1km E	Significant - open rural landscape character of high integrity within and around the site	Moderate - Site has a rural landscape character of reasonable integrity but the surrounds are a peri-urban landscape of mixed land uses relating to the urban fringe location	Significant - open rural landscape character of high integrity within and around the site	Moderate - The site itself is contained within a dense network of pastoral fields and hedgerows with rural HSL to the E however major transport infrastructure occurs immediately W and a quarry and golf driving range is located directly E	Moderate - although the site itself is contained within a dense network of pastoral fields and hedgerows major transport infrastructure occurs immediately W and E	Moderate - open rural landscape character of relatively high integrity but located near an urban fringe (Rush) - rail line to W does not strongly influence landscape character
2.2	Landscape & Visual - Pipelines							
2.3	Landscape & Visual - Marine Outfalls							



3.0	Ecology	Annabrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
3.1	Ecology - Sites							
3.1.1	Potential to impact on Natura 2000 Sites and Natural Heritage Areas	Slight: 4.1km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC	Slight: 5.3km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC and 7.0km upstream of Natura 2000 wetland sites Malahide Estuary SPA/SAC	Slight: 4.6km upstream of Natura 2000 wetland sites (Baldoye Bay SPA/SAC)	Slight: 7.0km upstream of Natura 2000 wetland sites (Malahide Estuary SPA/SAC)	Slight: 4.3km upstream of Natura 2000 wetland sites (Baldoye Bay SPA/SAC)	Moderate: 2.9km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC	Significant: 1.0km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC
3.1.2	Potential to impact on Fingal Ecological Network Sites	Moderate: Site located 125m from Rath Little Stream ecological corridor	Moderate: Site located 180m from Ballyboghil Stream ecological corridor, but access road crosses it.	Significant: Site abuts Mayne River ecological corridor	Slight: Site located 800m from Ballyboghil Stream ecological corridor.	Significant: Site abuts Sluice River ecological corridor	Significant: Site abuts Rath Little ecological corridor; Access road crosses Ballough Stream ecological corridor.	Imperceptible: Site located more than 3km from Ballough Stream ecological corridor
3.1.3	Potential to impact protected species based on length of field boundary defined by hedgerow, which incorporates mature trees, within site, e.g. Badgers, Bats, Yellowhammer, Tree sparrow, Stock dove	Significant: 2.4km of hedges within the site	Slight: 0.1km of hedges within the site	Moderate: 1.4km of hedges within the site	Slight: 0.9km of hedges within the site	Significant: 2.3km of hedges within the site	Significant: 3.4km of hedges within the site	Significant: 2.5km of hedges within the site
3.1.5	Potential to impact on a salmonid system	Moderate - The access road abuts the a tributary of the Ballyboghil River (main channel and tributaries) constitutes a salmonid system.	Moderate - The Ballyboghil River (main channel and tributaries) constitutes a salmonid system and the access road crosses it. However, the Donabate River constitutes a non-salmonid system.	Slight - The Mayne River constitutes a non-salmonid system	Slight - The Donabate River constitutes a non-salmonid system.	Moderate - The Sluice River (main channel and tributaries) constitutes a salmonid system.	Moderate - The Ballough River (main channel and tributaries) constitutes a salmonid system and the access road crosses it.	Slight - The Lusk River constitutes a non-salmonid system
3.1.7	Potential to result in the loss of winter Greylag Goose Feeding Areas based in IWeBS Data.	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Imperceptible - Outside the normal geographical range of the north Co. Dublin winter Greylag Goose flock	Moderate - Within the normal geographical range of the north Co. Dublin winter Greylag Goose flock. Location is in an area considered likely to be used by the north Co. Dublin winter Greylag Goose flock on occasion
3.2	Ecology - Pipelines							
3.3	Ecology - Marine Outfall							
3.3.1	Potential to impact on Natura 2000 Sites within survey area footprint	Moderate (main area avoids marine designations)	Moderate (main area avoids marine designations)	Significant (passes through Baldoye SAC)	Moderate (main area avoids marine designations)	Significant (passes through Baldoye SAC)	Moderate (main area avoids marine designations)	Moderate (main area avoids marine designations)
3.3.2	Potential to impact on Fingal Ecological Network Sites	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Significant Transfer pipeline must pass through Baldoye Coast Ecological Buffer Zone and Portmarnock Golf Course Nature Development Area. These sites are protected in the County Plan and serve to further protect the Baldoye Bay SPA/SAC/pNHA.	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Significant Transfer pipeline must pass through Baldoye Coast Ecological Buffer Zone and Portmarnock Golf Course Nature Development Area. These sites are protected in the County Plan and serve to further protect the Baldoye Bay SPA/SAC/pNHA.	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)
3.3.3	Potential to impact on other potential annex 1 habitats (under the Habitats Directive) within the survey area footprint	Moderate (possible, dune habitats and biogenic reefs in north area)	Moderate (possible, dune habitats and biogenic reefs in north area)	Significant (saltmarsh and zostera beds in Baldoye Estuary)	Moderate (possible, dune habitats and biogenic reefs in north area)	Significant (saltmarsh and zostera beds in Baldoye Estuary)	Moderate (possible, dune habitats and biogenic reefs in north area)	Moderate (possible, dune habitats and biogenic reefs in north area)
3.3.5	Potential to impact on Intertidal habitats	Slight (isolated sensitive sites in some areas of coast)	Slight (isolated sensitive sites in some areas of coast)	Moderate (sensitive habitats in Estuary and on Velvet Strand)	Slight (isolated sensitive sites in some areas of coast)	Moderate (sensitive habitats in Estuary and on Velvet Strand)	Slight (isolated sensitive sites in some areas of coast)	Slight (isolated sensitive sites in some areas of coast)



4.0	Hydrology -	Annabrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
4.1	Hydrology - Sites							
4.1.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	<i>Slight:</i> The Ballough River (water quality Q3/Q4) and Ballyboghil tributary (water quality Q3) are within 170m and 60m of the site respectively, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> Ballyboghil River (200m north), Ballyboghil tributary (40m west) (water quality Q3) and Belinstown tributary (60m south) of the site (all Q3), Medium importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> Medium: Cuckoo River (north) within 50m and Mayne River and Mayne Tributary (south) (water quality Q3) within 370m of the site, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Moderate:</i> Belinstown River (10m north) and Broadmeadow tributary (1km south) (water quality Q3) of the site, High importance. Will have permanent impact on small proportion of attribute.	<i>Moderate:</i> Sluice River (10m north) and Sluice tributary (290m south) of the site, High importance. Will have permanent impact on small proportion of attribute.	<i>Moderate:</i> Ballough tributary (180m east) and Ballough River (10m west) of the site (water quality Q3), High importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> Collinstown Stream (30m west) and Palmerstown Stream (120m southeast) of the site, Medium importance. Will have permanent impact on small proportion of attribute.
4.1.2	Culverting requirement - used to indicate impact on flood-prone watercourses due to reduced conveyance.	<i>None:</i> No new culvert required.	<i>Moderate:</i> Crossing Ballyboghil River, High importance. Will have permanent impact on small proportion of attribute.	<i>None:</i> No new culvert required	<i>Imperceptible:</i> Culvert might be required for a local minor tributary, Low importance. Will have permanent impact on small proportion of attribute.	<i>None:</i> No new culvert required	<i>Slight:</i> Crossing Ballough Tributary, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> Crossing Collinstown Stream, Medium importance. Will have permanent impact on small proportion of attribute.
4.1.4	Potential impact on ecologically important and designated sites.	<i>Slight:</i> The rivers discharge into the Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) approx. 4.1km downstream, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> The rivers discharge into Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) and Malahide Bay (SAC, SPA and pHNA) approx. 5.3 and 7km downstream respectively, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Imperceptible:</i> The Mayne River discharges into Baldoye Estuary (SPA, SAC and pHNA) approx. 4.6km downstream, Low importance. Will have permanent impact on small proportion of attribute.	<i>Imperceptible:</i> The Belinstown River discharges into Malahide Bay and the Broadmeadow tributary discharges into Broadmeadow Estuary (SAC, SPA, pHNA) approx. 7 and 5km downstream respectively, Low importance. Will have permanent impact on small proportion of attribute.	<i>Imperceptible:</i> The river discharges into Baldoye Estuary (SAC, SPA and pHNA) approx. 4.3km downstream, Low importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> The river discharges into Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) approx. 2.9km downstream, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Moderate:</i> The Collinstown stream discharges into Rogerstown Estuary (SAC, SPA, pHNA, Ramsar and SNR) approx. 1km downstream, High importance. Will have permanent impact on small proportion of attribute.
4.2	Hydrology - Pipelines							
4.3	Hydrology - Marine Outfall							
5.0	Hydrogeology -	Annabrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
5.1	Hydrogeology - Sites							
5.1.3	GSI Groundwater Protection Response matrix	R1	R1	R1	R1	R2	R1	R1
5.2	Hydrogeology - Pipelines							
5.3	Hydrogeology - Marine Outfall							
6.0	Soils and Geology	Annabrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
6.1	Soils and Geology - Sites							
6.2	Soils and Geology - Pipelines							
6.3	Soils and Geology - Marine Outfall							



7.0	Agronomy & Agriculture - Sites	Annbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathertan
7.1	Approximate% Reduction in overall farm holding	36%	21%	28%, 18%, 24 %	21%	8.6%, 49%, 9.6%, 26%	21%	30%, 16.75%, 100%, 9.3%, 34%, 98%, 19%
7.2	Farming Enterprise	Beef & Horticulture (The majority of the site is used for a beef enterprise)	Tillage, Potatoes & Horticulture	Horticulture & Tillage	Tillage, Horticulture, & Potatoes	Beef	Mixed livestock & tillage	Horticulture & Tillage, (intensive market gardening area)
7.3	Number of landowners impacted within site boundary	1 to 3	1 to 3	4 to 6	1 to 3	4 to 6	1 to 3	7 to 9
7.5	Severance based on site location within overall land holdings	Minor	Minor	Minor	Moderate	Minor	Minor	Moderate
7.8	Overall Impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Moderate negative impact	Major negative impact
8.0	Noise	Annbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathertan
9.0	Air and Odour	Annbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathertan
10.0	People and Communities	Annbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathertan
10.1	Number of residential & commercial buildings 300-500m from site boundary	44	21	83	53	116	33	131
10.4	Potential to impact on areas of Significant Population Densities	Lusk is c. 3.1km to the east and Ballyboughal (school) is 2.2km to the SW.	Ballyboughal (houses at Doorgel) is c. 0.7km to the NW.	Belcamp and Damdale are c. 0.8km to the south. Dublin Airport entrance and Terminal 1 are c. 2.1km and 2.4km to NW respectively.	Ballyboughal (houses at Doorgel) is c. 1.1km to the NW.	Swords is c. 1km to the north. A housing estate at Ballymacartle is c. 0.6km to the SE. Dublin Airport entrance is c. 1.1km to the SW.	Lusk is c. 1.3km to the east.	Rush is c. 0.7km to the east and Lusk (settlement at Lough Common) is c. 1.8km to the west.
11.0	Traffic	Annbrook	Baldurigan	Clonsagh	Cookstown	Cloghran	Newtowncorduff	Rathertan
11.1	Length of access road required	1230m access road required	580m access road required	320m access road required	930m access road required	290m access road required	640 access road required	620m access road required
11.2	Number of crossings required for access road	None	2 river/stream crossings	None	1 ditch/stream crossings	None	1 stream/river crossings	2 stream/river crossings
11.3	Potential impact on landowners	Access road impacts on 6 fields	Access road impacts on 3 fields splitting one	Access road impacts on 2 fields however can follow existing track	Access road impacts on 5 fields	Access Road impacts on 2 field	Access Road impacts on 2 fields	2-3 fields impacted upon.
11.4	Works required to provide safe access entrance	Some local widening likely. Boundary treatments required for visibility so some additional landtake probable	Some local widening likely. Visibility ok.	Visibility ok. Can make use of existing field access. Some local road widening probable	Road would likely require widening. To achieve visibility would require significant landtake.	Road on embankment so would need to raise access road on approach to junction	None. Wide road, good visibility	Some local widening likely. Boundary treatments required for visibility so some additional landtake probable
11.5	Potential impact on surrounding local road network	Can access R132 after approx. 2km of travel on R129.	Can access R132 after approx. 2km of travel on R129.	Access onto local road however not far from N32	Access onto R108. Road not particularly suitable for HGVs. Travel distance to better road moderate	Access onto local road however not far from N32	Easy access to wide road (R132)	Access onto R128 and probable use of R127. Both Roads are not particularly suitable for HGVs
11.6	Frequency of accidents near entrance	1 accident (minor) near proposed entrance	None	None	None	None	4 accidents (3 minor 1 serious) near proposed entrance	1 accident (minor) approx. 200m from entrance
11.7	Frequency of accidents on surrounding network (Indication of general road safety issues)	few accidents on surrounding roads	few accidents on surrounding roads	High accident rate on N32 & R107 (including deaths)	few accidents on surrounding roads	High accident rate on N32 & R107 (including deaths)	Several accidents on R132	Probable use of R127 south of Lusk with high accident rate. If this road wasn't to be used then slight to moderate rating
11.8	Road link impacted upon by all construction traffic (excluding major routes i.e. R132/N32)	2km (R129)	4km (R129)	450m (Clonsagh Rd)	Two options but both long (R108 & R129 7.8km, R108 & R125 6.9km)	Stockhole Lane / Clonsagh Rd could be used from either direction	None	5.2kms (R127)



12.0	Planning Policy	Annebrook	Baldurgh	Clonsheagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
12.2	Site Zoning	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech)	RU (Rural)	GB (Greenbelt)	RU (Rural)	RU (Rural)
12.3	Airport Public Safety and Noise Zones on site	N/A	N/A	Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	N/A
12.7	Zoning present within 300m of site boundary	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech) OS (Open Space) RA (New Residential)	RU (Rural)	GB (Greenbelt) GE (Enterprise)	RU (Rural) RC (Rural Cluster)	RU (Rural)
12.8	Airport Public Safety and Noise Zones within 300m of site boundary	N/A	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	Inner PSZ Outer PSZ Inner Noise Zone Outer Noise Zone	N/A	N/A
13.0	Engineering Design - Pipelines	Annebrook	Baldurgh	Clonsheagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
13.1	Pipeline Length							
13.1.6	Total Pipeline Lengths							
	Total Pipeline Length	47,850 m	47,850 m	30,600 m	47,900 m	34,300 m	47,850 m	46,900 m
13.2	Power Requirements							
	Total Power Requirements	10,000 kW	9,700 kW	7,850 kW	9,600 kW	8,550 kW	9,300 kW	9,800 kW
13.3	Carbon Emissions							
	Total Carbon (tonnes CO2)	504,008	488,427	385,931	482,905	435,140	482,523	508,325
13.5	Access / Right of Way / Wayleaves along Pipeline Corridors							
13.7	Potential to Impact on Physical Infrastructure along Pipeline Corridors							
13.9	Presence of Public Utilities within WwTP sites							
	Public Utilities within the Site	No known public utilities	2 number: ESB (MV) Overhead (10-20kv)	1 number: ESB (MV) Overhead (38kv)	No known public utilities	No known public utilities	1 number: ESB (MV) Overhead (38kv)	No known public utilities
13.10	Land Ownership and Titles along Pipeline Corridors							
13.11	Route Traffic Management							
13.12	Construction Risk along Pipeline Corridors							
13.13	Operation and Maintenance - WwTP, Pumping Stations & Pipeline ancillaries							



Phase 2 Alternative Sites Assessment and Route Selection - Matrix Assessment

Fifth Iteration on Matrix - List of Sub-Criteria assigned an 'amber' colour during the fifth iteration of the matrix

Ref	Environmental Criteria	Annsbrook	Baldurban	Clonsagh	Cookstown	Newtowncorduff
1.0	Cultural Heritage	Annsbrook	Baldurban	Clonsagh	Cookstown	Newtowncorduff
1.1	Cultural Heritage -Sites					
1.1.2	Potential to impact (direct/indirect) on RMPs (designated sites)	Direct: None Indirect: One imperceptible negative (Gracedieu DU007-015)	Direct: None Indirect: One imperceptible negative (DU007-016)	Direct: None Indirect: Three imperceptible negative (DU015-056, 057 & 059)	Direct: None Indirect: One slight negative (DU007-016)	Direct: None Indirect: None
1.1.3	Potential to impact (direct/indirect) on RPS/NIAH (designated sites)	Direct: None Indirect: None	Direct: None Indirect: One imperceptible negative (RPS 323)	Direct: None Indirect: One imperceptible negative (RPS 792)	Direct: None Indirect: One slight negative (RPS 323)	Direct: None Indirect: None
1.1.4	Potential to impact (direct/indirect) on CH sites (previously unrecorded sites)	Direct: None Indirect: Four moderate negative (CH 26, 105,106,108)	Direct: None Indirect: Two, one moderate negative (CH 30), one slight negative (CH 32)	Direct: None Indirect: Three imperceptible negative (CH 56, 65, 62)	Direct: None Indirect: Two slight negative (CH 30, CH 32)	Direct: None Indirect: Four imperceptible negative (CH 13, 14, 16, 17) & three slight negative (CH 11, 12, 24)
1.1.5	Potential to impact (direct) on water courses and environs (areas of archaeological potential)	None	One (potentially significant)	None	Three (potentially significant)	One (potentially significant)
1.2	Cultural Heritage -Pipelines					
1.3	Cultural Heritage - Marine Outfalls					



2.0	Landscape & Visual	Annbrook	Baldurigan	Clonsagh	Cookstown	Newtowncorduff
2.1	Landscape & Visual - Sites					
2.1.1	Potential to impact on views from scenic routes (designation in Fingal CDP)	Moderate - scenic views located 1.2km NE and 1.3km SW have no visibility but those 2.7km north within HSL zone have elevated clear view towards site	Significant - one 0.5km N with clear views and one 0.5km SE also with clear views - also distant elevated views from scenic routes >5km N	Imperceptible - nearest scenic route 4km E and associated with coast	Significant - one 0.5km E with relatively clear views towards the site afforded from here - also distant elevated views from scenic routes >5km N	Significant - one 0.5km N and one 0.7km NW - clear views available from the nearest of these also longer distance (3km) elevated views from scenic routes to NW
2.1.2	Potential to impact on areas of 'Highly Sensitive Landscape' (designation in Fingal CDP)	Moderate - HSL located 1.2km N elevated above with some intervisibility	Moderate - HSL located 1.5km N with some intervisibility from higher ground within the HSL	Slight - one 1.3km NE with limited intervisibility	Slight - HSL located 1.6km N with limited intervisibility	Slight - elevated HSL zone located 0.7km NW but separated by M1 motorway
2.1.3	Potential to impact on views from heritage/ tourist/ amenity features	Slight - no such features identified in the immediate vicinity of site	Slight - no such features identified in the immediate vicinity of site	Moderate - Potential oblique views from upper storeys of Bewleys Airport Hotel (0.5km W) as well as partly screened views from the Hilton Airport Hotel (1.3km SE) - also GAA grounds to S	Slight - no such features identified in the immediate vicinity of site	Moderate - Pub located on nearest scenic route designation 0.5km NE overlooking the site - new M1 services 1km N - B&B at Dunganstown 1km SE
2.1.4	Potential to impact on the character of the landscape character	Moderate - rural landscape character of strong integrity within and around the site but motorway 1km E	Significant - open rural landscape character of high integrity within and around the site	Moderate - Site has a rural landscape character of reasonable integrity but the surrounds are a peri-urban landscape of mixed land uses relating to the urban fringe location	Significant - open rural landscape character of high integrity within and around the site	Moderate - although the site itself is contained within a dense network of pastoral fields and hedgerows major transport infrastructure occurs immediately W and E
2.1.5	Potential that landscape screening will be ineffective or contribute to landscape and visual impacts	Slight - This site can be well screened and integrated - particular attention needs to be paid to elevated scenic route and HSL designations to the north	Moderate - potential for effective screening to foreshorten views, conflict with open landscape character and prevailing hedgerow characteristics - particular attention needs to be paid to elevated scenic route and HSL designations to the N	Slight - This site can be well screened and integrated but particular attention needs to be paid to elevated views from Bewleys Airport hotel	Moderate - potential for effective screening to foreshorten views, conflict with open landscape character and prevailing hedgerow characteristics - particular attention needs to be paid to elevated scenic route and HSL designations to the north	Slight - This site can generally be well screened and integrated - particular attention needs to be paid to views from elevated overpass and scenic views to NW
2.1.12	Potential to disrupt landscape structure (hedgerows / field pattern etc.)	Significant - well defined geometric hedgerow/field pattern contained within site boundary	Slight - large relatively undefined fields contained within site boundary	Slight - large somewhat irregular shaped fields with low hedgerows between	Slight - Large relatively undefined fields with low hedgerows around site	Significant - intensive and strongly defined hedgerow/field pattern contained within site boundary but surrounding lands more dispersed in structure
2.2	Landscape & Visual - Pipelines					
2.3	Landscape & Visual - Marine Outfalls					



3.0	Ecology	Annsbrook	Baldurigan	Clonsagh	Cookstown	Newtowncorduff
3.1	Ecology - Sites					
3.1.1	Potential to impact on Natura 2000 Sites and Natural Heritage Areas	Slight: 4.1km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC)	Slight: 5.3km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC and 7.0km upstream of Natura 2000 wetland sites Malahide Estuary SPA/SAC	Slight: 4.6km upstream of Natura 2000 wetland sites (Baldoyle Bay SPA/SAC)	Slight: 7.0km upstream of Natura 2000 wetland sites(Malahide Estuary SPA/SAC)	Moderate: 2.9km upstream of Natura 2000 wetland sites Rogerstown Estuary SPA/SAC)
3.1.2	Potential to impact on Fingal Ecological Network Sites	Moderate: Site located 125m from Rath Little Stream ecological corridor	Moderate: Site located 180m from Ballyboghil Stream ecological corridor, but access road crosses it.	Significant: Site abuts Mayne River ecological corridor	Slight: Site located 800m from Ballyboghil Stream ecological corridor.	Significant: Site abuts Rath Little ecological corridor; Access road crosses Ballough Stream ecological corridor.
3.1.3	Potential to impact protected species based on length of field boundary defined by hedgerow, which incorporates mature trees, within site, e.g. Badgers, Bats, Yellowhammer, Tree sparrow, Stock dove	Significant: 2.4km of hedges within the site	Slight: 0.1km of hedges within the site	Moderate: 1.4km of hedges within the site	Slight: 0.9km of hedges within the site	Significant: 3.4km of hedges within the site
3.1.4	Potential to result in loss of habitats of high ecological value e.g. Annex I habitats (designated or not), ecological stepping stones or linking corridors	Slight: Site comprised of agriculturally improved, cultivated or arable land.	Slight: Site comprised of agriculturally improved, cultivated or arable land.	Moderate: Site comprised of agriculturally improved, cultivated or arable land.	Slight: Site comprised of agriculturally improved, cultivated or arable land.	Moderate: Site comprised of agriculturally improved, cultivated or arable land.
3.1.5	Potential to impact on a salmonid system	Moderate - The access road abuts the a tributary of the Ballyboghil River (main channel and tributaries) constitutes a salmonid system.	Moderate - The Ballyboghil River (main channel and tributaries) constitutes a salmonid system and the access road crosses it. However, the Donabale River constitutes a non-salmonid system.	Slight - The Mayne River constitutes a non-salmonid system	Slight - The Donabate River constitutes a non-salmonid system.	Moderate - The Ballough River (main channel and tributaries) constitutes a salmonid system and the access road crosses it.
3.1.9	Potential to result in significant loss of winter habitat for Lapwing and Golden Plover and other wader species outside of designated areas (Le. relatively large, flat open fields of ploughed or fallow arable land or pasture)	Moderate - site includes wet pasture suitable for Lapwing, Golden Plover or other winter waders	Moderate - site includes large arable fields suitable for Lapwing, Golden Plover or other winter waders	Moderate - site includes large pasture fields suitable for Lapwing, Golden Plover or other winter waders	Moderate - site includes large arable fields suitable for Lapwing, Golden Plover or other winter waders	Slight - smallish fields, unlikely to be used regularly by Lapwing and Golden Plover
3.2	Ecology - Pipelines					



3.3	Ecology - Marine Outfall					
3.3.1	Potential to impact on Natura 2000 Sites within survey area footprint	Moderate (main area avoids marine designations)	Moderate (main area avoids marine designations)	Significant (passes through Baldoyle SAC)	Moderate (main area avoids marine designations)	Moderate (main area avoids marine designations)
3.3.2	Potential to impact on Fingal Ecological Network Sites	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Significant Transfer pipeline must pass through Baldoyle Coast Ecological Buffer Zone and Portmarnock Golf Course Nature Development Area. These sites are protected in the County Plan and serve to further protect the Baldoyle Bay SPA/SAC/pNHA.	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)	Moderate Transfer pipeline can potentially pass through St. Catherine's Wood and/or Drumanagh Nature Development Areas, and must cross through Annex I habitats at the coastline (Rocky Sea Cliffs)
3.3.3	Potential to impact on other potential annex 1 habitats (under the Habitats Directive) within the survey area footprint	Moderate (possible, dune habitats and biogenic reefs in north area)	Moderate (possible, dune habitats and biogenic reefs in north area)	Significant (saltmarsh and zostera beds in Baldoyle Estuary)	Moderate (possible, dune habitats and biogenic reefs in north area)	Moderate (possible, dune habitats and biogenic reefs in north area)
3.3.5	Potential to impact on intertidal habitats	Slight (isolated sensitive sites in some areas of coast)	Slight (isolated sensitive sites in some areas of coast)	Moderate (sensitive habitats in Estuary and on Velvet Strand)	Slight (isolated sensitive sites in some areas of coast)	Slight (isolated sensitive sites in some areas of coast)
4.0	Hydrology -	Annabrook	Baldurban	Clonsagh	Cookstown	Newtowncorduff
4.1	Hydrology - Sites					
4.1.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	<i>Slight:</i> The Ballough River (water quality Q3/Q4) and Ballyboghil tributary (water quality Q3) are within 170m and 60m of the site respectively, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> Ballyboghil River (200m north), Ballyboghil tributary (40m west) (water quality Q3) and Belinstown tributary (60m south) of the site (all Q3), Medium importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> Medium: Cuckoo River (north) within 50m and Mayne River and Mayne Tributary (south) (water quality Q3) within 370m of the site, Medium importance. Will have permanent impact on small proportion of attribute.	<i>Moderate:</i> Belinstown River (10m north) and Broadmeadow tributary (1km south) (water quality Q3) of the site, High importance. Will have permanent impact on small proportion of attribute.	<i>Moderate:</i> Ballough tributary (180m east) and Ballough River (10m west) of the site (water quality Q3), High importance. Will have permanent impact on small proportion of attribute.
4.1.2	Culverting requirement - used to indicate impact on flood-prone watercourses due to reduced conveyance.	<i>None:</i> No new culvert required.	<i>Moderate:</i> Crossing Ballyboghil River, High importance. Will have permanent impact on small proportion of attribute.	<i>None:</i> No new culvert required.	<i>Imperceptible:</i> Culvert might be required for a local minor tributary, Low importance. Will have permanent impact on small proportion of attribute.	<i>Slight:</i> Crossing Ballough Tributary, Medium importance. Will have permanent impact on small proportion of attribute.
4.2	Hydrology - Pipelines					
4.3	Hydrology - Marine Outfall					



5.0	Hydrogeology -	Annsbrook	Baldurigan	Clonshagh	Cookstown	Newtowncorduff
5.1	Hydrogeology - Sites					
5.2	Hydrogeology - Pipelines					
5.3	Hydrogeology - Marine Outfall					
6.0	Soils and Geology	Annsbrook	Baldurigan	Clonshagh	Cookstown	Newtowncorduff
6.1	Soils and Geology - Sites					
6.2	Soils and Geology - Pipelines					
6.3	Soils and Geology - Marine Outfall					
7.0	Agronomy & Agriculture - Sites	Annsbrook	Baldurigan	Clonshagh	Cookstown	Newtowncorduff
7.2	Farming Enterprise	Beef & Horticulture (The majority of the site is used for a beef enterprise)	Tillage, Potatoes & Horticulture	Horticulture & Tillage	Tillage, Horticulture, & Potatoes	Mixed livestock & tillage
7.3	Number of landowners impacted within site boundary	1 to 3	1 to 3	4 to 6	1 to 3	1 to 3
7.5	Severance based on site location within overall land holdings	Minor	Minor	Minor	Moderate	Minor
8.0	Noise	Annsbrook	Baldurigan	Clonshagh	Cookstown	Newtowncorduff
9.0	Air and Odour	Annsbrook	Baldurigan	Clonshagh	Cookstown	Newtowncorduff
10.0	People and Communities	Annsbrook	Baldurigan	Clonshagh	Cookstown	Newtowncorduff
10.1	Number of residential & commercial buildings 300-500m from site boundary	44	21	83	53	33
10.4	Potential to impact on areas of Significant Population Densities	Lusk is c. 3.1km to the east and Ballyboughal (school) is 2.2km to the SW.	Ballyboughal (houses at Dooroge) is c. 0.7km to the NW.	Belcamp and Darndale are c. 0.8km to the south. Dublin Airport entrance and Terminal 1 are c. 2.1km and 2.4km to NW respectively.	Ballyboughal (houses at Dooroge) is c. 1.1km to the NW.	Lusk is c. 1.3km to the east.



11.0	Traffic	Annbrook	Baldurgen	Clonshagh	Cookstown	Newtowncorduff
11.1	Length of access road required	1230m access road required	580m access road required	320m access road required	930m access road required	640 access road required
11.2	Number of crossings required for access road	None	2 river/stream crossings	None	1 ditch/stream crossings	1 stream/river crossings
11.3	Potential impact on landowners	Access road impacts on 6 fields	Access road impacts on 3 fields splitting one	Access road impacts on 2 fields however can follow existing track	Access road impacts on 5 fields	Access Road impacts on 2 fields
11.4	Works required to provide safe access entrance	Some local widening likely. Boundary treatments required for visibility so some additional landtake probable	Some local widening likely. Visibility ok.	Visibility ok. Can make use of existing field access. Some local road widening probable	Road would likely require widening. To achieve visibility would require significant landtake.	None, Wide road, good visibility
11.5	Potential impact on surrounding local road network	Can access R132 after approx. 2km of travel on R129.	Can access R132 after approx. 2km of travel on R129.	Access onto local road however not far from N32	Access onto R108. Road not particularly suitable for HGVs. Travel distance to better road moderate	Easy access to wide road (R132)
11.6	Frequency of accidents near entrance	1 accident (minor) near proposed entrance	None	None	None	4 accidents (3 minor 1 serious) near proposed entrance
11.7	Frequency of accidents on surrounding network (indication of general road safety issues)	few accidents on surrounding roads	few accidents on surrounding roads	High accident rate on N32 & R107 (including deaths)	few accidents on surrounding roads	Several accidents on R132
11.8	Road link impacted upon by all construction traffic (excluding major routes i.e. R132/N32)	2km (R129)	4km (R129)	450m (Clonshagh Rd)	Two options but both long (R108 & R129 7.8km, R108 & R125 6.9km)	None
12.0	Planning Policy	Annbrook	Baldurgen	Clonshagh	Cookstown	Newtowncorduff
12.2	Site Zoning	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech)	RU (Rural)	RU (Rural)
12.7	Zoning present within 300m of site boundary	RU (Rural)	RU (Rural)	GB (Greenbelt) HT (High Tech) OS (Open Space) RA (New Residential)	RU (Rural)	RU (Rural) RC (Rural Cluster)
13.0	Engineering Design - Pipelines	Annbrook	Baldurgen	Clonshagh	Cookstown	Newtowncorduff
13.1	Pipeline Length					
13.1.6	Total Pipeline Lengths					
	Total Pipeline Length	47,850 m	47,850 m	30,600 m	47,900 m	47,850 m
13.2	Power Requirements					
	Total Power Requirements	10,000 kW	9,700 kW	7,850 kW	9,600 kW	9,300 kW



13.3	Carbon Emissions					
	Total Carbon (tonnes CO2)	504,008	488,427	385,931	482,905	482,523
13.5	Access / Right of Way / Wayleaves along Pipeline Corridors					
13.6	Crossings - Waterways, Rail, etc. along Pipeline Corridors					
13.7	Potential to Impact on Physical Infrastructure along Pipeline Corridors					
13.9	Presence of Public Utilities within WwTP sites					
	Public Utilities within the Site	No known public utilities	2 number: ESB (MV) Overhead (10-20kv)	1 number: ESB (MV) Overhead (38kv)	No known public utilities	1 number: ESB (MV) Overhead (38kv)
13.10	Land Ownership and Titles along Pipeline Corridors					
13.11	Route Traffic Management					
13.12	Construction Risk along Pipeline Corridors					
13.13	Operation and Maintenance - WwTP, Pumping Stations & Pipeline ancillaries					

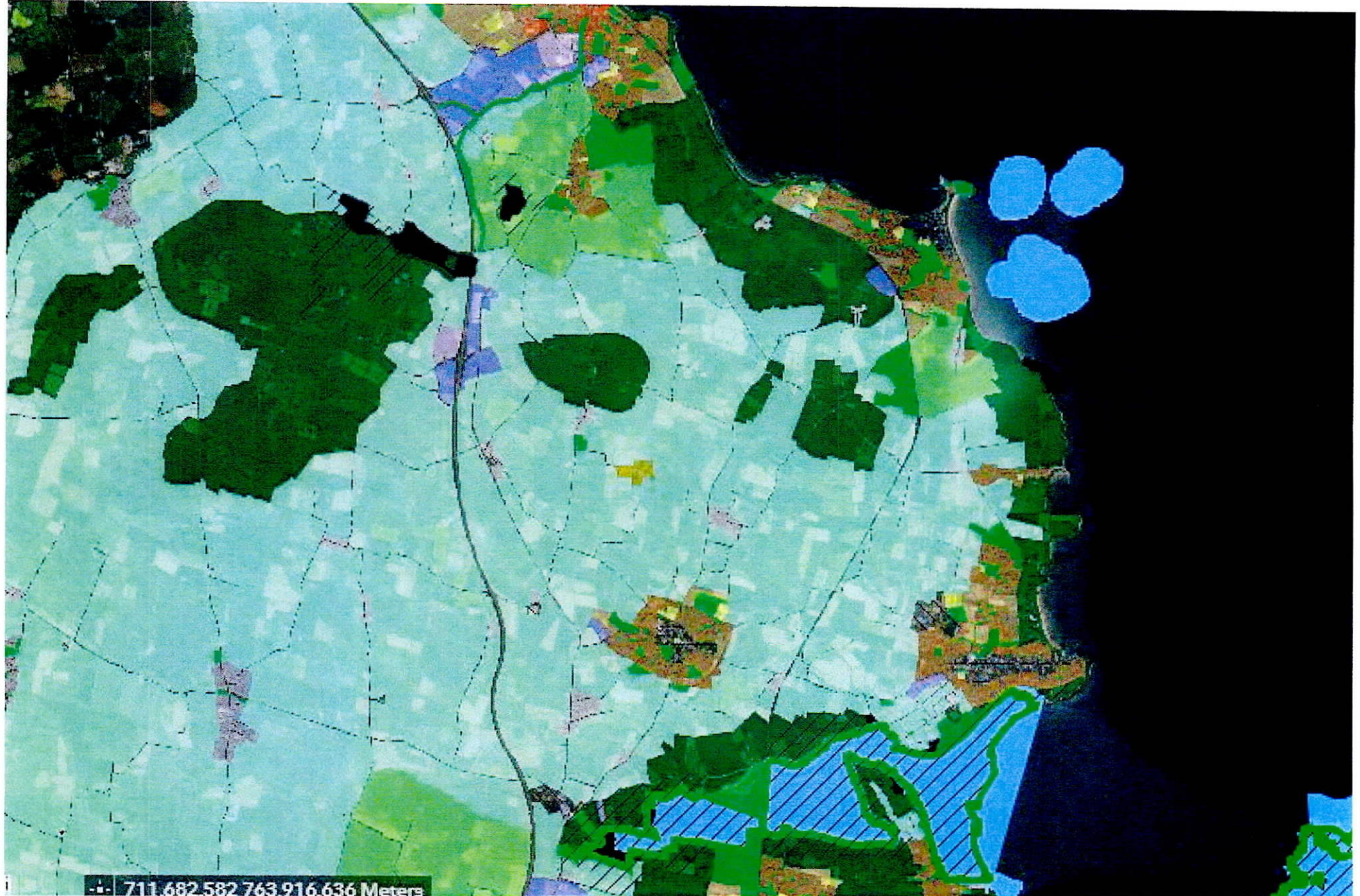


Southern Outfall Pipe

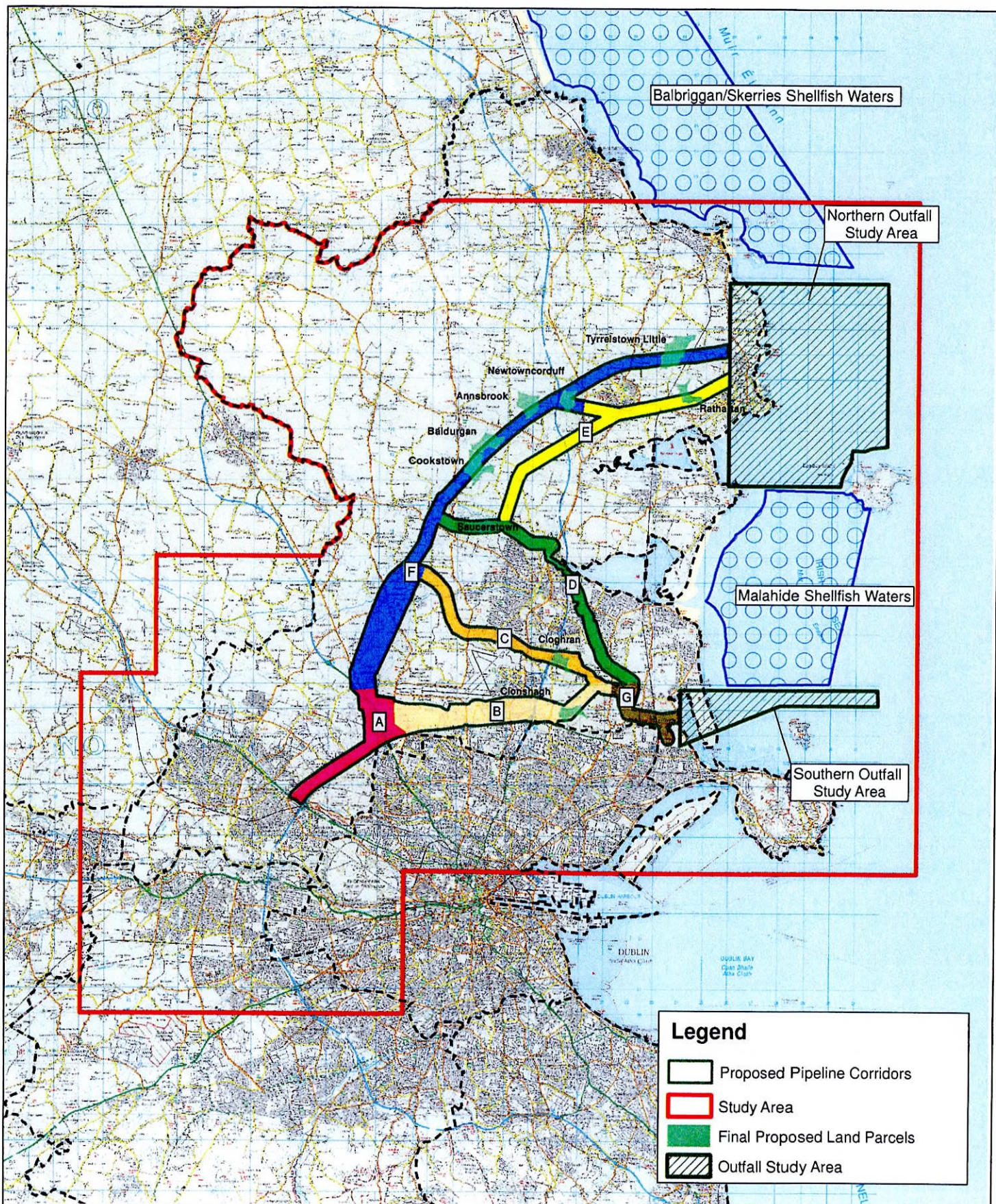




Northern Outfall Pipe



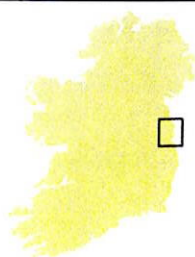




**Greater Dublin Drainage**

Drawing Title

ALTERNATIVE SITES ASSESSMENT  
AND ROUTE SELECTION REPORT (Phase 2)  
LAND PARCELS, PIPELINE CORRIDORS,  
MARINE OUTFALL AREAS FOR ASSESSMENT



A	10/05/12	ISSUED	GP	DM	JB	CDK
Rev.	Date	Purpose of revision	Drawn	Checked	Rev'd	App'd
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**JACOBS**

**TOBIN**

Drawing Status	ISSUED	
Scale @ A3	1:140,000	DO NOT SCALE
Job No.	32102900	
Drawing No.	FIGURE 2	

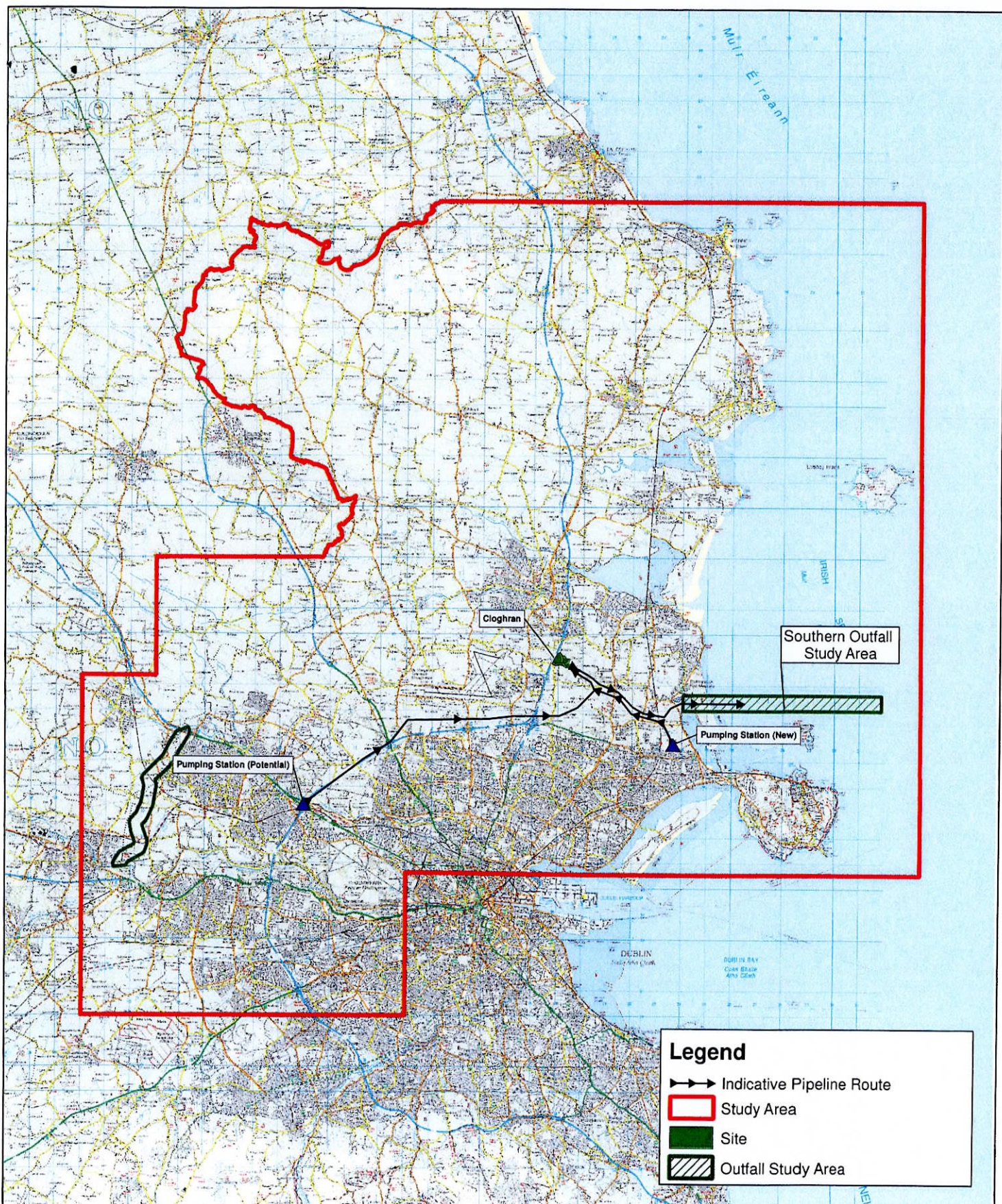












**Greater Dublin Drainage**

Drawing Title

ALTERNATIVE SITES ASSESSMENT  
AND ROUTE SELECTION REPORT (Phase 2)

SITE OPTIONS SCHEMATIC - 4



A		10/05/12	ISSUED TO CLIENT	OF	CM	JB	CDK
Rev.	Date	Purpose of revision		Drawn	Check'd	Rev'd	App'd
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North Arrow

Scale 0 1 2 3 4 5 Kilometres

**JACOBS** **TOBIN**

Drawing Status: **ISSUED**

Scale @ A3: 1:140,000 DO NOT SCALE

Job No: 32102900

Drawing No: FIGURE 7d



