

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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
1.0	Cultural Heritage	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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/NI/AH (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 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, 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)
1.1.5	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 (Newlawn)	Direct: None Indirect: Three slight negative (Spring Hill, Lower Middletown, Upper Middletown)	Direct: None Indirect: One slight negative (Skiddo 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/NI/AH	27 RPS and 12 NI/AH sites located within corridor	27 RPS and 12 NI/AH sites located within corridor	15 RPS and 6 NI/AH sites located within corridor	27 RPS and 12 NI/AH sites located within corridor	16 RPS and 7 NI/AH sites located within corridor	27 RPS and 12 NI/AH sites located within corridor	35 RPS and 19 NI/AH sites located within corridor	35 RPS and 19 NI/AH sites located within corridor	27 RPS and 12 NI/AH 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/NI/AH	29 RPS/NI/AH sites located within corridor	29 RPS/NI/AH sites located within corridor	No RPS/NI/AH sites located within corridor	29 RPS/NI/AH sites located within corridor	No RPS/NI/AH sites located within corridor	29 RPS/NI/AH sites located within corridor	29 RPS/NI/AH sites located within corridor	29 RPS/NI/AH sites located within corridor	29 RPS/NI/AH 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	Annsbrook	Baldrgan	Cionshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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 within the HSL	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
2.1.6	Potential to impact on views from settlements	Imperceptible - Crossroads settlement (Ballyboghill) 2.5km W has no view of site	Moderate - Crossroads settlement (Ballyboghill) 1.5km NW and associated dwellings stretch southwards along R108 closer to the site (1km)	Slight - Densely populated Nth Dublin suburb of Darndale <1km S, other estates 1km N and E - No clear views afforded toward the site from any of these	Moderate - Crossroads settlement (Ballyboghill) 1.7km NW and associated dwellings stretch southwards along R108 closer to the site (1km)	Moderate - small estate settlement of Ballymacartie 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 0.6km 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 Glebe 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 Kingtown 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 6km E	Imperceptible - rail line 3.5km E	Imperceptible - rail line 6km 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 0.6km 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 2km 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 - R108 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 house 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

2.2	Landscape & Visual - Pipelines									
2.2.10	Potential to disrupt landscape structure (treelines / hedgerows / field pattern etc.)	<p>A - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>D - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>F - Significant - this corridor section passes almost entirely through fields and hedgerows</p> <p>G - Slight - Moderate - landscape is relatively unstructured and open along this pipeline corridor section but with some hedgerow field patterns</p>	<p>A - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>D - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>F - Significant - this corridor section passes almost entirely through fields and hedgerows</p> <p>G - Slight - Moderate - landscape is relatively unstructured and open along this pipeline corridor section but with some hedgerow field patterns</p>	<p>A - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>B - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>G - Slight - Moderate - landscape is relatively unstructured and open along this pipeline corridor section but with some hedgerow field patterns</p>	<p>A - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>D - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>F - Significant - this corridor section passes almost entirely through fields and hedgerows</p> <p>G - Slight - Moderate - landscape is relatively unstructured and open along this pipeline corridor section but with some hedgerow field patterns</p>	<p>A - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>B - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>G - Slight - Moderate - landscape is relatively unstructured and open along this pipeline corridor section but with some hedgerow field patterns</p>	<p>A - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>D - Moderate - landscape is relatively unstructured and irregular along this pipeline corridor section but with some hedgerow field patterns</p> <p>F - Significant - this corridor section passes almost entirely through fields and hedgerows</p> <p>G - Slight - Moderate - 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2.2.13	Potential to impact on historic designed landscapes	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>D - Significant - passes across corner of Abbeyville estate at eastern end of corridor</p> <p>F - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>D - Significant - passes across corner of Abbeyville estate at eastern end of corridor</p> <p>F - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>B - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>D - Significant - passes across corner of Abbeyville estate at eastern end of corridor</p> <p>F - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>B - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>D - Significant - passes across corner of Abbeyville estate at eastern end of corridor</p> <p>E - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>F - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>D - Significant - passes across corner of Abbeyville estate at eastern end of corridor</p> <p>E - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>F - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>D - Significant - passes across corner of Abbeyville estate at eastern end of corridor</p> <p>F - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>	<p>A - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>D - Significant - passes across corner of Abbeyville estate at eastern end of corridor</p> <p>F - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p> <p>G - Imperceptible - There does not appear to be any demesne landscapes in the vicinity of this pipeline corridor section</p>
2.3	Landscape & Visual - Marine Outfalls									
3.0	Ecology	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
3.1	Ecology - Sites									
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 Ballyough Stream ecological corridor.	Imperceptible: Site located more than 3km from Ballyough Stream ecological corridor.	Moderate: Site located 250m from the Broadmeadow River ecological corridor	Imperceptible: Site located more than 3km from Ballyough Stream ecological corridor
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 Ballyough 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 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	Imperceptible - Outside the normal geographical range of the north Co Dublin winter Greylag Goose flock	Significant - Within 'Skeries Grasslands' IWeBS area, likely to be a feeding site for the north Co Dublin winter Greylag Goose flock

3.2	Ecology - Pipelines									
3.2.1	potential to impact on Natura 2000 Sites and Natural Heritage Areas	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldoye Bay SPA/SAC/pNHA</p> <p>F - Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA; Balcunnin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldoye Bay SAC/SPA/pNHA and Ramsar site</p>	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldoye Bay SPA/SAC/pNHA</p> <p>F - Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA; Balcunnin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldoye Bay SAC/SPA/pNHA and Ramsar site</p>	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>B - 8.0km North Dublin BAY SAC and North Bull Island SPA; 4.5km Baldoye Bay SAC/SPA/pNHA</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>G - Also interfaces with Baldoye Bay SAC/SPA/pNHA and Ramsar site</p>	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldoye Bay SPA/SAC/pNHA</p> <p>F - Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA; Balcunnin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldoye Bay SAC/SPA/pNHA and Ramsar site</p>	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldoye Bay SPA/SAC/pNHA</p> <p>F - Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA; Balcunnin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldoye Bay SAC/SPA/pNHA and Ramsar site</p>	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldoye Bay SPA/SAC/pNHA</p> <p>E - 5.0km Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA</p> <p>F - Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA; Balcunnin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p> <p>E - Also crosses Rush Stream which flows out to WFD coastal waters</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p>	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldoye Bay SPA/SAC/pNHA</p> <p>E - 5.0km Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA</p> <p>F - Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA; Balcunnin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p> <p>E - Also crosses Rush Stream which flows out to WFD coastal waters</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p>	<p>Crosses river upstream of following (c)SAC/SPA/pNHA</p> <p>A - 13km South Dublin Bay and River Tolka Estuary SPA/pNHA; North Dublin Bay SAC/SPA</p> <p>D - 0.5km Malahide estuary SPA/SAC; 2.0km Baldoye Bay SPA/SAC/pNHA</p> <p>F - Malahide Estuary SPA/SAC/pNHA; Rogerstown Estuary SPA/SAC/pNHA; Balcunnin Stream flows out to WFD coastal waters</p> <p>G - 0.5km Baldoye Bay SAC/SPA/pNHA</p> <p>F - Also crosses Balcunnin Stream which flows out to WFD coastal waters</p> <p>G - Also interfaces with Baldoye Bay SAC/SPA/pNHA 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 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 5 nature development areas</p> <p>Crosses 1 No. nature development area</p> <p>potentially impinges on 1 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 6 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>	
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 8 No. salmonid systems.	Crosses 9 No. salmonid systems.	Crosses 9 No. salmonid systems.	Crosses 8 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 IWeBS identified areas of importance to birds adjacent to Malahide Estuary	Portion of route located within Malahide Estuary IWeBS area Portion of route located within 'Skerries Grasslands' IWeBS area	Portion of route located within Malahide Estuary IWeBS area Portion of route located within 'Skerries Grasslands' IWeBS area	No IWeBS areas located on pipeline route	Portion of route located within Malahide Estuary IWeBS area Portion of route located within 'Skerries Grasslands' IWeBS area	No IWeBS areas located on pipeline route	Portion of route located within Malahide Estuary IWeBS area Portion of route located within 'Skerries Grasslands' IWeBS area	Portion of route located within Malahide Estuary IWeBS area Portion of 2 No. routes located within 'Skerries Grasslands' IWeBS area	Portion of route located within Malahide Estuary IWeBS area Portion of 2 No. routes located within 'Skerries Grasslands' IWeBS area	Portion of route located within Malahide Estuary IWeBS area Portion of route located within 'Skerries Grasslands' IWeBS area
3.3	Ecology - Marine Outfall									
4.0	Hydrology -	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	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 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 Ballyough 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 -	Annsbrook	Baldurigan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown 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; Horiakes Well, St. Catharina's Well, Bridee Well and St. Macculins 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.
5.2	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	7 No. bored wells with moderate to excellent yields Possible additional groundwater abstraction points and wells nearby	No groundwater supplies within 500m	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	Annsbrook	Baldurigan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown 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 the site boundary. Presence of a river along the northern boundary indicates alluvium (including soft silts) may be present. 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 the site boundary. Presence of a river near the south east and south west corners indicate alluvium (including soft silts) may be present. 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 - 5% 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 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 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	Agronomy & Agriculture - Sites	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
9.9	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	Annsbrook	Baldurigan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
10.1	Number of residential & commercial buildings 300-500m from site boundary	44	21	83	53	116	33	131	66	50
10.3	Potential to impact on known community amenities and facilities within 1km from site boundary.	Ballyboghill Hedgerow Round (Sli na Soeacha) - c. 480m to the SW.	Ballyboghill Hedgerow Round (Sli na Soeacha) - c. 280m to the east.	Football grounds c. 700m to the NW, Darrdale and Belcamp Parks c. 800m to the SW and SE respectively and Inntaif GAA club c. 500m to the south.	Swords Roganstown golf club c. 990m to the south and Ballyboghill Hedgerow Round c. 980m to the NE.	Playground c. 800m to the north (Newinstown 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 Roganstown golf course c. 290m to the NW, Broadmeadow linear park c. 320m to east and demesne parkland c. 620m to the SW.	None
11.0	Traffic	Annsbrook	Baldurigan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	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 however can follow existing track	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 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	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.
11.5	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	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 (R129)	450m (Clonshagh Rd)	Two options but both long (R108 & R129 7.8km, R108 & R125 6.9km)	Stockhole Lane / Clonshagh Rd could be used from either direction	None	5.2kms (R127)	3.25km (R125)	6.8km (R127 & R128)
12.0	Planning Policy	Annsbrook	Baldurigan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	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	Annsbrook	Baldurigan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
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	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	379,596	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	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)	1v
13.10	Land Ownership and Titles along Pipeline Corridors									
		Most Ownerships	Most Ownerships	Least Ownerships	Most Ownerships	Least 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
		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
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

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	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
1.0	Cultural Heritage	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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 (DU005-036)
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)	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	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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
2.2	Landscape & Visual - Pipelines									
2.3	Landscape & Visual - Marine Outfalls									
3.0	Ecology	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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 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	Moderate: 3.0km upstream of Natura 2000 wetland sites (Malahide Estuary SPA/SAC)	Moderate: 2.2km upstream of Natura 2000 wetland sites (Rogerstown 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 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	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 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	Imperceptible - Outside the normal geographical range of the north Co Dublin winter Greylag Goose flock	Significant - Within 'Skerries Grasslands' iWEBS 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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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	<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.	<i>Significant:</i> 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.	<i>Imperceptible:</i> 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.
4.2	Hydrology - Pipelines									
4.3	Hydrology - Marine Outfall									
5.0	Hydrogeology	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
9.0	Air and Odour	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
10.0	People and Communities	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	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 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.	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.	Swords (Mooretown) is c. 1.2km to the SE.	Lusk (school) is c. 1.6km to SW and Rush is c. 1.9km to the SE.
11.0	Traffic	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	Tyrrelstown Little
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	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	4 accidents (all minor) located near entrance	None

12.0	Planning Policy	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	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	Annsbrook	Baldurghan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Saucerstown	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	385,931	482,905	435,140	482,523	508,325	379,596	547,849
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									
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

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

Ref	Environmental Criteria	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
1.0	Cultural Heritage	Annsbrook	Baldurgan	Clonshagh	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 (DU005-038)
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: Two imperceptible negative (DU008-057, 055)
1.1.3	Potential to impact (direct/indirect) on RPS/NIAS (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 283)	Direct: None Indirect: One moderate negative (RPS 245)
1.2	Cultural Heritage -Pipelines								
1.3	Cultural Heritage - Marine Outfalls								
2.0	Landscape & Visual	Annsbrook	Baldurgan	Clonshagh	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/ 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	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 - Baldungan Church on hill 2.5km N with extensive scenic views in the direction of the site	Significant - Baldungan 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	Annsbrook	Baldurigan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	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	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)	Moderate: 2.2km upstream of Natura 2000 wetland sites (Rogerstown Estuary SPA/SAC)
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 Balough 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 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	Significant - Within 'Skerries Grasslands' (WEBS) 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 wader 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 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)	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 Drummanagh 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 Drummanagh 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 Drummanagh 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 Drummanagh 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 Drummanagh 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 Drummanagh 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)	Moderate (possible, dune habitats and biogenic reefs in north area)

4.0	Hydrology -	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	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	<i>Slight:</i> 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.	<i>Slight:</i> 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.	<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.	<i>Imperceptible:</i> 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.	<i>None:</i> No new culvert required.	<i>Moderate:</i> Crossing Ballyboghill 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.	<i>None:</i> No new culvert required.
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 Baldoyle 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 Baldoyle 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.	<i>Slight:</i> 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 -	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
9.0	Air and Odour	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little

10.0	People and Communities	Annsbrook	Baldurgan	Clonshagh	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 Ballyboughal (school) is 2.2km to the SW.	Ballyboughal (houses at Dooroge) 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 Dooroge) is c. 1.1km to the NW.	Swords is c. 1km to the north. A housing estate at Ballymacartie 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.	Lusk (school) is c. 1.6km to SW and Rush is c. 1.9km to the SE.
11.0	Traffic	Annsbrook	Baldurgan	Clonshagh	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	Annsbrook	Baldurgan	Clonshagh	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 - Pipelines	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan	Tyrrelstown Little
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	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
13.5	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								
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	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
1.0	Cultural Heritage	Annsbrook	Baldurgan	Clonshagh	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/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: One slight negative (RPS 605)	Direct: None Indirect: None	Direct: None Indirect: One moderate negative (RPS 246), one imperceptible negative (RPS 283)
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	Baldurgan	Clonshagh	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/ 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	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 - Baldungan 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	Annsbrook	Baldurgan	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 (Baldoyle 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 (Baldoyle 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 Baldoyle SAC)	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 Drummanagh 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 Drummanagh 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 Drummanagh 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 Drummanagh 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 Drummanagh 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 Bardoyle Estuary)	Moderate (possible, dune habitats and biogenic reefs in north area)	Significant (saltmarsh and zostera beds in Bardoyle 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 -	Annsbrook	Baldurgan	Clonshagh	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 Ballyogh 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.	<i>Slight:</i> 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.	<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> Ballyogh tributary (180m east) and Ballyogh 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 Ballyboghill 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 Ballyogh 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, pNHA, 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, pNHA, Ramsar and SNR) and Malahide Bay (SAC, SPA and pNHA) 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 Baldoyle Estuary (SPA, SAC and pNHA) 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, pNHA) approx. 7 and 5km downstream respectively, Low importance. Will have permanent impact on small proportion of attribute.	<i>Imperceptible:</i> The river discharges into Baldoyle Estuary (SAC, SPA and pNHA) 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, pNHA, 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, pNHA, 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 -	Annsbrook	Baldurgan	Clonshagh	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	Annsbrook	Baldurgan	Clonshagh	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
9.0	Air and Odour	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
10.0	People and Communities	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
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 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.	Swords is c. 1km to the north. A housing estate at Ballymacarlie 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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Cloghran	Newtowncorduff	Rathartan
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 (Clonshagh Rd)	Two options but both long (R108 & R129 7.8km, R108 & R125 6.9km)	Stockhole Lane / Clonshagh Rd could be used from either direction	None	5.2kms (R127)

12.0	Planning Policy	Annsbrook	Baldurgan	Clonshagh	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	Annsbrook	Baldurgan	Clonshagh	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	Baldurgan	Clonshagh	Cookstown	Newtowncorduff
1.0	Cultural Heritage	Annsbrook	Baldurgan	Clonshagh	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	Annsbrook	Baldurgan	Clonshagh	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	Baldurgan	Clonshagh	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 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 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 (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
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 -	Annsbrook	Baldurgan	Clonshagh	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	Slight: The Ballyogh 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 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: Ballyogh tributary (180m east) and Ballyogh 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.	None: No new culvert required.	Moderate: Crossing Ballyoghill 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.	Slight: Crossing Ballyogh 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	Baldurgan	Clonshagh	Cookstown	Newtowncorduff
5.1	Hydrogeology - Sites					
5.2	Hydrogeology - Pipelines					
5.3	Hydrogeology - Marine Outfall					
6.0	Soils and Geology	Annsbrook	Baldurgan	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	Baldurgan	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	Baldurgan	Clonshagh	Cookstown	Newtowncorduff
9.0	Air and Odour	Annsbrook	Baldurgan	Clonshagh	Cookstown	Newtowncorduff
10.0	People and Communities	Annsbrook	Baldurgan	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	Annsbrook	Baldurgan	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	Annsbrook	Baldurgan	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	Annsbrook	Baldurgan	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	Annsbrook	Baldurgan	Clonshagh	Cookstown	Newtowncorduff
	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					