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EirGrid

Ward 400 kV Substation Step 4 Report

EirGrid PLC

April 2026

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Fingal to East Meath Grid Reinforcement

Notice

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Abbreviation	Description
AC	Alternating current
AIS	Air Insulated Switchgear
BNG	Biodiversity Net Gain
BOCCI	Birds of Conservation Concern in Ireland
BPO	Best Performing Option
CENELEC	European Committee for Electrotechnical Standardisation
DAA	Dublin Airport Authority
DSO	Distribution System Operator
EMF	Electromagnetic field
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
ESBN	Electricity Supply Board Networks
EU	European Union
FCC	Fingal County Council
FCCDP	Fingal County Council Development Plan
FRA	Flood Risk Assessment
GIS	Gas Insulated Switchgear
GPR	Ground Penetrating Radar
GSI	Geological Survey Ireland
HV	High Voltage
I-WeB	Irish Wetland Bird Survey
kV	Kilovolt
LCIM	Line cable interface mast
m	Metres
MCA	Multi-Criteria Analysis
MV	Medium Voltage
MW	Megawatts
NBDC	National Biodiversity Data Centre
NHA	National Heritage Area
NIAH	National Inventory of Architectural Heritage
NID	Nature Inclusive Design
NPF	National Planning Framework
OHL	Overhead Line
OPEX	Operating expenditure

Abbreviation	Description
OPW	Office of Public Works
pNHA	proposed National Heritage Areas
QI	Qualifying Interests
RPS	Record of Protected Structures
SAC	Special Area of Conservation
SMR	Sites and Monuments Record
SPA	Special Protection Area
SSFRA	Site-Specific Flood Risk Assessment
SuDS	Sustainable Drainage System
TSO	Transmission System Operator
UGC	Underground Cable
WFD	Water Framework Directive
ZoI	Zone of Influence

Glossary of Terms	
Bay	A connection point to a busbar and comprising switchgear and measurement equipment.
Circuit	A line or cable, including associated switchgear, which carries electrical power.
Corridor	A designated study area (often 1 km wide) within which a proposed overhead line or underground cable route is evaluated
Demand	The amount of electrical power that is consumed by a customer and is measured in Megawatts (MW). In a general sense, the amount of power that must be transported from transmission network connected generation stations to meet all customers' electricity requirements.
Distribution System Operator (DSO)	In the electrical power business, a distribution system operator is the licensed entity responsible for: ▪ Operating and ensuring the maintenance and development of the distribution system in a given area (and its interconnections), if necessary and where applicable; and ▪ Ensuring the long-term ability of the system to meet reasonable demands for electrical power.
EirGrid	The independent statutory electricity Transmission System Operator in Ireland.
Flood Zone A	High probability of flooding - Where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding).
Grid	A network of high voltage lines and cables (400 kV, 275 kV, 220 kV and 110 kV) used to transmit bulk electricity supplies around Ireland. The terms grid, electricity transmission network, and transmission system are used interchangeably.

Glossary of Terms	
Outage	Times when transmission infrastructure (i.e., lines, cables and transformers, etc.) will be out of service for maintenance or capital works.
Loop-In Circuits	Loop-In Circuits are circuits used to connect a new substation by connecting or looping into an existing circuit.
Study Area	A geographic boundary defined such that it is appropriate to the scale of the proposed development, thereby facilitating the subsequent identification of the nature and extent of constraints within the proposed Study Area
Substation Zone	A substation zone is a subset of a sub-study area and is developed to identify suitable areas for locating potential substation sites.
Switchgear	A combination of electrical equipment such as disconnects and/or circuit breakers used to isolate equipment in or near an electrical substation.
Transformer	An item of electrical equipment that allows electrical power to flow between typically two different voltage levels in an alternating current (AC) power system.
Transmission circuit	An overhead line, underground cable, or combination of both, used for the bulk movement of electrical energy from one node to another node within the electrical grid.
Transmission interface substation	A Transmission Interface Substation is a specific substation that serves as the critical point of connection between a Transmission System Operator (TSO) and a Distribution System Operator (DSO). This substation plays a vital role in managing the transfer of electrical power from the high-voltage transmission grid (operated by EirGrid as its role as the TSO) to the lower-voltage distribution network (operated by ESB as its role as the DSO). A Transmission Interface Substation is responsible for stepping down the voltage from transmission levels to distribution levels.
Transmission System Operator (TSO)	In the electrical power business, a transmission system operator is the licensed entity responsible for the management of the flow of power on the electricity grid, moving high-voltage electricity around the country, from where it is produced to where it is used, supplying large energy users and the distribution network that powers homes and businesses.

1. Introduction

1.1 Who is EirGrid?

EirGrid PLC (hereafter referred to as EirGrid) is responsible for a safe, secure, and reliable supply of electricity in Ireland. EirGrid develops, manages, and operates the electricity transmission grid. This brings power from where it is generated to where it is needed throughout Ireland. EirGrid uses the grid to supply power to industry and businesses that use large amounts of electricity. The grid also powers the distribution network. This supplies the electricity used every day in homes, businesses, schools, hospitals, and farms.

1.2 What is Capital Project CP1214?

The Fingal to East Meath Grid Reinforcement Project (known as 'the Fingal East Meath project' or simply 'FEM') is the Capital Project identified under the Infrastructure Agreement to address the needs for additional capacity at transmission interface substations in the North Dublin and East Meath area. This project addresses the need for new infrastructure to accommodate the continued growth in electricity demand in the region, which is being driven by several sectors including residential housing, commercial and industrial development, the electrification of heat and transportation, and integration of renewable energy connections.

The existing transmission interface substations and the associated transmission circuits are at risk of reaching their capacity limits and as a result the existing infrastructure will not be capable of supplying sufficient power to where it is needed. To address this need, new infrastructure is required to ensure a reliable, sustainable electricity supply to customers in the area.

A high-level project location is identified in Figure 1-1.

The development of this project follows EirGrid's 6-Step approach to Grid Development (refer to Figure 1-2) which sets out the steps to be taken to identify and implement the best performing solution that meets the needs outlined above.

The Fingal to East Meath Grid Reinforcement Project is currently in Step 4, with the objective of identifying where exactly the required infrastructure must be built.

This grid reinforcement will create opportunities by providing capacity to supply electricity to areas where it is needed in the future which will enable businesses, schools, hospitals, homes, and farms to prosper and grow, and will also create opportunities for facilitating renewable generation.

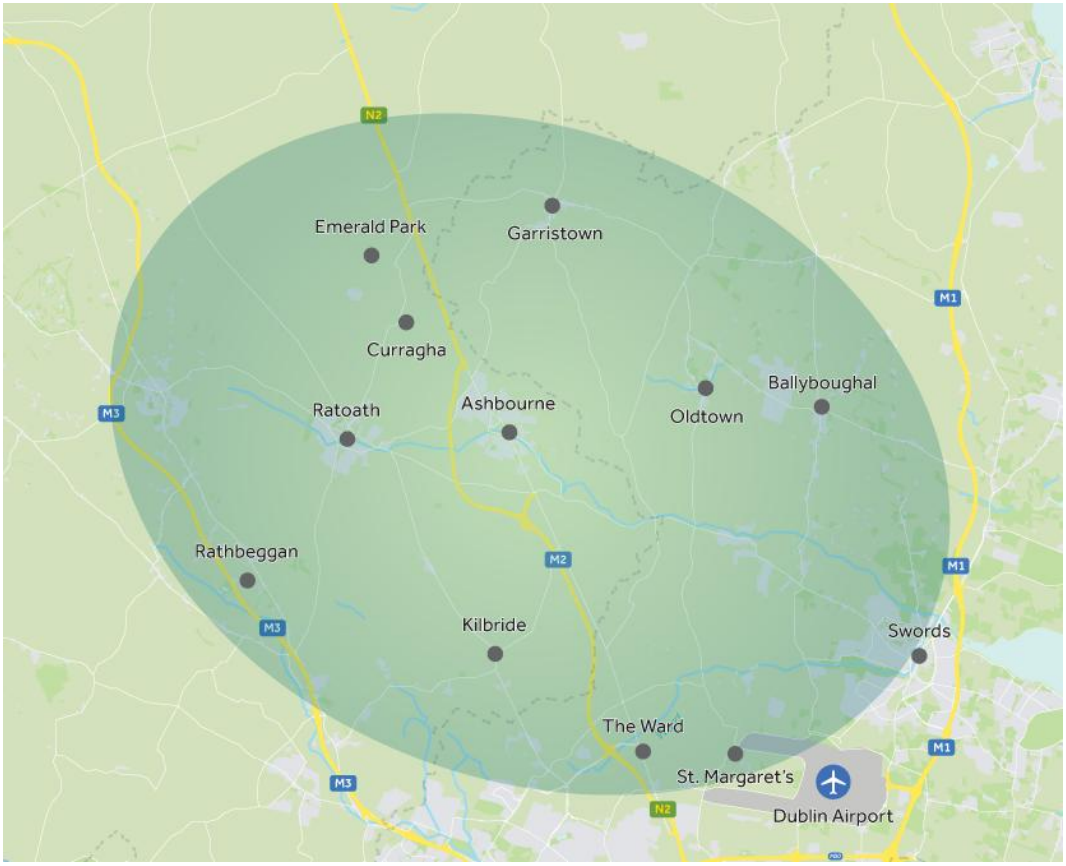

Figure 1-1 - Initial CP1214 Project Location Indicated in June 2024 Public Information Leaflet

Figure 1-2 - EirGrid's 6-Step approach to Grid Development

1.3 Ward 400 kV Substation

The Ward 400 kV Substation, which is the name that has been given to the proposed substation on the eastern section of the FEM Capital Project, is an individual and autonomous project within the FEM Capital Project required to address significant additional capacity needs in the North Dublin and East Meath area. It is comprised of a transmission interface substation (also referred to as a 'Bulk Supply Point') which enables higher voltage levels (in this case 400 kV and 220 kV) to step down to 110 kV which in turn is stepped down to 38 kV (and below) at substations on the distribution system. In connecting to the expanded 400 kV network (via the consented CP1021 East Meath-North Dublin 400 kV UGC), the Ward 400 kV Substation will become a critical node[1] on the transmission network; and a point of connection for future transmission and distribution circuits.

This specific elements of the Ward 400 kV Substation project are comprised of:

- A 400/220/110 kV substation and associated and ancillary development.
- A connection (or loop-in) to the permitted East Meath North Dublin 400 kV underground cable linking Woodland Substation to Belcamp Substation (An Coimisiún Pleanála Ref: 319422).

This substation is critical enabling infrastructure to enable residential housing, commercial and industrial development and the electrification of heat and transportation in the North Dublin and East Meath area in the short term and long term (40+ years).

The Ward 400 kV Substation is to become a critical node on the Irish transmission network and will be a point of connection for future circuits. As such, the size of the substation has been selected to allow for future transmission and distribution circuits. This will mean that the substation is future-proofed to ensure that it has the capacity to transmit and distribute increased levels of electricity to meet future demand from population growth in the area, to incorporate new renewable energy sources, and ensure security of the electricity supply. The exact routes of these circuits are yet to be decided, but considering them within the design at this stage will help to reduce cost and minimise the total construction impacts on the local community. Future circuits would be brought forward as a future phase of development as noted in Section 1.4.

1.4 Future Phases of Development

EirGrid is currently undertaking feasibility work on other individual projects forming part of the FEM Capital Project, as follows:

- A new substation in the East Meath area (to be referred to as the 'East Meath 220/110 kV Substation').
- New circuits connecting the East Meath 220 kV/110 kV Substation to the existing 220 kV transmission network.
- A new 220 kV circuit connecting the proposed East Meath 220/110 kV Substation with the Ward 400/220/110 kV Substation (i.e., the latter being the initial project described in Section 1.3).

These projects are at different stages within Step 3 of EirGrid's Grid Development Roadmap (to consider and determine the best performing technology options and define the relevant study areas), and in due course these projects will be the subject of a separate planning application or applications.

[1] A 'critical node' is an electrical substation on the transmission grid where power can be distributed to the distribution system that supplies the electricity used every day in homes, businesses, schools, and hospitals.

Further future circuits will be brought forward as required in line with EirGrid's and ESB's statutory objectives to plan and develop the grid infrastructure needed to support Ireland's economy and will be subject to further consultation and engagement.

2. Project Progression Through Step 4

The objective of Step 4 is to determine where exactly the proposed Ward 400 kV Substation will be built. Figure 2-1 shows the process that was followed to close out Step 3 and then the subsequent process that was followed in Step 4 to determine the Best Performing Option (BPO) for the Ward 400 kV Substation site.

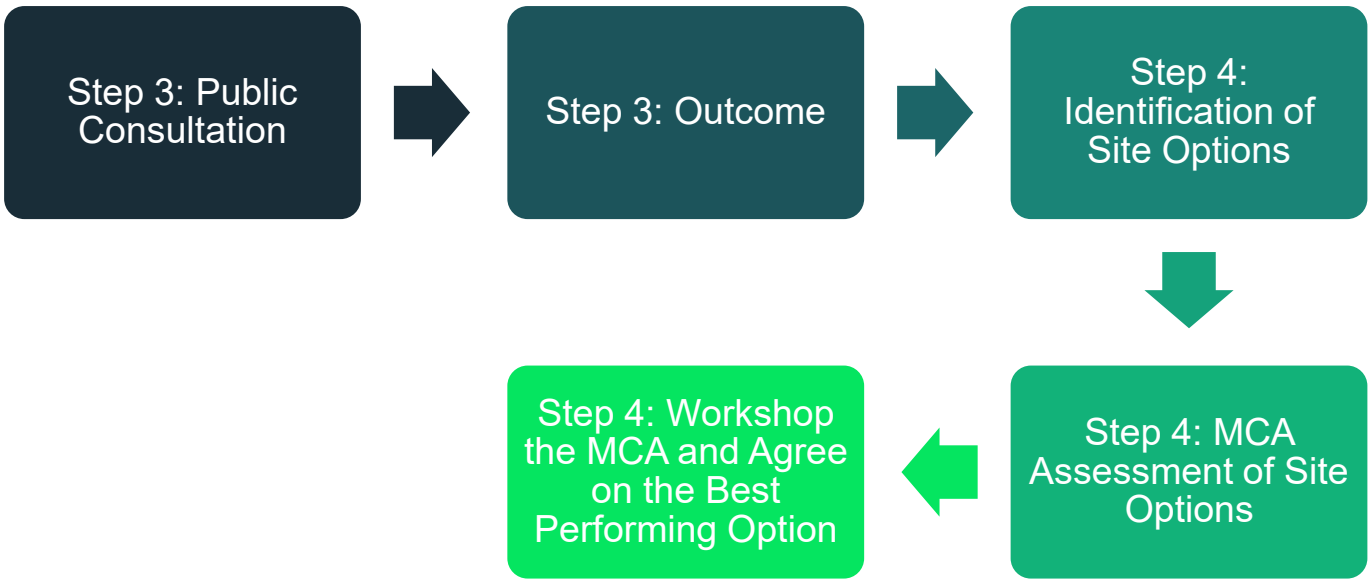

Figure 2-1 - Process Followed in Step 4

1. **Step 3: Consultation:** Once the Step 3 Emerging Best Performing Options had been identified, EirGrid carried out a public consultation campaign during October/November 2024. The public consultation campaign solicited feedback from the public regarding the proposed technology options and associated study areas for the siting of the Ward 400 kV Substation.
2. **Step 3: Outcome:** Upon completion of the public consultation campaign, a consultation report was prepared and the feedback used to determine the Best Performing Option for the substation technology and the associated emerging best performing study areas.
3. **Step 4: Identification of Site Options:** Based on the requirements for the Ward 400 kV Substation, potential sites within the study areas arising from Step 3 were identified and landowner engagement undertaken. A high-level assessment of the identified sites was then undertaken to identify a shortlist of substation sites.
4. **Step 4: MCA Assessment of Site Options:** Using the EirGrid Multi-Criteria Analysis Guidelines and the available constraints information, an assessment of the shortlisted site options was undertaken. The sub-criteria were rated from low to high risk and the overall performance for each option determined.
5. **Step 4: Workshop the MCA and Agree on the Best Performing Option:** The EirGrid Cross-Functional Team and the AtkinsRéalis team conducted an MCA workshop where the options were presented and the MCA rating of each of the options discussed. The MCA workshop concluded with a decision on the Best Performing Option for the location of the Ward 400 kV Substation to proceed with.

2.1 Step 3: Consultation

EirGrid carried out a public consultation campaign from 8th October 2024 to 8th November 2024 which invited feedback on the substation technology options and substation study areas (represented by zones), as shown in Figure 2-2 and documented in the Step 3 Report[2]. Upon completion of the public consultation campaign, a Step 3 Engagement and Consultation Report[3] was prepared.

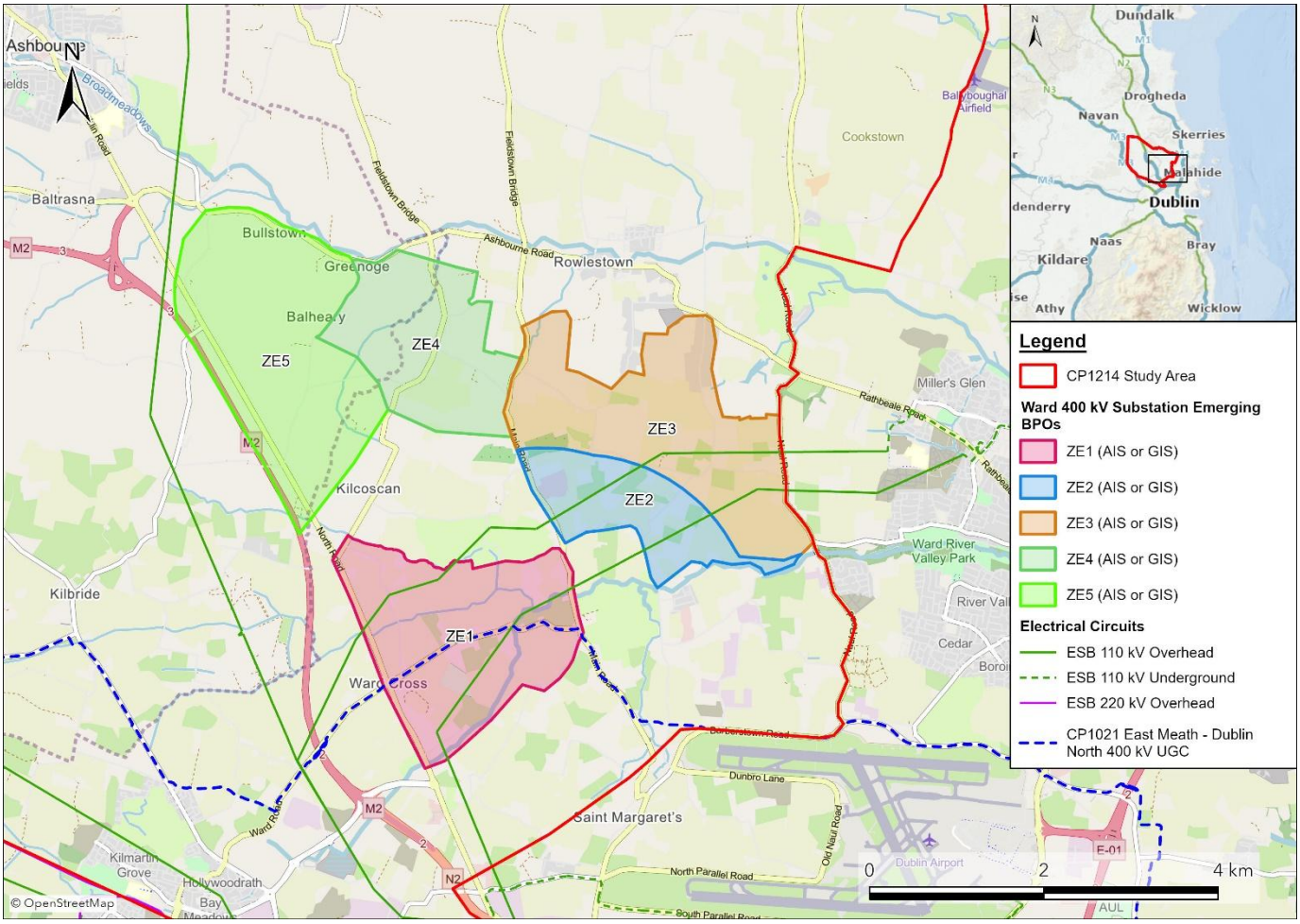

Figure 2-2 - Ward 400 kV Substation – Step 3 Emerging Best Performing Options

2.2 Step 3: Outcome

Following completion of the Step 3 public consultation and taking into account the feedback from that consultation, EirGrid further assessed the 5no. zones and discarded Zones ZE2 and Zone ZE3, primarily due to the poor connectivity to existing electrical infrastructure and poor land availability.

[2] The Step 3 Report is available on the project's website: https://cms.eirgrid.ie/sites/default/files/publications/Fingal-to-East-Meath-Grid-Reinforcement-Step-3-Report-October-2024.pdf

[3] The Step 3 Engagement and Consultation Report is available on the project's website: https://cms.eirgrid.ie/sites/default/files/publications/FEM-Step-3-Consultation-Report-Final.pdf

For the remaining zones (i.e., Zone ZE1, Zone ZE4 and Zone ZE5), EirGrid's Land Management team engaged with landowners. Following discussions with landowners and taking into consideration the size of the land parcels potentially available for future purchase, a GIS substation was selected as the best performing technology for the Ward 400 kV Substation as there were no lands available that were large enough to accommodate an AIS substation.

When considering the location of a GIS substation, ZE1 (as shown in Figure 2-3) was identified as the Best Performing Option to be brought forward for further investigation in Step 4 for the following reasons:

- The availability of land within Zone ZE1 in comparison to other zones.
- The need to loop-in the Ward 400 kV Substation into existing and planned high voltage electrical infrastructure which traverse Zone ZE1. This includes the consented CP1021 East Meath-North Dublin 400 kV UGC, the Finglas-Glasmore 110 kV OHL, and Fingal-Stephenstown 110 kV OHL.
- The proximity to regional roads including the R135 and the R121, which provide opportunities for future circuits to connect to the proposed Ward 400 kV Substation.

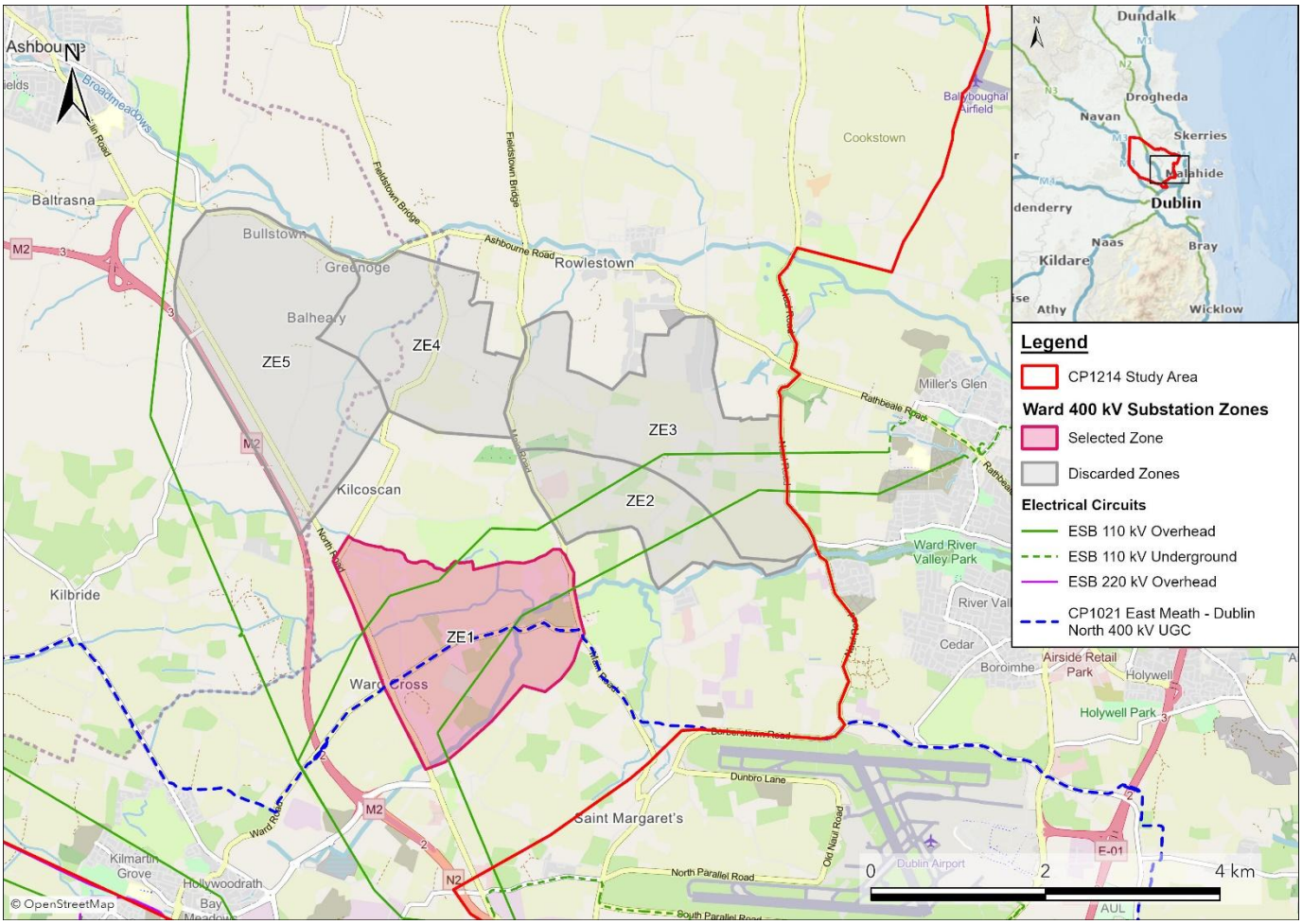

Figure 2-3 - Ward 400 kV Substation – Step 3 Best Performing Option

2.3 Step 4: Identification of Site Options

Through the ongoing engagement with landowners by EirGrid's Land Management team at the commencement of Step 4, potential sites for the proposed Ward 400 kV Substation were identified. A high-level risk assessment was carried out to confirm which sites might be suitable for the development of the Ward 400 kV Substation. An initial list of 5no. sites were identified (Figure 2-4).

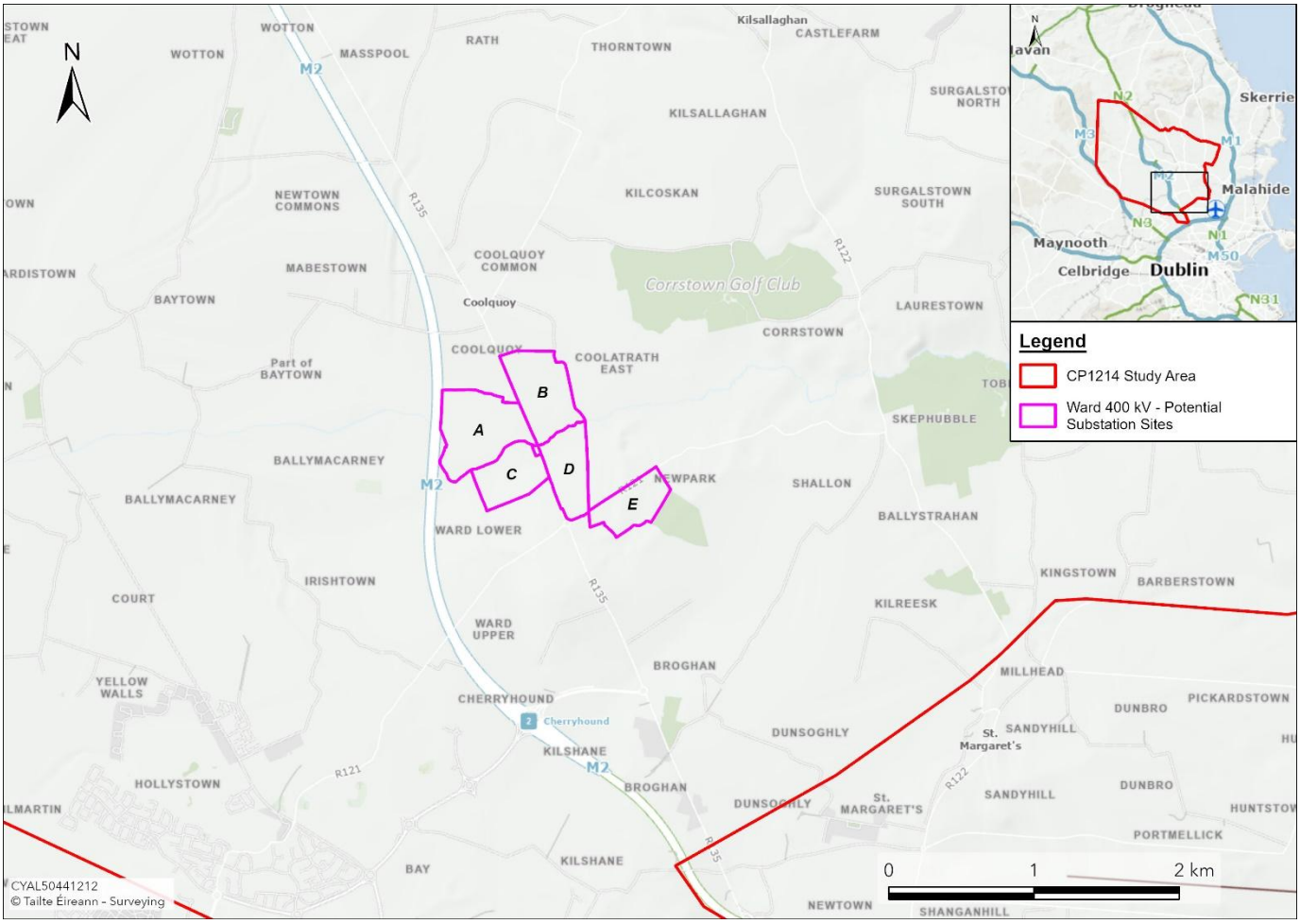

Figure 2-4 - Ward 400 kV Substation – Site Options

EirGrid and AtkinsRéalis undertook a high-level review of these 5no. sites, with connectivity being a key consideration in site selection. Whilst all 5no. sites have the potential to loop-in to the existing 110 kV OHLs (traversing the site or located close to the site, as shown in Figure 2-5), they also need to loop-in to the consented CP1021 East Meath-North Dublin 400 kV UGC, and sites A and B were located furthest away. Another key consideration is flood risk; as can be seen in Figure 2-6, a significant portion of Site A contains flood risk.

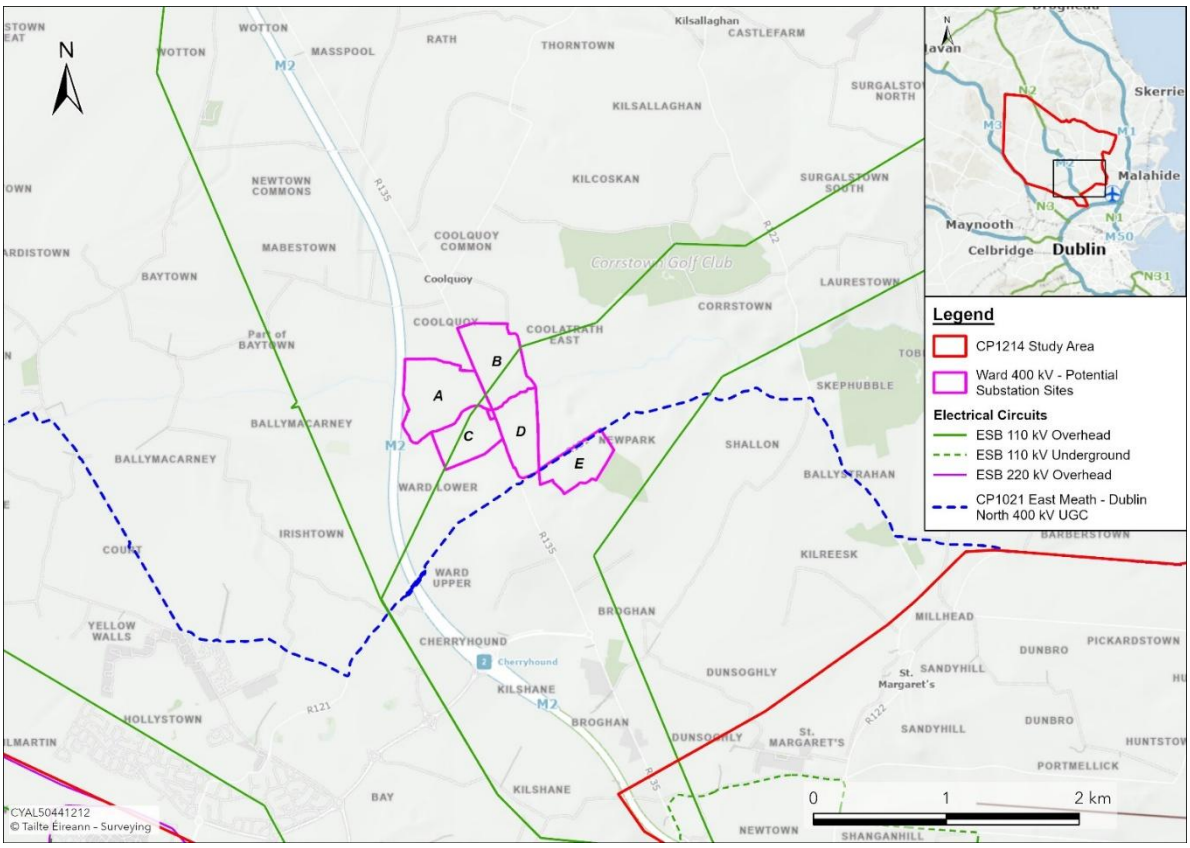

Figure 2-5 - Ward 400 kV Substation – Site Options and Existing/Consented Transmission Circuits

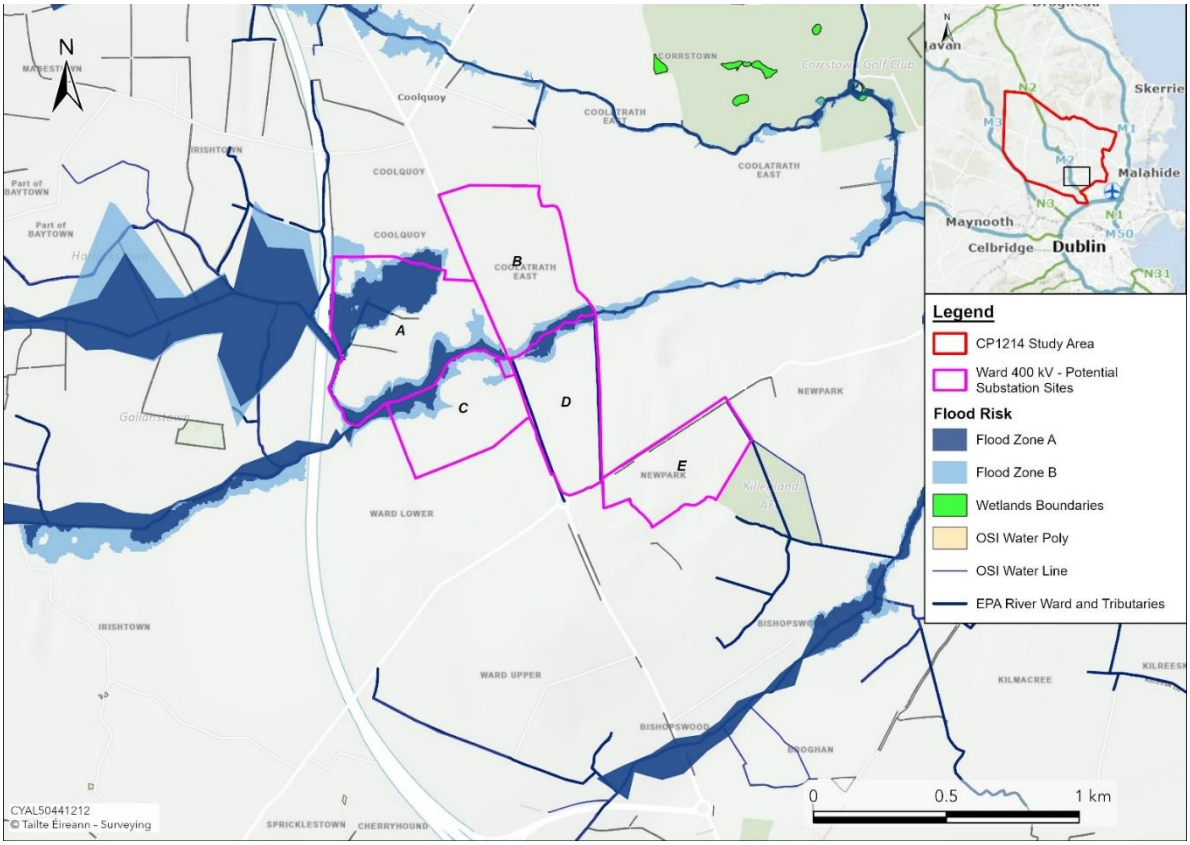

Figure 2-6 - Ward 400 kV Substation – Site Options and Flood Risk Constraints

2.4 Step 4: Options Under Consideration

Given that the consented CP1021 East Meath-North Dublin 400 kV UGC is situated farthest from Site A and Site B, and the significant flood risk areas in Site A, both sites were not brought forward for more detailed consideration in Step 4.

Therefore, the shortlisted site options considered for the Ward 400 kV Substation in the Step 4 MCA were (as shown in Figure 2-7):

- Site C
- Site D
- Site E

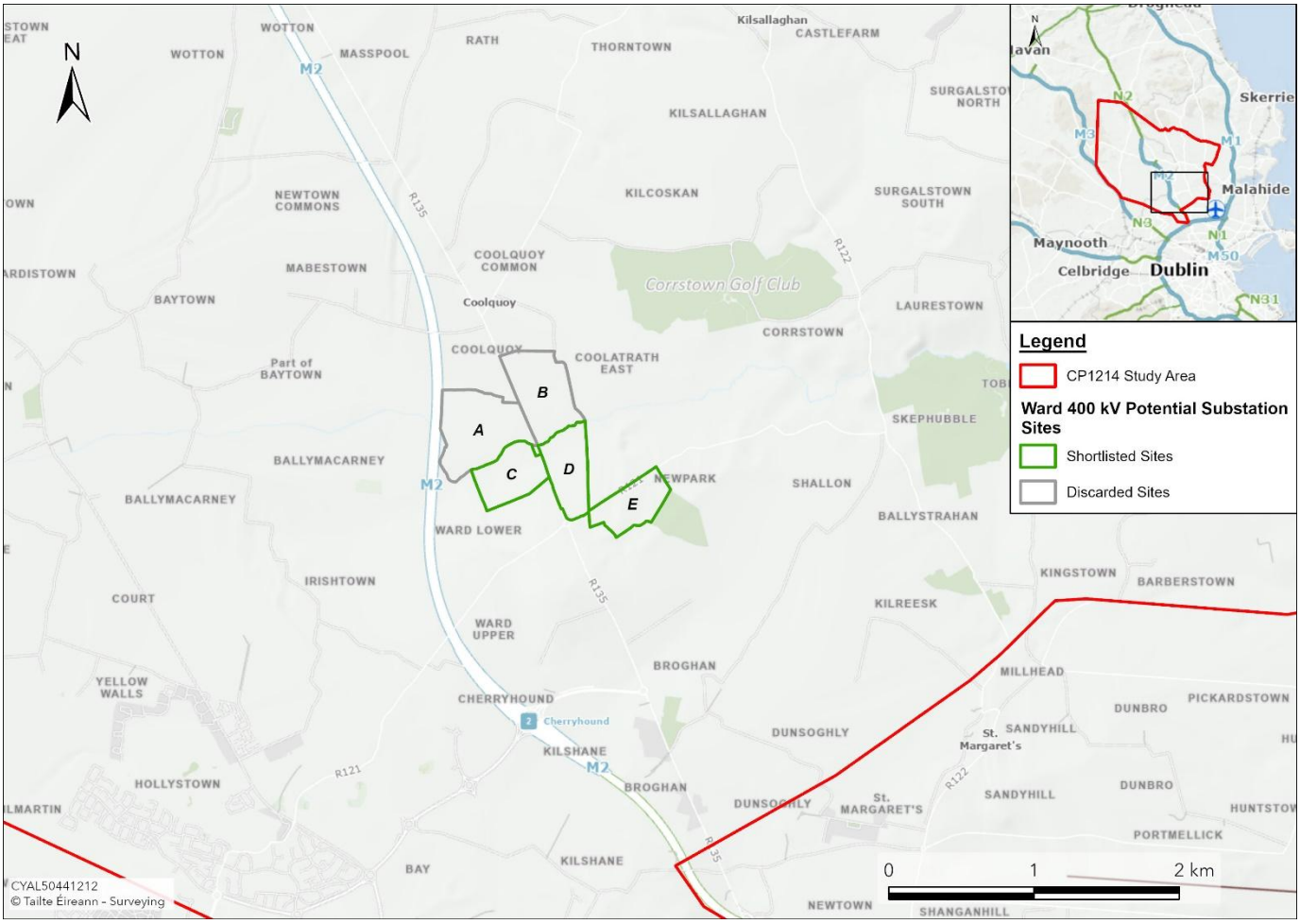

Figure 2-7 - Ward 400 kV Substation – Step 4 Shortlisted Site Options

2.5 Step 4: MCA Process

To assist in identifying the best performing substation site, a Multi-Criteria Analysis (MCA) was carried out in accordance with the EirGrid Multi-Criteria Analysis Guidelines. The five main criteria considered in the MCA are:

- Technical Performance;
- Economic Performance;
- Deliverability Aspects;
- Environmental Aspects; and
- Socio-Economic Aspects.

Each of these criteria were broken down further into sub-criteria and a multi-criteria evaluation matrix was used to identify the best performing option.

2.5.1 Technical Performance

The following sub-criteria were considered from a comparative evaluation perspective:

- **Ease of Connectivity:** This considers the ease with which circuits can be connected to the substation via nearby roads (UGC only) or off-road corridors (OHL and UGC).
- **Expansion / Extendibility:** This considers the availability of land within the site for future expansions to the substation.
- **Geotechnical Conditions:** Considers the impact of known ground conditions (from GSI data or other available datasets), and would include depth to bedrock, likely water table depth, known areas of poor ground / marsh etc.

The following sub-criteria are considered neutral in that all substation sites performed the same in respect of the particular sub-criterion:

- **Compliance with Safety Standards:** The project should comply with relevant safety standards such as those from the European Committee for Electrotechnical Standardisation (CENELEC). Materials should comply with IEC or CENELEC standards.
- **Compliance with System Reliability, Security Standards:** The project should comply with the reliability and security standard defined in the Transmission System Security and Planning Standards and the Operation Security Standards.
- **Electromagnetic Compatibility:** Impact on wireless services such as radars, radio communications, TV, flight paths, etc.

2.5.2 Economic Assessment

The following sub-criteria were considered from a comparative evaluation perspective:

- **Project Implementation Costs:** Costs associated with the procurement, installation and commissioning of the grid development elements only. GIS substation costs are common for all options and thus are ignored.
- **Pre-Engineering Costs:** Costs associated with the design and specification, route evaluation and management of the statutory planning application, including contingencies for such activities.
- **Contingency Costs:** Estimate of unforeseeable expenditure that an individual option may incur.

The following sub-criteria are considered neutral in that all substation sites performed the same in respect of the particular sub-criterion:

- **Project Life-Cycle Costs:** Costs incurred over the useful life of the reinforcement and include the on-going cost of ensuring that it remains viable for the evaluation period. Includes operating expenditure (OPEX), maintenance, replacement, cost of losses, decommissioning, etc.
- **Project Benefits:** Avoided costs and difference in constraint costs for example due to the lack of capacity to export a forecast volume of generation.
- **Cost to SEM:** Cost to Single Energy Market from Development Unavailability (Reliability) i.e., the loss of energy due to unavailability, impact on the Grid, as well as other costs or transmission losses.

2.5.3 Deliverability Aspects

The following sub-criteria were considered from a comparative evaluation perspective:

- **Implementation Timelines:** Relative length of time until energisation (assess significant differences); considers timeframes relating to engineering (incl. planning), procurement of land (and equipment, etc. if relevant) and construction.
- **Land Availability:** Considers land availability for the construction of the substation, in addition to working space during construction. Land availability for connecting circuits is assessed as part of the 'Technical – Ease of Connectivity' sub-criteria.
- **Ease of Construction:** Considers elements such as working time constraints, outage impact, utility congestion, etc. and how that may impact the Contractor during construction. Complexity of the construction methodology is also considered.

The following sub-criteria are considered neutral in that all substation sites performed the same in respect of the particular sub-criterion:

- **Dependence on other Projects:** Does the project depend on the completion of other projects?
- **Supply Chain Constraints:** Any constraints (e.g., small number of suppliers in Ireland or internationally) that would affect the procurement of materials or services to complete the project.
- **Permits & Wayleaves:** Various permissions and wayleaves required to proceed to construction (e.g., number or level).

2.5.4 Environmental Aspects

The following sub-criteria were considered from a comparative evaluation perspective:

- **Biodiversity, Flora & Fauna:** Assessment of the impact on biodiversity, flora and fauna, which could include an ecological desktop study. The following topics were assessed as part of this sub-criterion:
  - Impacts on other ecologically important and/or sensitive habitats (i.e., non-Annex I habitats) as identified in the relevant constraints report.
  - Impacts on sensitive bird species and/or their habitats as identified in the relevant constraints report.
  - Impacts on protected species (Annex II and IV of the EU Habitats Directive) outside of Natura 2000 sites.
  - Impacts on ecological networks and/or connectivity and Green Infrastructure.
  - Impacts on aquatic environment (including watercourses and waterbodies).
- **Soil:** Impact on soil/subsoil geology, Irish geological heritage sites, and bedrock geology, etc.
- **Material Assets:** Impact on land use (forestry, farmland, bogs/peats, horticulture), houses, commercial and community properties, landfill sites, etc.
- **Noise & Vibration:** Vibrations and operational noise impact of lines and substations, taking into account sensitive receptors.
- **Water:** Impact on river crossings, lakes, and groundwater based on established methodologies.
- **Contaminated Land:** Considers the potential for contaminated land to be present.
- **Planning Policy and Land Use:** Considers whether the circuit is consistent with the local authorities Development Plans, and whether there is space for mitigation and/or biodiversity net gain.
- **Planning History:** Historic planning applications and current granted applications with potential for cumulative impact on environment.

The following sub-criteria are considered neutral in that all substation sites performed the same in respect of the particular sub-criterion:

- **Climate & Sustainability:** The potential for release of greenhouse gasses or impacts on climatic change on the asset.
- **Traffic & Transport:** This considers potential effects on traffic and transport in the study area during the construction phases of the different solutions.

2.5.5 Socio-Economic Aspects

The following sub-criteria were considered from a comparative evaluation perspective:

- **Recreation and Tourism:** Impact on recreational activities (e.g., fishing, sports) and tourism, during and after construction, that are not included in the other sub-criteria.
- **Landscape & Visual:** Assessment of landscape constraints and designations and the impact on visual amenity.
- **Cultural Heritage:** The impact on the recorded cultural heritage resource of a potential grid solution.

The following sub-criteria are considered neutral in that all substation sites performed the same in respect of the particular sub-criterion:

- **Settlements and Communities:** The expected impact of a grid development on towns, villages and rural housing, and the way of life of their communities, residents workers and visitors (e.g., severance, settlement patterns, etc.).
- **Health:** To determine potential effects on humans, this considers WHO health thresholds. Electromagnetic field (EMF) is considered as set out in EirGrid's 'Your guide to understanding electric and magnetic fields (EMFs)'.

2.5.6 MCA Rating Scale

The effect on each criteria parameter is presented along a range from “more significant / more difficult / more risk” to “less significant / less difficult / less risk”. Table 2-1 shows the criteria performance/rating scale used to illustrate each criteria parameter in a comparative assessment with other options.

Table 2-1 - Criteria Rating Scale

More significant / difficult / risk — Less significant /difficult / risk

High Risk (Dark Blue)	Moderate-High (Blue)	Moderate (Dark Green)	Moderate-Low (Green)	Low (Cream)

3. Step 4: Multi-Criteria Analysis – Ward 400 kV Substation

The purpose of the MCA is to identify the Best Performing Option (BPO) for the proposed Ward 400 kV Substation. This chapter summarises the MCA completed in Step 4 on the three (3no.) options for the proposed Ward 400 kV Substation.

3.1 Best Performing Option (BPO) from the Multi-Criteria Analysis

Table 3-1 shows the overall performance for the 3no. site options. Whilst all options are rated ‘Moderate’ risk overall, there are discernible differences in how each of the options perform in respect of particular sub-criterion which has informed the identification of the BPO. The differences are briefly discussed in this section, with further information presented in the subsequent sections including an explanation / justification of the selection of the BPO.

Technical Performance: Considering technical performance, all options are found to perform similarly overall but Site D performs slightly better than the other two options. The technical evaluation of the various options is largely driven by the ease of connecting the planned and future circuits into the substation. Site D is found to be the least congested option in terms of connecting UGC circuits (due to direct access to adjoining regional roads). Site C and E are somewhat restricted in terms of circuit connectivity and will require additional corridor wayleaves to connect in future circuits. Site D is somewhat restricted in terms of space which could limit further expansion of the substation, whereas Sites C and E have additional space onsite which can be used for future equipment and apparatus. However, all options are confirmed to have adequate space for the initial required GIS buildings (including future GIS bays) and associated equipment/circuits.

Economic Performance: From an economic perspective, Site D and Site E perform better (Moderate-Low risk) due to the shorter required loop-in to the consented CP1021 East Meath-North Dublin 400 kV UGC.

Deliverability Aspects: Considering deliverability, all options are found to perform similarly overall but Site E performs slightly better than the other two options. Site E has adequate land space for the substation and its future expansion but additional off-road circuit corridors through third-party lands will be required for future circuits to route to the R135. For Site D, land availability is adequate for the initial substation layout but may be restrictive in terms of future expansion and circuit connections. Implementation timelines and ease of construction are rated best for Site E

and Site D, whereas Site C could be impacted if the existing OHL circuits (38 kV and 110 kV) need to be diverted (with construction timelines potentially being dependent on outage windows).

Environmental Aspects: When considering the environmental aspects overall, Site D and Site E perform better than Site C and are rated Moderate-Low risk. Site C was the worst performing site, rated Moderate-High risk. Water revealed the greatest differences between sites largely driven by the proximity to the Ward River and associated flood risk in Site C and Site D.

There was little/no variance in MCA ratings between the 3no. options for several environmental sub-criteria including: Biodiversity, Flora and Fauna, Noise and Vibrations, Planning and Policy and Contaminated Land. This is to be expected given that:

- Identified constraints and associated heat maps were used to (as best as possible) discard areas with higher environmental and ecological risk.
- The proximity of the substation sites to each other means they have many shared attributes which makes it difficult to identify any discernible differences between them.

Socio Economic Aspects: From a socio-economic perspective, the overall rating indicate Site C and D pose greater socio-economic risk relative to Site E. This is because:

- While Landscape and Visual impacts are considered a key risk for all of the site options the risk is higher in Site D because sufficient landscape screening would unlikely be achieved. The substation footprint requirements for the siting of the substation within the folio resulted in (at a maximum) a 25 m linear landscaping buffer around the margins of Site D. The screening depth that could be achieved with this remaining space is only 5 m (to account for a fall zone of at least 20 m for trees). This would not provide sufficient screening of the visual impact of the substation and compromised screening solutions (e.g., hedging) would be needed. While there are opportunities to increase screening planting depth at some locations (e.g., the southern section of the site) there remains substantial residual risk.
- Cultural Heritage is a key risk for Site C and the primary driver of the higher rating here relative to Site D and Site E. There is a known archaeological sites and monument record in Site C.

In the MCA Workshop attended by the EirGrid Cross-Functional Team and the project team, and following a robust MCA process, it was concluded that ***Site E is the Best Performing Option for the Ward 400 kV Substation*** for the following reasons:

- The substation can be adequately sited within Site E with allowance for future expansion and has the least risk in terms of construction and implementation timelines (whereas Site D has limited space for future expansion);
- The R121 runs adjacent to the site which reduces the length of the loop-ins to the consented CP1021 East Meath North Dublin 400 kV UGC (making for easier connection and reduced costs in comparison to Site C and Site D);
- The site is somewhat restricted in terms of circuit connectivity, but this can be overcome with additional circuit corridors linking to the R135;
- There is no known flood risk associated with Site E unlike Sites C and D;
- There is only 1no. existing MV OHL within Site E which needs diversion (as opposed to higher voltage OHLs within Site C);
- There is no known cultural heritage risk associated with Site E (based on desktop sources) whereas Site C has known cultural heritage risk; and
- Site E could accommodate landscape screening and mitigation with space for biodiversity net gain also available. This would be more difficult to achieve with Site C and D.

Table 3-1 - MCA Ratings (Overall)

Option	Site C	Site D	Site E
Technical Performance			
Economic Assessment			
Deliverability Aspects			
Environmental Aspects			
Socio-Economic Aspects			
Overall Rating			

3.2 Technical Performance

Table 3-2 shows a summary of the ratings for the Technical Performance of each option.

Table 3-2 - MCA Ratings (Technical Performance)

Option	Site C	Site D	Site E
Ease of Connectivity			
Expansion/extendibility			
Geotechnical Conditions			
Overall Technical Rating			

3.2.1 Ease of Connectivity

This considers the ease with which circuits can be connected to the substation via nearby roads (UGC only) or off-road corridors (OHL and UGC).

At a high-level, all options are surrounded by open rural ground suitable for possible OHL and UGC wayleave corridors in most directions (i.e., north, west, south, southeast, northeast). However, there are a number of surrounding constraints which impact the three site options to varying degrees:

- R135 and R121 regional roads;
- M2 motorway;
- Ward River;
- Solar farm developments;
- Kilegland AFC soccer pitches;
- Corrstown Golf Club; and
- Local housing.

At a site-specific level, there are a number of constraints which impact the three sites to varying degrees, as detailed below:

Site C only has direct road frontage on its eastern boundary to the R135. To avoid reducing the available capacity along the R135 for future underground cable circuits, an off-road wayleave along the eastern side of the folio is required for the loop-in circuits to access the R121 / consented CP1021 East Meath-North Dublin 400 kV UGC. This option is the least congested for UGC connections along with Site D (dependent on obtaining this wayleave).

To enter Site C, the 2no. 400 kV loop-in UGCs to the CP1021 East Meath-North Dublin 400 kV UGC would travel from joint bays no. 32 and no. 33 northwards along the R135 for approximately 500 m. Additional wayleave access along the eastern boundary of Site C may be required if the R135 cannot accommodate both 400 kV UGCs within the road corridor. The new 220 kV circuit connecting the proposed East Meath Substation with the Ward Substation circuit would route into the site from the north travelling down the R135.

The following conditions and constraints are also noted for Site C:

- An existing 110 kV OHL circuit crosses Site C, allowing for a direct loop-in with the new substation.
- Other existing 110 kV OHL infrastructure is located in proximity to Site C, with multiple options for connection via offroad wayleaves / easements.
- An UGC circuit can be routed north via the R135 towards Ashbourne.
- An UGC circuit can be routed south via R135 Kilshane Cross. Note, additional offroad wayleaves will be required north of The Wards Cross as the R135 will be full with the loop-in UGC circuits to the CP1021 East Meath-North Dublin 400 kV UGC.
- An offroad UGC wayleave corridor would be required to route circuits eastwards (as the R121 eastwards will likely only accommodate 1no. more UGC circuit).
- An offroad wayleave corridor would be required to route circuits towards the southwest. There are 2no. possible routes overall, but from Site C, directly westwards before heading south along the M2 (and finally crossing the M2) is the most appropriate.

Site D has direct road frontage on three sides of its folio boundary including direct access to the R135 and the R121. This option is the least congested for UGC connections and is not dependent on additional offroad UGC wayleaves.

To enter Site D, the 2no. 400 kV loop-in UGCs to the CP1021 East Meath-North Dublin 400 kV UGC would enter directly from the R121 running along the southern folio boundary. The new 220 kV circuit connecting the proposed East Meath Substation with the Ward Substation would route into the site from the north travelling down the R135.

The following conditions and constraints are also noted for Site D:

- Existing 110 kV OHL infrastructure is located in proximity to Site D, with multiple options for connection via offroad wayleaves / easements.
- An UGC circuit can be routed north via the R135 towards Ashbourne.
- An UGC circuit can be routed south via R135 Kilshane Cross.
- An offroad UGC wayleave corridor would be required to route circuits eastwards (as the R121 eastwards will likely only accommodate 1no. more UGC circuit).
- An offroad wayleave corridor would be required to route circuits towards the southwest. There are 2no. possible routes overall.

Site E only has direct road frontage on its northern boundary to the R121. To avoid heavy UGC congestion along the R121 / bottleneck at The Ward Cross roundabout, an offroad wayleave corridor via the western side of the folio is required to access the R135. This option is the most congested for UGC connections.

To enter Site E, the 2no. 400 kV loop-in UGCs to the CP1021 East Meath-North Dublin 400 kV UGC would enter direct from the R121 into the substation (instead of joining together at joint bay 33). Alternatively, the western loop-in UGC could be diverted south at The Wards Cross roundabout along the R135 and approach Site E via a western offroad corridor. This may allow other future circuits to head via The Wards Cross without crossing / derating the CP1021 East Meath-North Dublin 400 kV UGC.

The new 220 kV circuit connecting the proposed East Meath Substation with the Ward Substation would route into the site from the north travelling down the R135 and the R121.

The following conditions and constraints are also noted for Site E:

- Existing 110 kV OHL infrastructure is located in proximity to Site E, with multiple options for connection via offroad wayleaves / easements.
- An UGC circuit can be routed north via R135 towards Ashbourne. Note, additional offroad wayleaves will be required to access the R135 north.
- An UGC circuit can be routed south via R135. Note, additional offroad wayleaves will be required to access the R135 south.
- An offroad UGC wayleave corridor would be required to route eastwards (as the R121 eastwards will likely only accommodate 1 more UGC circuit).
- An offroad wayleave corridor would be required to route circuits towards the southwest. There are 2no. possible routes overall, but from Site E, directly southwards offroad though third-party lands, and then heading westwards across the R135 (and finally crossing the M2) is the most appropriate.

3.2.2 Expansion/extendibility

All three options have adequate space to fit the required 400 kV, 220 kV and 110 kV GIS switchgear onsite within dedicated GIS buildings.

Sites C and E have additional space onsite which can be used for future equipment and apparatus. Site D is more restricted in terms of additional space for future equipment and is rated at a higher risk accordingly.

3.2.3 Geotechnical Conditions

Detailed geotechnical surveys or ground conditions review has not been performed for the three options, and therefore the assessment is based on desktop sources.

The ground usage at all options is agricultural in nature (i.e., planted crops), with adequate space between border hedgerows for siting a substation. Site D has some undulating ridges which will require some level of cut and fill earthworks to level the site. Flood risk area along the northern boundary (along the Ward River) will constrain the substation to the middle / southern sections of the folio. Drainage ditches also run along sections of the western and eastern boundaries.

The available land in the northern half of Site C has exposed bedrock. The majority of Site C has extreme groundwater vulnerability with flood risk area along the northern boundary (along the Ward River) which will constrain the substation to the middle sections of the folio. The northern half of the folio also has a moderate incline up from the river which will require moderate cut and fill earthworks to level the field.

Site E is a generally flat field with no evidence or history of flood risk. There are existing field drainage ditches along the western and southern boundaries of the field.

3.3 Economic Assessment

Table 3-3 shows a summary of the ratings for the Economic Assessment of each option.

Table 3-3 - MCA Ratings (Economic Assessment)

Option	Site C	Site D	Site E
Project Implementation Costs			
Contingency Costs			
Pre-Engineering Costs			
Overall Economic Rating			

3.3.1 Project Implementation Costs

This sub-criterion considers the costs associated with the procurement, installation and commissioning of the grid development elements only. The GIS substation costs are considered to be common for all options and thus are ignored. Likewise, land procurement costs are assumed to be equivalent across all sites.

The assessment factors in the costs for developing the 2no. 400 kV loop-in circuits from suitable break-in locations along the CP1021 East Meath-North Dublin 400 kV UGC to the proposed substation location at each option.

Site E presents the lowest UGC circuit costs as the 400 kV loop-in circuit length is minimal. The circuit costs are found to be somewhat higher for Site D and higher again for Site C on account of the progressively longer 400 kV loop-in circuit lengths.

3.3.2 Contingency Costs

Contingency Costs would include an estimate of any unforeseeable expenditure that an individual option may incur, including but not limited to the following:

- Possible obstructions or delays to granting planning permission / license delays;
- CPO or extended negotiations with private landowners;
- Volatile equipment procurement costs / lead-times (rated the same as all options have the same equipment);
- Unstable ground conditions. As ground conditions for the options are unknown at this stage, all options performed equally in this regard; and
- All options are in close proximity to adjacent dwellings and provisions for additional sound barriers may be required.

Site C has two existing OHL circuits (1no. 110 kV and 1no. 38 kV) which traverse the folio and may need to be permanently/temporarily diverted during the construction of the substation (permission and outages are required

which may incur additional costs). The existing communications mast onsite may need to be permanently moved or the height extended (to avoid line of sight issues) which will involve further costs and negotiations with the relevant asset owner and landowner. Additional site groundworks may be required if the substation boundary encroaches on the flood area along the northern boundary.

Site D has existing MV OHL circuits traversing the site which will need to be diverted / buried with the permission of ESBN. Drainage ditches along the western and eastern boundaries will need modification for road and cable access to the site. Additional site groundworks may be required if the substation boundary encroaches on the flood area along the northern boundary.

Site E has an existing MV OHL circuit traversing the site which will need to be diverted / buried with the permission of ESBN. As the site only has direct access to the R121 (which will contain the CP1021 East Meath-North Dublin 400 kV UGC), additional UGC wayleaves will be required to secure alternative access routes for incoming feeder circuits. These wayleaves would need to be negotiated and secured with the relevant landowners.

3.3.3 Pre-Engineering Costs

Pre-Engineering Costs are those associated with the substation design and specification, incoming circuit route evaluations, loop-in (to the CP1021 East Meath-North Dublin 400 kV UGC) circuit design and the management of the statutory planning application, which would be affected by the following (non-exhaustive) list of factors:

- Any non-standard equipment / system design & specification (not applicable and thus rated the same for all options);
- Site / technology / grid circuit corridors with violations of planning laws, statutory body guidelines, EirGrid / ESBN standards and policies, etc. – not applicable for all options.
- Diversions of existing utilities onsite (applicable to all sites for existing OHL circuits but more so for Site C with existing 110 kV and 38 kV OHL circuits traversing the folio);
- Large number of landowners / stakeholders (each option is made up of one land folio, but all have existing third party assets along/within the boundary);
- All options are in close proximity to Dublin Airport and its associated height restriction zones so relevant aeronautical height restriction studies will be required to obtain relevant authorisations from the DAA / AirNav Ireland; and
- Likewise, Electromagnetic Frequency (EMF) and Electromagnetic Compatibility (EMC) impact assessment studies may be required to assess any potential impact on navigation and communication systems in the vicinity.

For Site C the existing communication mast may need to be relocated and/or height extended (additional studies and engineering may be required for the relevant asset owner plus notification to DAA). Additional planning / engineering will be required if existing 110 kV and 38 kV OHLs need to be diverted.

Similarly, Site C has a listed archaeology feature within the boundary and additional studies would be required to assess the impact (if any) on the Sites and Monuments Record.

For Site D and Site E, the height of the existing communication mast at Site C may need to be evaluated to ensure there are no interference / line of sight issues from the planned substation buildings. Permission from ESBN will be required for diverting the existing MV OHL assets.

Site D (and to a lesser degree Site E) require the least engineering effort to develop the loop-in design (to the CP1021 East Meath-North Dublin 400 kV UGC). Site E may be impacted by UGC congestion at The Wards Cross roundabout and will require further engineering effort and possibly additional wayleaves secured to the west and north.

3.4 Deliverability Aspects

Table 3-4 shows a summary of the ratings for the Deliverability Aspects of each option.

Table 3-4 - MCA Ratings (Deliverability Assessment)

Option	Site C	Site D	Site E
Implementation Timelines			
Land Availability			
Ease of Construction			
Overall Deliverability Rating			

3.4.1 Implementation Timelines

EirGrid's 6-Step approach to Grid Development allocates adequate durations between project Stage Gates for proper planning and procurement of long lead time items:

The proposed Ward 400 kV Substation development is likely to constitute SID under 'new transmission infrastructure facilitating the transmission of electricity from one substation to another', requiring an application submitted directly to An Coimisiún Pleanála (ACP). The SID planning process is typically longer than a local authority planning application and may pose a risk to the overall project timeline.

Historically, procurement lead times for GIS substation equipment can be longer (compared to equivalent AIS substation equipment) but increased use/acceptance of GIS substations within the Irish and Global electrical markets and increased offerings from manufacturers globally has shortened procurement times.

No significant risk is identified for the three options at this stage from construction activity timelines except for MV / HV circuit diversions and possibly some additional groundworks.

3.4.2 Land Availability

The GIS substation footprint is estimated to be a minimum of approximately 10 acres, which can fit within all three options' land folios with some limitations. A relatively large area of space is allocated within the proposed substation layout for future circuits plus future compensation equipment / system devices, and this future space could be used for a construction / storage compound during the initial phases of construction. Additional space around the substation will need to be considered for routeing and connecting the planned and future circuits, and provision for drainage, site access and landscape screening. The positioning of the substation within each options' folio should be done so as to reduce potential noise impact on local dwellings and to allow for the provision of landscape screening.

For Site C there is road frontage to the R135 only and therefore additional wayleaves (through the southern part of the land folio) will be required for incoming circuits including the loop-in to the CP1021 East Meath-North Dublin 400 kV UGC. The positioning of the substation within Site C is complicated by:

- Only the northern half of the folio is available;
- Existing 38 kV and 110 kV OHL circuits traverse the site;
- Existing communications mast in the centre of the site;

- Flood zone risk on northern boundary; and
- Archaeological feature along northern border.

Site D is deemed to have the highest risk in terms of land availability of all three options. There is just adequate space within the folio for the initial substation footprint but as the site is narrow on the southern boundary and with the risk of flooding, there is very limited space for bringing in future OHLs circuits (LCIM compounds). The site is advantageous for incoming UGC circuits by having direct access to both the R135 and R121 (i.e., where CP1021 East Meath-North Dublin 400 kV UGC is routed) as well as a local road running along the eastern boundary, but space is very limited for routing of UGCs within the folio itself.

Site E has adequate space within the folio for a GIS substation but the existing dwelling on the folio would need to be demolished. There is road frontage to the R121 only, so additional wayleaves through adjacent land folios will be required for incoming circuits.

3.4.3 Ease of Construction

A relatively large area of space is allocated within the proposed substation layout for future circuits and future compensation equipment / system devices, and this future space could be used for a construction / storage compound during the initial phases of construction. All options are rural, served by regional roads. Appropriate traffic management plans would need to be put in place for the construction phase but no special constraints on working time limitations are expected.

All substation sites are relatively close to the planned CP1021 East Meath-North Dublin 400 kV UGC joint bays which will limit the amount of UGC works required for the required loop-ins on this circuit. Site E may have an advantage when designing the break-in on the circuit as one of the CP1021 East Meath-North Dublin 400 kV UGC joint bays is located adjacent to the site. An outage will be required to facilitate the break-in on the circuit but could be minimised by pre-routing the cable / ducting to the relevant substation site whilst constructing the CP1021 East Meath-North Dublin 400 kV UGC. This would be subject to the relevant planning permissions being in place.

All sites are near Dublin Airport and the DAA may impose limits on the use of construction cranes / equipment above a certain height limit.

The options have not been surveyed / investigated in detail to date, but ground conditions and elevations within the options are generally expected to be suitable for substation construction, e.g., moderate amount of cut and fill ground works required (more so for Site C and Site D compared to Site E). Site C and Site D are also noted to have flood areas along their northern boundaries along the Ward River, which will need to be avoided when siting the substation within the relevant land folio.

Construction at Site C is expected to be complicated by required diversions / outages on the existing Finglas-Glasmore 110 kV and Ashbourne-Finglas 38 kV OHL circuits which traverse the folio / likely substation location. Site D and Site E contain MV OHLs which will need to be diverted; however, these are considered to have less impact on the ease of construction when compared to the 38 kV and 110 kV OHLs within Site C.

With Site E it will be difficult to construct all of the required incoming UGC circuits to the substation without obtaining additional wayleave corridors through neighbouring land folios and possibly diverting existing utilities within the R121.

3.5 Environmental Aspects

Table 3-5 summarises MCA ratings for the Environmental Aspects of each option. Overall, Site D and Site E are the best performing from an environmental perspective, with both sites rated Moderate risk. Site C was the worst performing option, rated Moderate-High risk (Table 3-5). Water revealed the greatest differences between sites (see Section 3.5.2.3).

Table 3-5 - MCA Ratings (Environmental Aspects)

Option	Site C	Site D	Site E
Biodiversity, Flora & Fauna			
Material Assets			
Noise & Vibrations			
Water			
Contaminated Land			
Planning & Policy			
Overall Environmental Rating			

For the vast majority of Environmental Criteria there was little/no difference in the MCA performance between the site options for Biodiversity, Flora and Fauna, Material Assets, Noise and Vibrations, Planning and Policy and Contaminated Land. This is to be expected given that:

- In identifying the extents of the substation zones identified constraints and associated heat maps were used to (as best as possible) discard areas with higher risk.
- The proximity of the substation sites to each other means they have many shared attributes which makes it difficult to identify any discernible differences between them.

MCA sub-criteria such as connectivity to Natura 2000 sites, groundwater bodies, planning and policy are large-scale considerations and as a result these sub-criteria cannot readily discern between potential substation sites. Nevertheless this information is useful and applicable to all options and selected examples are described in Section 3.5.1 ‘Similarities across all options’.

3.5.1 Similarities across all options

3.5.1.1 Biodiversity, Flora and Fauna

There were no discernible differences between some of the Biodiversity, Flora and Fauna sub-criteria. For example, there are no SACs, SPAs, NHA or pNHA in any option or the 500 m zone of influence (ZoI), as shown in Figure 3-1. The closest SAC is Malahide Estuary to the east, approximately 9–9.3 km from the options. Malahide Estuary SPA is also 9–9.3 km from the options to the east.

The Ward River outfalls to Malahide Estuary SAC/SPA/pNHA and as such there is hydrological connectivity between all of the options via watercourses and field drains to these Natura 2000/national sites (Figure 3-2). Malahide Estuary is also a RAMSAR site (Site Code: 833) and is designated under the Convention of Wetlands of International Importance (Ramsar Convention, 1971).

There are no known mapped Annex I habitats within any option. Ecology site surveys will resolve if any Annex I habitats exist and vegetation of flowing waters [3260] that might be found in the rivers/streams bordering Site C and Site D. The Fingal Biodiversity Plan (2023–2030) states that for undesignated Annex I Habitats, where development is proposed in or near Annex I Habitats, "*the development will have to demonstrate that it will have no significant adverse impact on the habitats of interest in these areas and their ecological integrity*".

3.5.1.1.1 Impacts on Sensitive Bird Species and/or Their Habitats

Similarities between the options are:

- No bird species listed on Annex I of the EU Birds Directive have been identified here (NBDC, 2024).
- The nearest I-WeBs site is the Broadmeadow (Malahide) Estuary (I-WeBs Site Code: 0U408) which encompasses Malahide Estuary SPA.
- Three QI species of Malahide Estuary SPA (i.e., light bellied Brent goose, oystercatcher and golden plover) use large fields, parks and agricultural fields which are considered supporting habitats for these birds and could be present in any substation site option. Construction of substation infrastructure may therefore impact ex-situ bird species of the Malahide Estuary SPA.
- Species recorded during the walkover surveys include raptors (buzzard, kestrel and sparrowhawk) and passerine species (blackbird, blue tit, chaffinch, magpie, pheasant, rook and wood pigeon).
- Some bird species will also use arable fields for feeding depending on the sward height, crop etc. Winter stubble provides food for farmland birds over winter (Figure 3-7), while spring-sown cereals provide nesting opportunities for birds such as Skylark etc.
- The agricultural land use within all sites may provide favourable conditions for the Red listed Yellowhammer.
- The hedgerows/treelines bordering these sites likely provide commuting routes for bird species.
- The proposed development will alter existing conditions on the site by replacing arable crops and improved grassland habitats with substation infrastructure.

3.5.1.1.2 Impacts on Protected Species Outside of Natura 2000 Sites

Similarities between the options are:

- No species listed on Annex I of the Habitats Directive are recorded here (NBDC, 2025).
- Bat landscape sensitivity rating is moderate (NBDC, 2024).
- There are no Flora Protection Order Species recorded in any site.
- No known records of invasive plant species within the 1 km grid square.
- Mature trees exist as part of the hedgerows and may provide foraging, commuting and roosting potential for bats.
- Ash dieback is present.
- There are very few biodiversity records on the NBDC database for the general area.

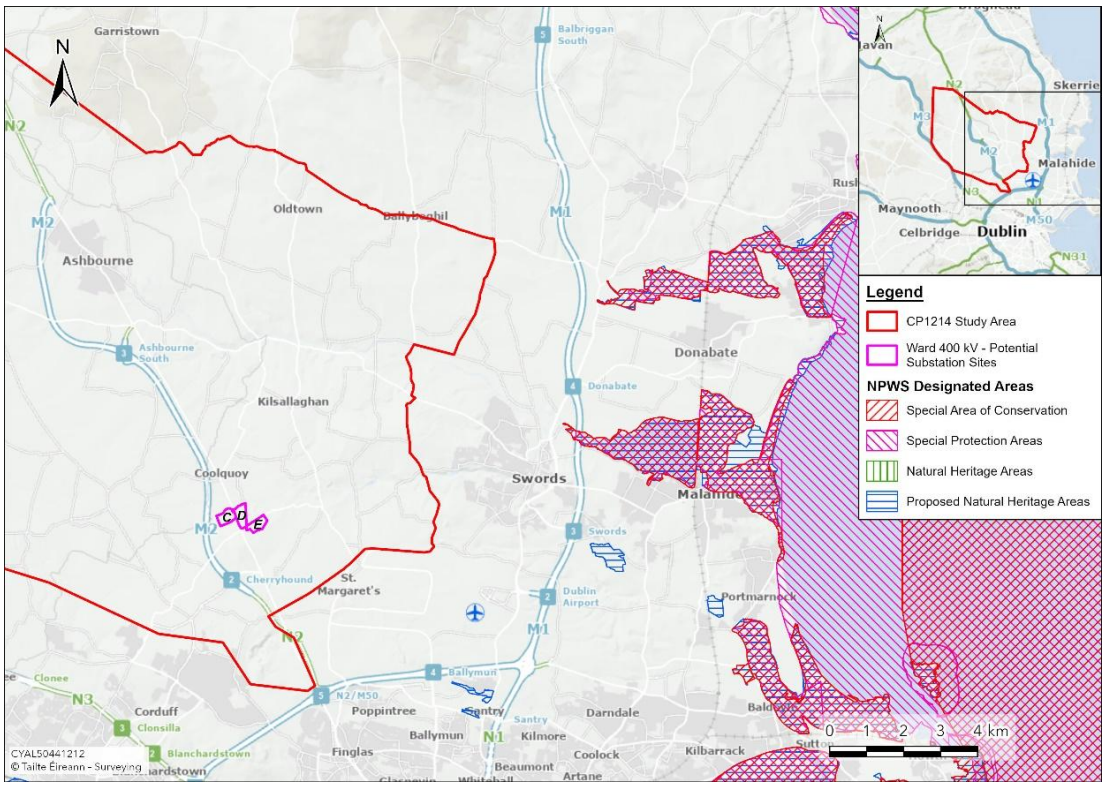

Figure 3-1 - Location of Special Areas of Conservation and Special Protection Areas with respect to options

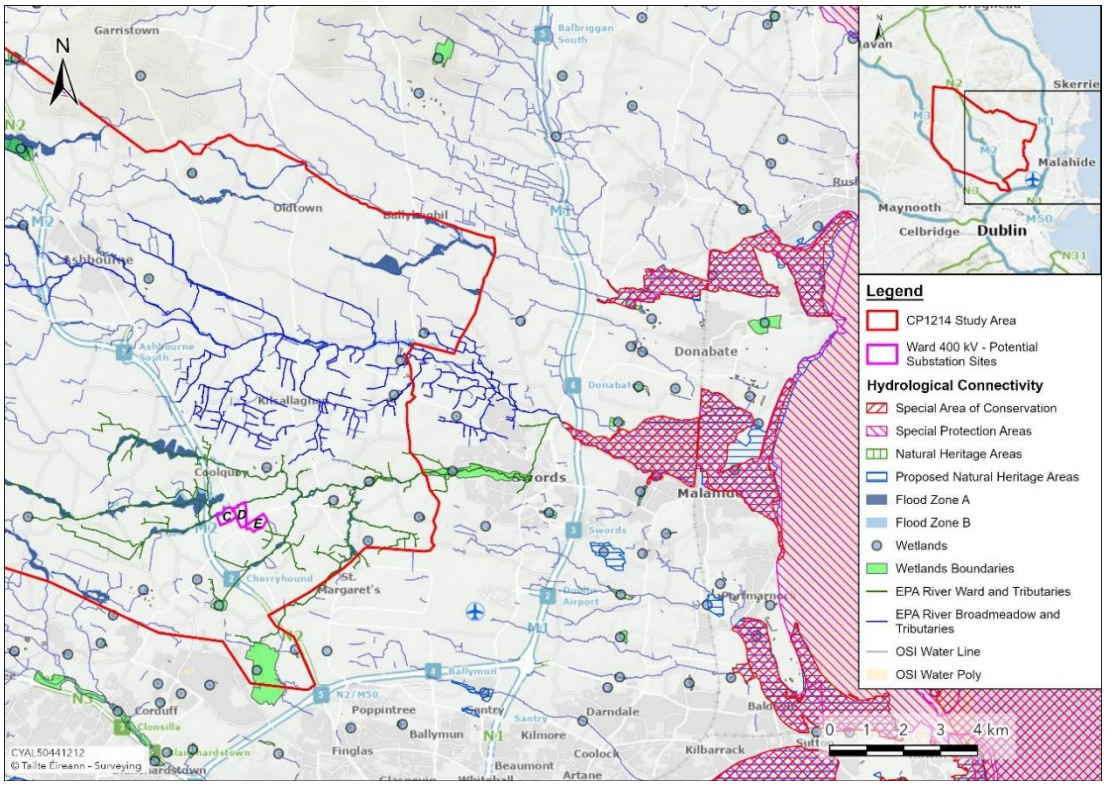

Figure 3-2 - Hydrological connectivity to Special Areas of Conservation and Special Protection Areas with respect to the options

3.5.1.2 Material Assets

Soils across Site C, Site D and Site E are predominantly classified as deep well drained mineral (mainly basic) with areas of poorly drained mineral (mainly basic), mineral alluvium and shallow well drained mineral (mainly basic) throughout. Poorly drained soils (mineral or organic), by their nature, typically remain wet for prolonged periods each year and reach saturation during rain events. Site C and Site D are mostly cultivated land.

The sites are not situated in any “proposed open space” and there will be no impacts to towns from any of the options.

3.5.1.3 Noise and Vibration

Noise and Vibration was rated Moderate risk across all substation site options. No candidate quiet areas exist within the vicinity of any of the options (Dublin Noise Action Plan [2024–2028]). The Strategic Noise Maps for Fingal show no industry or rail noise exists within the vicinity of the options. Day and night-time noise from roads (TII) spills into the 3no. options with Site C having more impacts than Site D or Site E (Figure 3-3 and Figure 3-4).

Property counts from the boundary lines of the proposed options were counted. Although Site D has the highest number of residential dwellings (12no.) within 300 m of the site boundary (with Site C having the lowest number [3no.]), there are no residential dwellings located less than 50 m from the site boundary lines of Site D or Site E, with 2no. dwellings located less than 50 m from Site C. The Newpark Nursing Home is within 100–200 m from Site E and is therefore afforded a higher degree of sensitivity to noise. Published EPA noise mapping indicates an ambient night-time noise level between 50–59 dB L_{night} across the 3no. options. Some areas of Site E are not covered by the EPA noise maps; there may be lower noise levels in parts of this option, which may increase the potential noise impact. Therefore, an additional risk rating correction due to baseline noise levels was applied.

Objective IUO63 in Fingal County Council Development Plan (FCCDP, 2021-2027) states "*Noise Exposure Maps. Developments for noise sensitive uses shall have regard to the noise exposure maps contained within the Fingal Noise Action Plan (2018–2023) or any supplementary mapping prepared by FCC, and developers shall be required to produce a noise impact assessment and mitigation plans, where necessary, for any new noise sensitive development within these areas*". This will be considered in the next phase of design.

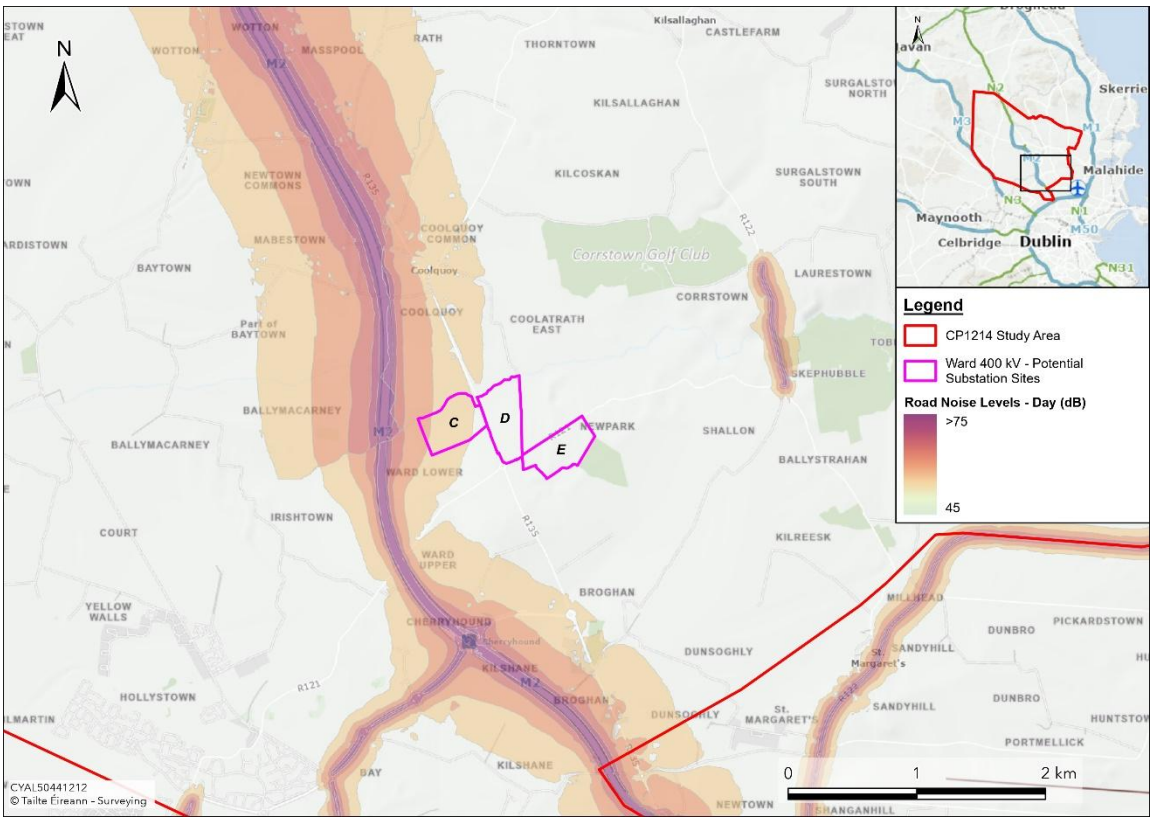

Figure 3-3 - Daytime Night-time noise maps from roads with respect to each option

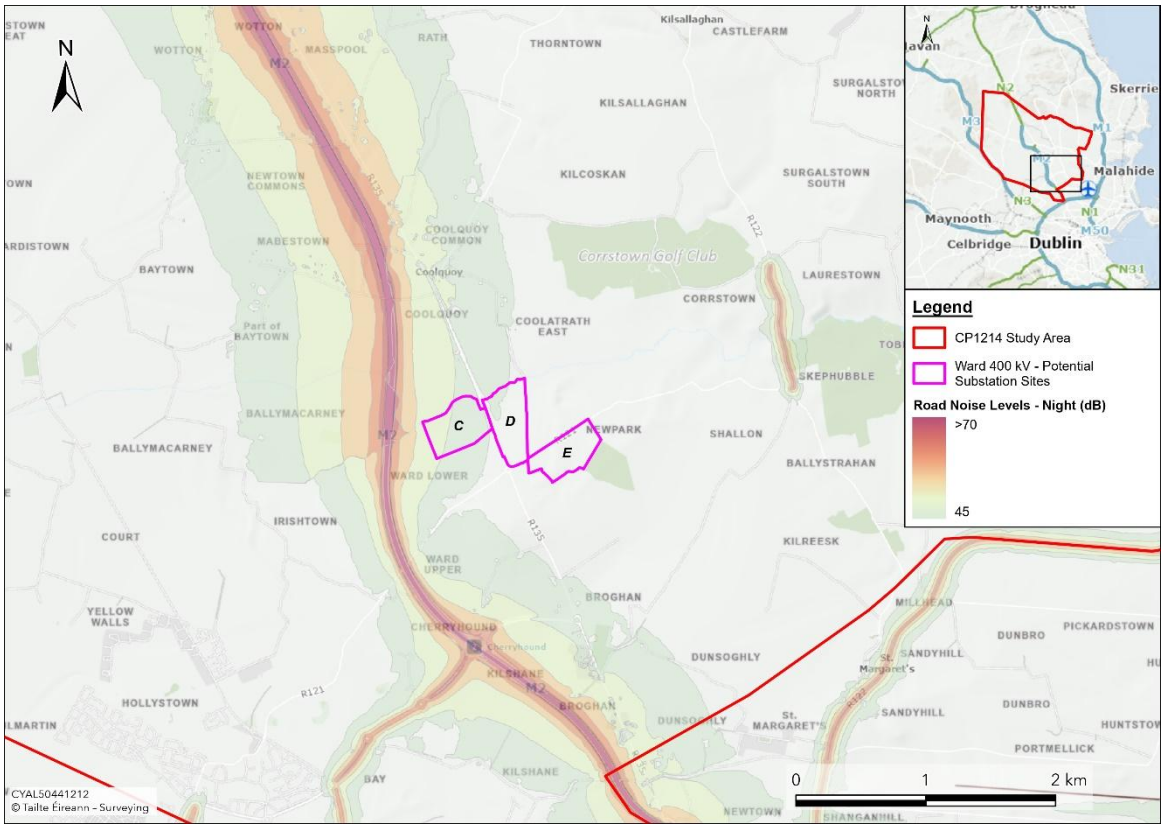

Figure 3-4 - Night-time noise maps from roads with respect to each option

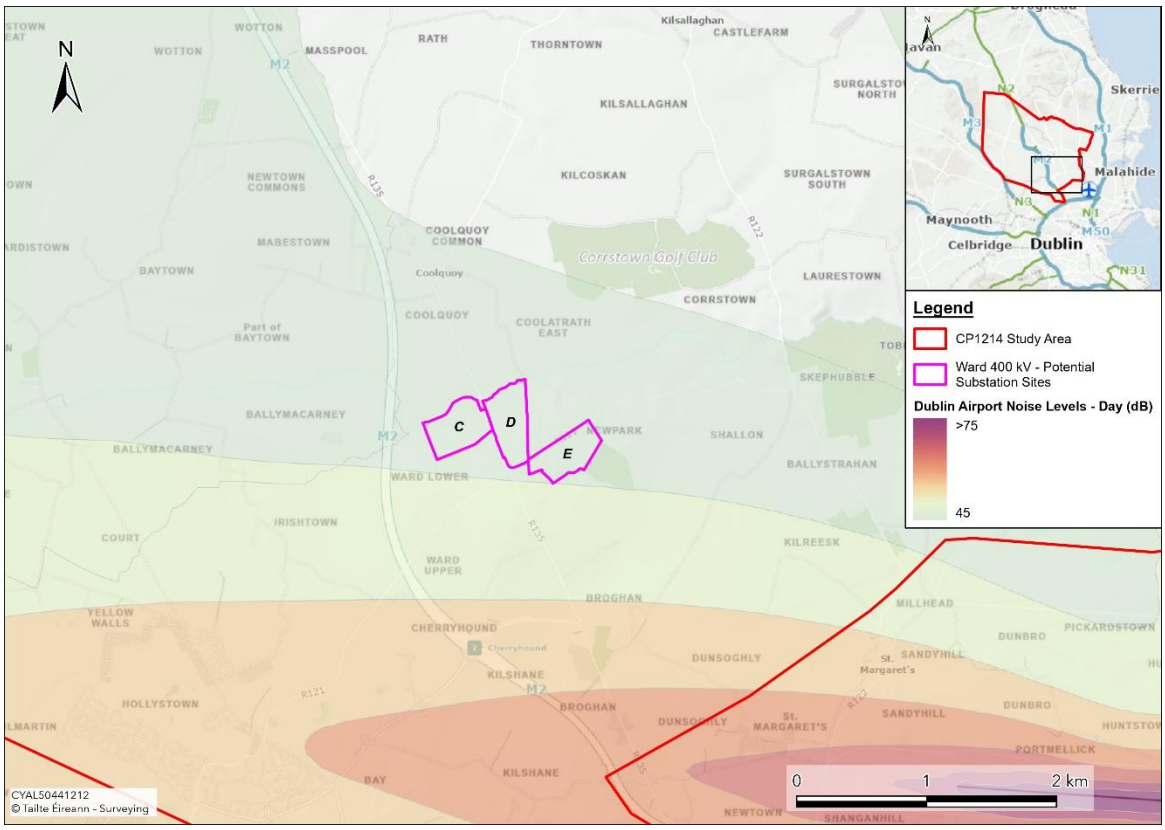

Figure 3-5 - Daytime noise maps for Dublin Airport with respect to each option

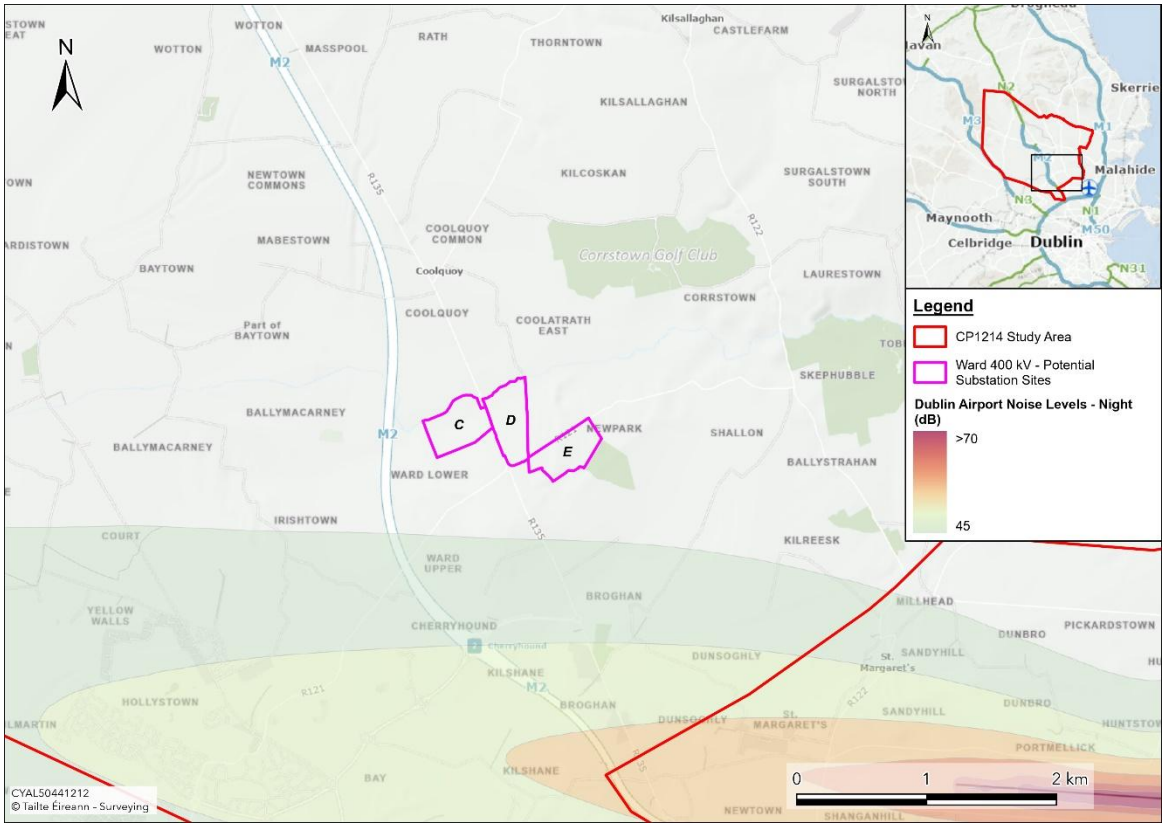

Figure 3-6 - Night-time noise maps for Dublin Airport with respect to each option

3.5.1.4 Water

3.5.1.4.1 Groundwater Bodies

There is potential for substation development to impact on groundwater quality, particularly during the construction phase, because of changes to land use, hydrocarbon contamination and changes in groundwater recharge. All substation site options are located within the Swords groundwater body (EPA code: IE_EA_G_011), classified by the (EPA) (2026) as 'good' WFD status (2019–2024) and 'not at risk' of failing to meet WFD objectives by 2027.

3.5.1.5 Contaminated Land

Contaminated Land risk was rated Moderate-Low across all options with no discernible differences between them. Based on a review of available historic mapping and aerial photography, historic land-use within the priority sites was agricultural in nature. There are no historic landfills reported within the general area of the options. There are no EPA licenced facilities within 2 km of the options. There are no SEVESO sites within the general area of the options. There are no active or disused quarries or mineral occurrences within or adjacent to the options. Site investigation surveys will still be required.

3.5.2 Differences between options

3.5.2.1 Biodiversity, Flora and Fauna

3.5.2.1.1 Impacts on Sensitive Bird Species and/or Their Habitats

Some differences between the options were evident. The Ward River flows along the northern boundary of Site C and Site D, while in Substation Site E, the northern, eastern and western boundaries are surrounded by field drains which drain into the Ward River. The Ward River may potentially provide foraging habitat for some species including Kingfisher, a species listed on Annex I of the Birds Directive. The nearest I-WeBs site is the Broadmeadow (Malahide) Estuary (I-WeBs Site Code: 0U408) which encompasses the Malahide Estuary SPA.

In Site D and Site E, there are no records of barn owl (Red listed on BOCCI) but some of the open farm buildings and the derelict building to the east of Site D and to the north of Site E might be capable of supporting it. Herring Gull were recorded in Site E during Winter Bird Surveys for CP1021 East Meath-North Dublin 400 kV UGC in 2022/2023. Other species recorded were black-headed gull and lapwing. A diversity of breeding birds were recorded also, and included great black-headed gull, grey heron, meadow pipit, snipe and yellowhammer.

Figure 3-7 - Example of Winter stubble (Site C). Image taken January 2025.

Figure 3-8 - Open farm building with potential to support Barn Owl (Site E). Image taken July 2025.

3.5.2.1.2 Impacts on Protected Species Outside of Natura 2000 Sites

In Site C and Site D, the site walkover (January 2025) indicated otter could potentially be present and further site surveys are required to determine this. The proximity to the Ward River likely provides foraging and commuting opportunities for bats and other species who use this linear ecological corridor. Otter (Annex II and IV) are known from the wider area (although not explicitly recorded here) and there is a high likelihood for this species to occur within watercourses and riparian habitats. The Fingal Biodiversity Plan states that otters are found along all rivers in Fingal; however, Site E is considered less suitable for otter activity as it is characterised by field drains rather than a defined river system.

In Site D, the farm building to the south-east of this site (and outside the footprint of Site D; Figure 3-9) might provide bat roosting opportunities as well as the mature treelines on the western boundary. A masonry bridge exists just downstream of Site D but appears the crevices have been infilled with shotcrete likely limiting bat habitat. This needs to be determined as part of the Ecology site surveys.

Figure 3-9 - Abandoned building immediately to the east of Site D

3.5.2.1.3 Impacts on Ecological Networks, and/or Connectivity, and Green Infrastructure

Site C, Site D and Site E are not located within the Nature Development Area boundaries identified in FCC Development Plan (2023-2029; Figure 3-10).

However, in Site C and Site D, an ecological corridor (FCCDP 2023-2029) skirts the northern boundary of these sites and is associated with the Ward River (Figure 3-10). FCC Development Plan (2023–2029) states "*The Council will normally only grant planning permission where it is clearly demonstrated that a proposal will not adversely affect the habitats and/or species of interest in the corridor or stepping stone or compromise its function as an ecological corridor or stepping stone. Proposals for development affecting these areas should also seek to enhance the ecological values of the corridor or stepping stone as an integral part of the proposal. An ecological assessment may be required for any proposed development likely to have a significant impact on habitats and species of interest in an ecological corridor or stepping stone*".

Furthermore, objective GINHO40 Ecological Assessments in FCCDP (2023–2029) states: "*Protect the ecological functions and integrity of the corridors indicated on the Plan Green Infrastructure maps. An ecological assessment may be required for any proposed development likely to have a significant impact on habitats and species of interest in an ecological corridor or stepping stone*". "*Ensure that hydro-morphological assessments are undertaken where proposed development is within lands which are partially or wholly within the Riparian Corridors identified as part of this Development Plan*". There is no defined and mapped ecology corridor in Site E (FCCDP 2023–2029; Figure 3-10).

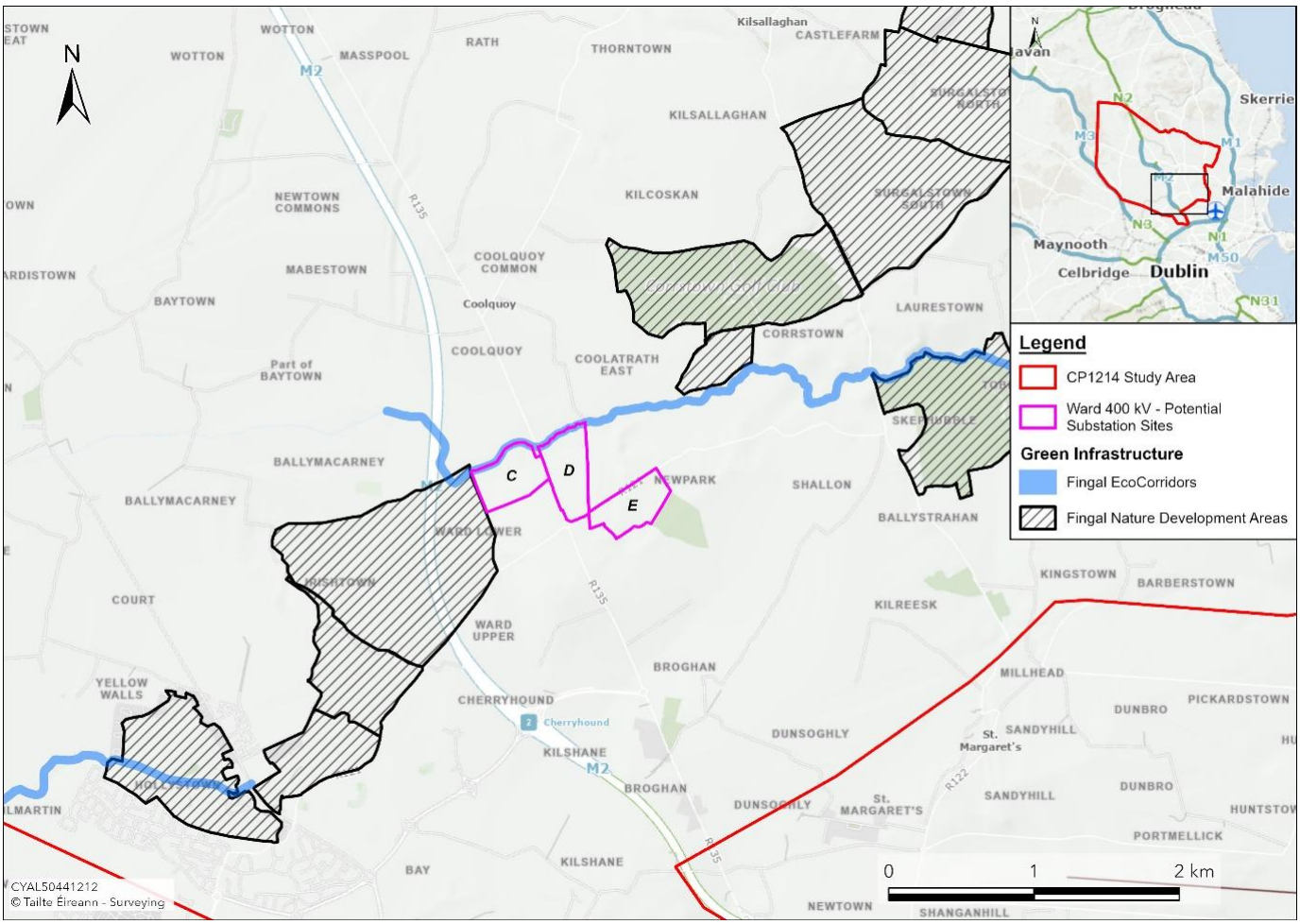

Figure 3-10 - Location of Green Infrastructure (Nature Development Areas and Ecological Corridors) as mapped in Fingal Development Plan with respect to Options.

3.5.2.1.4 Impacts on Aquatic Environment

In Site C and Site D, the mainstem of the Ward River (Water code: IE_EA_08W010300) flows along the northern boundary of these options in an easterly direction. It is classified by the EPA as being of 'moderate' WFD (2019–2024) status and as being 'at risk' of failing to meet WFD objectives by 2027. The Ward River outfalls to Malahide Estuary SAC/SPA/pNHA and as such there is hydrological connectivity from these options to these Natura 2000 sites and national sites. Furthermore, Malahide Estuary is also a RAMSAR site (Site Code 833).

The Ward River Valley Park is downstream of Site C and Site D. The Ward River Valley Park is a spawning ground for trout and salmon populations. The Ward River is considered important for Brook Lamprey, Atlantic Salmon, Brown Trout, all bat species, kingfisher, dipper, sand martin, common frog, common newt and green figwort (FCC, 2023a). This river is arterially drained (JBA, 2018) and rivers with significant hydro-morphological alterations are a key focal area of the Water Action Plan (2024) because these sites are continually failing to meet WFD requirements. Any further degradation of this site associated with this development could compromise water quality and associated Annex I species. Fingal Biodiversity action plan states "*Avoid developments within the 48m buffer of the river corridor or in a floodplain of the Liffey, Tolka, Pinkeen, Mayne, Sluice, Ward, Broadmeadow, Ballyboughal, Corduff, Matt and Delvin. This will ensure that the corridor function of the river and adjacent lands is protected, and that movement of flora and fauna is not compromised*".

In Site C, the substation is currently sited outside this ecological corridor 48 m buffer. The substation footprint is currently in Flood Zone A and B and arguably within the flood plain of the Ward River ecological corridor. The site

walkover on 13th January 2025 indicated surface water was present that corresponds with Flood Zone B just west of the existing dwelling.

There are field drains along the western and eastern boundaries of Site D that flows into the Ward River. This river is arterially drained (JBA, 2018) and rivers with significant hydro-morphological alterations are a key focal area of the Water Action Plan (2024) because these sites are continually failing to meet WFD requirements. Any further degradation of this site associated with this development could compromise water quality and associated Annex I species.

Flood risk associated with the Ward River exists in Site D. It will require site specific flood risk assessment (SSFRA) if it is to be the preferred option as SSFRA should be considered for all new developments within the County.

In Site E, a series of drains run along the northern boundary of this site as well as the western and eastern boundaries. These flow into the Ward (030). The stream is classified by the EPA as being of 'moderate' WFD (2019–2024) status and as being 'at risk' of failing to meet WFD objectives by 2027. Drainage ditches both wet and dry exist in this site.

The FCC Development Plan (2023–2029) requires that "*Ensure that hydro-morphological assessments are undertaken where proposed development is within lands which are partially or wholly within the Riparian Corridors identified as part of this Development Plan*". This will be considered in the detailed design stage for the chosen option.

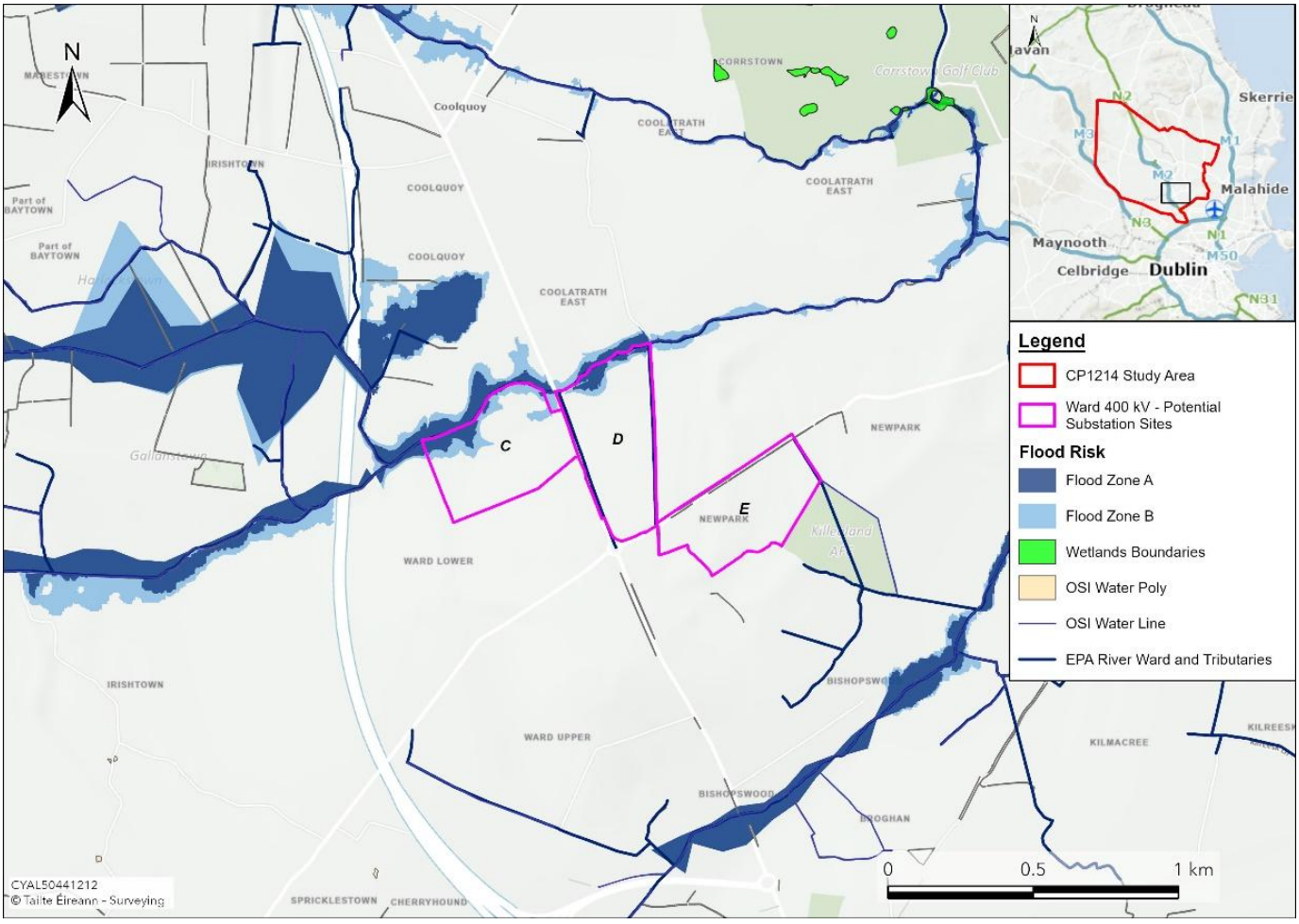

Figure 3-11 - Flood risk associated with each Option. Date source: OPW (2025)

3.5.2.1.5 Space for mitigation, biodiversity net gain and nature inclusive design

Nature Inclusive Design/Biodiversity Enhancement is required for all new substation builds by EirGrid with the objective to deliver on published commitment to implement Nature Inclusive Design proposals across EirGrid projects, and wherever feasible given third-party land constraints, go beyond nature protection to deliver nature restoration. Electricity transmission infrastructure is linear in nature akin to road and pipeline infrastructure (EirGrid, 2020) and the Strategic Environmental Assessment for EirGrid's Implementation Plan recognises the potential for fragmentation associated with linear infrastructure. An environmental objective in the SEA is:

B2 – "Support Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function as stepping-stones (designated or not) - are of major importance for wild fauna and flora and essential for the migration, dispersal and genetic exchange of wild species".

Substation development (in tandem with the associated grid corridor infrastructure) could affect the integrity and function of ecological corridors and stepping-stones. In particular, any development that intersects ecological corridors will likely compromise their integrity. Fingal (2023a) recognise that "*Preventing fragmentation of existing corridors that connect nature conservation areas is less expensive than having to restore connections in the future. It is therefore important that the existing corridors are protected from inappropriate development in the county Development Plan*" (FCC, 2023a).

FCC Development Plan (2023–2029) Objective DMSO138 states – "*Protection and Enhancement of Biodiversity Ensure all development and infrastructure proposals include measures to protect and enhance biodiversity leading to an overall net biodiversity gain*". Furthermore the plan also states "*The use of green solutions for drainage is underpinned in the NPF and Fingal's Climate Change Action Plan (2019–2024) and is a key cornerstone of achieving flooding and Water Framework Directive objectives*".

The performance for this sub-criterion showed differences between the sites. SuDS may be required for a preferred option. Sufficient space will be needed within the site boundary for SuDS as well as planting/landscaping etc. In Site C the opportunity for planting is more limited and this will be further constrained to the south of the site given existing constraints in the north associated with flood risk and cultural heritage records. Culverting may be required in Site D given drains on both boundaries. Plan Objective IUO27 – De-culverting of Watercourses states "*Promote de-culverting to restore watercourses to their natural environmental state*".

Off-site habitat compensation could be provided for in the future for this and/or other developments in any of the options due to the size of the folios. An objective in EirGrid transmission development plan is:

"*BIODO2: Having regard to BIOD01 and applying the mitigation hierarchy, deliver No Net Loss of biodiversity, if not Net Biodiversity Gain, on all EirGrid projects (onshore and offshore), except where external factors beyond EirGrid control constrain this objective (e.g., third party land ownership on linear infrastructure). As a last resort in such cases where external factors constrain delivery of No Net Loss or Net BNG, EirGrid will consider off-site habitat compensation. Such off-Site Compensation may be delivered by third party suppliers (e.g., not-for-profits) on third party lands, or on ESBN-owned lands, or (if and when established through appropriate governance) on lands acquired by EirGrid for biodiversity compensation*".

Ecological connectivity, BNG, NID, SuDs and landscape planting will be considered further in later stages of the project development process.

3.5.2.2 Material Assets

Material assets is another sub-criterion that differentiated between options.

In Site C there is a telecommunications mast within the site and 1no. 110 kV overhead line (OHL) runs from the southwest corner to the northeast corner within this site. There is 1no. 38 kV OHL running in a south-easterly direction from the northern border. There is no mapped Gas Networks Ireland infrastructure within this site. The location of this mast limits altering siting of this substation is required in the detailed design stage and increases this risk here.

In Site D there are 2no. existing MV OHLs which traverse the folio and will need to be permanently diverted.

In Site E there is an existing MV OHL which traverses the folio and will need to be permanently diverted.

Once specific sites have been identified in Step 4, and potential routes for the circuits have been identified, further detailed assessment on built services will be undertaken – this includes water, sewer, surface water, telecommunications, etc.

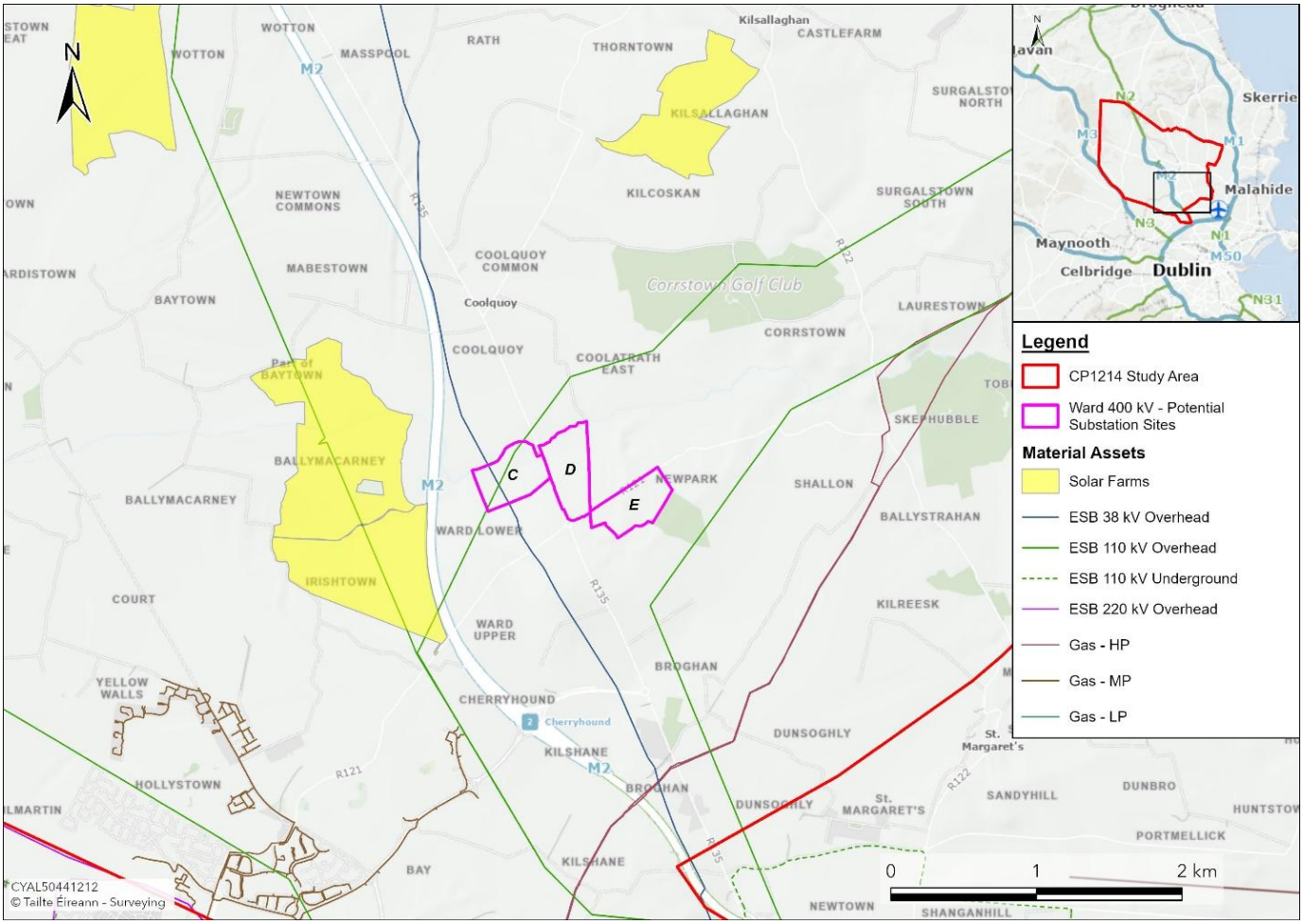

Figure 3-12 - Key known material assets in the Substation Site options

3.5.2.3 Water

3.5.2.3.1 Groundwater Vulnerability

Difference in groundwater vulnerability were apparent between the options. In Site C, there are sections of Rock at or near surface or Karst vulnerability in north and south of Site C. Otherwise, the majority of site has extreme groundwater vulnerability (Figure 3-13). Within Site D, the northern section of the site has extreme groundwater vulnerability, with a tiny section of rock/karst. The middle section of the site has high groundwater vulnerability and a small section in the south of the site has moderate vulnerability. In Site E, there is moderate groundwater vulnerability throughout this site.

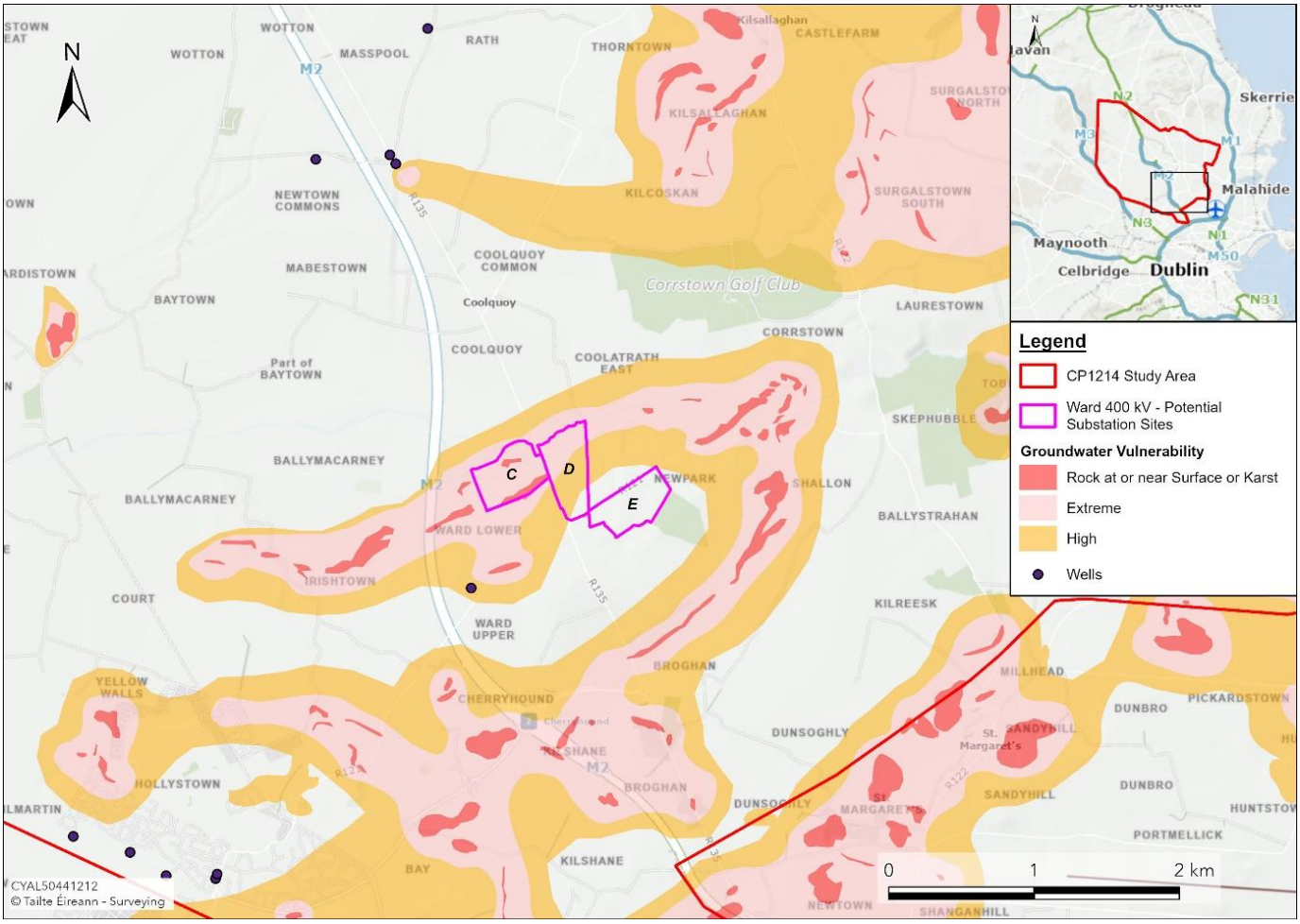

Figure 3-13 - Groundwater vulnerability with respect to the options

3.5.2.3.2 Flood Risk

Flood Risk was a sub-topic that differentiated between options. A review of OPW maps shows Flood Zone A and B along northern borders/fringes of Site C associated with the Ward River. Approximately one third of Site C is in Flood Zone A+B. The Ward River also flows along the northern boundary of Site D. Flood risk associated with the Ward River exists in Site D. SSFRAs will be required for all new developments within the County. All developments must prepare a Stage 1 Flood Risk Analysis and if the flooding risk is not screened out, they must prepare a SSFRA for the development, where appropriate (OPW, 2025).

No flood risk was identified in Site E (OPW, 2025).

3.5.2.4 Planning and Policy

Planning and Policy differentiated between the sites.

Land use zoning for Site C and E is designated as ‘GB – Greenbelt’ with an objective to ‘Protect and provide for a Greenbelt’. The objective vision is to *"Create a rural/urban Greenbelt zone that permanently demarcates the boundary (i) between the rural and urban areas, or (ii) between urban and urban areas. The role of the Greenbelt is to check unrestricted sprawl of urban areas, to prevent coalescence of settlements, to prevent countryside encroachment and to protect the setting of towns and/or villages. The Greenbelt is attractive and multifunctional, serves the needs of both the urban and rural communities, and strengthens the links between urban and rural areas in a sustainable manner. The Greenbelt will provide opportunities for countryside access and for recreation, retain attractive landscapes, improve derelict land within and around towns, secure lands with a nature conservation interest, and retain land in agricultural use. The zoning objective will have the consequence of achieving the regeneration of undeveloped town areas by ensuring that urban development is directed towards these areas"*.

Utilities installations are open for consideration in these sites zoned as ‘Greenbelt’.

Land use zoning for Site D was un-zoned at the time of the MCA assessment[4]. This site has since been rezoned to Rural Business with an objective to provide for and facilitate rural-related business which has a demonstrated need for a rural location (FCCDP 2023–2029).

FCC Development Plan (FCCDP 2023–2029) states the following with respect to safeguarding Biodiversity / Biodiversity Net Gain (BNG) and the implementation of mitigation measures. The following are applicable to all options:

- Objective DMSO138 states – "Protection and Enhancement of Biodiversity Ensure all development and infrastructure proposals include measures to protect and enhance biodiversity leading to an overall net biodiversity gain".
- "The use of green solutions for drainage is underpinned in the NPF and Fingal’s Climate Change Action Plan 2019–2024 and is a key cornerstone of achieving flooding and Water Framework Directive objectives".

The following is applicable to only Site D as culverting of drains located on both boundaries may be required:

- IUO27 – De-culverting of Watercourses: ‘Promote de-culverting to restore watercourses to their natural environmental state’

For all options, sufficient space will be required for SuDS (should they be needed) and planting/landscaping etc. It is expected that Site C will be constrained for space to the south of the site given existing constraints in the north.

[4] The MCA risk was not adjusted given this change in information.

3.6 Socio-Economic Aspects

Table 3-6 summarises MCA ratings for the Socio-Economic aspects of each option. Across all socio-economic sub-criteria, the overall ratings indicate Site C and Site D present greater socio-economic risk than Site E (Table 3-6). An evaluation of each option is made under each socio-economic sub-criterion and is elaborated further in the following sections. Note: there was no difference between the options with respect to impacts on recreation, amenity and tourism and the risk was rated Low.

Table 3-6 - MCA Ratings (Socio-Economic Aspects)

Option	Site C	Site D	Site E
Landscape & Visual			
Recreation, Amenity & Tourism			
Cultural Heritage			
Overall Socio-Economic Rating			

3.6.1 Landscape and Visual

Landscape and visual impacts are considered a key risk for the options including changes in the fabric, character and quality of the landscape, and specific changes in the character of available views and the effects of those changes on visual receptors (e.g., users of footpaths, residents or users of recreational facilities).

There are no protected views at or near any of the options. All sites are predominantly agricultural within close proximity to numerous individual residences along the road networks. Newpark Care Centre is located northeast of Site E increasing visual sensitivity for this option.

The options are not located within a 'Highly Sensitive Landscape' (GIM1) or within a 'HA High Amenity Area' and there are no protected views within or in close proximity to any of the options. The landscape character type of all options is listed as 'Rolling Hills with Tree Belts'; which is classed as a landscape character value of modest value and medium sensitivity, and 'Low Lying Agriculture'; which is classed as a landscape character value of modest and low sensitivity.

Site C and Site E are zoned as green belt suggesting the landscape of both these sites has more local value compared to sites outside the greenbelt area. These site options are therefore more sensitive to built-development than Site D (un-zoned).

A minimum of 10 m wide belt of screen planting should be incorporated into the preferred substation site plan. Site C and Site E can accommodate this, however Site D cannot. This means that sufficient screening of visual impact cannot be achieved in Site D, and therefore it is rated Moderate-High risk, whereas Site C and Site E are rated Moderate risk.

3.6.2 Cultural Heritage

The Cultural Heritage risk was assessed based on the presence of National Inventory of Architectural Heritage (NIAH) features, Sites and Monuments Record (SMR), Architectural Conservation Areas and County Record of Protected Structures. On site surveys (e.g., geophysical surveys, slit trenches, etc.) were not undertaken for the three options, and therefore the assessment is based on desktop sources.

There are no cultural heritage features within Site D or Site E, and for that reason they have been assigned a low-risk status. However, there is 1no. SMR listed feature within Site C, a large enclosure (DU011-174----) located in the northern area of the site (Figure 3-14). Site C therefore is rated Moderate-High risk.

The enclosure is described by the Archaeological Survey of Ireland as "*Located in a large arable field c. 40m SE of the Ward River and c. 230m WSW of Coolarath Bridge. Site located close to the N boundary of field. The enclosure can be seen on Google Earth (24 June 2018) coverage where it is visible as a positive cropmark. The site is circular in plan (ext. diam. c. 56.1m E-W and c. 55.2m N-S) defined by a ditch (With c. 2m). An irregular feature to the centre and to the W half of site appears to be associated with a 'gravel pit' indicated on the OS First ed. 6-inch map sheet (c. 1840) and the OS 25-inch map sheet (c. 1910) where it is indicated with 'tree' symbols*."

Objective DMSO229 in FCC development plan (2021–2027) states: "*Impacts on Archaeological and Architectural Heritage Ensure that proposals for large scale developments and infrastructure projects consider the impacts on the archaeological and architectural heritage and seek to avoid them. The extent, scale, density, route, services and signage for such projects should be sited at a distance from Protected Structures and Recorded Monuments, avoid affecting the special character of Architectural Conservation Areas, remain outside the boundaries of historic designed landscapes, and not interrupt specifically designed vistas. Where this is not possible the visual and physical impact must be minimised through appropriate mitigation measures such as high-quality design, that goes beyond regulatory and engineering requirements*".

The National Monument Service indicates that "*It is important to note that only records that are precisely located are visible on the map canvas and that each record is represented as a red point or dot: this equates with the known approximate centre of the record and is not indicative of its geographic extent*".

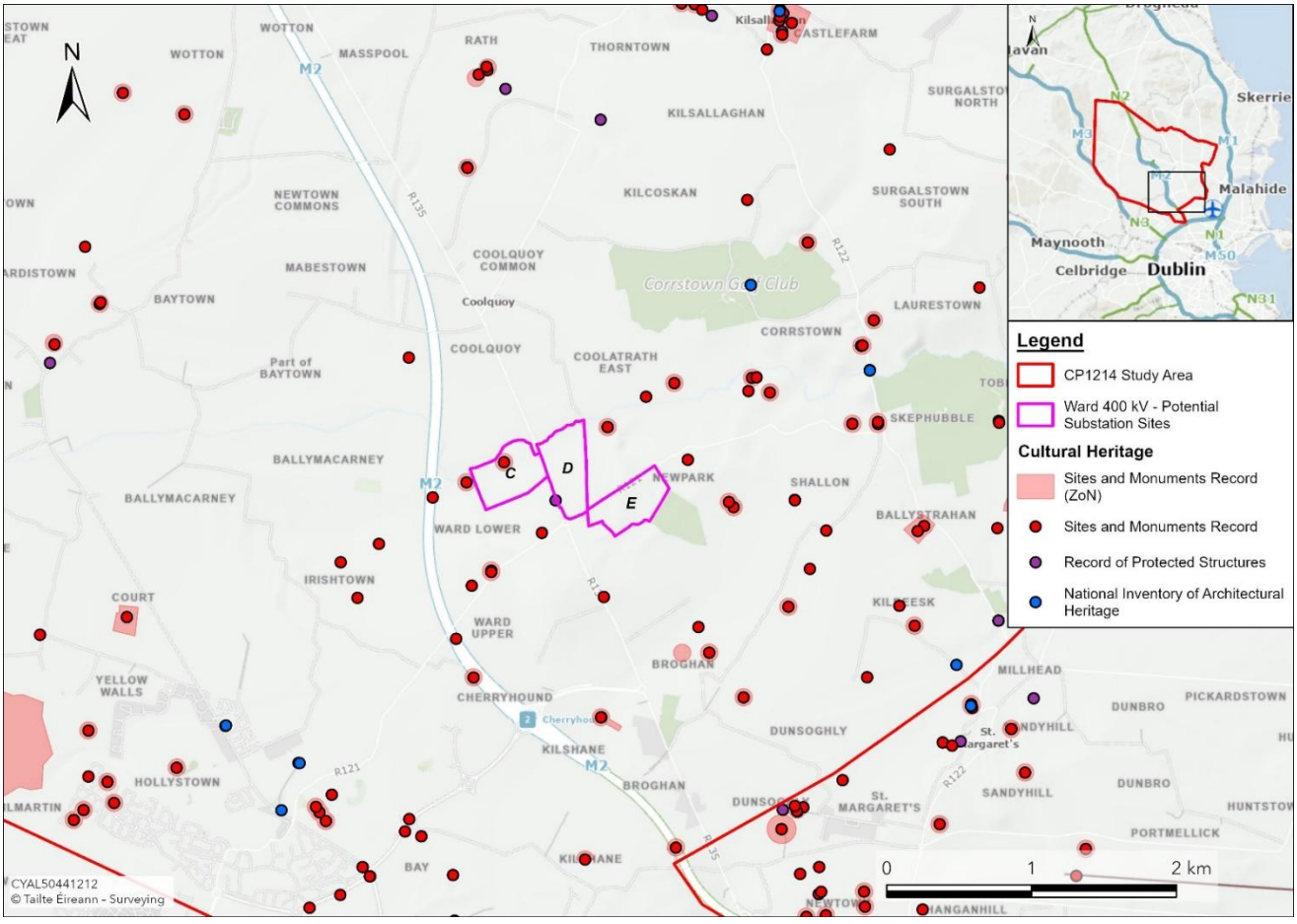

Figure 3-14 - Known Cultural Heritage Records with respect to the options

4. Conclusions

4.1 Summary of the MCA

The purpose of the MCA is to identify the Best Performing Option (BPO) for the proposed Ward 400 kV Substation. This report summarises the MCA completed in Step 4 on the three (3no.) options i.e. Site C, Site D and Site E for the proposed Ward 400 kV Substation.

The substation zones and refined site options presented in this report and assessed as part of the MCA for the proposed Ward 400 kV Substation, have been informed by ongoing stakeholder, public and landowner engagement, including the FEM Step 3 Public Consultation in 2024.

To assist in identifying the best performing substation site, a Multi-Criteria Analysis (MCA) was carried out in accordance with the EirGrid Multi-Criteria Analysis Guidelines. The five main criteria considered in the MCA are:

- Technical Performance;
- Economic Performance;
- Deliverability Aspects;
- Environmental Aspects; and
- Socio-Economic Aspects.

Each of these criteria were broken down further into sub-criteria and a multi-criteria evaluation matrix was used to identify the best performing option. Table 4-1 shows the overall performance for the 3no. site options.

Table 4-1 - MCA Ratings (Overall)

Option	Site C	Site D	Site E
Technical Performance			
Economic Assessment			
Deliverability Aspects			
Environmental Aspects			
Socio-Economic Aspects			
Overall Rating			

Whilst all options are rated ‘Moderate’ risk overall, there are discernible differences in how each of the options perform in respect of particular sub-criterion. The differences for each option are described in detail in Section 3 and summarised below.

Technical Performance: Considering technical performance, all options are found to perform similarly overall but Site D performs slightly better than the other two options. The technical evaluation of the various options is largely driven by the ease of connecting the planned and future circuits into the substation. Site D is found to be the least

congested option in terms of connecting UGC circuits (due to direct access to adjoining regional roads). Site C and E are somewhat restricted in terms of circuit connectivity and will require additional corridor wayleaves to connect in future circuits. Site D is somewhat restricted in terms of space which could limit further expansion of the substation, whereas Site C and Site E have additional space onsite which can be used for future equipment and apparatus. However, all options are confirmed to have adequate space for the initial required GIS buildings (including future GIS bays) and associated equipment/circuits.

Economic Performance: From an economic perspective, Site D and Site E perform better (Moderate-Low risk) due to the shorter required loop-in to the consented CP1021 East Meath-North Dublin 400 kV UGC.

Deliverability Aspects: Considering deliverability, all options are found to perform similarly overall but Site E performs slightly better than the other two options. Site E has adequate land space for the substation and its future expansion but additional off-road circuit corridors through third-party lands will be required for future circuits to route to the R135. For Site D, land availability is adequate for the initial substation layout but may be restrictive in terms of future expansion and circuit connections. Implementation timelines and ease of construction are rated best for Site E and Site D, whereas Site C could be impacted if the existing OHL circuits (38 kV and 110 kV) need to be diverted (with construction timelines potentially being dependent on outage windows).

Environmental Aspects: When considering the environmental aspects overall, Site D and Site E perform better than Site C and are rated Moderate-Low risk. Site C was the worst performing site, rated Moderate-High risk. Water revealed the greatest differences between sites largely driven by the proximity to the Ward River and associated flood risk in Site C and Site D.

There was little/no variance in MCA ratings between the 3no. options for several environmental sub-criteria including: Biodiversity, Flora and Fauna, Noise and Vibrations, Planning and Policy and Contaminated Land. This is to be expected given that:

- Identified constraints and associated heat maps were used to (as best as possible) discard areas with higher environmental and ecological risk.
- The proximity of the substation sites to each other means they have many shared attributes which makes it difficult to identify any discernible differences between them.

Socio Economic Aspects: From a socio-economic perspective, the overall rating indicate Site C and D pose greater socio-economic risk relative to Site E. This is because:

- While Landscape and Visual impacts are considered a key risk for all of the site options the risk is higher in Site D because sufficient landscape screening would unlikely be achieved. The substation footprint requirements for the siting of the substation within the folio resulted in (at a maximum) a 25 m linear landscaping buffer around the margins of Site D. The screening depth that could be achieved with this remaining space is only 5 m (to account for a fall zone of at least 20 m for trees). This would not provide sufficient screening of the visual impact of the substation and compromised screening solutions (e.g., hedging) would be needed. While there are opportunities to increase screening planting depth at some locations (e.g., the southern section of the site) there remains substantial residual risk.
- Cultural Heritage is a key risk for Site C and the primary driver of the higher rating here relative to Site D and Site E. There is a known archaeological sites and monument record in Site C.

4.2 Selection of the Best Performing Option (BPO)

In the MCA Workshop attended by the EirGrid Cross-Functional Team and the project team, and following a robust MCA process, it was concluded that ***Site E is the Best Performing Option for the Ward 400 kV Substation*** for the following reasons:

- The substation can be adequately sited within Site E with allowance for future expansion and has the least risk in terms of construction and implementation timelines (whereas Site D has limited space for future expansion);
- The R121 runs adjacent to the site which reduces the length of the loop-ins to the consented CP1021 East Meath North Dublin 400 kV UGC (making for easier connection and reduced costs in comparison to Site C and Site D);
- The site is somewhat restricted in terms of circuit connectivity, but this can be overcome with additional circuit corridors linking to the R135;
- There is no known flood risk associated with Site E unlike Sites C and D;
- There is only 1no. existing MV OHL within Site E which needs diversion (as opposed to higher voltage OHLs within Site C);
- There is no known cultural heritage risk associated with Site E (based on desktop sources) whereas Site C has known cultural heritage risk; and
- Site E could accommodate landscape screening and mitigation with space for biodiversity net gain also available. This would be more difficult to achieve with Site C and D.

5. Next Steps

This report, the Ward 400 kV Substation Step 4 Report, will be published and the findings presented to the public through a public information campaign. EirGrid has commenced engagement with key stakeholders (e.g., An Coimisiún Pleanála, Fingal County Council, etc.) and this process will continue over the next few months.

The preliminary design for the Ward 400 kV Substation and associated 400 kV loop-in circuits has commenced together with environmental and site surveys and investigations.

A Step 4 Public Information Campaign will be carried out in April and May 2026 and any feedback received will be reviewed by the project team. The project will then move into Step 5, which involves the development, compilation and submission of a Strategic Infrastructure Development (SID) planning application to An Coimisiún Pleanála. The submission of the SID planning application will be supported by a range of environmental and technical reports.

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