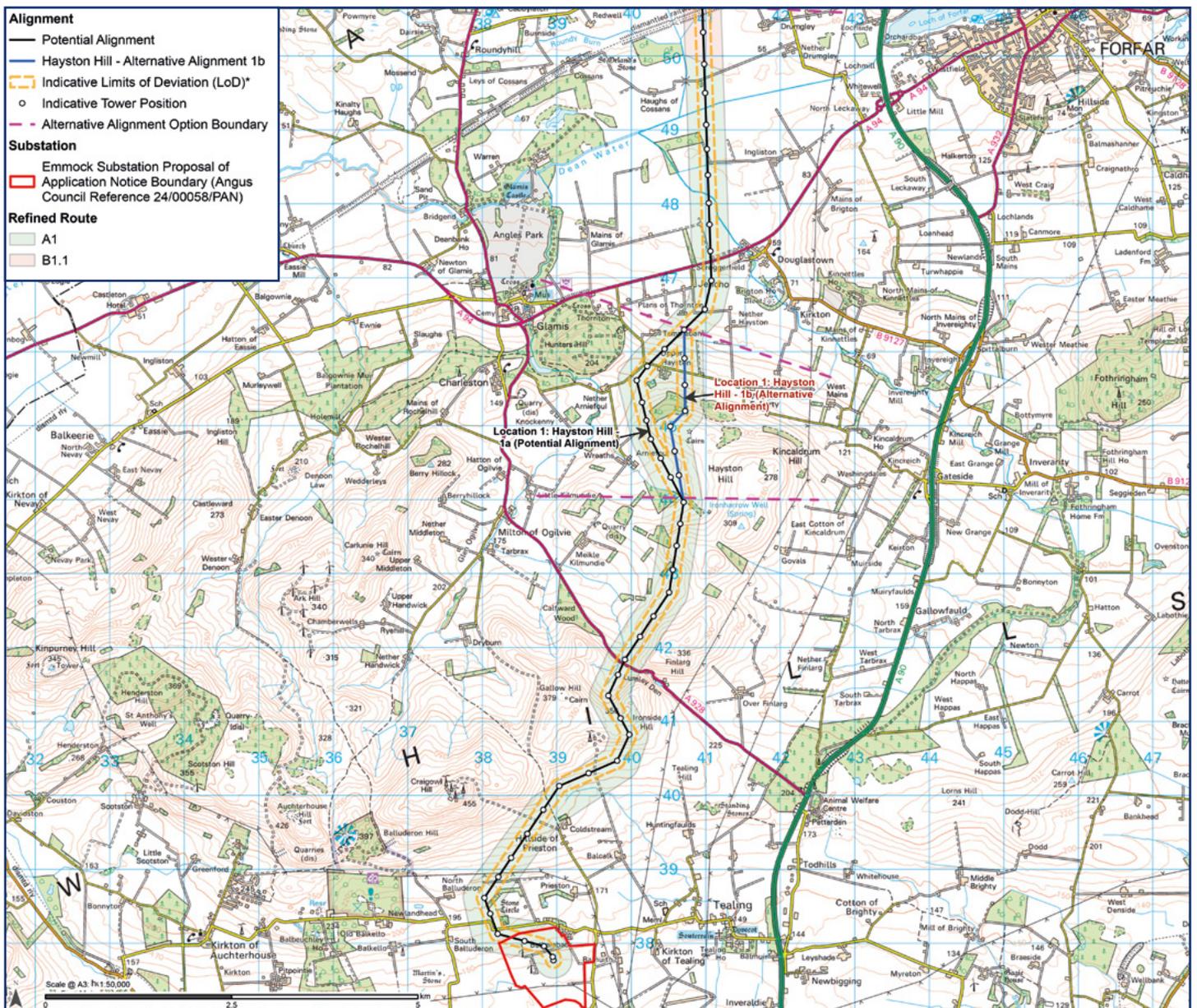


Section A – Tealing to Forfar



This leaflet summarises the information provided in the Kintore to Tealing Alignment Consultation Document, which can be found here: ssen-transmission.co.uk/TKUP.

Section A – Tealing to Forfar

Potential Alignment

The Potential Alignment in Section A (within Route A1) starts from the new proposed 400kV substation known as Emmock, near Tealing, initially passing in a northwestern direction past the scattered properties around Balkemback and Balluderon to the west of Balkemback Cottages Stone Circle (Scheduled Monument) before heading northeast over rising hill ground to the east of Craigowl Hill. The alignment then heads northeast along the slopes of Ironside Hill to avoid a communications mast.

The alignment then crosses the A928 Glamis to Petterden public road to the west of Finlarg Hill remaining in an upland area before returning to lower ground as it passes west of Hayston Hill across predominantly agricultural land.

The alignment then follows a northerly course, crossing the A94 Glamis to Forfar road to the east of Hunters Hill and the village of Glamis and to the west of the small settlement of Douglastown. The final three kilometres of the alignment in Section A cross low-lying and partly flood-prone agricultural land to the west of Forfar.

Alternative Alignment Options

There is one location where Alternative Alignments have been considered in Section A; at Location 1: Hayston Hill (two alternatives). The key environmental, technical and cost considerations which differentiate between Alternative Alignment 1a (the Potential Alignment) and Alternative Alignment 1b at Hayston Hill include:

Environmental

- Alternative Alignment 1b has a greater potential to impact mixed scattered scrub and areas of upland heathland that have the potential to support sensitive Annex 1 habitats associated with the upland areas.
- Alternative Alignment 1b is more constrained by cultural heritage due to its proximity to the Scheduled Monuments located at Arniefoul Cairn and Nether Arniefoul Unenclosed Settlement.
- Alternative Alignment 1b is also more likely to impact forestry operations compared to Alternative Alignment 1a as some loss of woodland would likely be needed to create an operational corridor.



- Alternative Alignment 1a has slightly more potential to compromise the quality or quantity of surface or groundwater of regional importance due to its proximity to a groundwater spring which may be an abstraction source, however there is flexibility to reduce this constraint with micrositing.

Technical

- Alternative Alignment 1b is likely to require more earthworks due to the steep/undulating topography encountered but has less towers than Alignment Alternative 1a.
- Alternative Alignment 1b has a higher number of towers situated above 200 metres Above Ordnance Datum (AOD) which, whilst achievable, is less technically preferred than siting towers on lower elevations where they are easier to construct and maintain.
- An overhead line following Alternative Alignment 1a would need to span more minor watercourses.

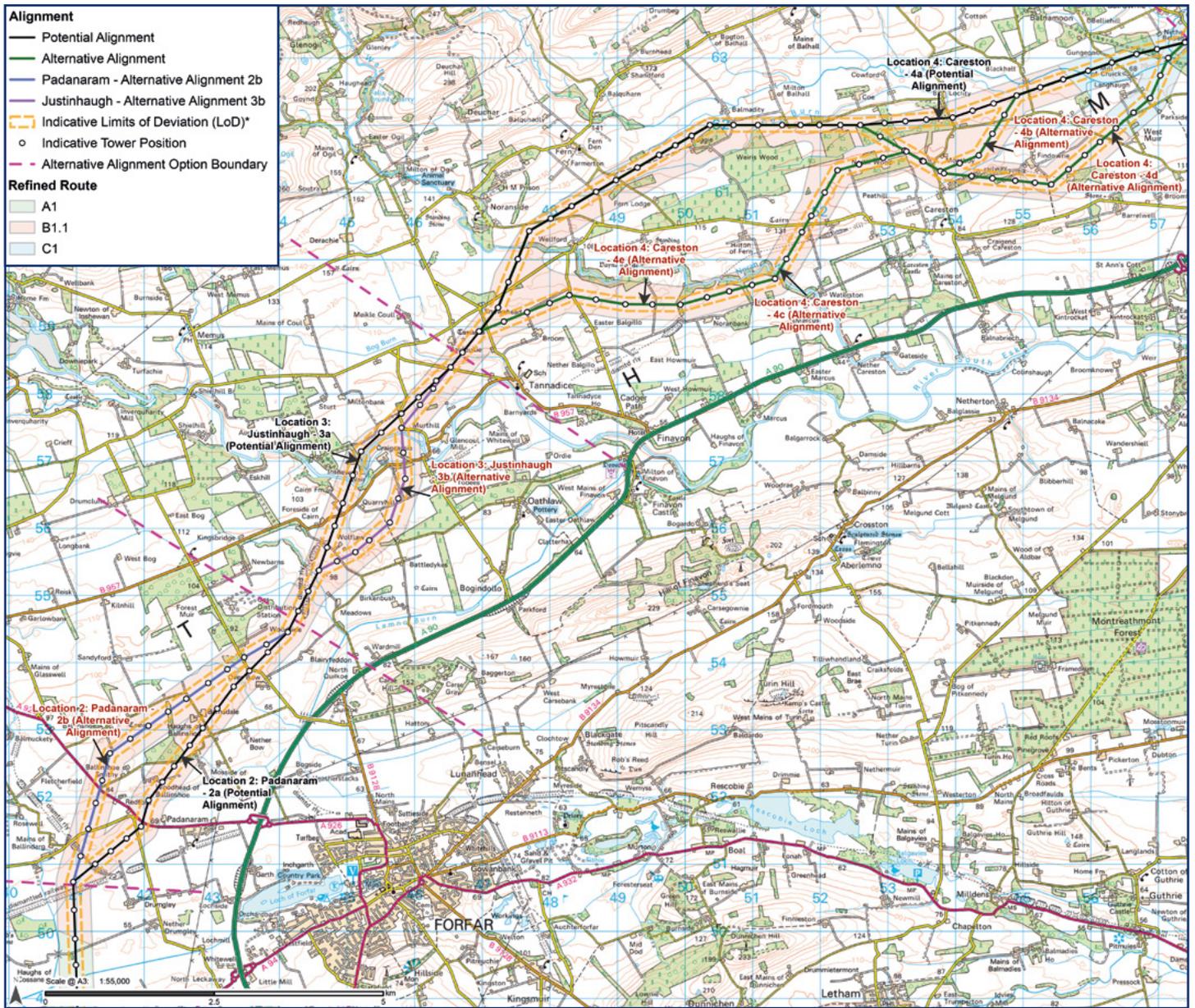
Cost

- Alternative Alignment 1b represents the lowest cost alignment but only marginally. This is primarily due to the overall length of Alternative Alignment 1b being slightly shorter and requiring fewer towers overall.

Conclusion

Alternative Alignment 1a is considered to be least constrained from both an environmental and technical perspective although it is marginally higher in cost. It has therefore been selected to form part of the Potential Alignment.

Section B – Forfar to Brechin



Please also see additional figures overleaf showing the five alternative alignment options at Location 4 Careston.

This leaflet summarises the information provided in the Kintore to Tealing Alignment Consultation Document, which can be found here: ssen-transmission.co.uk/TKUP.

Section B – Forfar to Brechin

Location 4: Careston Potential Alignment 4a



Location 4: Careston Alternative Alignment 4b



Location 4: Careston Alternative Alignment 4c



Location 4: Careston Alternative Alignment 4d



Location 4: Careston Alternative Alignment 4e




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Potential Alignment

The Potential Alignment in Section B (within Route B1.1) starts to the west of Forfar and initially passes in a northeast direction to the west of the settlement of Padanaram, and south of the Scheduled Monument at Ballinshoe Castle, spanning the Woodside Local Nature Conservation Site (LNCS) at its narrowest section. The alignment then crosses the A926 and B957 public roads and spans the River South Esk (a Special Area of Conservation designated for protected aquatic species) to the west of Justinhaugh Bridge.

The alignment continues to the northeast passing approximately 1 kilometre to the west of Tannadice village and crosses the Noran Water to the west of the settlement of Wellford, spanning a strip of ancient woodland on the banks of the river. The alignment continues in a northeastern direction to the north of Roughmount Wood and Weiris Wood then following a southeasterly course through Duns Wood and Lochty Wood past the settlement of Careston, located approximately 1.5 kilometres to the south of the alignment. The alignment continues in a northeastern direction across largely open agricultural land avoiding clusters of properties in the vicinity of Findowrie as it passes towards Little Brechin Wood into Section C.

Alternative Alignment Options

There are three locations where Alternative Alignments have been considered in Section B; at Location 2: Padanaram (two alternatives), Location 3: Justinhaugh (two alternatives) and Location 4: Careston (five alternatives).

Section B Location 2 – Padanaram

The key environmental, technical and cost considerations which differentiate between Alternative Alignment 2a (the Potential Alignment) and 2b at Padanaram include:

Environmental

- Both alignments cross some small areas of woodland, however it is considered that Alternative Alignment 2a offers greater opportunity than Alternative Alignment 2b to minimise the potential for felling through the southern edge of Forrestmuir Wood, which is also part of the Woodside LNCS. However Alternative Alignment 2a is slightly more constrained by long-established woodlands of plantation origin (LEPO) than Alternative Alignment 2b.
- Although both Alternative Alignments 2a and 2b avoid direct interaction with designated cultural heritage assets, Alternative 2b is considered to compromise the setting of two Scheduled Monuments, Ballinshoe Castle and Fletcherfield Enclosure. Whilst Alternative Alignment 2a would have some potential to compromise the setting of Ballinshoe Castle, it would be located further from the Scheduled Monument than Alternative Alignment 2b.
- Although the alternative alignments are considered to be similarly constrained for proximity to properties, Alternative Alignment 2a offers greater flexibility to ensure the OHL is located beyond 200 metres from residential properties. Alternative Alignment 2a also offers greater flexibility to locate the OHL further from sensitive visual receptors.
- Alternative Alignment 2b crosses an area of coniferous plantation woodland near Haughs of Ballinshoe which is slightly less preferred compared to Alternative Alignment 2a, which avoids interaction with areas of commercial forestry.

Technical

- Both alternative alignments would require towers to be situated within a floodplain, however Alternative Alignment 2b represents a higher technical risk. Alternative Alignment 2b maintains lower angles in comparison to Alternative Alignment 2a but runs in parallel with a high-pressure gas pipeline for a significant length which increases the mitigation required to resolve interference through induced voltage.

Cost

- Alternative Alignment 2a represents the marginally lower cost option primarily due to the overall length being shorter and requiring fewer towers.

Conclusion

Alternative Alignment 2a is considered to be least constrained from both an environmental and technical perspective and is the lower cost option. It has therefore been selected to form part of the Potential Alignment.

Section B Location 3 – Justinhaugh

The key environmental, technical and cost considerations which differentiate between Alternative Alignments 3a (Potential Alignment) and 3b at Justinhaugh include:

Environmental

- Both alternative alignments cross areas of riparian woodland along the River South Esk, a designated Special Area of Conservation (SAC), however Alternative Alignment 3b is assessed as being more constrained in relation to habitat biodiversity than Alternative Alignment 3a. Tower sizing and micrositing will help mitigate ecological constraints at the river crossing from construction, as well as reducing tree felling required of the riparian woodland.
- Alternative Alignment 3b cannot avoid the placement of towers in the 200-year future flood extent of the River South Esk, there is therefore greater potential for this alignment to compromise quality and/or quantity of surface or groundwater.
- Alternative Alignment 3a intersects the southeastern edge of Inshewan House Non-Inventory Designed Landscape (NIDL), however as this part of the designed landscape comprises open arable farmland without key designated features, an OHL alignment here could be located away from the core elements of the NIDL and would not intrude into key views from the House.
- Alternative Alignment 3b passes over an undulating elevated landform to the northwest of Battledykes, where the visual prominence of the OHL and its intervisibility with the surrounding area would be increased representing a slightly greater landscape and visual constraint than for Alternative Alignment 3a.

Technical

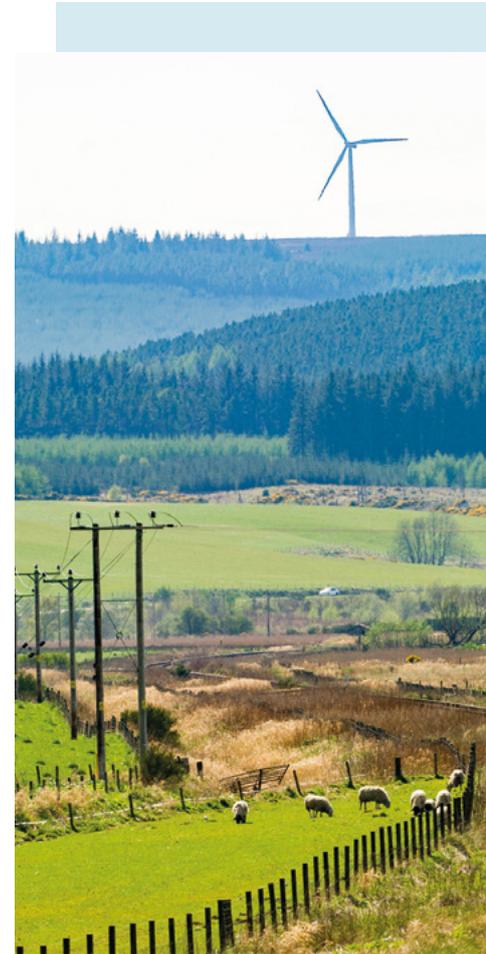
- Alternative Alignment 3b has a higher number of angle structures, which results in a technically more challenging alignment in terms of construction and operation, as well as a higher land take per tower. Alternative Alignment 3b also has more challenging crossing points with existing infrastructure and environmental aspects when considering the river and roads in the area.
- Both alternative alignments cross and are close to the River South Esk, which also has an associated flood risk, adding complexity to the constructability. However, Alternative Alignment 3a parallels these banks as well as crossing them, potentially increasing the associated risk of erosion.
- Alternative Alignment 3b crosses a high-pressure pipeline twice and runs in parallel with this pipeline for a longer distance than Alternative Alignment 3a, which will likely increase the mitigation required to resolve interference through induced voltage. There are some steep slopes associated with Alternative Alignment 3a which may increase the risk of constructability.

Cost

- There is no clear difference in relation to the estimated cost of the alternative alignments.

Conclusion

Alternative Alignment 3a is considered to be least constrained from both an environmental and engineering perspective and there is no clear difference in cost. It has therefore been selected to form part of the Potential Alignment.



Section B Location 4 – Careston

The key environmental, technical and cost considerations which differentiate between Alternative Alignments 4a (Potential Alignment), 4b, 4c, 4d and 4e at Careston include:

Environmental

- Although Alternative Alignments 4a, 4b and 4d intersect a small strip of ancient woodland of semi-natural origin where they cross the Noran Water, tower micro-siting and sizing would help to mitigate felling required for the OHL, minimising woodland loss.
- Alternative Alignment 4a intersects Lochty Wood; an area of mature broadleaved LEPO woodland with some wet woodland and potential groundwater dependent terrestrial ecosystems (GWTDE). The other alternative alignments avoid crossing Lochty Wood but all affect LEPO woodland in either Duns Wood or North Wood. Alternative Alignment 4e also crosses the edge of Barrelwell Bog Local Nature Conservation Site (LNCS).
- Alternative Alignments 4c and 4e pass close to the Scheduled Monument at Law of Windsor Cairn, whilst Alternative Alignments 4a, 4b and 4d are located in close proximity to the Scheduled Monument at Wellford Enclosure. Alternative Alignments 4c and 4e would likely compromise the setting of Law of Windsor Cairn, whilst Alternative Alignments 4a, 4b and 4d have flexibility to provide some separation of the OHL from Wellford Enclosure.
- Alternative Alignments 4c and 4e would cross a locally prominent ridgeline at Hilton of Fern and are considered to compromise landscape character. The ridgeline forms a notably elevated area within a landscape that is generally low lying, increasing the prominence of an OHL in this area and the potential for adverse visual effects from a range of receptors.
- Whilst the level of constraint associated with visual amenity for Alternative Alignments 4a, 4b and 4d is considered to be similar, Alternative Alignment 4b is the most visually constrained due to the potential for visual impacts on receptors including the properties at Montboy.

Technical

- Alternative Alignment 4a has the smallest number of angle towers of all the options and overall follows the shortest route. Alternative Alignment 4b is the longest overall alignment and has a large number of angle towers. Alternative Alignment 4b also runs in parallel to a high-pressure gas pipeline for the longest distance which will increase the mitigation required to resolve interference through induced voltage.
- Alternative Alignment 4a has fewer angle structures than Alternative Alignment 4d, however Alternative Alignment 4d is considered the lowest risk of having to apply mitigation for interference with the gas pipeline through induced voltage.
- Based on desktop assessment, all the options have a similar risk rating in terms of flooding and terrain. For Alternative Alignments 4a, 4b and 4d the river crossing has steep gradients and Alternative Alignments 4c and 4e need to traverse a ridge.

Cost

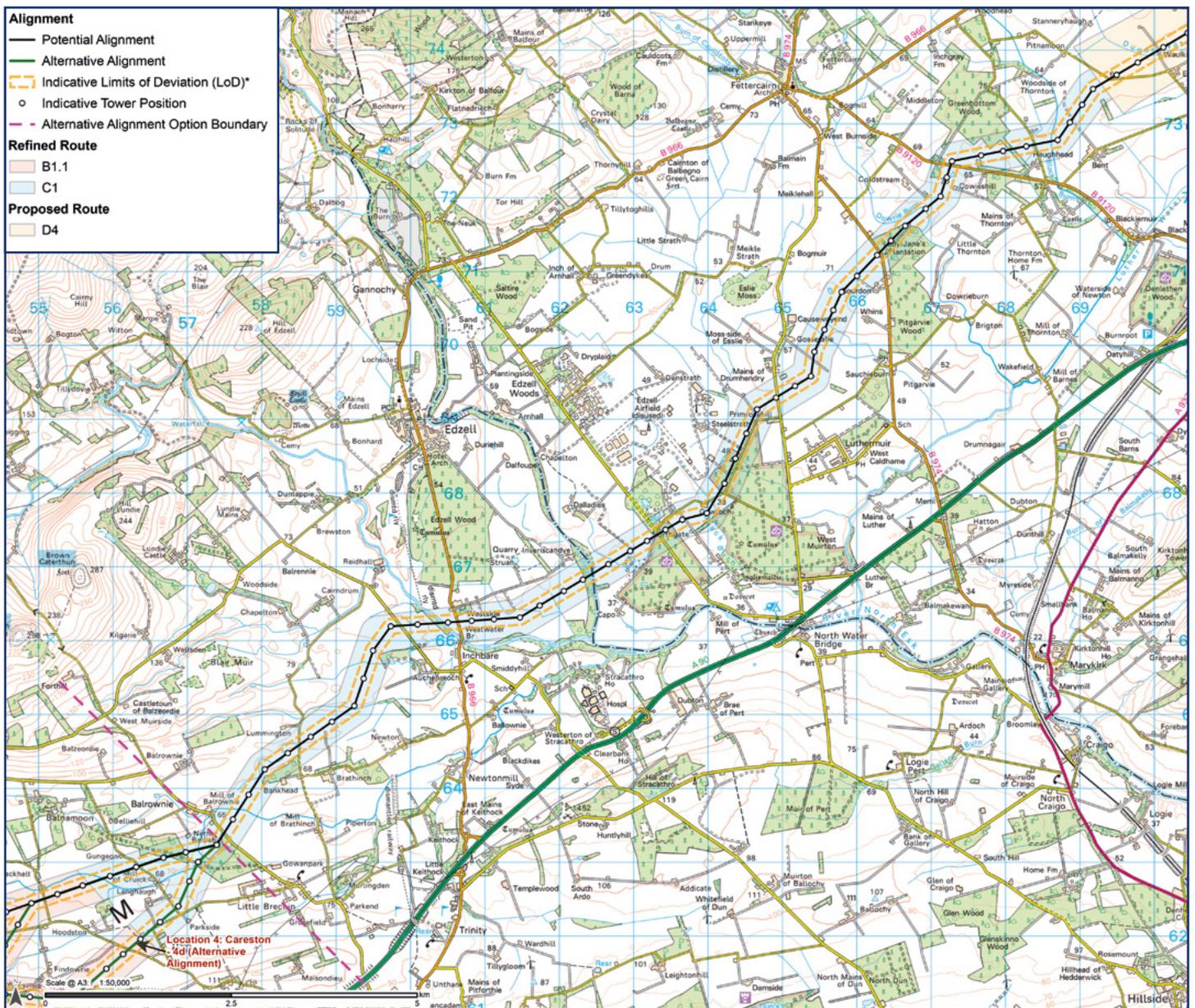
- Alternative Alignment 4a is the lowest cost option with the other four alternative alignments being marginally more expensive.

Conclusion

Although Alternative Alignment 4d is marginally preferred on environmental criteria, Alternative Alignment 4a is considered the least constrained from an engineering perspective and it is the lowest cost option. Alternative Alignment 4a has therefore been selected to form part of the Potential Alignment. Opportunities to mitigate environmental effects will be progressed through the detailed design and EIA.



Section C – Brechin to Laurencekirk



This leaflet summarises the information provided in the Kintore to Tealing Alignment Consultation Document, which can be found here: ssen-transmission.co.uk/TKUP.

Section C – Brechin to Laurencekirk

Potential Alignment

The Potential Alignment in Section C (within Route C1) starts to the northwest of Brechin, initially passing in a northeastern direction between Belliehill Wood and Little Brechin Wood to Auchenreoch where the alignment crosses the West Water. Due to the pinch point of properties at the settlement of Inchbare and south of Edzell Wood, the alignment is unable to avoid the fluvial floodplain areas of the West Water. South of Edzell Wood, the alignment continues in an eastern direction, crossing the B966 Brechin to Edzell public road between clusters of properties and then follows a northeastern path across open agricultural land.

The alignment then crosses the River North Esk at a point to the southeast of the settlement of Edzell, skirting the edges of woodland areas at Capo Plantation and Inverury Wood and passing the former Edzell Airfield site, now being redeveloped with a range of land uses, which is located to the north of the alignment.

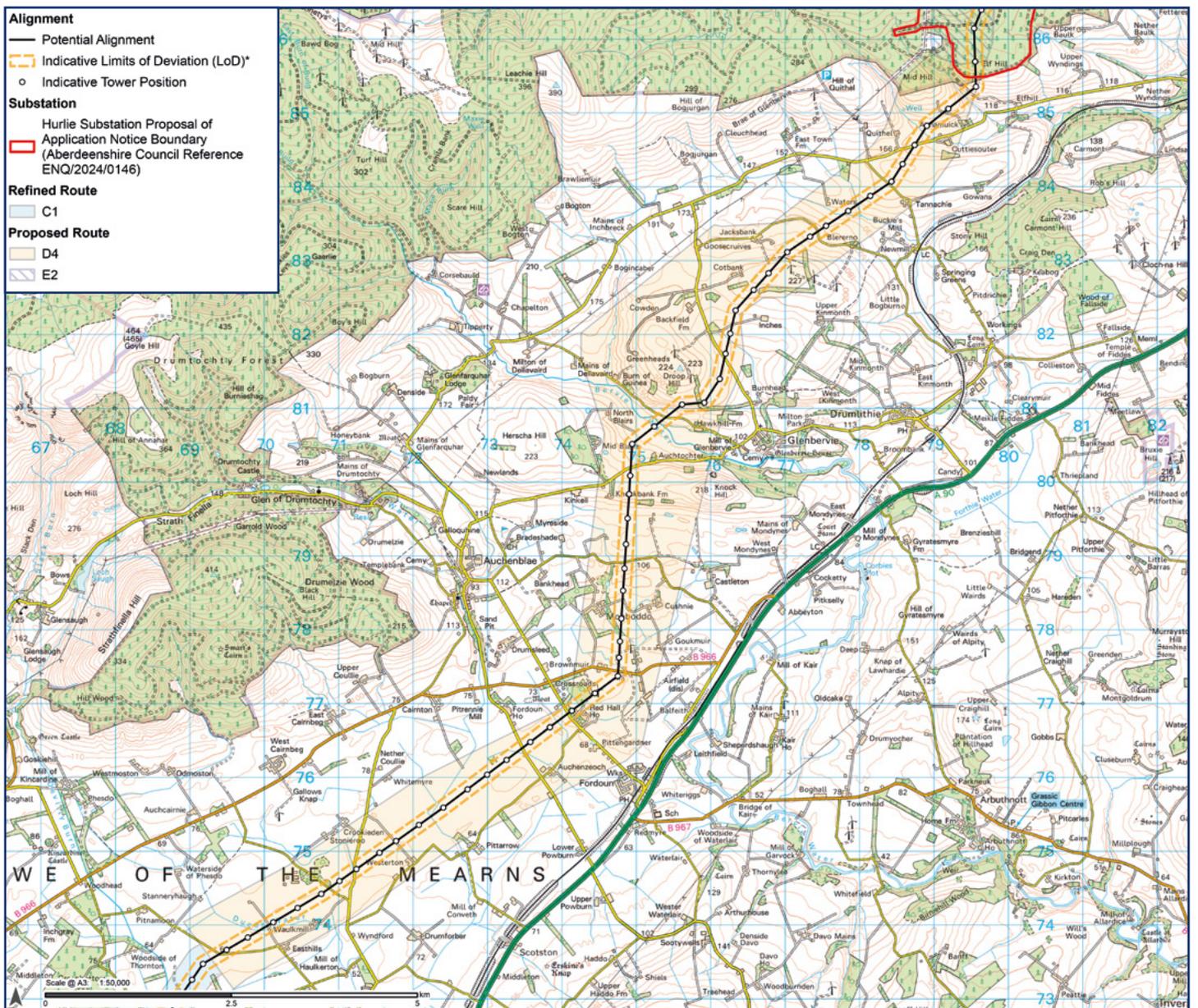
The alignment passes 1 kilometre to the north of the small settlement Luthermuir following a northeastern course through gently rising agricultural land to the south of Eslie Moss Site of Special Scientific Interest (SSSI). It then crosses the B974 Fettercairn to Marykirk public road and through the northern edge of mixed woodland at Lady Jane's Plantation, continuing in a northeastern direction to the south of Greenbottom Wood (both of which are long-established woods of plantation origin, LEPO). The alignment then continues in a northeastern direction through the Howe of the Mearns to a point approximately 2 kilometres northwest of the town of Laurencekirk where it connects with the Potential Alignment in Section D.

Alternative Alignment Options

Following the confirmation of the proposed route C1 in the November 2023 Report on Consultation (RoC) (**Kintore to Tealing OHL RoC November 2023**), work began to identify an alignment and possible alternative alignments within route C1. During the alignment development work, no alternative alignments were identified and a Potential Alignment was designed taking account of the varying technical, land use and environmental constraints throughout Section C. The alignment proposed in C1 offers a technically feasible option and avoids or limits interactions with environmental and community constraints.



Section D – Laurencekirk to Hurlie substation



This leaflet summarises the information provided in the Kintore to Tealing Alignment Consultation Document, which can be found here: ssen-transmission.co.uk/TKUP.