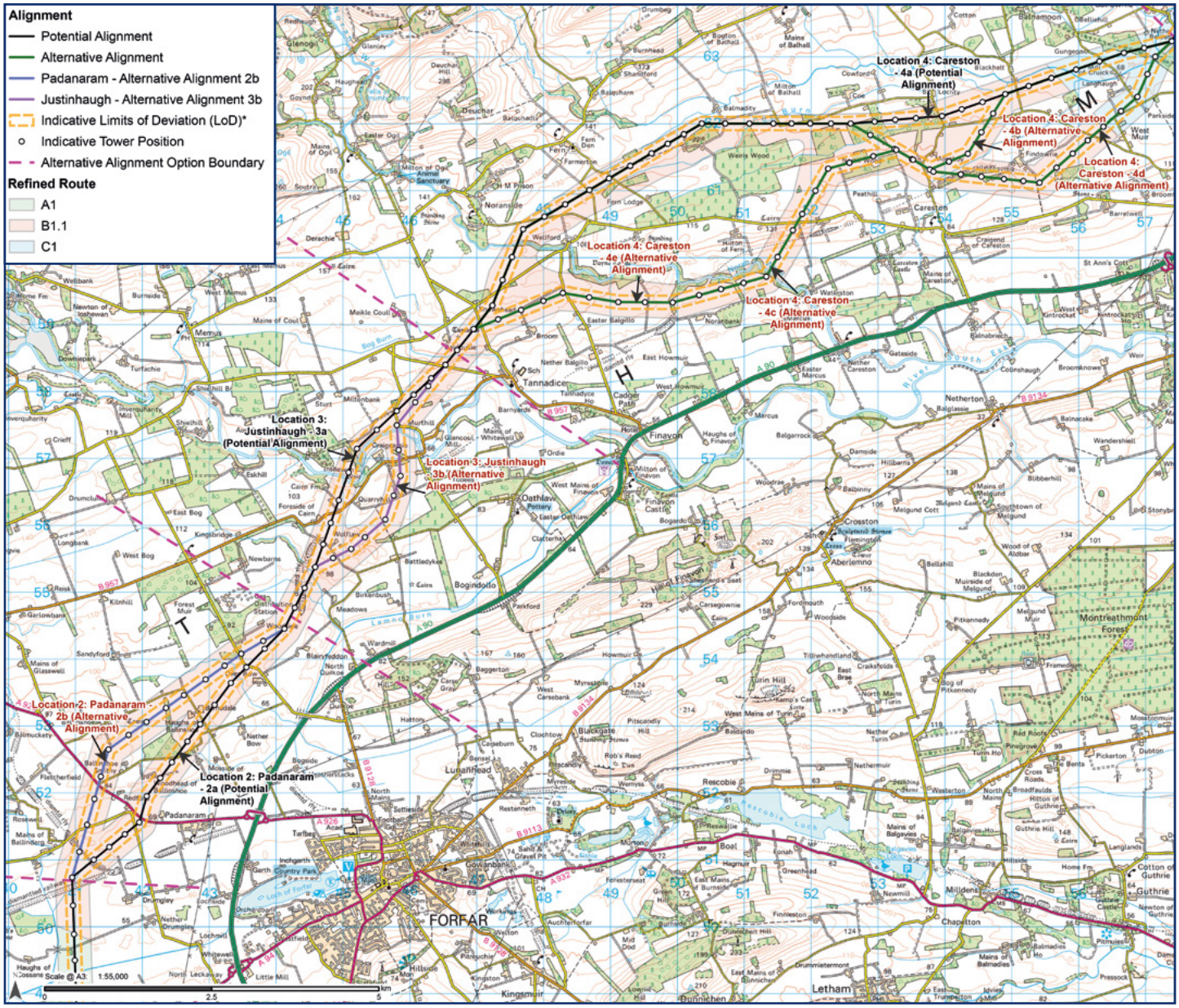
Scottish & Southern Electricity Networks

TRANSMISSION

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.**

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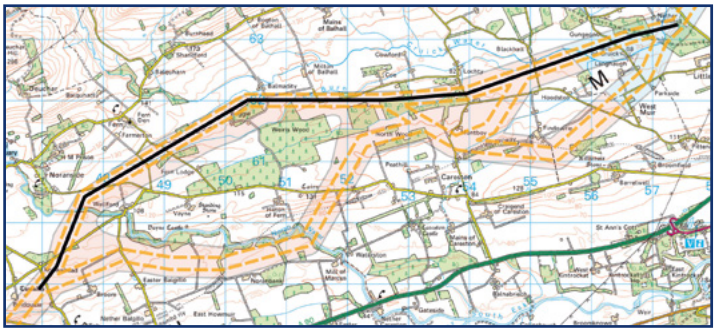
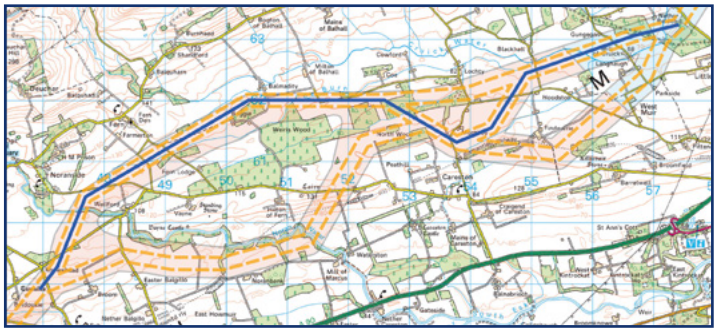
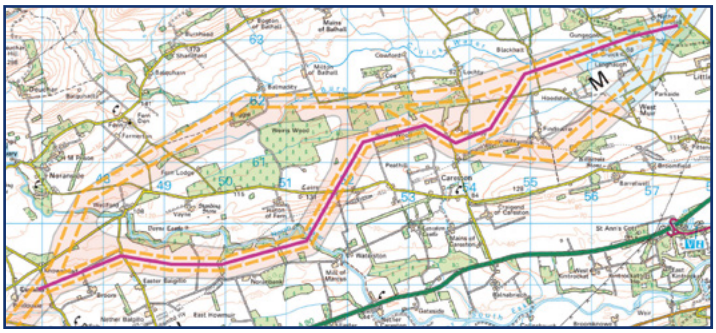
Location 4: Careston Potential Alignment 4a



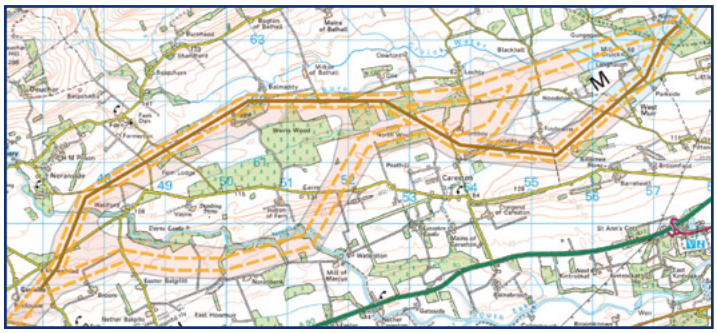
Location 4: Careston Alternative Alignment 4b



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.

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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.

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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 micrositing 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.