Ashford Hill
to
Thatcham

132kV Feasibility Risk report 2018

Prepared by Dalcour Maclaren 2018 for Southern Electric Power Distribution

Ashford Hill to Thatcham 132kV Feasibility Risk report

Summary

We have been asked to identify options for a 132kV cable route between Thatcham Substation and Ashford Hill Compound Substation, tower 90A of the PA line. Route options have been based on environmental and physical constraints identified through a desk top study of datasets available.

Potential routes have been identified on the basis that constraints are minimised. None of the landowners have been contacted at this stage to ascertain how many occupiers/tenants are along the route. The highway routes with and without a HDD drill have been supplied by Forte Projects.

The route options and approximate distances can be summarised as follows:

- Predominantly highway, 9.5km
- Predominantly highway with drill, 9.4km
- Western option, 5.3km
- Central option, 5.4km
- Eastern option, 6.5km

Main constraints

The land south of Thatcham suffers from multiple planning, environmental and physical constraints that limit route options.

The River Kennet basin is subject to gravel extraction. There are sites subject to extraction and sites proposed for allocation running west to east right across the region. The local authority is currently undergoing a review of its minerals plan so it has not been possible to confirm conclusively the full impact of gravel extraction at this stage.

There are a number of land and river based SSSIs where statutory consent would be necessary

The region is also scattered with plots of ancient woodland.

The route options have been identified with a view to limit constraints. Those that remain a risk can be identified as follows:

- Gravel extraction along the River Kennet basin
- SSSI along the River Kennet
- SSSI at Greenham and Crookham Commons
- Canal crossing
- Network Rail crossing
- River Kennet crossing
- River Enborne crossing
- Development potential south of Thatcham Substation
- Registered Common land
- Flood plain for the River Kennet and River Enborne

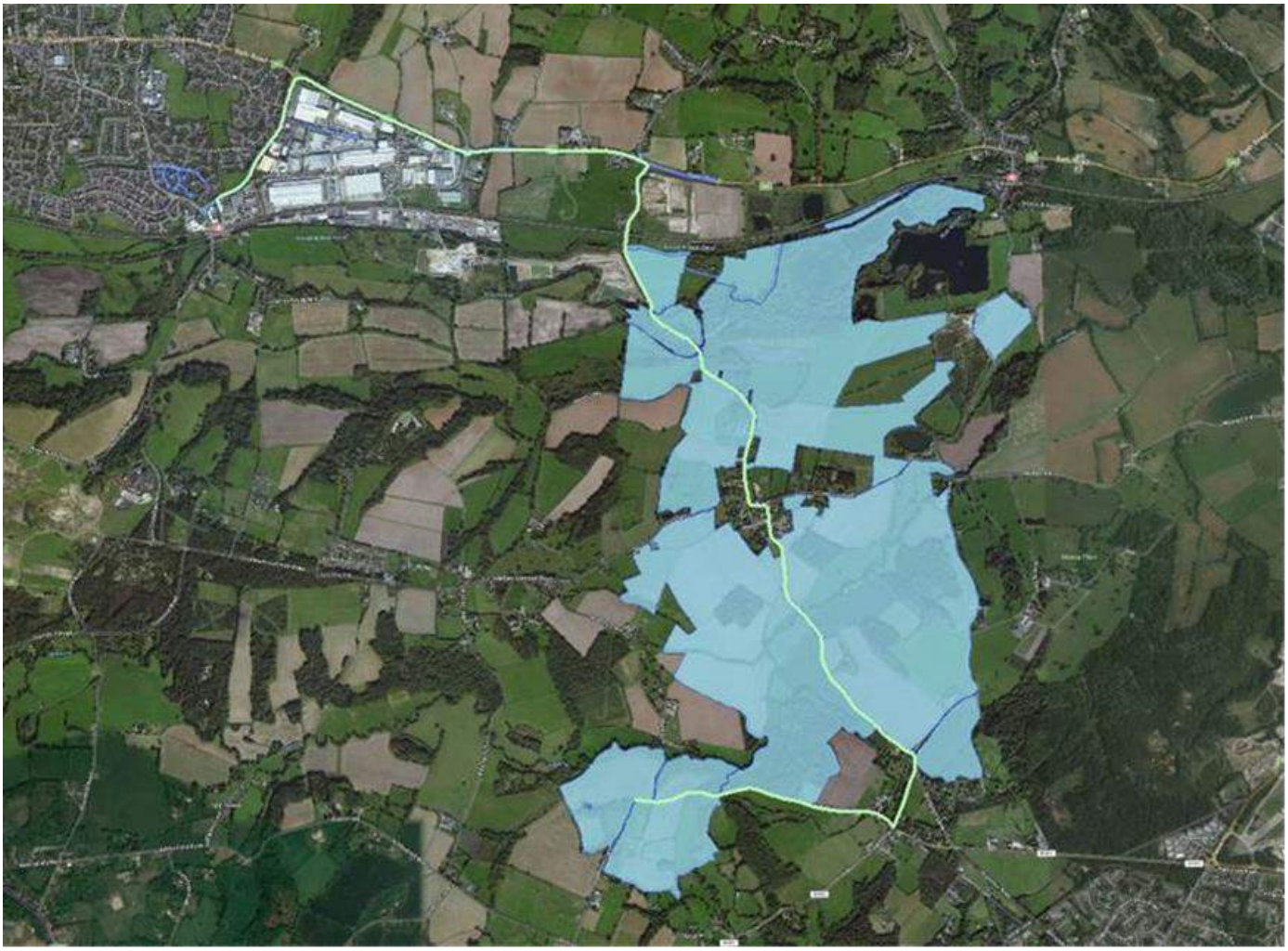
Prepared by Dalcour Maclaren 2018 for Southern Electric Power Distribution

Review of potential routes

Predominantly highway – 9.5km

The route that has been identified by Forte Projects is approximately 9.5km long. No highways search has been carried out to categorically confirm all roads are adopted highway, or the extent of the highway boundary.

The route exits the substation site to the north along Station Road and Pipers Way before entering the A4 trunk road heading east. Both Station Road and Pipers Way are single carriageways with two lanes. The route continues along the A4 before exiting south onto the Brimpton Road then Brimpton Lane, again, single carriageway with two lanes. The final stretch of the route enters Hockford Lane at Brimpton Common. This is a narrow single carriageway, single lane road, approximately 1.5km in length.



Risks detailed – see **Annex 1** for additional information

There are a number of bridges that need to be assessed to identify whether there is sufficient depth in the highway for SSEN apparatus to be laid. The following structures have been identified:

- Bridge over a tributary of the Kennet and Avon Canal
- Bridge over the railway
- Bridge over the Kennet and Avon Canal
- Bridge over the River Kennet – Also an SSSI
- Bridge over the River Enbourne

There is 1 ownership affected between where the cable exits the highway and tower 90A. where negotiations will be necessary to secure consent.

Prepared by Dalcour Maclaren 2018 for Southern Electric Power Distribution

Costs

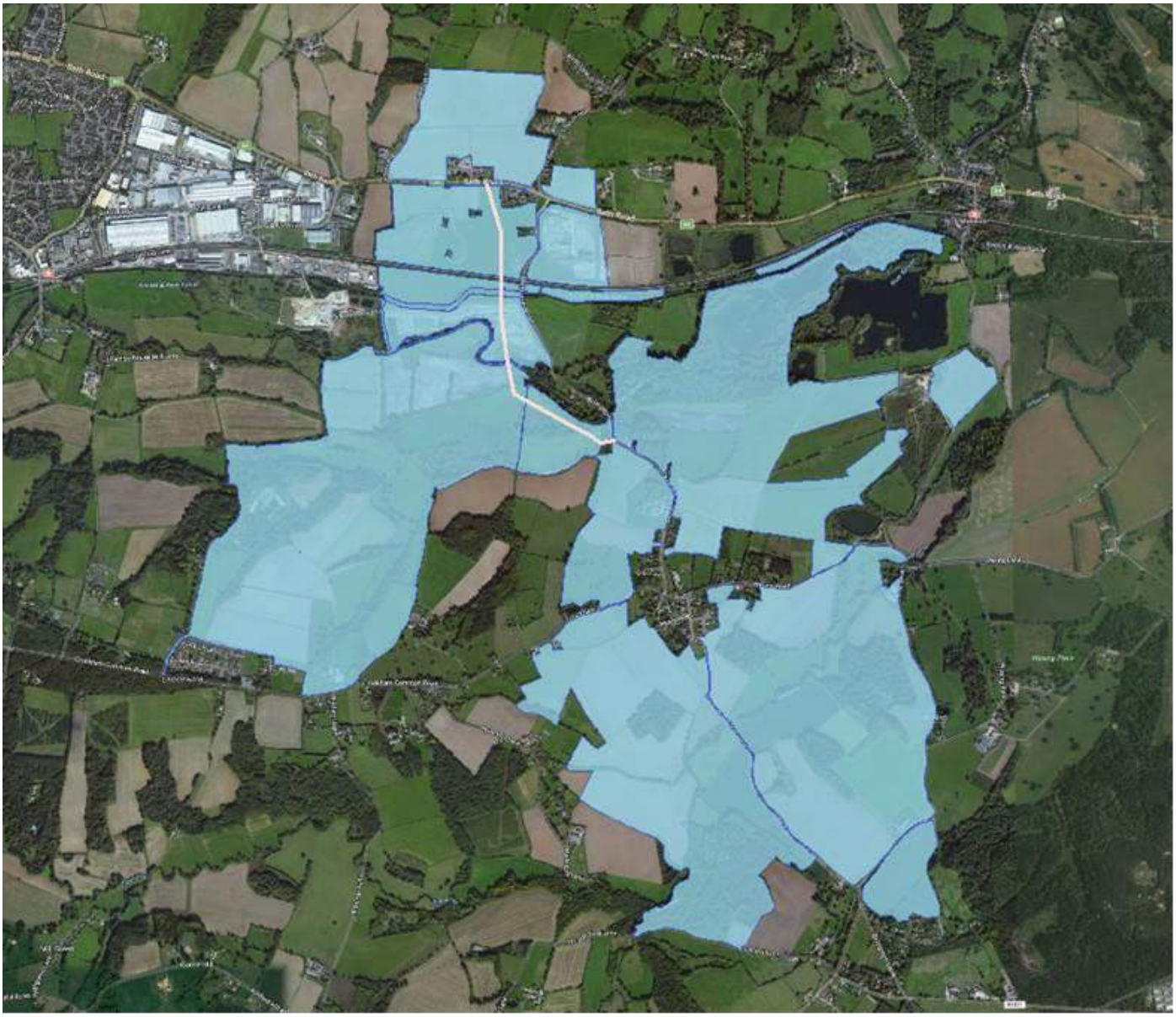
There are increased cost implications of routing predominantly in highway.

Costs of consenting and reinstatement on private land will be minimal due to one title being affected by the scheme (subject to confirmation on adopted highway extent). The proposed cable route in private land follows an existing access track to the tower site. Title documents will have to be properly investigated to identify what rights already exist.

Predominantly highway with drill – 9.4km

The route that has been identified by Forte Projects is approximately 9.4km long. No highways search has been carried out to categorically confirm all roads are adopted highway, or the extent of the highway boundary.

The route is identical to that above with the exception of proposing two drills to overcome bridges over the Kennet and Avon Canal tributary, the railway and the Kennet and Avon Canal and the River Kennet. It will still be necessary to assess highway depth over the bridge over the River Enbourne to ensure cables can be laid in the structure.



Risks detailed– see **Annex 2** for additional information

- Seven land parcels have been identified along the drill route between the A4 and Brimpton Road. It will be necessary to secure landowner consent for this section.
- The cable route crosses land that has been quarried in recent years. Recent aerial photography identifies both drill sites being within land having been reinstated post mineral extraction. SSEN need to be content that this land type will not have an impact on cables. Contact with the landowner will be necessary to identify if the land was used as a waste disposal site.
- One of the drill locations and the cable route back to the Brimpton Road will be in the vicinity of the River Kennet SSSI. Consent from Natural England to carry out works will be necessary as the laying of pipelines under the SSSI is a specifically excluded operation for the SSSI.

Prepared by Dalcour Maclaren 2018 for Southern Electric Power Distribution

- It will be necessary to secure a flood risk permit from the Environment Agency for operations being carried out within the flood plain. The majority of the land is located within the flood risk area.
- The cable route between the drill and Brimpton Road cannot avoid land proposed for allocation for mineral extraction. It does, however, fall outside the area considered suitable for development within the allocated area.
- It remains necessary to assess the bridge over the River Enborne to identify if construction is possible.
- There are increased cost implications of routing predominantly in highway.

Costs

There are increased cost implications of routing predominantly in highway.

Costs of consenting and reinstatement on private land will be greater than the route option exclusively in the highway. Seven titles have been identified along the drill route between the A4 and Brimpton Road where consent will be necessary. Land use is predominantly agricultural with the majority of fields believed to be grassland subject to flooding (as identified by Gov.UK Flood Map).

The cable is, in part, routed through land allocated or proposed as allocated land for mineral extraction. Subject to negotiations with the landowners it may still be possible for the cables to be routed through these sites. Consideration will need to be given to the potential cost of compensating for loss of mineral extraction depending on the extent of land that would be sterilised.

It will be possible to provide an estimation of these costs following further examination of land use and investigation of minerals rights.

Western option – 5.3km

The route aims to provide an alternative option to the costlier highway routes and is determined by avoiding, as far as possible, environmental constraints.

The route exits the substation via a drill due south and follows open agricultural land before entering highway at Crookham Common to limit the impact on a SSSI and registered common land. After approximately 520 metres the proposed route enters SSSI/registered common land before returning to predominantly open agricultural land.

There are 20 titles affected where negotiations will be necessary to secure consent.

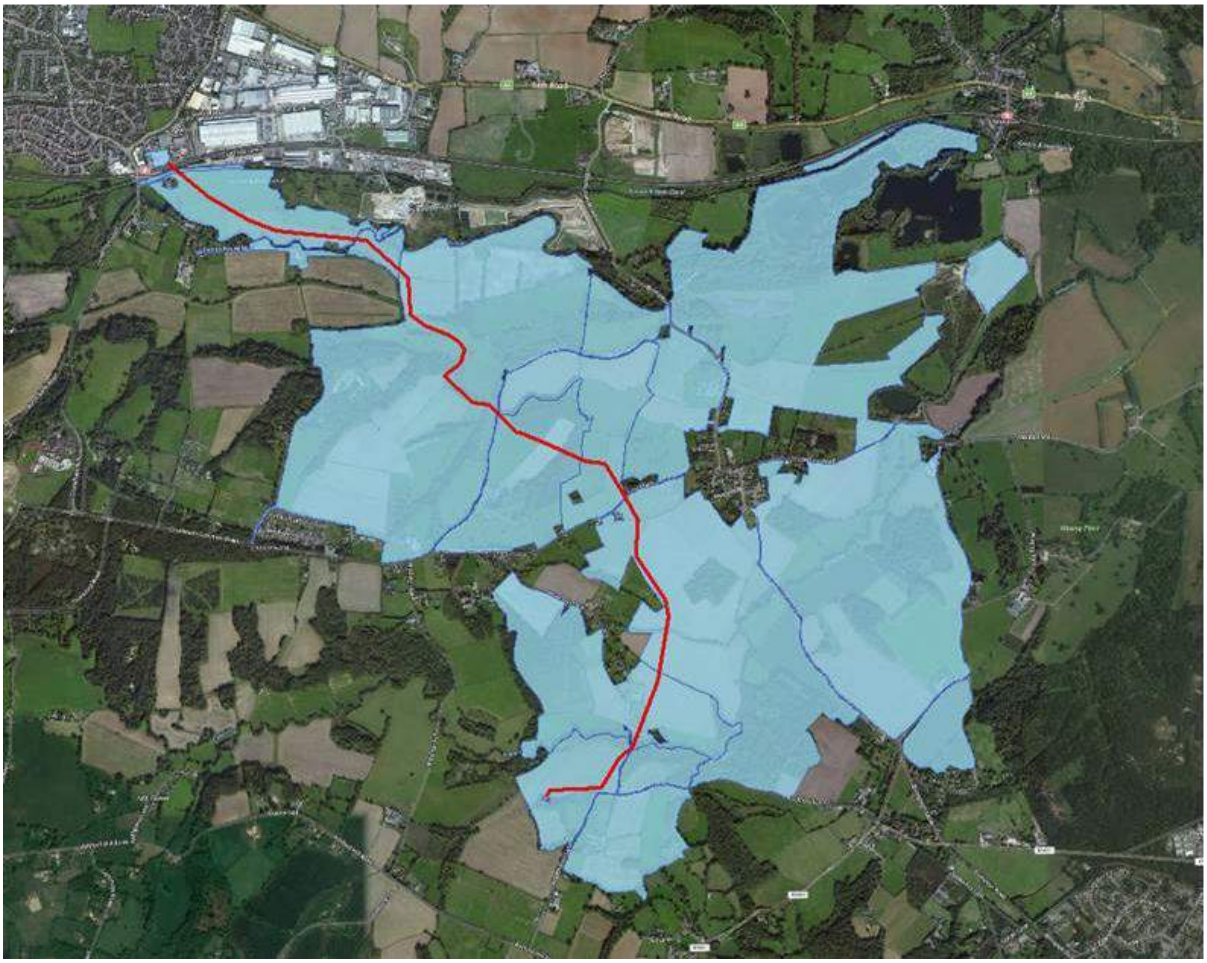
Risks detailed – see **Annex 3** for additional information

- A drill will be necessary from Thatcham Substation under the railway and the Avon and Kennet Canal.
- A further drill will be required to cross the River Kennet.
- The River Kennet is a SSSI where statutory consent will be necessary. EA consent will also be required as works are within an EA identified flood zone.
- The land where it will be necessary to drill is subject to proposals for a large residential development. Planning has not formally been applied for. Current design proposals suggest the land to be earmarked as open space.
- The cable route also crosses land identified on the minerals plan as subject to planning or proposed for allocation for mineral extraction.
- The proposed route crosses Crookham Common. This is classified as a SSSI and is also Registered Common Land. The route proposes using highway to cross the majority of the designated area with a section using vehicular track within the woodland.
- A further river crossing is necessary for the River Enbourne.

Central Option – 5.4km

The route aims to provide an alternative option to the costlier highway routes and is determined by avoiding environmental constraints as far as possible.

There are 10 titles affected where negotiations will be necessary to secure consent.



Risks detailed – see **Annex 4** for additional information

- A drill will be necessary from Thatcham Substation under the railway and the Avon and Kennet Canal.
- The drill location and continued cable route will be in land where a large residential development has been proposed, although planning has not been formally applied for. It is likely any cable route will need to be routed within a development layout. This may be within open space. The land is classified as flood zones 2 and 3.
- The River Kennet needs to be crossed in two places. This is an SSSI
- The route brushes a scheduled monument.
- Requires areas of woodland to be removed.
- It is necessary to cross the River Enbourne

Eastern Option – 6.5km

The route exits the substation to the north running east through the industrial estate before running south to join the proposed drill route for the highway proposal. Rather than linking back to the highway route, a route has been identified off road bounding land potentially allocated for mineral extraction.

There are 20 titles affected where negotiations will be necessary to secure consent.

Risks detailed – see **Annex 5** for additional information

- Consent will be necessary within the industrial estate as adopted highway is limited.
- Drill needed under the railway and Avon and Kennet Canal.
- Drill in land believed to be reinstated quarry.
- Further 2 x drills under the River Kennet
- Borders land identified on the minerals plan as subject to planning or proposed for allocation for mineral extraction.
- Crossing required at the River Enbourne

Risk Matrix

Route	Gravel Extraction	River Crossing	Canal Crossing	Rail crossing	Development land	Registered Common Land	SSSI	EA Consent
Predominantly highway, 9.5km		Yes (bridge)	Yes (bridge)	Yes (bridge)				
Predominantly highway with drill, 9.4km	Yes	Yes	Yes	Yes			Yes	Yes
Western option, 5.3km	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Central option, 5.4km		Yes	Yes	Yes	Yes			
Eastern option, 6.5km	Yes	Yes	Yes	Yes				

Annex 1 – Highway option

a. River crossing – Kennet and Avon Canal tributary

b. Railway and Kennet and Avon Canal crossings

Railway bridge

Canal bridge

Prepared by Dalcour Maclaren 2018 for Southern Electric Power Distribution

c. River Kennet crossing

d. River Enbourne crossing

Annex 2 – Highway option with drill

a. Proposed drill sites

Proposed drill A

Proposed drill B

b. Drill site constraints

Drill site B in the vicinity of a SSS

Route back to highway subject to land identified for mineral extraction