

# VIP Cotswolds AONB ZF.2 – High Level Appraisal

## Introduction

- 1.1 This report was undertaken on behalf of National Grid by Gillespies in April 2020. It presents the findings of a high level, desk based appraisal of potential landscape and visual mitigation of a relatively long section of transmission line, ZF.2, in the Cotswolds AONB.
- 1.2 Section ZF.2 was identified as a red category subsection in the VIP 2014 Technical Report. It is judged to have overall combined landscape and visual impacts of high importance, with a total score of 24. This results from the combination of a high score for landscape impact and a high score attributed to both visual impacts on users of trails and cycle-ways and visual impacts on visitors to publicly accessible sites.
- 1.3 Figure 1 overleaf illustrates the location of ZF.2 in relation to the Cotswolds AONB and other National Grid infrastructure.
- 1.4 ZF.2 extends into the AONB from the north-east of Dixton and heads in a southerly direction, rising up to Prescott where it turns south-east across high ground before descending into south-east of Cheltenham. The length of line in ZF.2 is 16.6 km.

## Summary of landscape impact of ZF.2 as reported in 2014

- 1.5 Line subsection ZF.2 runs through a large scale landscape which has few overt human influences, is of high quality and contains many features that are representative of the special qualities of the AONB. Expansive views across sparsely settled farmland and the distinctive skylines of the escarpments give the area a high scenic quality. The pylon line is a prominent feature which alters the rural qualities and tranquil nature of the landscape. Overall, the subsection is judged to have landscape impacts of high importance.

## Summary of visual impact of ZF.2 as reported in 2014

- 1.6 In terms of visual impacts, although the scale of impact of ZF.2 varies, pylons are clearly visible from many locations. The nearby town of Winchcombe and some small dispersed settlements have views of the pylon line, but the wide geographical spread of these impacts and the numbers of people affected means that overall the importance of visual impacts on communities is considered to be moderate. Local public rights of way are mainly concentrated around the scarp slopes with fewer footpaths on the high ground. Although in places pylons are very visible, overall the importance of impacts on these receptors is also considered to be moderate. The Cotswolds Way National Trail runs along the top of the scarp and there are also a number of regional trails in the area. High importance impacts are recorded for these recreational receptors. There are also a number of visitor locations within this subsection including Sudley Castle and other heritage sites, panoramic viewpoints and a number of car parks. The presence of these encourages people to access the area. Visitors over a wide area are affected by views of pylons. High importance visual impacts are recorded for these receptor groups. This subsection is therefore judged to have visual impacts that are of a high level of importance.



## Changes since 2014 and implications

- 1.7 A review of google earth has revealed just one change in the landscape since 2014. A 4MW solar farm has been constructed in two fields approximately 350m east of the northern extent of ZF.2. This is not considered to affect the above scores from 2014, which remain unchanged.

## Purpose and structure of this study

- 1.8 Due to the length of the ZF.2 the cost of undergrounding the entire section would be considerable. National Grid therefore wish to review ZF.2 with a view to taking forward a project that is both technically and financially viable and one that provides the greatest benefits in terms of landscape and visual mitigation.

**NATIONAL GRID**  
VIP PROJECT LANDSCAPE AND  
VISUAL IMPACT ASSESSMENT

 AONB boundary  
 Other overhead line section

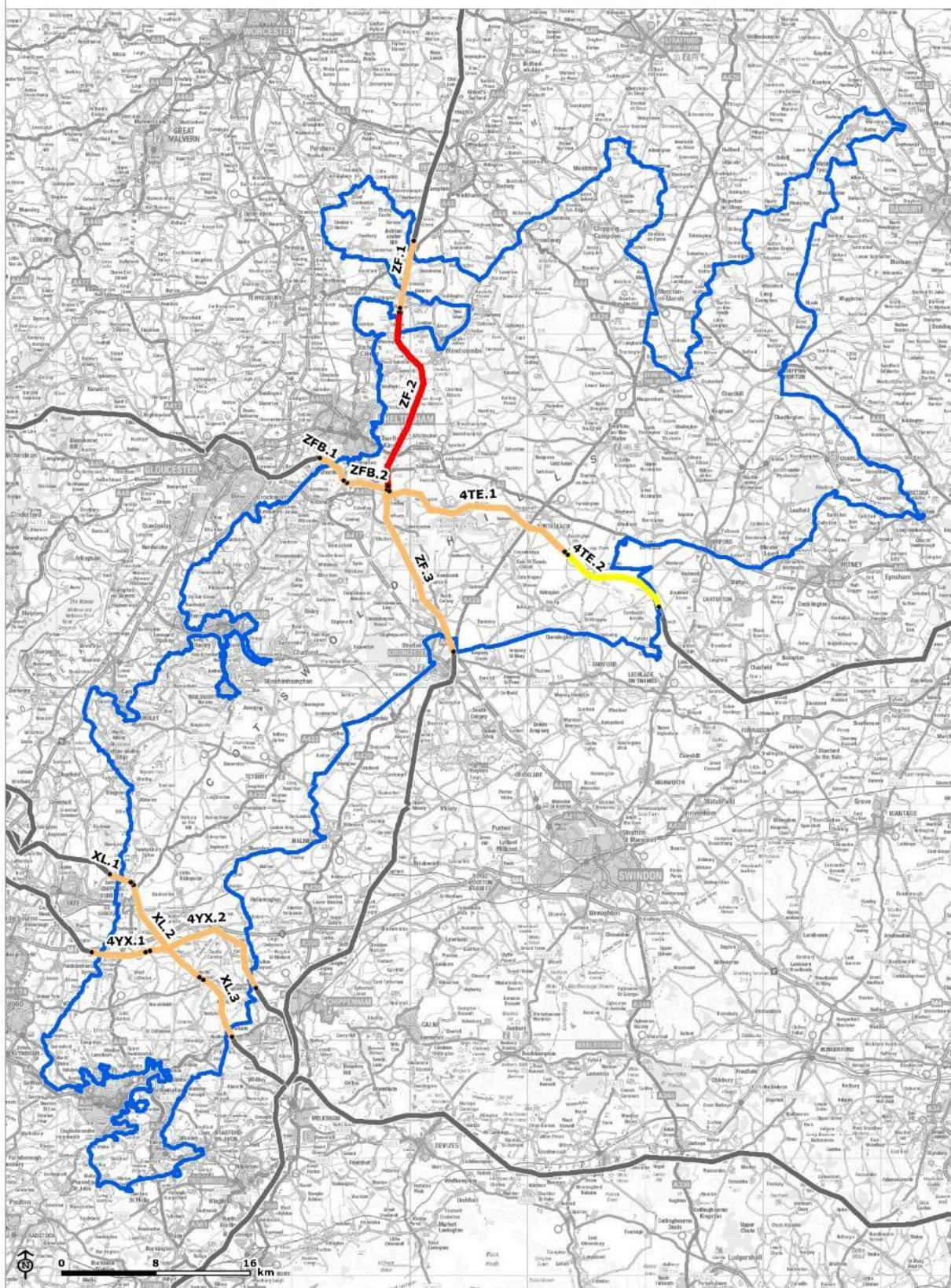
**Combined landscape and visual score  
of assessed sub-sections**

 0 to 9  
 10 to 19  
 20 to 24  
 25 and above

Source: Natural England,  
National Grid

Map Scale @ A4: 1:450,000

**Figure 1: OHL Sub-Section  
Assessment Score for  
Cotswolds AONB**



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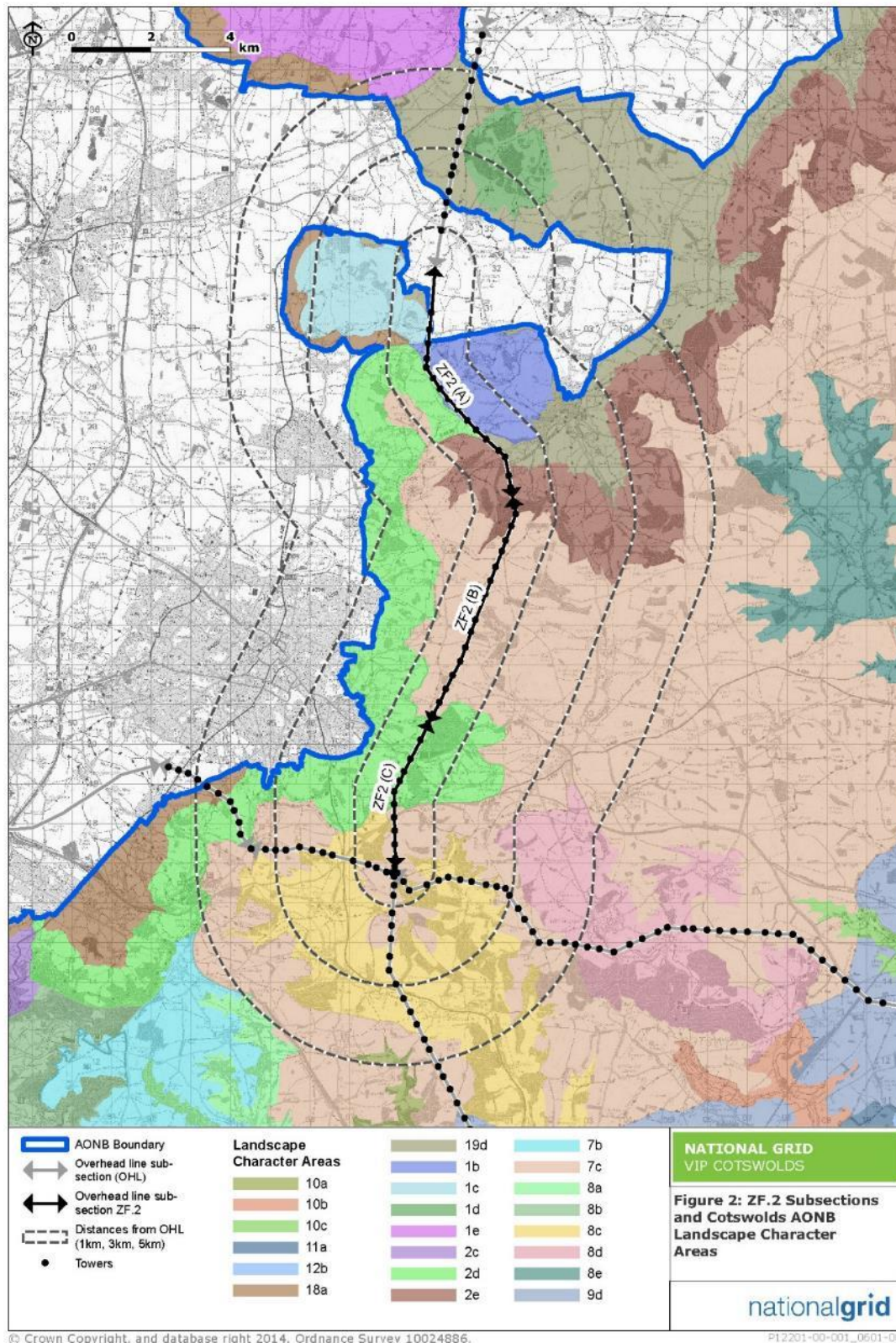
CB:EL EB:lendak e LUCED1 FIG1 6710 r1\_OHLSubSecSCR A4P 14/08/2018

- 1.9 The purpose of the study is to provide high level narrative text and plans which will feed into a report to be produced by National Grid and presented to the Stakeholder Advisory Group. This report will be considered by the SAG to support an informed decision with regard to the way forward in terms of RIO T2.
- 1.10 The method and format for this appraisal are set out below:
- Desk top review of ZF.2 to establish the possibility of further division into smaller subsections (due to the length of ZF.2 being approximately 17 km) – taking into consideration the landscape and visual context of each subsection;
  - Production of Zones of Theoretical Visibility (ZTV) for each of the subsections. These are utilised to illustrate the worst case scenario in terms of the visibility of the subsections. The ZTVs are based on 'bare earth' scenarios and do not consider the screening/ filtering effects of any intervening trees, woodland blocks, built form or very localised changes in landform;
  - Identification of key visual receptors for each subsection;
  - Brief review of landscape and visual considerations and constraints including statutory and non-statutory ecology and historic environment related designations. Consideration of how they may influence mitigation proposals/ undergrounding associated with the undergrounding of each subsection;
  - High level Sealing End Compound siting study in terms of landscape and visual considerations; and
  - Conclusion and recommendations.



## Subdivision of ZF.2

- 1.11 A desk top review of section ZF.2 has identified the opportunity for further subdivision to three smaller subsections – ZF.2(A), ZF.2(B) and ZF.2(C). These are as illustrated in Figure 2 below. They are based on localised changes in landscape character along ZF.2, particularly in terms of topography/ elevation, land cover and landscape pattern and scale. The three subsections are described below together with an overview of landscape character and consideration of their visibility.



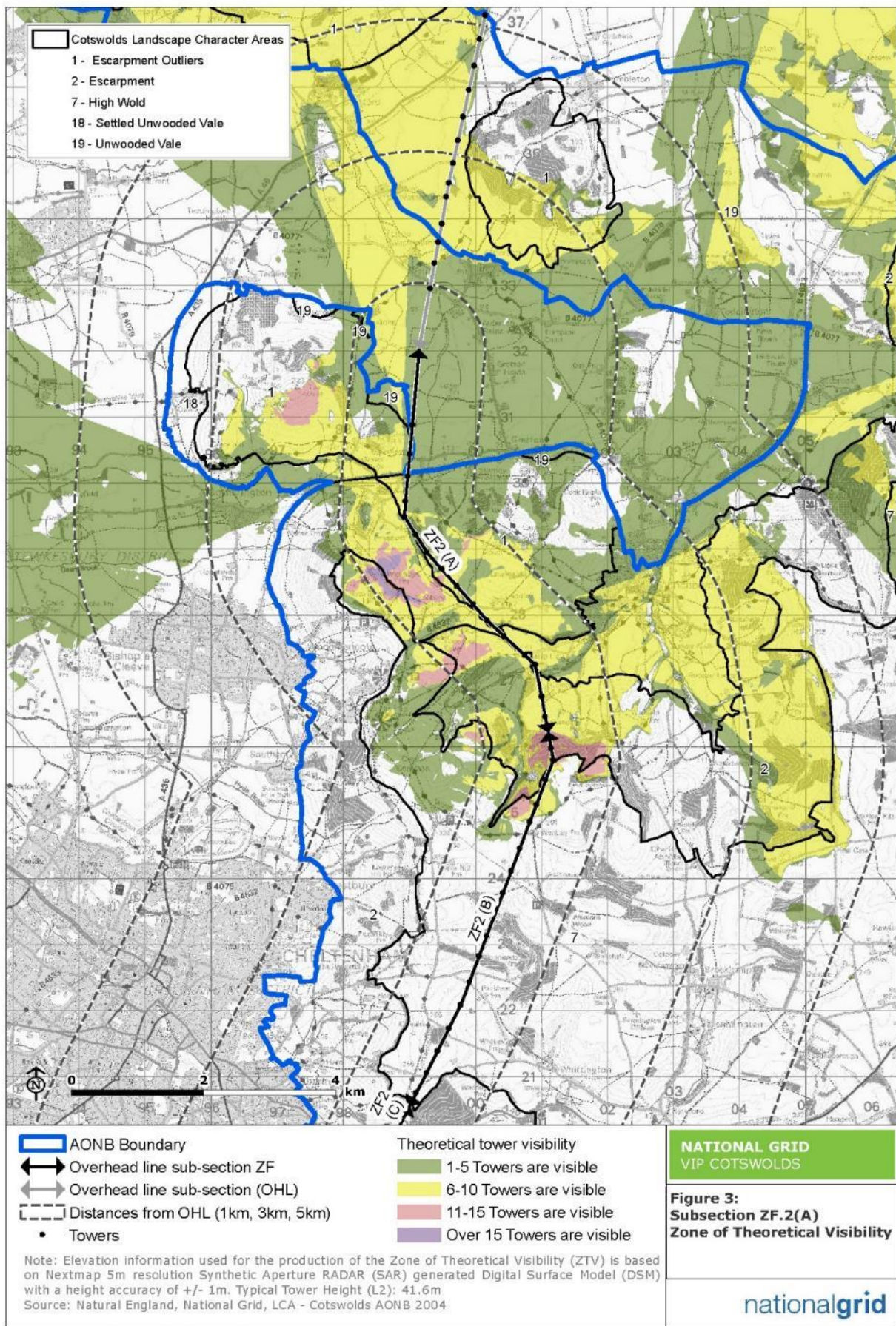
## ZF.2(A)

- 1.12 ZF.2(A) is approximately 6.6 km long.
- 1.13 As illustrated in Figure 2, this subsection commences in the north, entering the AONB boundary at the intersection of *Landscape Character Area (LCA) 1C - Oxenton and Dixton Hills* and *LCA 1D - Dumbleton and Alderton Hills* (Escarpment Outlier Landscape Character Types (LCTs)). The subsection then runs along and between the boundaries of *LCA 2D - Cooper's Hill to Winchcombe* (Escarpment LCT) and *LCA 19D Vale of Evesham Fringe* (Unwooded Vale LCT) and ends in the south in *LCA 2E - Winchcombe to Dover's Hill* (Escarpment LCT).
- 1.14 Figure 3 overleaf, illustrates the ZTV of the pylons of ZF.2(A). This demonstrates that as a worst case scenario the visibility of most of the pylons of ZF.2(A) would be largely contained to the north west of the AONB.
- 1.15 The pylons along this subsection are often in lower lying parts of the landscape and as such are sometimes viewed against the backcloth of landform. Some views of ZF.2(A), from within AONB, are also filtered by a relatively high frequency of tree cover. Plate 1 below is representative of a view from higher ground at Cleeve Common looking towards ZF.2(A). The pylons of ZF.2(A) are visible in the mid ground of the view but are backclothed against nearby landform.

**Plate 1: The view from Cleeve Common open access land at the junction of Cotswold Way National Trail and Winchcombe Way regional trail looking north over arable farmland and Langley / Woolstone Hills**









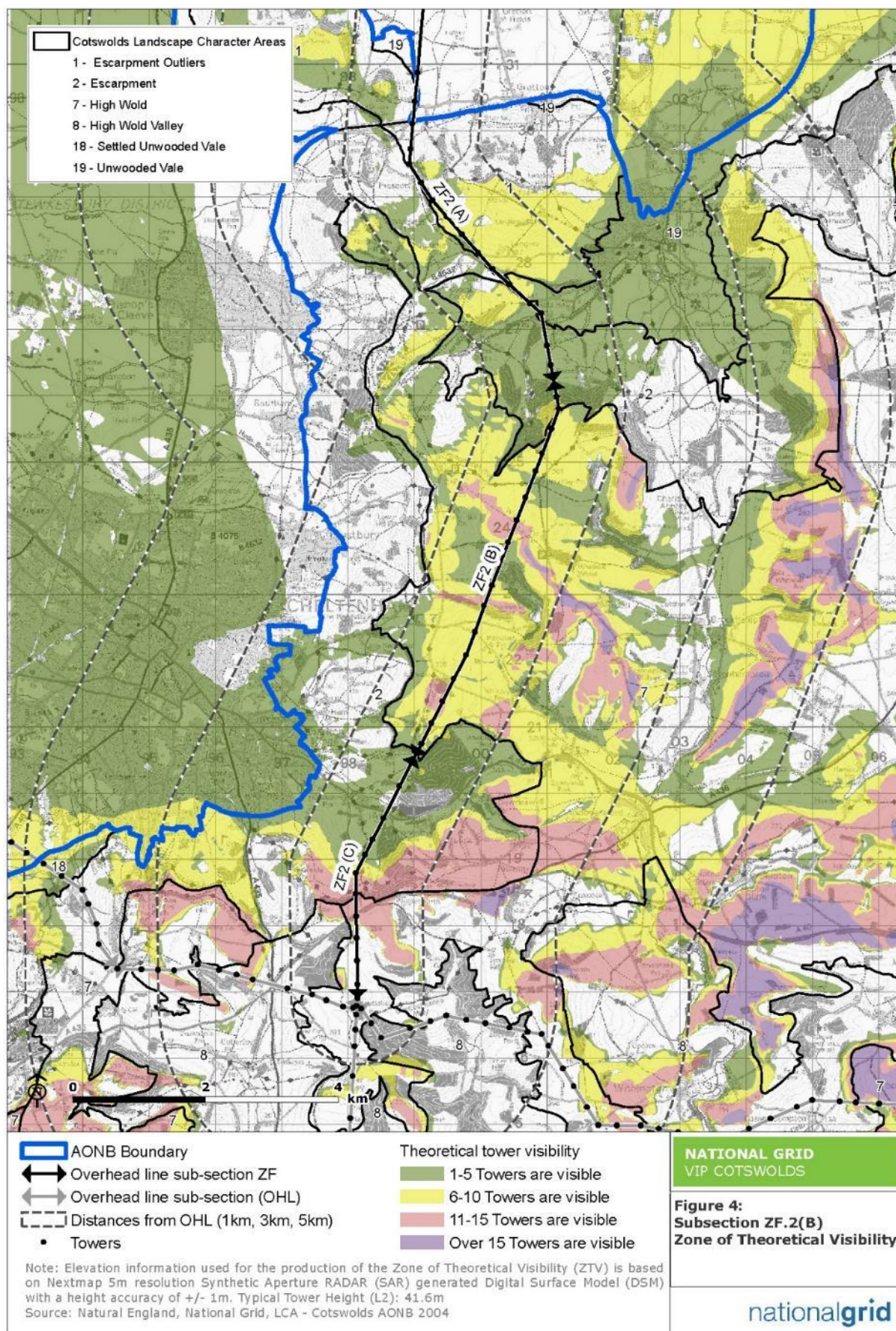
## **ZF.2(B)**

- 1.16 ZF.2(B) is approximately 6.1 km long.
- 1.17 This subsection falls almost entirely within LCA 7C: Cotswolds High Plateau.
- 1.18 Figure 4 illustrates the ZTV of the pylons of ZF.2(B). This illustrates that as a worst case scenario the visibility of many of the pylons of ZF.2(B) would be relatively extensive within the AONB.
- 1.19 The pylons crossing this plateau are often viewed fully against the skyline due to the combination of flatter topography, relatively fewer trees and frequency of large scale arable fields.
- 1.20 Plate 2 below is representative of a view from higher ground at Cleeve Common looking towards ZF.2(B). The pylons of ZF.2(B) are visible against the skyline.

**Plate 2: View from a local right of way and open access land at Wardens Wood car park / interpretation panel**









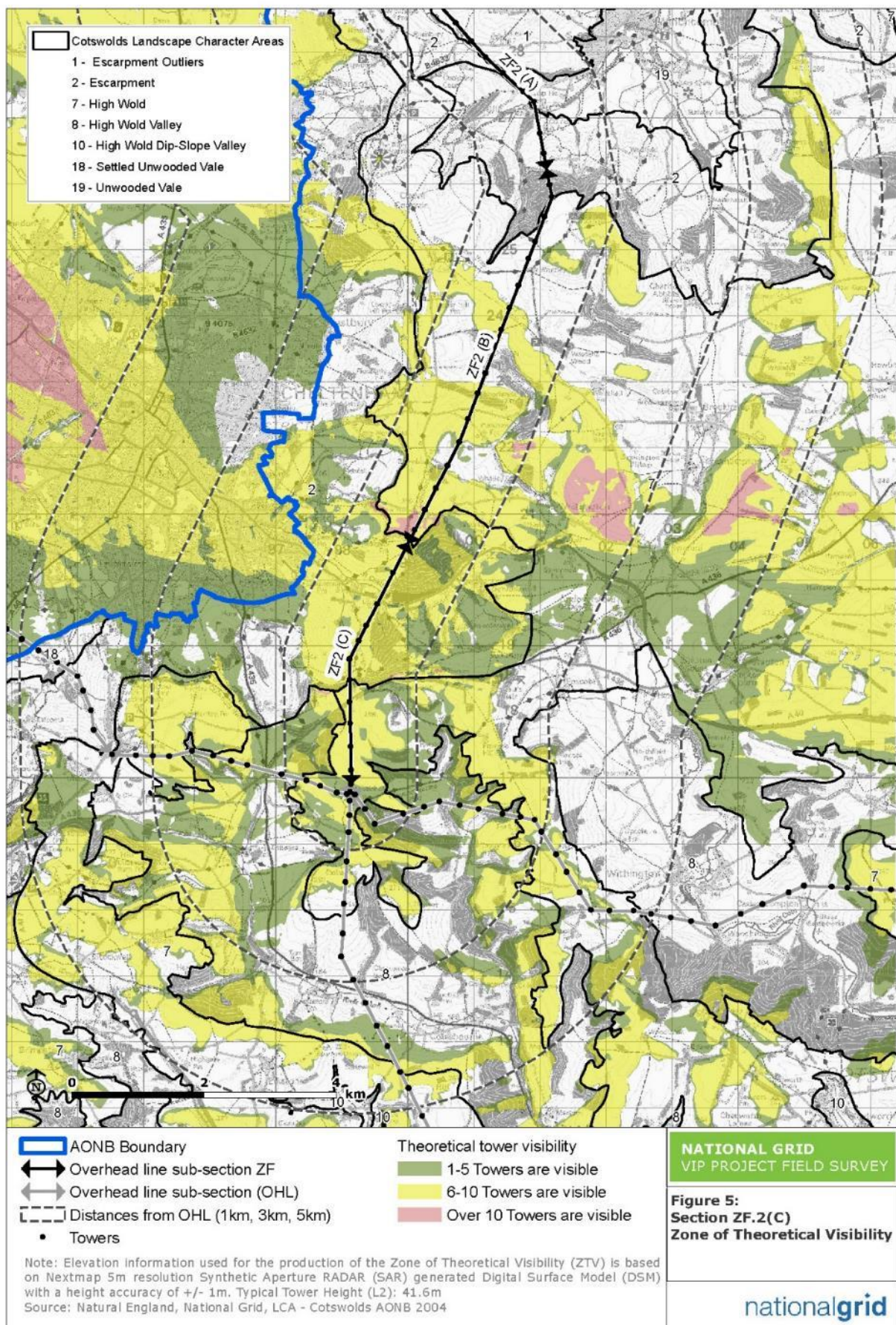
## ZF.2(C)

- 1.21 ZF.2(C) is approximately 3.9 km long.
- 1.22 This subsection falls within *LCA 2D - Cooper's Hill to Winchcombe* (Escarpment LCT) and *LCA 7C: Cotswolds High Plateau* (High Wold).
- 1.23 Figure 5 illustrates the ZTV of the pylons of ZF.2(C). This illustrates that as a worst case scenario the visibility of some of the pylons would be relatively extensive within the AONB.
- 1.24 The pylons along this subsection are sometimes viewed against the backcloth of landform and woodland. Some views are also filtered by a relatively high frequency of tree cover. The pylons to the south of this subsection lie on higher ground and are more visible. Plate 3 below is representative of a view from higher ground at the southern edge of the *Cotswolds High Plateau*. The pylon to the left of the view is part of ZF.2(B). The Pylons of ZF.2(C) descend down the escarpment slope and disappear behind landform before reemerging above the woodland canopy on higher ground to the south.

**Plate 3: View from Cotswolds Way National Trail looking over arable fields towards Dowdeswell Wood.**









## Visual Receptors

- 1.25 Table 1 below provides a comparison of the three subsections in terms of key visual receptors and provides an indication of how many pylons may be visible from these receptors (based on the worst case scenario shown by the ZTV plans). The information relating to the numbers of pylons that are potentially visible is colour coded the same as the ZTV plans for ease of reference.
- 1.26 The identification of key receptors is based on site knowledge and data collected during site visits undertaken in 2014. This has been supplemented by more recent desk top studies including a review of ZTV's, Google Earth and Street View.

**Table 1: Comparison of key receptors**

Key Receptors	ZF Subsection and number of pylons potentially visible		
	ZF.2(A)	ZF.2(B)	ZF.2(C)
People visiting Cleeve Hill promoted viewpoint	6-10	6-10	0
People visiting Kilkenny promoted viewpoint	0	Over 15	1-5
People visiting Belas Knap (English Heritage Long Barrow and Scheduled Ancient Monument)	0	11-15	0
People visiting Cleeve Common	1-5	11-15	6-10
People visiting Sudley Castle	6-10	1-5	0
People walking along the Cotswold Way National Trail	11-15	11-15	11-15
People walking along the Winchcombe Way regional trail	6-10	6-10	1-5
People walking along the Gloucestershire Way regional trail	6-10	11-15	6-10
Cheltenham Circular Path	0	11-15	6-10
The local community of Winchcombe	6-10	1-5	0
People travelling on the A40 main road	0	6-10	6-10
People travelling on the A436 main road	0	11-15	6-10
People travelling on the A435 main road	0	6-10	1-5

## Mitigation considerations

### Mitigation options (from 2014 VIP Report)

- 1.27 The 2014 assessment reported high importance of impacts on visitors to local attractions and users of the trails including the Cotswolds Way National Trail. It was noted that trees are a feature of the landscape and there are opportunities for hedge and field corner planting to screen views of the line and mitigate some of the impacts on the landscape.

### Other potential mitigation/ enhancement (as identified in 2018)

- 1.28 Potential mitigation that could be explored further may include alternative pylon design, overhead line on an alternative route alignment or undergrounding. These options have not yet been explored in detail. Taking into consideration lessons learned from other VIP projects it is considered unlikely that an alternative pylon design or overhead line on an alternative route alignment would provide sufficient mitigation of any of the three subsections of ZF.2. It is also recognised that undergrounding projects do not come without their challenges. The following text explores the potential considerations in terms of constraints and opportunities to undergrounding.

### Undergrounding constraints/ considerations

- 1.29 In 2018 the most notable environmental risks to undergrounding the project were summarised as including the complexity of the landform and land cover in the study area which may be sensitive to an undergrounding scheme, the frequency of blocks of ancient woodland and density of visitor attractions and national and regional trails, open access land (common land at Cleeve Hill) and the dense network of public rights of way.
- 1.30 Table 2 below summarises the landscape and visual considerations (both constraints and opportunities) to undergrounding for each of the new subsections, including statutory and non-statutory ecology and historic environment related designations. This should be read in conjunction with Figures 6 - 8 overleaf.

**Table 2: Undergrounding considerations**

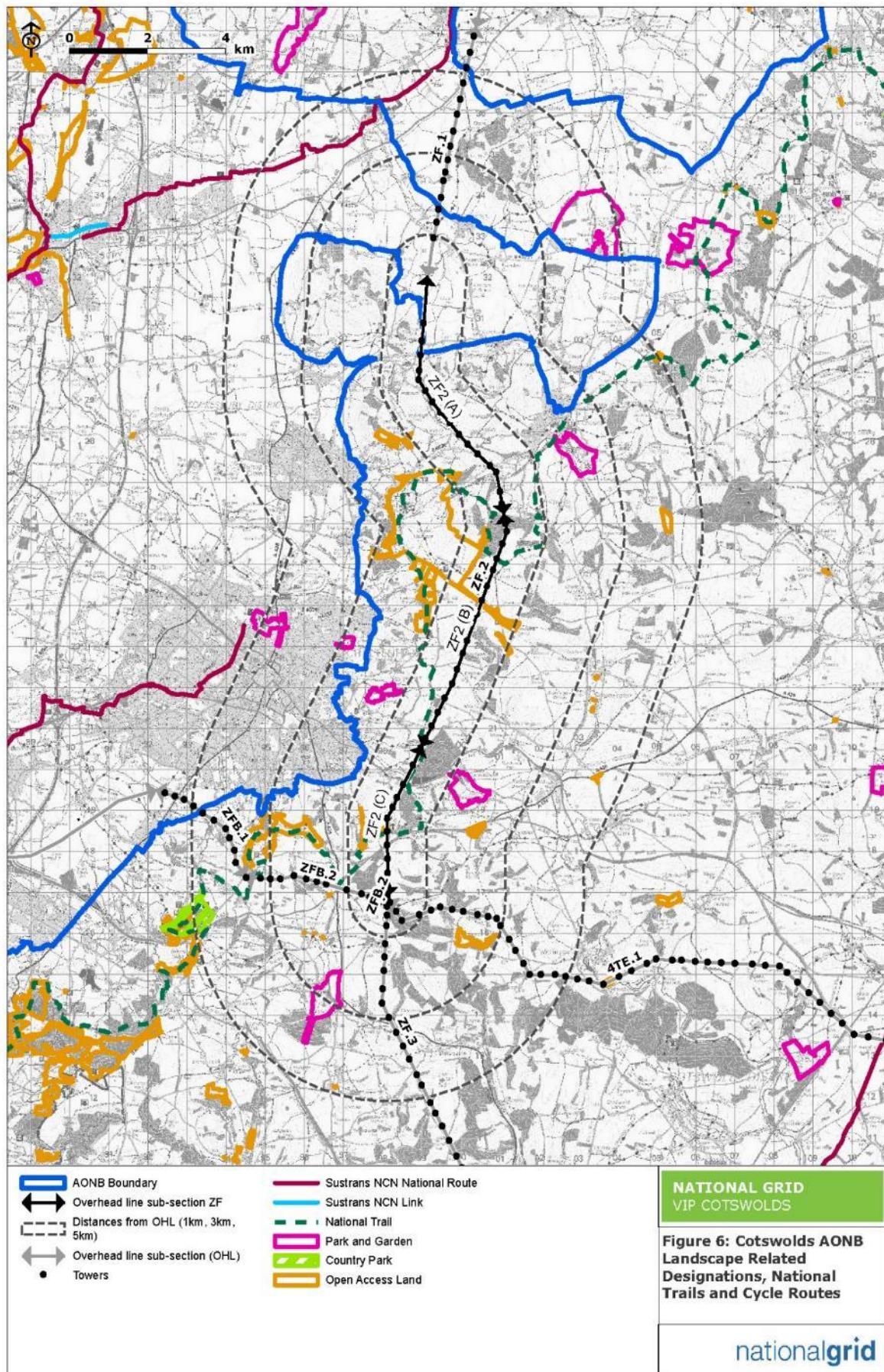
Sub-section	Key constraints and opportunities
ZF.2(A)	<p>The following key constraints have been previously identified:</p> <ul style="list-style-type: none"><li>• Dixon Wood Special Area of Conservation (SAC) and SSSI lies approximately 200m north-west of ZF.2(A);</li><li>• Cleeve Common SSSI lies approximately 600m west of the ZF.2(A); and</li><li>• A number of Scheduled Ancient Monuments are located within 2km buffer of ZF.2(A) of which Belas Knap is of particular significance.</li></ul> <p>It is considered that impacts on these areas/ features could be avoided through careful routeing.</p> <p>There is a relatively high frequency of tree cover within the 3 km buffer to ZF.2(A) – as such, it is likely that an undergrounding project may result in the loss of trees.</p> <p>Field scale and pattern within the buffer of ZF.2(A) is relatively small scale and irregular, bounded by frequent hedgerows and mature hedgerow trees.</p> <p>Relatively steep and undulating topography in combination with a dense network of rights of way, water courses and large well visited areas of open access land such as Cleeve Common may pose some challenges to undergrounding.</p>



Sub-section	Key constraints and opportunities
	<p>It is likely that there may be direct impacts on Cotswolds National Trail and other regional a local public rights of way. Any project to be taken forward should look to avoid and or minimise these impacts as far as possible.</p> <p>Subsection ZF.2(A) is connected to local public roads.</p>
<b>ZF.2(B)</b>	<p>The following key constraints have been previously identified:</p> <ul style="list-style-type: none"> <li>• Cleave Common SSSI lies approximately 600m west of the ZF.2(B)</li> <li>• There are several large areas of Ancient Woodland within 1km buffer of ZF.2(B).</li> <li>• A number of Scheduled Ancient Monuments are located within 2km buffer of ZF.2(B) of which Belas Knap is of particular significance.</li> </ul> <p>It is considered that impacts on these areas/ features could be avoided through careful routeing.</p> <p>In comparison to ZF.2(A) and ZF.2(C) tree cover within the 3 km buffer to ZF.2(B) is relatively low in frequency; however, it is likely that an undergrounding project may result in the loss of some trees.</p> <p>Field scale and pattern within the buffer of ZF.2(B) is relatively large scale and more regular with some large arable fields present. Fields along the northern half of the subsection are bounded by post and wire fences and degraded dry stone walls; whereas fields to the south tend to be defined by hedgerows.</p> <p>It is likely that there may be direct impacts on Cotswolds National Trail and other regional a local public rights of way. Any project to be taken forward should look to avoid and or minimise these impacts as far as possible.</p> <p>Subsection ZF.2(B) is the least connected to any public roads.</p>
<b>ZF.2(C)</b>	<p>The following key constraints have been previously identified:</p> <ul style="list-style-type: none"> <li>• There are several large areas of Ancient Woodland in close proximity to ZF.2(C) – most notably Dowdeswell Wood and Reservoir Nature Reserve.</li> <li>• A number of Scheduled Ancient Monuments are located within 2km buffer of ZF.2(B).</li> </ul> <p>It is considered that impacts on these areas/ features could be avoided through careful routeing, although due to the extent and size of the areas this may result in the requirement for a relatively long deviation to achieve an acceptable route for undergrounding.</p> <p>There is a relatively high frequency of tree cover within the 3 km buffer to ZF.2(C) – as such, it is likely that an undergrounding project may result in the loss of trees.</p> <p>Field scale and pattern within the buffer of ZF.2(C) is relatively intimate to small scale and irregular, bounded by frequent hedgerows and mature hedgerow trees.</p> <p>Relatively steep and undulating topography in combination with dense network of rights of way, water courses and Dowdeswell Reservoir may pose some challenges to undergrounding.</p> <p>It is likely that there may be direct impacts on Cotswolds National Trail and other regional a local public rights of way. Any project to be taken forward should look to avoid and or minimise these impacts as far as possible.</p>

Sub-section	Key constraints and opportunities
	Subsection ZF.2(C) is relatively well connected to two main roads.

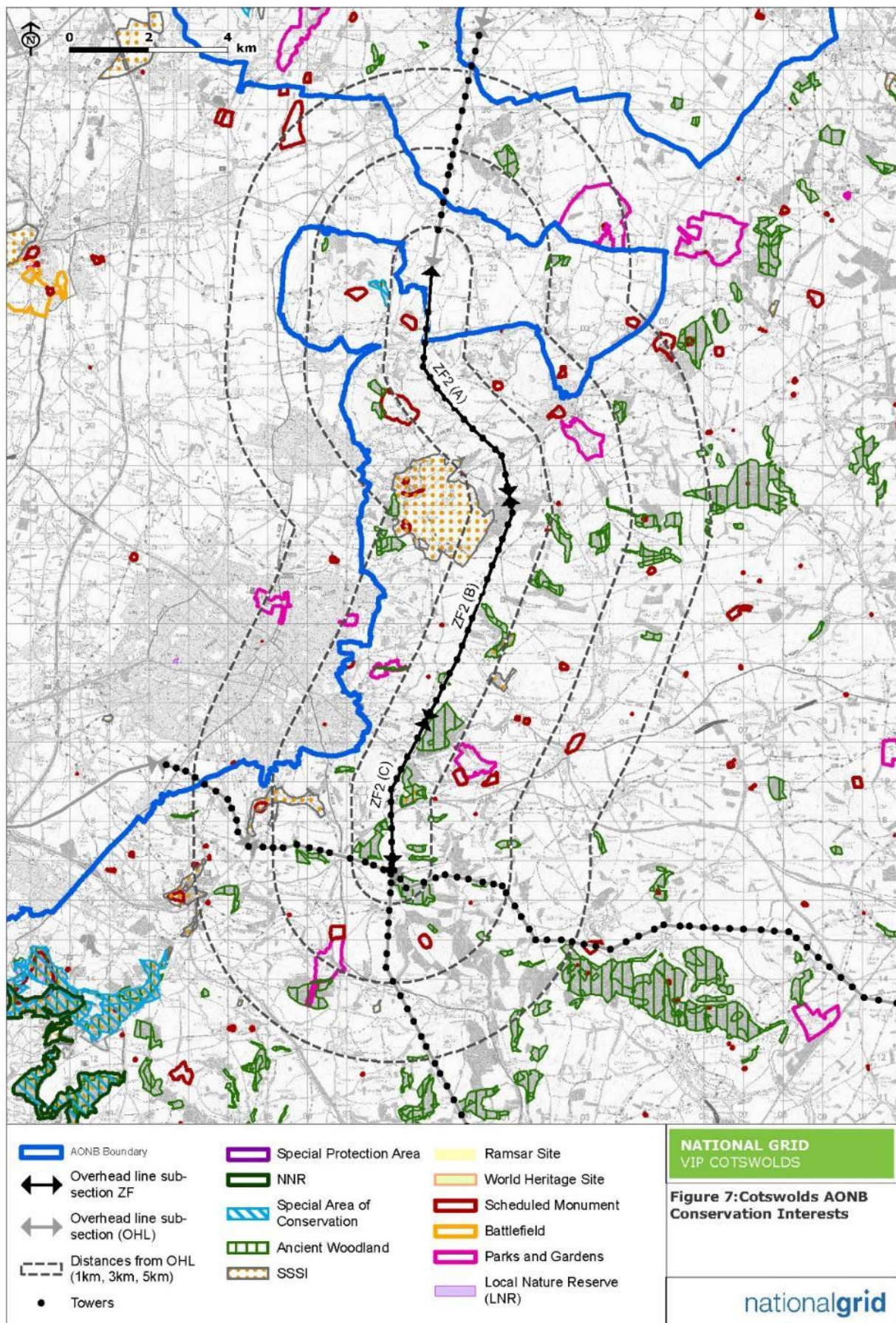




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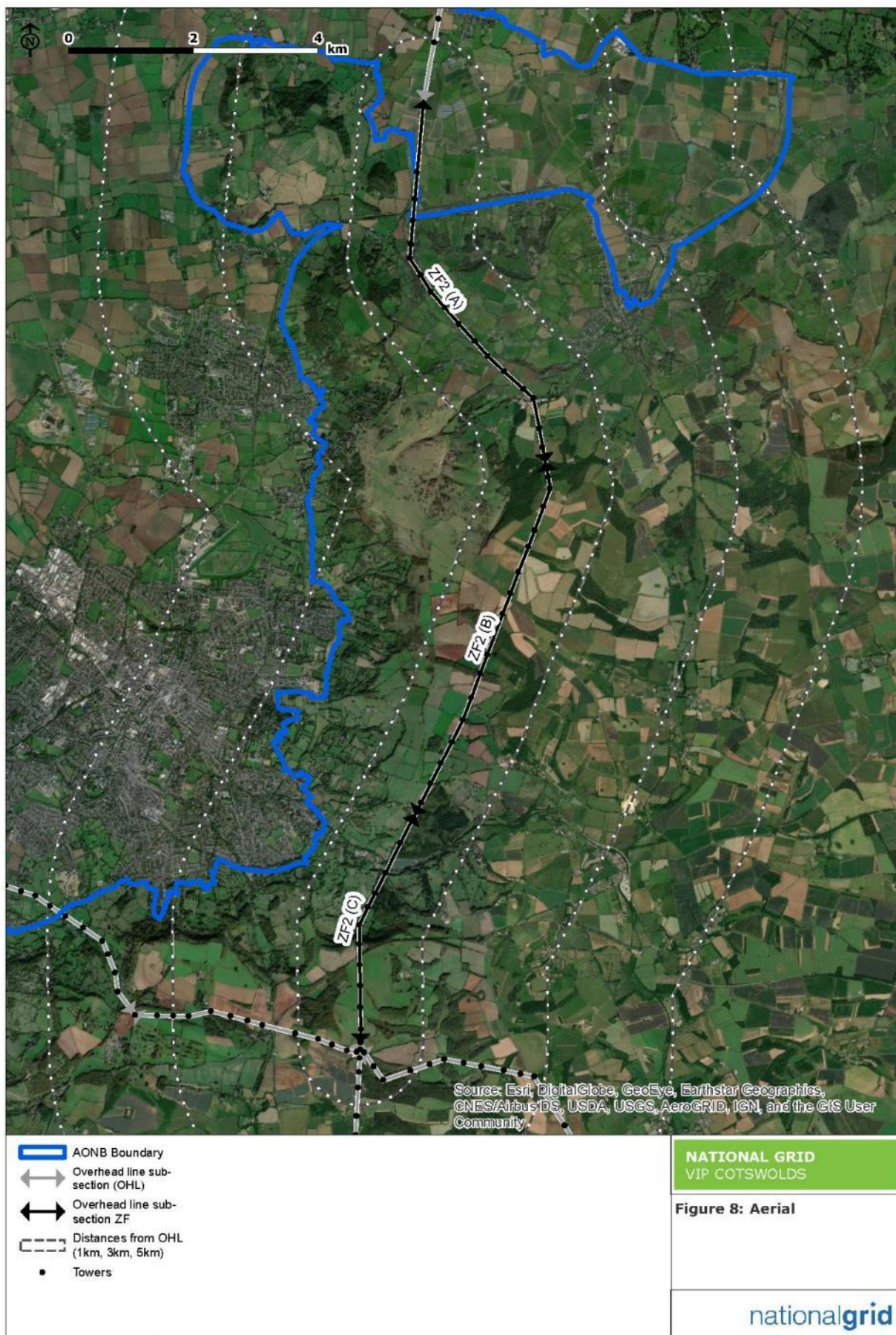




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## Sealing End Compound Siting

- 1.31 Based on a desk top review of the study area it is considered the well treed nature of parts of the landscape may offer opportunities for sensitive siting of Sealing End Compounds (SECs). The SECs could potentially be sited within the 1 km buffer of the extent of ZF.2.
- 1.32 The high level opportunities and constraints identified in Table 2 above should be considered in a more detailed siting study for SECs should a VIP Cotswolds project be taken forward to T2. Other high level considerations are highlighted in Figures 9 – 13 below. These are highlighted on aerial images. These are focussed towards the ends of each of the three subsections as opposed to reviewing the entire lengths of the subsections.
- 1.33 These considerations are based on the following:
- High level identification of broad locations which may be suitable for SEC's along the three subsections of ZF.2;
  - High level identification of broad locations which would not be suitable for SEC's along the three subsections of ZF.2;
  - The focus of the search is within a 1km study area either side of the overhead line;
  - Siting opportunities are purely being considered in terms of landscape and visual and high level conservation constraints at this stage; and
  - This work takes cognisance of routeing studies which have recently been undertaken by National Grid.
- 1.34 The key to Figures 9 – 13 is below:



Avoid siting infrastructure here

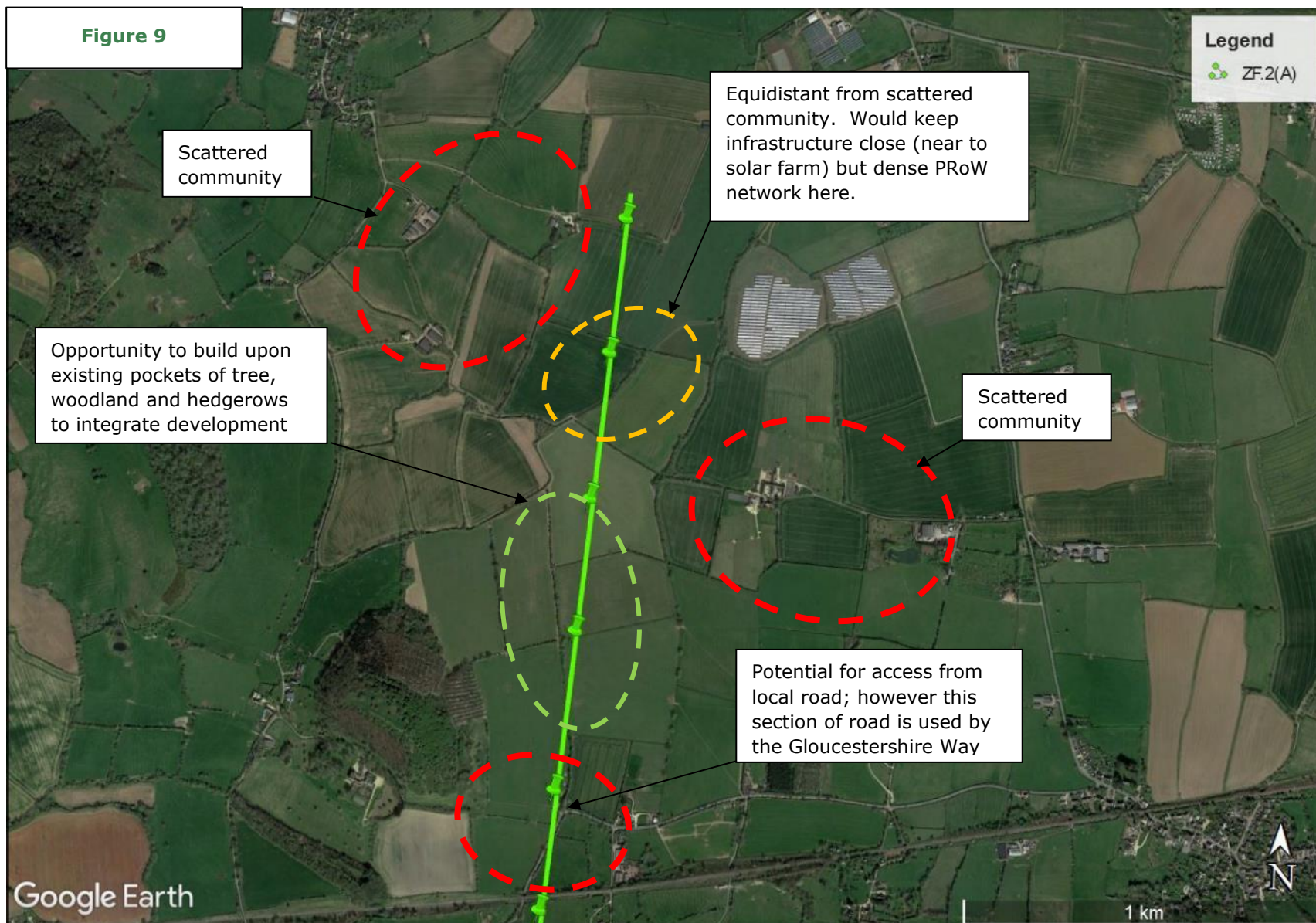


Some potential to accommodate a SEC but issues to consider further

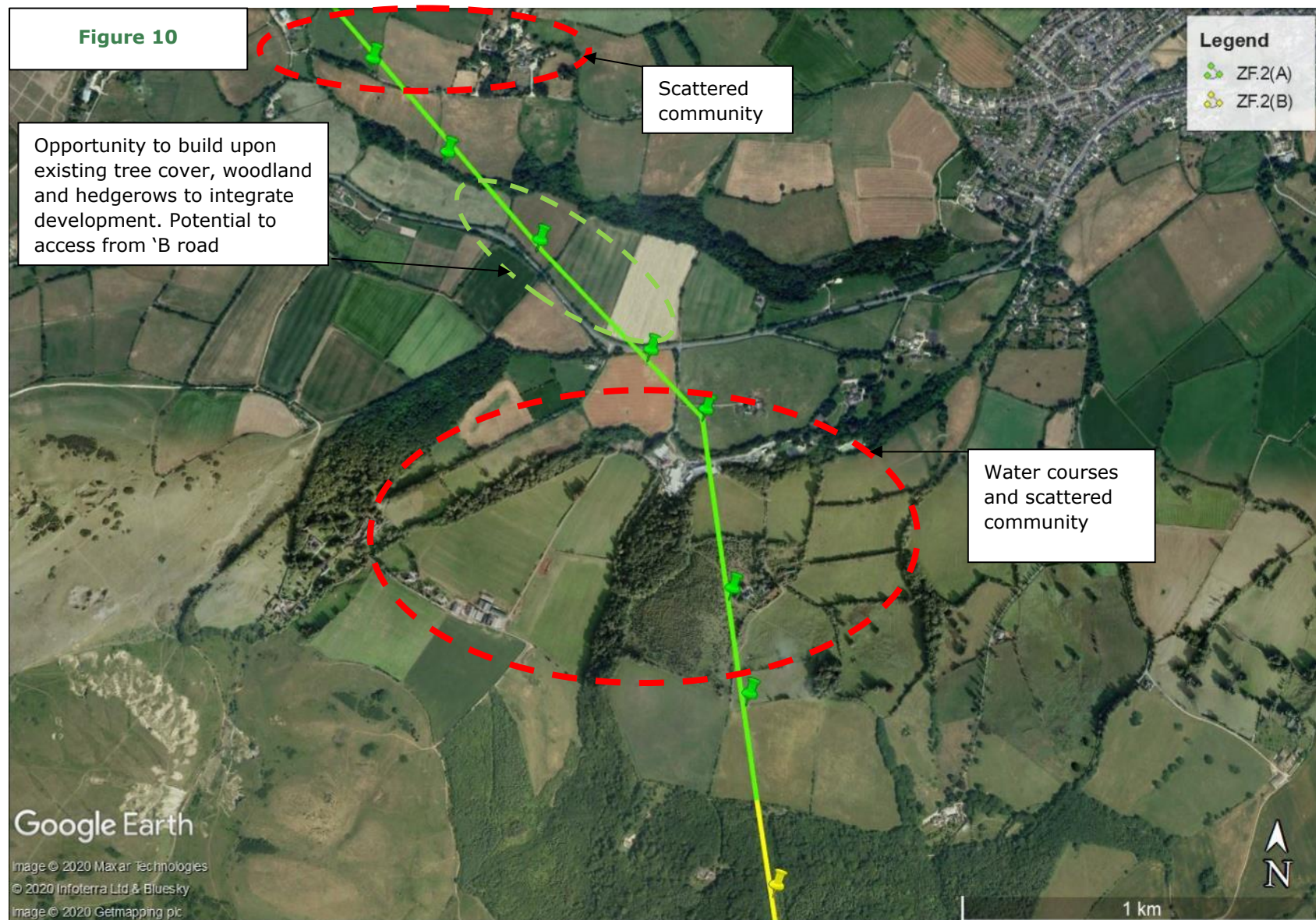


Potential SEC sites

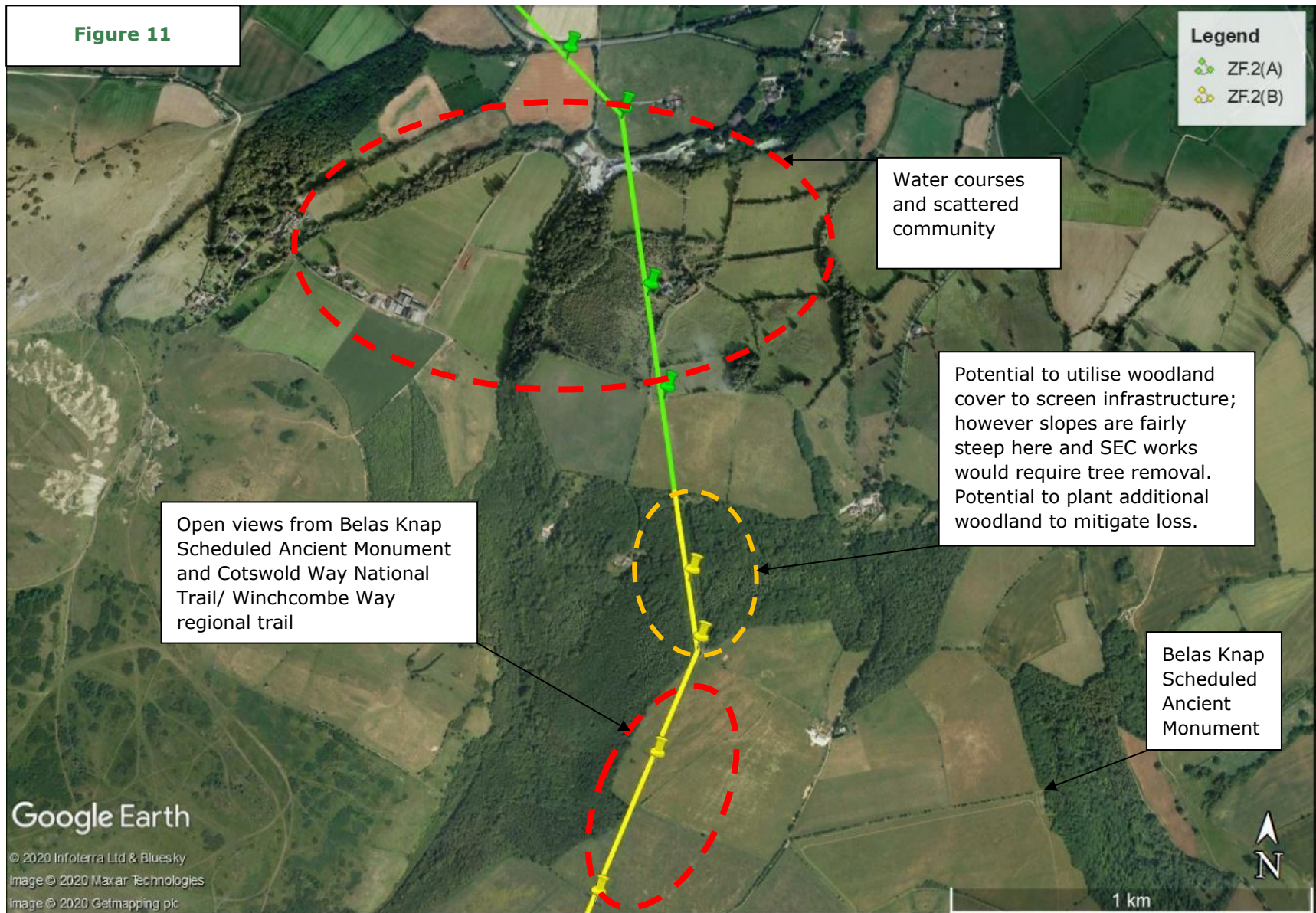




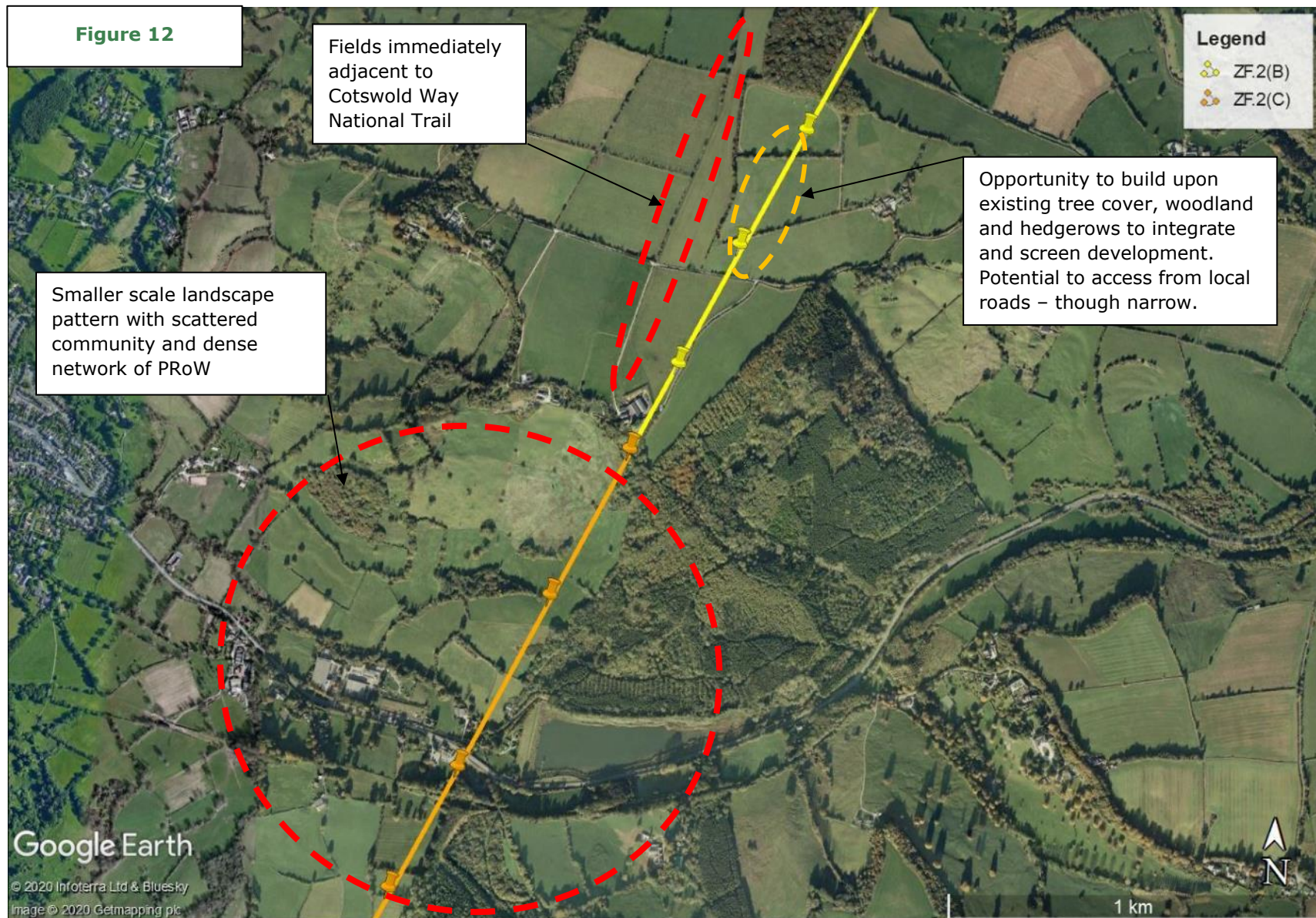




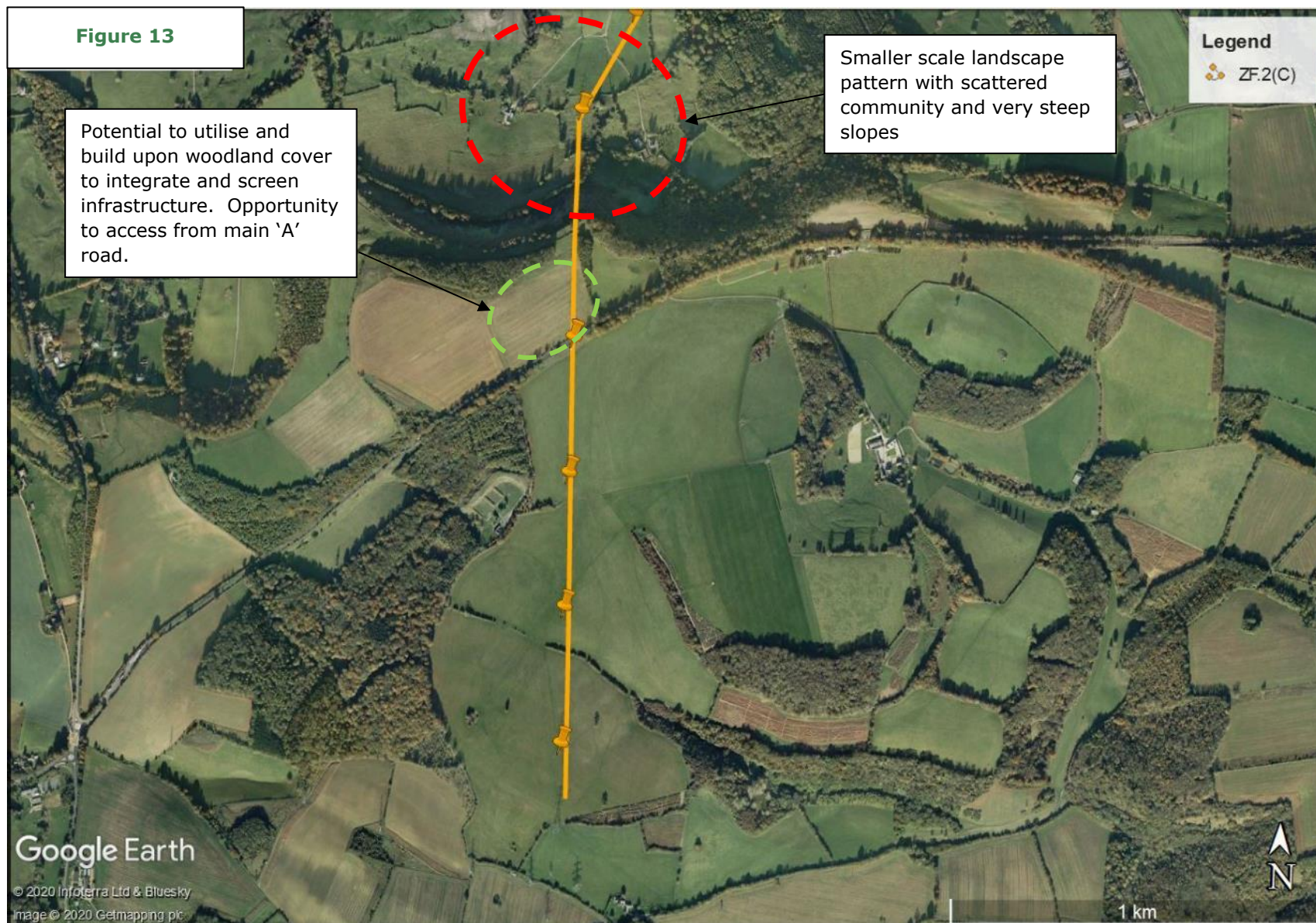












## Conclusion and Recommendations

- 1.35 In terms of the identification of an undergrounding project the recommendation would be to consider undergrounding subsection ZF.2(B). The removal of this part of ZF.2 would result in the most significant visual benefits to the widest range of key visual receptors.
- 1.36 In addition to this, it is recommended that a broad package of landscape enhancement and visual mitigation interventions be developed to further mitigate the impacts of ZF.2(A) and ZF.2(C) and enhance the wider landscape of the AONB. These interventions should take cognisance of the AONB management plan, landscape character area descriptions, local planning policy and opinions of stakeholders and the local community. In terms of priority the interventions should look to mitigate the impacts from key receptors, and in particular the southern end of ZF.2(C) which sits in an elevated location and adjoins several other overhead lines which cumulatively contribute to the importance of the impact of this part of ZF.2(C).



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