Springwell Solar Farm

ES Volume 2: Figures

Chapter 16: Cumulative Effects

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

EN010149/APP/6.2

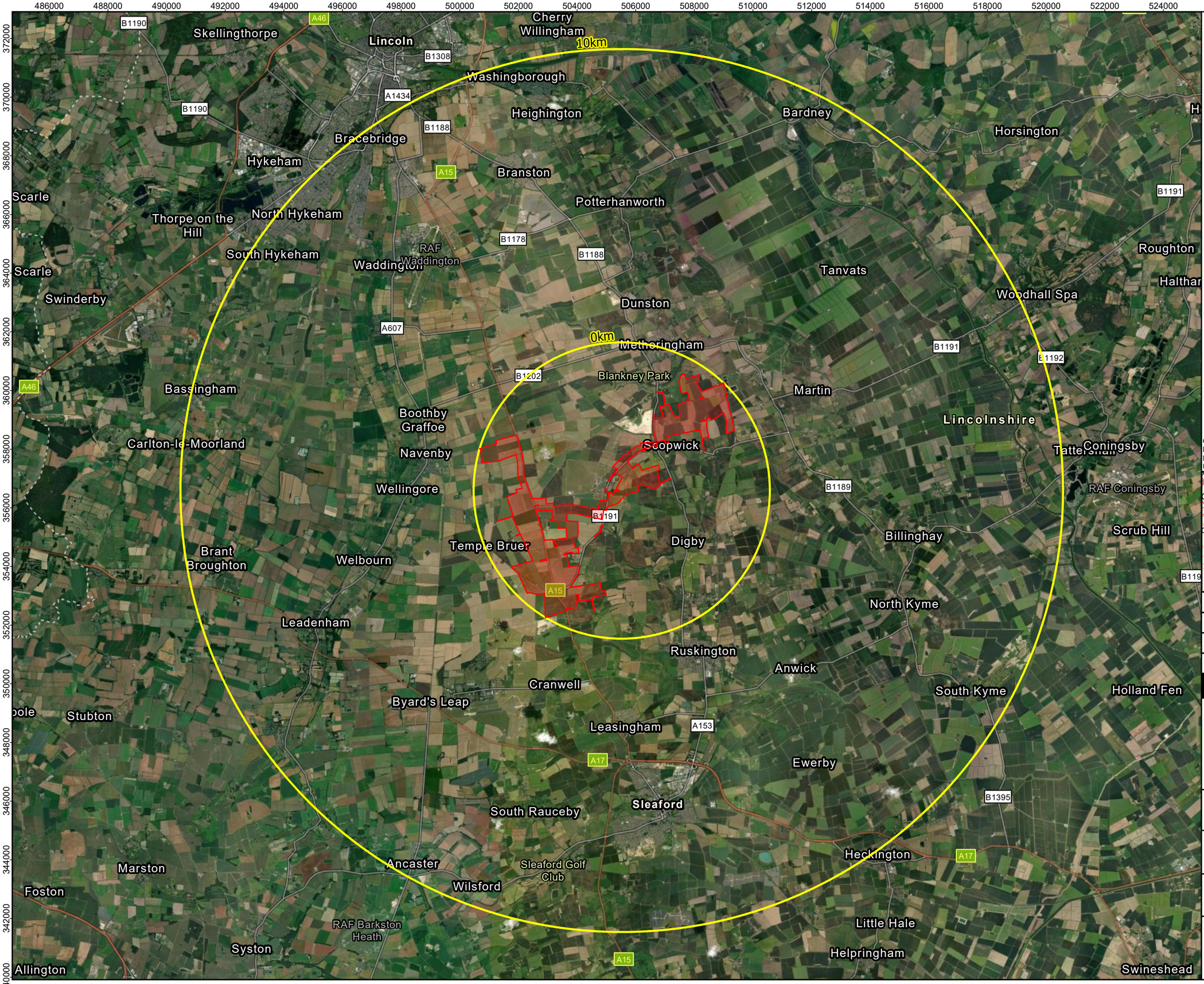
November 2024

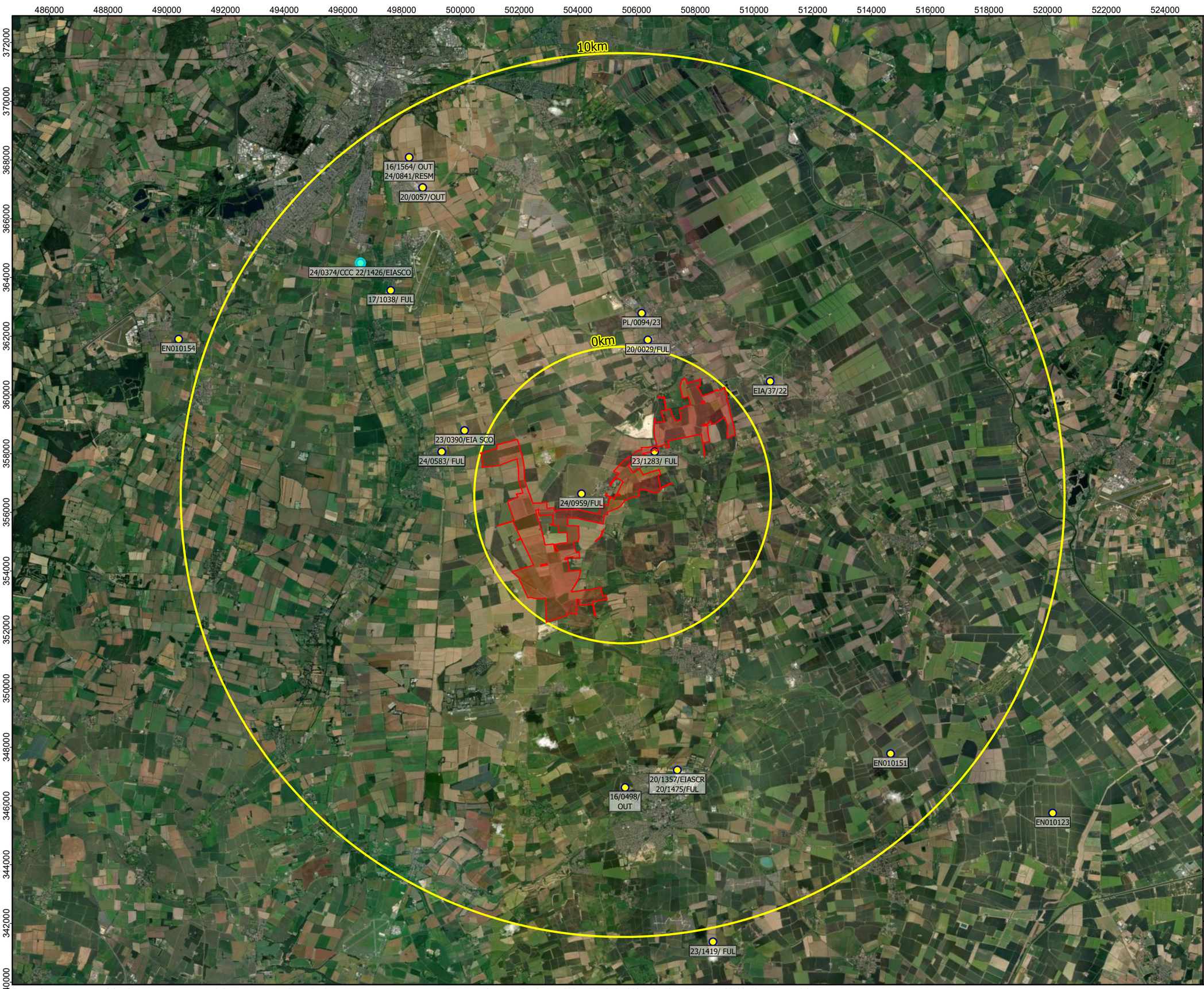
Springwell Energyfarm Ltd

ES Volume 2: Figures

Chapter 16: Cumulative Effects

Drawing number	Revision number	Drawing title	Scale
Figure 16.1	01	Cumulative Long List Radius	A3
Figure 16.2	01	Cumulative Short List Radius	A3
Figure 16.3	01	Cumulative ZTV - Springwell and National Grid Navenby Substation	A3
Figure 16.4	01	Cumulative ZTV - Springwell and Navenby Heath BESS	A3
Figure 16.5	01	Cumulative ZTV - Springwell and RAF Digby Development	A3
Figure 16.6	01	Cumulative ZTV - Springwell, National Grid Navenby Substation and Navenby Heath BESS	A3
Figure 16.7	01	Cumulative ZTV – Springwell, National Grid Navenby Substation and RAF Digby Development	A3
Figure 16.8	01	Best and Most Versatile (BMV) Agricultural Land and Cumulative Developments	A3





LEGEND:

- Order Limits
- Cumulative Developments
- Buffer

NOTES:

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	Nov 2024	DCO Submission	RSK	RSK	EDF

Springwell Solar Farm

DOCUMENT: ENVIRONMENTAL STATEMENT
VOLUME 2: FIGURES
REGULATION 5(2)(a)

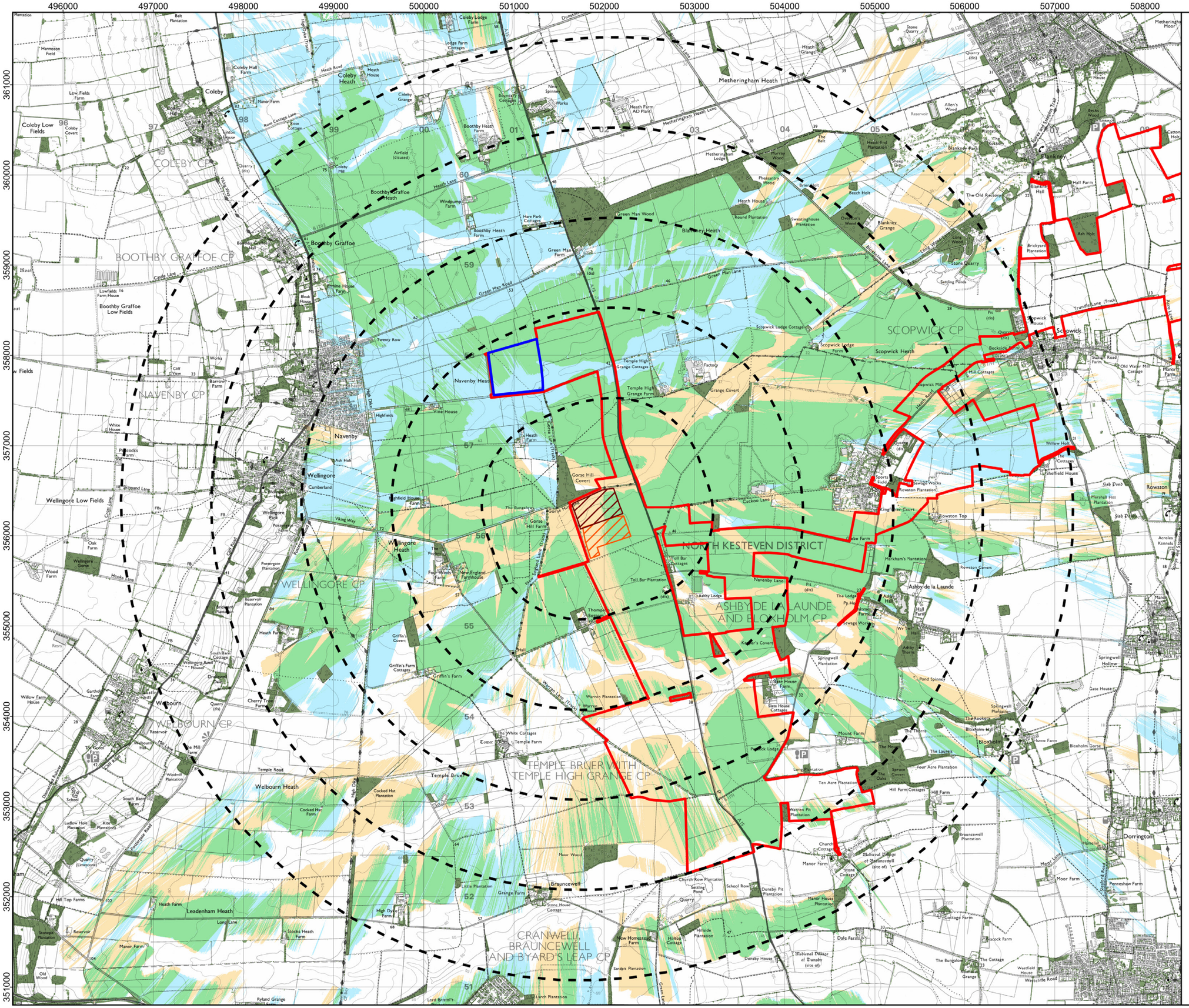
TITLE:
FIGURE 16.2: CUMULATIVE SHORT LIST RADIUS

PINS REFERENCE NUMBER:
EN010149/APP/6.2

0 2 4
Kilometers
Scale: 1:120,000 @ A3

REV 01

Path: \\rsk-cloud\Projects\660000 - EPD Projects\663620 - Springwell Solar Farm\01 - GIS\P663620.aprx



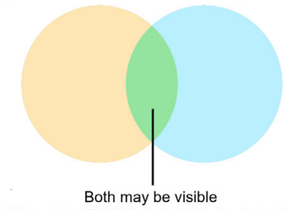
Legend:

- Order Limits
- Springwell Substation Siting Area
- Springwell BESS Siting Area
- Distance Radii from Siting Area (1, 2, 3, 4, 5km)
- NG Navenby Substation
- Woodland and vegetation higher than 2.5m

Zone of Theoretical Visibility

Springwell Substation/BESS may be visible

NG Navenby Substation may be visible



Both may be visible

NOTES:
Layout file: D012-obvs-substation+BESS-LIDAR0m-3km.shp; D012-Obvs-Cumu-Screening-VOM-3km.shp
Terrain data: DEFRA-LIDAR-2022-derivedDSM-VOM-2m.asc
Viewer's eye height: 2m above ground level
Calculation grid size: 2m
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.
The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings.
A digital surface model (DSM) has been derived from DEFRA 2022 2m DTM height data. Locations of buildings are taken from the OS Open Map Local dataset and woodland from the EA's Vegetation Object Model dataset. Heights of buildings and woodland are taken from DEFRA 2022 2m DSM height data.
The actual extent of visibility on the ground will be less than that suggested by this plan.
The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DSM and has a 2m² resolution.
The ZTV does not show cable route corridors, boundary fencing and CCTV, inverter and transformers and switchgear compounds, National Grid Sealing End Compound and additional 400kV towers.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	Nov 2024	DCO Submission	RSK	RSK	EDF

Springwell Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 2: FIGURES
REGULATION 5(2)(a)

TITLE:
Figure 16.3: Cumulative ZTV – Springwell and National Grid Navenby Substation

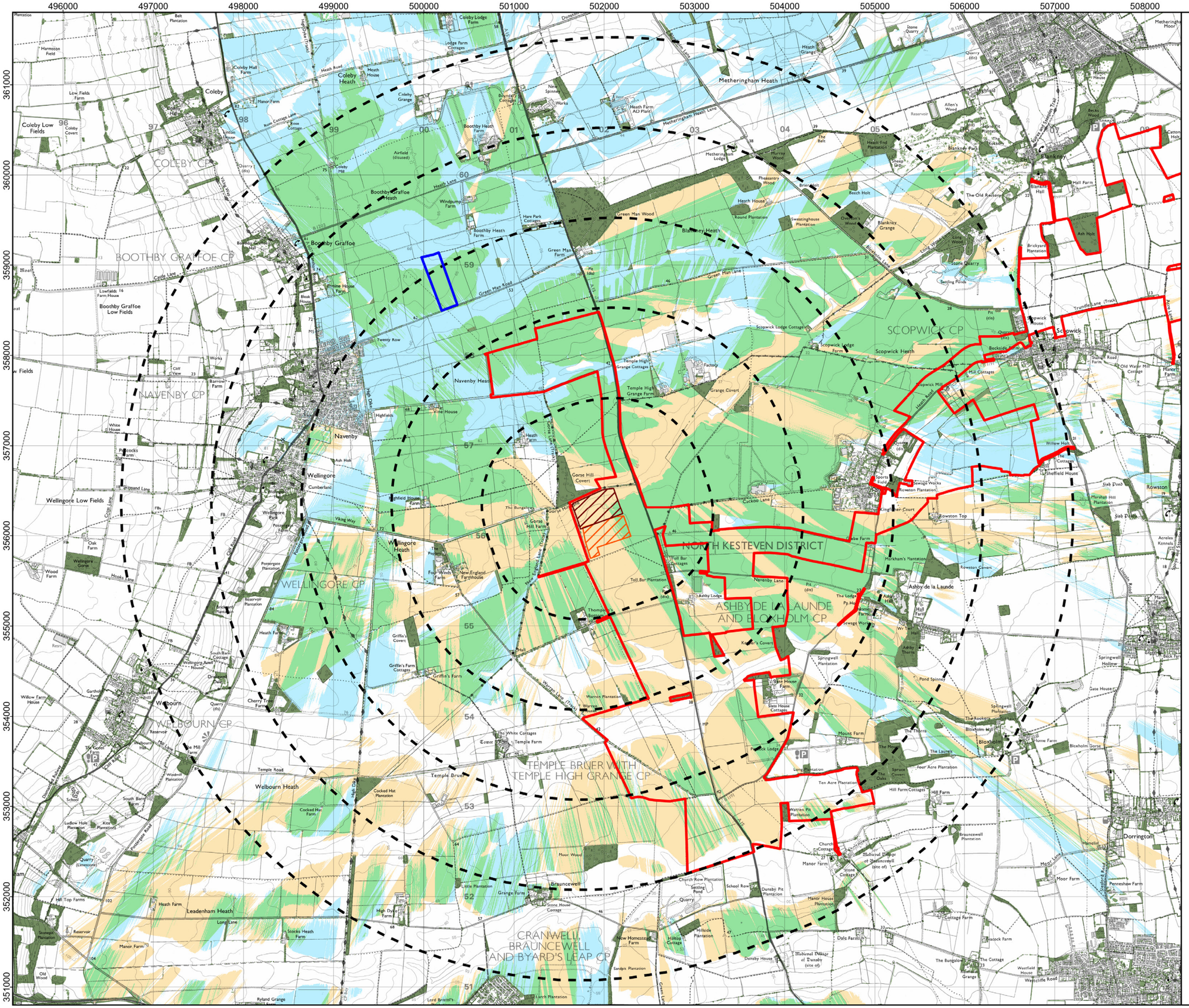
PINS REFERENCE NUMBER:
EN010149/APP/6.2

0 0.5 1
Kilometers

Scale: 1:40,000 @ A3

REV 01

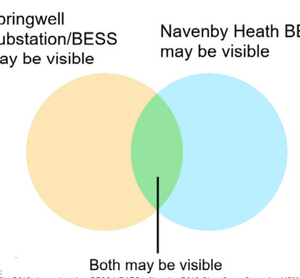
Path: C:\Users\mo.pamplin.RSK\HELSBY\RSK Group\SH Projects 200s - 0297 - Acre Lane Solar Farm\05 Working Files\02 GIS\P663620-ES.aprxLES 16-3 Springwell + Navenby ZTV Detailed



Legend:

- Order Limits
- Springwell Substation Siting Area
- Springwell BESS Siting Area
- Distance Radii from Siting Area (1, 2, 3, 4, 5km)
- Navenby Heath BESS
- Woodland and vegetation higher than 2.5m

Zone of Theoretical Visibility



NOTES:
Layout file: D012-obvs-substation+BESS-LiDAR5m-3km.shp; D012-Obvs-Cumu-Screening-VOM-3km.shp
Terrain data: DEFRA-LiDAR-2022-derivedDSM-VOM-2m.asc
Viewer's eye height: 2m above ground level
Calculation grid size: 2m
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.
The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings.
A digital surface model (DSM) has been derived from DEFRA 2022 2m DTM height data. Locations of buildings are taken from the OS Open Map Local dataset and woodland from the EA's Vegetation Object Model dataset. Heights of buildings and woodland are taken from DEFRA 2022 2m DSM height data.
The actual extent of visibility on the ground will be less than that suggested by this plan.
The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DSM and has a 2m² resolution.
The ZTV does not show cable route corridors, boundary fencing and CCTV, inverter and transformers and switchgear compounds, National Grid Sealing End Compound and additional 400kV towers.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	Nov 2024	DCO Submission	RSK	RSK	EDF

Springwell Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 2: FIGURES
REGULATION 5(2)(a)

TITLE:
Figure 16.4: Cumulative ZTV – Springwell and Navenby Heath BESS

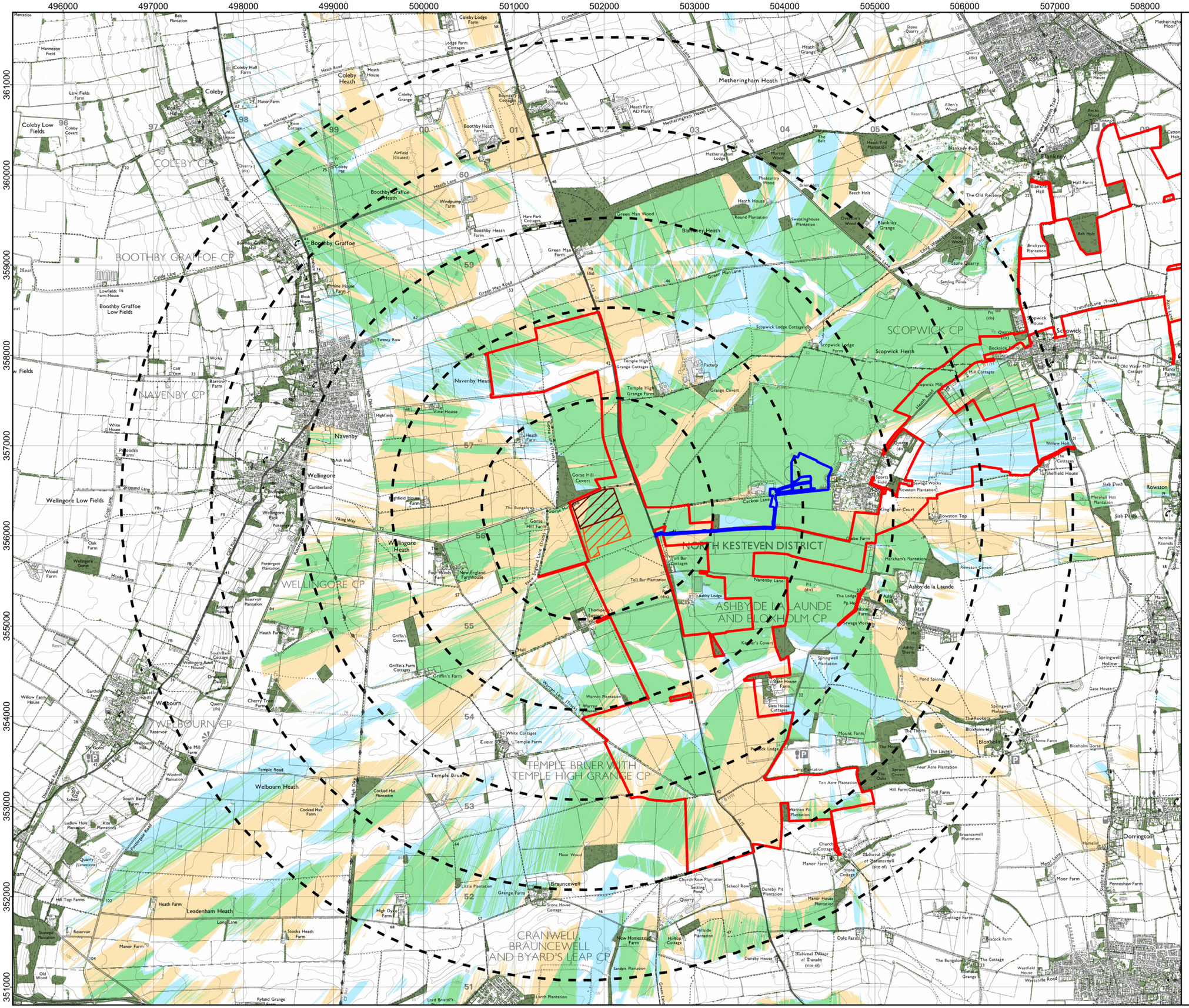
PINS REFERENCE NUMBER:
EN010149/APP/6.2

0 0.5 1
Kilometers

Scale: 1:40,000 @ A3

REV 00

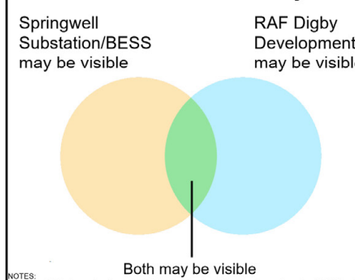
Path: C:\Users\mo.pamplin.RSK\HELSBY\RSK Group\SH Projects 200s - 0297 - Acre Lane Solar Farm\05 Working Files\02 GIS\P663620-ES.aprxLES 16-4 Springwell + NoGMR BESS ZTV Detailed



Legend:

- Order Limits
- Springwell Substation Siting Area
- Springwell BESS Siting Area
- Distance Radii from Siting Area (1, 2, 3, 4, 5km)
- RAF Digby Development
- Woodland and vegetation higher than 2.5m

Zone of Theoretical Visibility



NOTES:
Layout file: D012-obvs-substation+BESS-LIDAR0m-3km.shp; D012-Obvs-Cumu-Screening-VOM-3km.shp
Terrain data: DEFRA-LIDAR-2022-derivedDSM-VOM-2m.asc
Viewer's eye height: 2m above ground level
Calculation grid size: 2m
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.
The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings.
A digital surface model (DSM) has been derived from DEFRA 2022 2m DTM height data. Locations of buildings are taken from the OS Open Map Local dataset and woodland from the EA's Vegetation Object Model dataset. Heights of buildings and woodland are taken from DEFRA 2022 2m DSM height data.
The actual extent of visibility on the ground will be less than that suggested by this plan.
The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DSM and has a 2m² resolution.
The ZTV does not show cable route corridors, boundary fencing and CCTV, inverter and transformers and switchgear compounds, National Grid Sealing End Compound and additional 400kV towers.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	Nov 2024	DCO Submission	RSK	RSK	EDF

Springwell Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 2: FIGURES
REGULATION 5(2)(a)

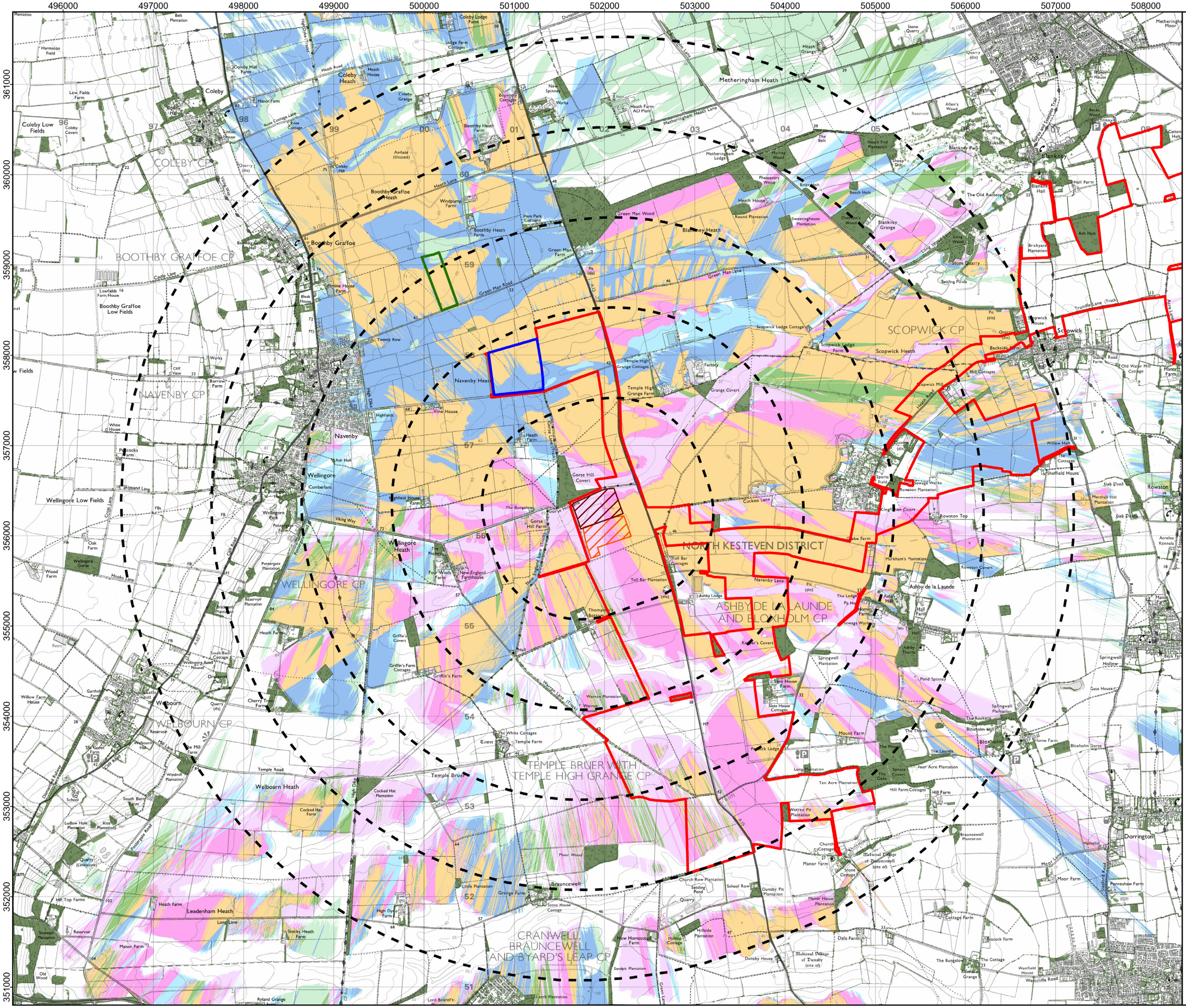
TITLE:
Figure 16.5: Cumulative ZTV – Springwell and RAF Digby Development

PINS REFERENCE NUMBER:
EN010149/APP/6.2

0 0.5 1
Kilometers
Scale: 1:40,000 @ A3

REV 00

Path: C:\Users\mo.pamplin.RSK\HELSBY\RSK Group\SH Projects 200s - 0297 - Acre Lane Solar Farm\05 Working Files\02 GIS\P663620-ES.aprxLES 16-5 Springwell + RAF Digby ZTV Detailed

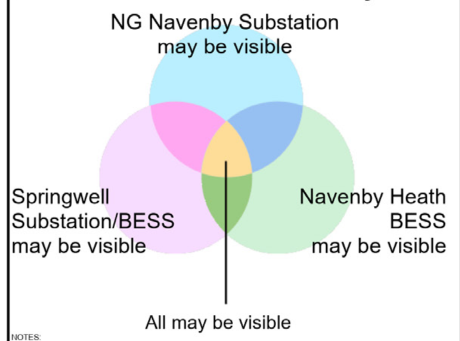


Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. | © Crown copyright, All rights reserved. 2024 License number 0100031673 | Contains Ordnance Survey data © Crown copyright and database right 2024

Legend:

- 🟥 Order Limits
- ▨ Springwell Substation Siting Area
- ▨ Springwell BESS Siting Area
- - - Distance Radii from Siting Area (1, 2, 3, 4, 5km)
- ☐ Navenby Heath BESS
- ☐ NG Navenby Substation
- 🟩 Woodland and vegetation higher than 2.5m

Zone of Theoretical Visibility



NOTES:
Layout file: D012-obvs-substation+BESS-LiDAR5m-3km.shp; D012-Obvs-Cumu-Screening-VOM-3km.shp
Terrain data: DEFRA-LiDAR-2022-derivedDSM-VOM-2m.asc
Viewer's eye height: 2m above ground level
Calculation grid size: 2m
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.
The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings.
A digital surface model (DSM) has been derived from DEFRA 2022 2m DTM height data. Locations of buildings are taken from the OS Open Map Local dataset and woodland from the EA's Vegetation Object Model dataset. Heights of buildings and woodland are taken from DEFRA 2022 2m DSM height data.
The actual extent of visibility on the ground will be less than that suggested by this plan.
The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DSM and has a $2m^2$ resolution.
The ZTV does not show cable route corridors, boundary fencing and CCTV, inverter and transformers and switchgear compounds, National Grid Sealing End Compound and additional 400kV towers.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

01	Nov 2024	DCO Submission	RSK	RSK	EDF
Rev	**Date**	**Description**	**Drn**	**Chk**	**App**

Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 2: FIGURES
REGULATION 5(2)(a)

TITLE:
Figure 16.6: Cumulative ZTV – Springwell, National Grid Navenby Substation and Navenby Heath BESS

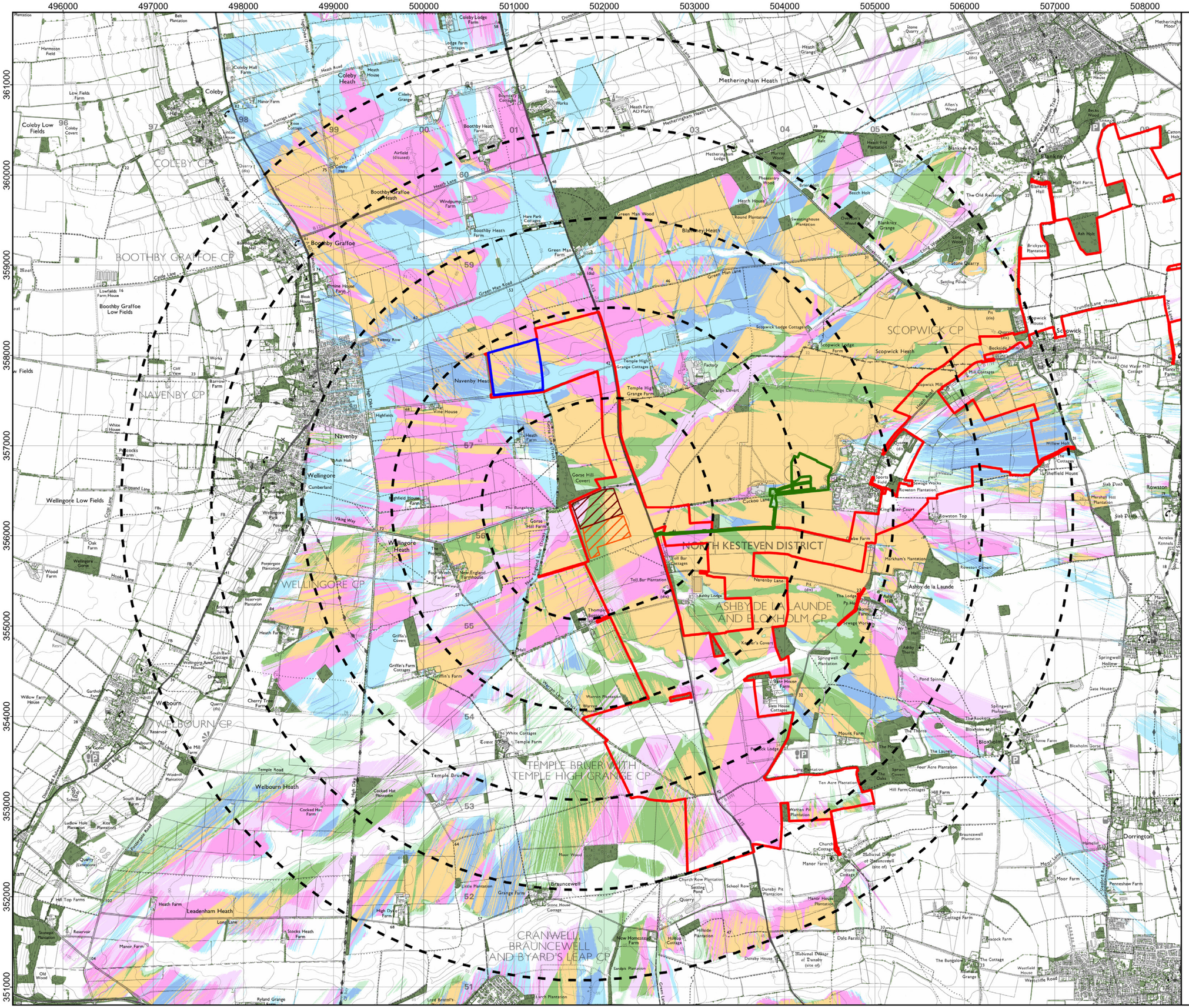
PINS REFERENCE NUMBER:
EN010149/APP/6.2

0 0.5 1
Kilometers
Scale: 1:40,000 @ A3

N E S W

REV 00

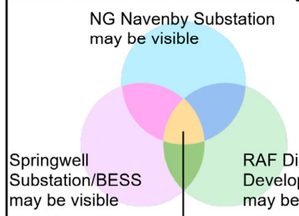
Path: C:\Users\mo.pamplin.RSKHELSBY\RSK Group\SH Projects 200s - 0297 - Acre Lane Solar Farm\05 Working Files\02 GIS\P663620-ES.aprx\ES 16-6 Springwell + Navenby + NoGMR ZTV Detaile



Legend:

- Order Limits
- Springwell Substation Siting Area
- Springwell BESS Siting Area
- Distance Radii from Siting Area (1, 2, 3, 4, 5km)
- NG Navenby Substation
- RAF Digby Development
- Woodland and vegetation higher than 2.5m

Zone of Theoretical Visibility



NOTES:
Layout file: D012-obvs-substation+BESS-LiDAR5m-3km.shp; D012-Obvs-Cumu-Screening-VOM-3km.shp
Terrain data: DEFRA-LiDAR-2022-derivedDSM-VOM-2m.asc
Viewer's eye height: 2m above ground level
Calculation grid size: 2m
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.
The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings. A digital surface model (DSM) has been derived from DEFRA 2022 2m DTM height data. Locations of buildings are taken from the OS Open Map Local dataset and woodland from the EA's Vegetation Object Model dataset. Heights of buildings and woodland are taken from DEFRA 2022 2m DSM height data.
The actual extent of visibility on the ground will be less than that suggested by this plan.
The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DSM and has a 2m² resolution.
The ZTV does not show cable route corridors, boundary fencing and CCTV, inverter and transformers and switchgear compounds, National Grid Sealing End Compound and additional 400kV towers.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	Nov 2024	DCO Submission	RSK	RSK	EDF

Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 2: FIGURES
REGULATION 5(2)(a)

TITLE:
Figure 16.7: Cumulative ZTV – Springwell, National Grid Navenby Substation and RAF Digby Development

PINS REFERENCE NUMBER:
EN010149/APP/6.2

0 0.5 1
Kilometers
Scale: 1:40,000 @ A3

N W E S

REV 00

Path: C:\Users\mo.pamplin.RSK\HELSBY\RSK Group\SH Projects 200s - 0297 - Acre Lane Solar Farm\05 Working Files\02 GIS\P663620-ES.aprxLES 16-7 Springwell + Navenby + Digby ZTV Detaile

475000 480000 485000 490000 495000 500000 505000 510000 515000 520000 525000 530000 535000

380000 375000 370000 365000 360000 355000 350000 345000 340000 335000 330000

Lincoln
North Hykeham
Wragby
Horncastle
Woodhall Spa
Newark-on-Trent
Sleaford
Heckington
Boston
Grantham
A46
A158
A16
A1
A15
A17
A52
A607
Nottinghamshire
Lincolnshire
Leicestershire

LEGEND:

- Order Limits
- County Boundary

Other Solar Farm Developments (indicative)

- Beacon Fen Energy Park
- Cottam Solar Project
- Fosse Green Energy Park
- GNR Solar Park
- Gate Burton Solar Farm
- Heckington Fen Solar Park
- One Earth Solar Farm
- Steeples Renewable Project
- Temple Oaks Renewable Energy Park
- West Burton Solar Project

Provisional Agricultural Land Classification

- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Non Agricultural
- Urban

NOTES:
Missing Fiskerton West Solar & Mareham Lane Solar

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	Nov 2024	DCO Submission	RSK	RSK	EDF

Springwell Solar Farm

Springwell Solar Farm

DOCUMENT: ENVIRONMENTAL STATEMENT
VOLUME 2: FIGURES
REGULATION 5(2)(a)

TITLE:
FIGURE 16.8: BEST AND MOST VERSATILE (BMV) AGRICULTURAL LAND AND CUMULATIVE DEVELOPMENTS

PINS REFERENCE NUMBER:
EN010149/APP/6.2

0 2 4
Kilometers

Scale: 1:200,000 @ A3

REV 01

Path: \\rsk-cloud\Projects\660000 - EPD Projects\663620 - Springwell Solar Farm\01 - GIS\P663620.aprx

Springwell

Solar Farm

springwellsolarfarm.co.uk

Application Document Ref: EN010149/APP/6.2
Planning Inspectorate Scheme Ref: EN010149