GREEN HILL
SOLAR FARM

Green Hill Solar Farm
EIA Scoping Report Appendices
Part 8 of 8 (Appendices 11-21)
Revision A

Date: July 2024

PINS reference: EN010170

Contents

GREEN HILL
SOLAR FARM

Green Hill Solar Farm
EIA Scoping Report
Appendix 11: Minerals
Revision A

Prepared by: Ted Clover Planning

Date: July 2024

PINS reference: EN010170

Contents

GREEN HILL SOLAR FARM

Title: Figure 11.1.1 Mineral Resource Plans
Green Hill A & A.2
Sheet 1 of 5

Document:
Minerals
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Search Area

Northamptonshire Minerals and Waste Local Plan

- Sand and Gravel Minerals Safeguarding Area

Data: North Northamptonshire Council, 2024, Lanpro, 2024.
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535_LPR_ZZ_XX_DR_Z_Scoping_0146
Coordinate system: British National Grid
Scale: 1:20,000 @ A3

0 500 1,000 Metres

Island GREEN POWER

Lanpro

GREEN HILL SOLAR FARM

Title: Figure 11.1.2 Mineral Resource Plans
Green Hill B
Sheet 2 of 5

Document:
Minerals
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Search Area

Northamptonshire Minerals and Waste Local Plan

- Sand and Gravel Minerals Safeguarding Area
- Permitted Mineral Area

Data: North Northamptonshire Council, 2024, Lanpro, 2024.
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535_LPR_ZZ_XX_DR_Z_Scoping_0146
Coordinate system: British National Grid
Scale: 1:15,000 @ A3

0 500 1,000 Metres

Island GREEN POWER

Lanpro

GREEN HILL SOLAR FARM

Title: Figure 11.1.3 Mineral Resource Plans
Green Hill C, D & E
Sheet 3 of 5

Document:
Minerals
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Search Area

Northamptonshire Minerals and Waste Local Plan

- Mineral Allocations
- Sand and Gravel Minerals Safeguarding Area
- Permitted Mineral Area

Data: North Northamptonshire Council, 2024, Lanpro, 2024.
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535_LPR_ZZ_XX_DR_Z_Scoping_0146
Coordinate system: British National Grid
Scale: 1:30,000 @ A3

0 500 1,000 Metres

Island GREEN POWER

Lanpro

GREEN HILL SOLAR FARM

Title: Figure 11.1.4 Mineral Resource Plans
Green Hill F & BESS
Sheet 4 of 5

Document:
Minerals
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Search Area

Northamptonshire Minerals and Waste Local Plan

- Mineral Allocations
- Sand and Gravel Minerals Safeguarding Area
- Permitted Mineral Area

Milton Keynes Minerals Local Plan (2017)

- Sand and Gravel Safeguarding Area
- Limestone Safeguarding Area

Data: North Northamptonshire Council, 2024, Lanpro, 2024.
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535_LPR_ZZ_XX_DR_Z_Scoping_0146
Coordinate system: British National Grid
Scale: 1:35,000 @ A3

0 500 1,000 Metres

Island GREEN POWER

Lanpro

GREEN HILL SOLAR FARM

Title: Figure 11.1.5 Mineral Resource Plans
Green Hill G
Sheet 5 of 5

Document:
Minerals
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Search Area

Northamptonshire Minerals and Waste Local Plan

- Sand and Gravel Minerals Safeguarding Area

Milton Keynes Minerals Local Plan (2017)

- Sand and Gravel Safeguarding Area
- Limestone Safeguarding Area

Data: North Northamptonshire Council, 2024, Lanpro, 2024.
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535_LPR_ZZ_XX_DR_Z_Scoping_0146
Coordinate system: British National Grid
Scale: 1:15,000 @ A3

0 500 1,000 Metres

Island GREEN POWER

Lanpro

GREEN HILL
SOLAR FARM

Green Hill Solar Farm
EIA Scoping Report
Appendix 12: Cultural Heritage
Revision A

Prepared by: Lanpro Services

Date: July 2024

PINS reference: EN010170

Contents

472000 476000 430000 484000 488000 492000 496000

276000 272000 268000 264000 260000 256000 252000

A A.2 B C D E BESS F G

GREEN HILL SOLAR FARM

Title:

Figure 12.1 Designated Heritage Assets

Document:

Cultural Heritage
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 2km Study Area
- Conservation Areas
- Registered Parks And Gardens
- Scheduled Monuments

Listed Buildings

Grade

- Grade I
- Grade II*
- Grade II

Data: Historic England, 2024; Environment Agency, 2024; Natural England, 2024; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

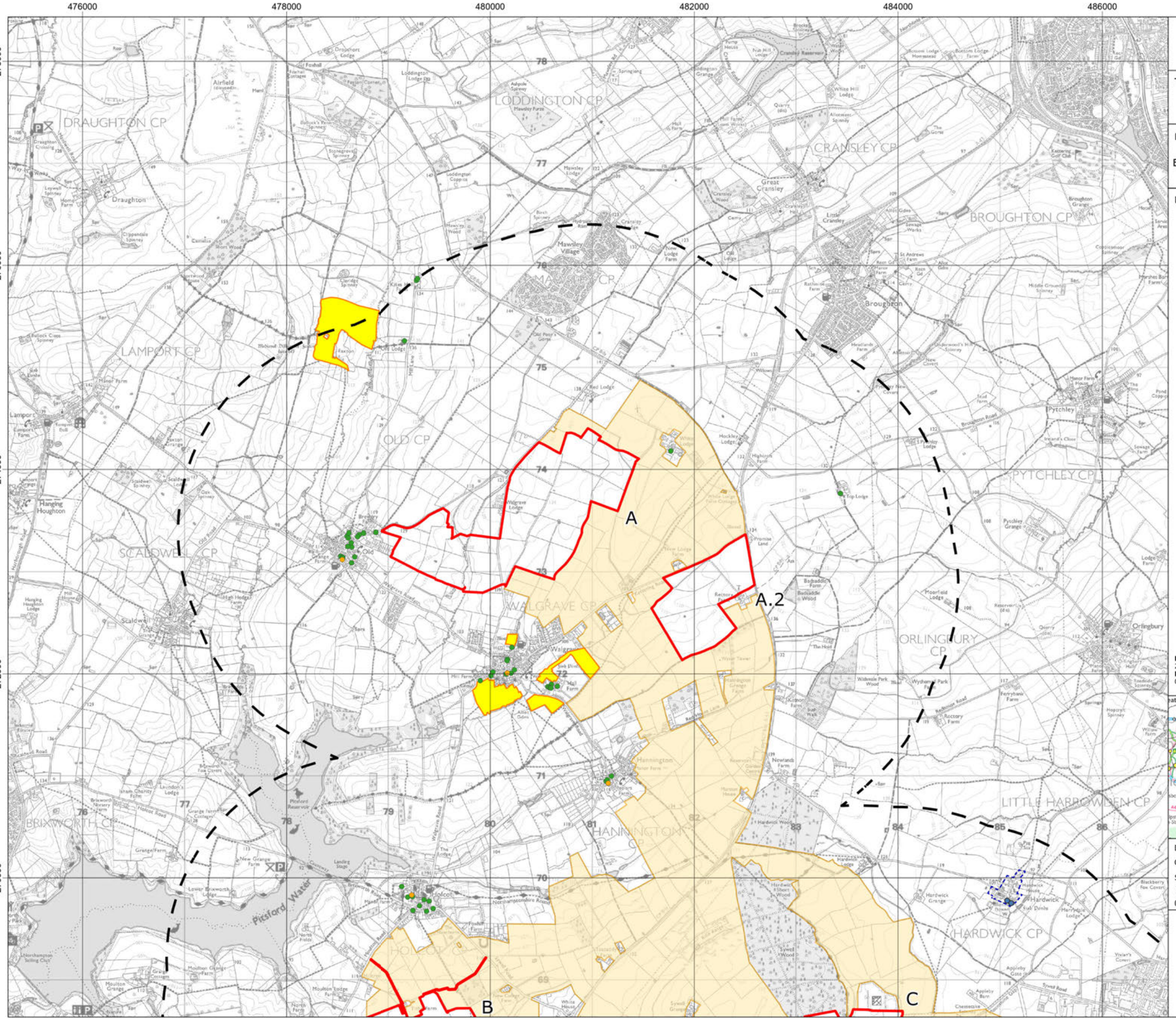
Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126
Coordinate system: British National Grid
Scale: 1:90,000 @ A3

N W E S

0 1 2 3 4 5 Kilometers

Island GREEN POWER

Lanpro



GREEN HILL SOLAR FARM

Title:
Figure 12.1.1 Designated Heritage Assets
Green Hill A & A.2

Document:
Cultural Heritage
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 2km Study Area
- Conservation Areas
- Registered Parks And Gardens
- Scheduled Monuments

Listed Buildings

Grade

- Grade I
- Grade II*
- Grade II

Data: Historic England, 2024; Environment Agency, 2024; Natural England, 2024; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126
Coordinate system: British National Grid
Scale: 1:35,000 @ A3

N
W
E
S

0 500 1,000 1,500 2,000 Meters

Island GREEN POWER

Lanpro

474000 476000 478000 480000 482000 484000

272000 270000 268000 266000 264000

A A.2 B C D E

GREEN HILL SOLAR FARM

Title:
Figure 12.1.2 Designated Heritage Assets
Green Hill B

Document:
Cultural Heritage
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 2km Study Area
- Conservation Areas
- Registered Parks And Gardens
- Scheduled Monuments

Listed Buildings

Grade

- Grade I
- Grade II*
- Grade II

Data: Historic England, 2024; Environment Agency, 2024; Natural England, 2024; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126
Coordinate system: British National Grid
Scale: 1:35,000 @ A3

N W E S

0 500 1,000 1,500 2,000 Meters

Island GREEN POWER

Lanpro

480000 482000 484000 486000 488000

270000 268000 266000 264000 262000

B C D E BESS

GREEN HILL SOLAR FARM

Title:
Figure 12.1.3 Designated Heritage Assets
Green Hill C, D & E

Document:
Cultural Heritage
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 2km Study Area
- Conservation Areas
- Registered Parks And Gardens
- Scheduled Monuments

Listed Buildings

Grade

- Grade I
- Grade II*
- Grade II

Data: Historic England, 2024; Environment Agency, 2024; Natural England, 2024; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126
Coordinate system: British National Grid
Scale: 1:35,000 @ A3

0 500 1,000 1,500 2,000 Meters

Island GREEN POWER

Lanpro

484000 486000 488000 490000 492000 494000

264000 262000 260000 258000 256000

BESS

F

G

WOLLASTON CP

STRIXTON CP

GRENDON CP

COGENHOE AND WHISTON CP

EARLS BARTON CP

CASTLE ASHBY CP

BOZEAT CP

EASTON MAUDIT CP

DENTON CP

YARDLEY HASTINGS CP

WARRINGTON CP

HARROLD

Earls Barton

Wollaston

Strixton

Grendon

Bozeat

Denton

Yardley Hastings

Yardley Chase

Hinwick

Harrold

GREEN HILL SOLAR FARM

Title:
Figure 12.1.4 Designated Heritage Assets
Green Hill F & BESS

Document:
Cultural Heritage
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 2km Study Area
- Conservation Areas
- Registered Parks And Gardens
- Scheduled Monuments

Listed Buildings

Grade

- Grade I
- Grade II*
- Grade II

Data: Historic England, 2024; Environment Agency, 2024; Natural England, 2024; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126
Coordinate system: British National Grid
Scale: 1:35,000 @ A3

0 500 1,000 1,500 2,000 Meters

Island GREEN POWER

Lanpro

GREEN HILL SOLAR FARM

Title:
Figure 12.1.5 Designated Heritage Assets
Green Hill G

Document:
Cultural Heritage
Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 2km Study Area
- Conservation Areas
- Registered Parks And Gardens
- Scheduled Monuments

Listed Buildings

Grade

- Grade I
- Grade II*
- Grade II

Data: Historic England, 2024; Environment Agency, 2024; Natural England, 2024; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126
Coordinate system: British National Grid
Scale: 1:35,000 @ A3

0 500 1,000 1,500 2,000 Meters

Island GREEN POWER

Lanpro

472000 476000 480000 484000 488000 492000 496000

276000 272000 268000 264000 260000 256000

A A.2 B C D E F BESS G

GREEN HILL SOLAR FARM

Title:
Figure 12.2 Non-Designated Heritage Assets

Document:
Cultural Heritage
Environmental Impact Assessment Scoping Report

Legend:
- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 1km Study Area
- Northamptonshire Monuments Point
- Northamptonshire Monuments Line
- Northamptonshire Monuments Polygon
- Milton Keynes Monument Point
- Milton Keynes Monument Line
- Milton Keynes Monument Polygon
- Bedford Borough Monuments Point
- Bedford Borough Monuments Polygon
- Bedford Borough Monument Line

Data: Historic England, 2024; © Northamptonshire Archives & Heritage Service; Milton Keynes HER data © Milton Keynes City Council; Bedford Borough HER data © Bedford Borough Council; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126
Coordinate system: British National Grid
Scale: 1:85,000 @ A3
N W E S
0 1 2 3 4 Kilometers

Island GREEN POWER
Lanpro

478000 480000 482000 484000

276000 274000 272000

GREEN HILL SOLAR FARM

Title: Figure 12.2.1 Non-Designated Heritage Assets Green Hill A & A.2

Document: Cultural Heritage Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 1km Study Area
- Northamptonshire Monuments Point
- Northamptonshire Monuments Line
- Northamptonshire Monuments Polygon

A

A.2

Data: Historic England, 2024; © Northamptonshire Archives & Heritage Service; Milton Keynes HER data © Milton Keynes City Council; Bedford Borough HER data © Bedford Borough Council; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126

Coordinate system: British National Grid

Scale: 1:20,000 @ A3

0 200 400 600 800 Meters

Island GREEN POWER

Lanpro

478000

480000

482000

270000

268000

266000

GREEN HILL SOLAR FARM

Title: Figure 12.2.2 Non-Designated Heritage Assets Green Hill B

Document: Cultural Heritage Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 1km Study Area
- Northamptonshire Monuments Point
- Northamptonshire Monuments Line
- Northamptonshire Monuments Polygon

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126

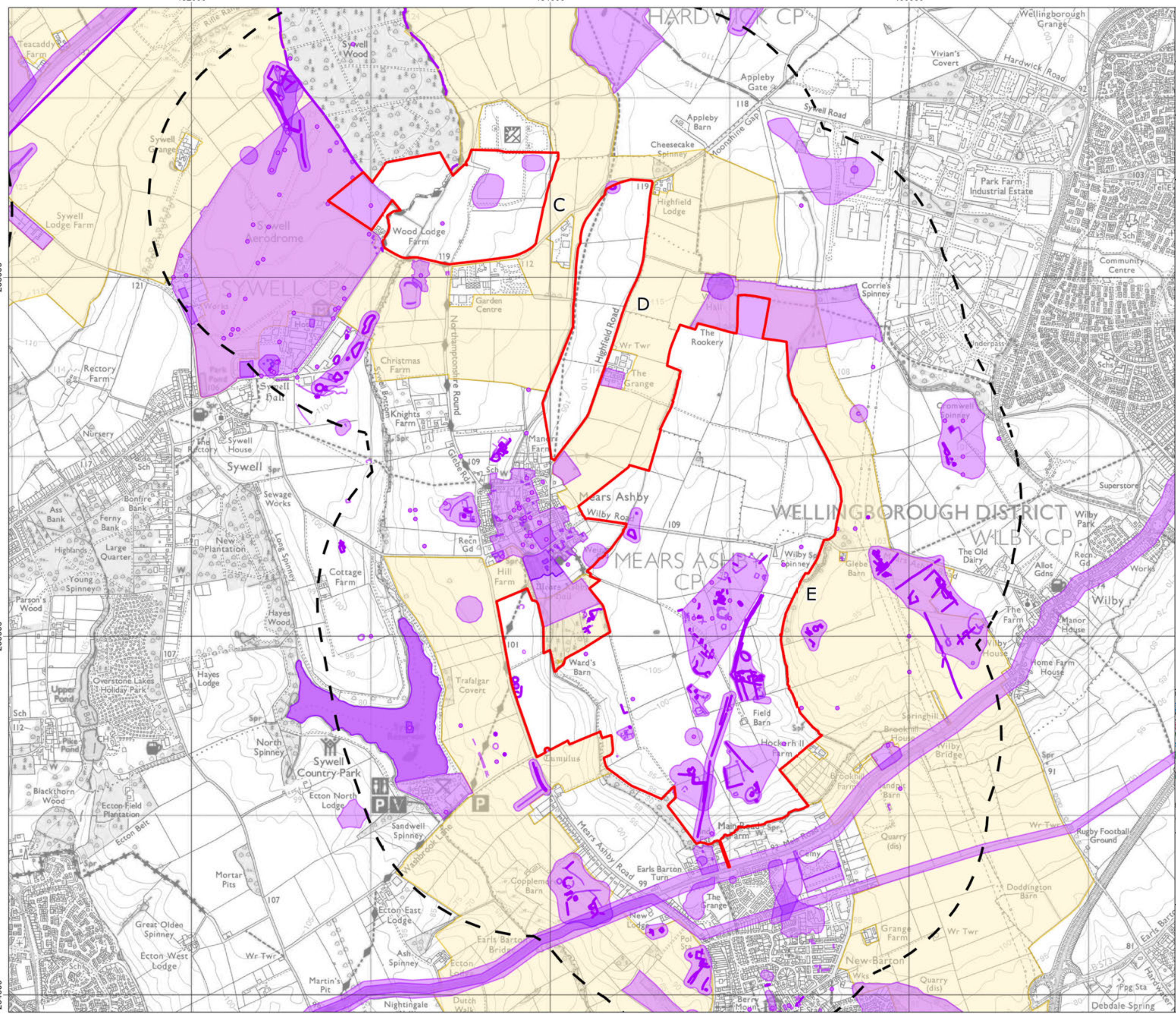
Coordinate system: British National Grid

Scale: 1:20,000 @ A3

0 200 400 600 800 Meters

Island GREEN POWER

Lanpro


482000
484000
486000
268000
266000
264000
HARDWICK CP
SYWELL CP
WELLINGBOROUGH DISTRICT
WILBY CP
MEARS ASHBY CP
C
D
E
Sywell Aerodrome
Sywell Wood
Wood Lodge Farm
Appleby Gate
Appleby Barn
Cheesecake Spinney
Highfield Lodge
Highfield Road
The Grange
The Rookery
Park Farm Industrial Estate
Sywell Road
Hardwick Road
Vivian's Covert
Wellingborough Grange
Corrie's Spinney
Garden Centre
Northamptonshire Round
Christmas Farm
Knights Farm
Rectory Farm
Sywell Hall
Sywell House
Sywell
Sywell Grange
Sywell Lodge Farm
Teacaddy Farm
Mears Ashby
Wilby Road
Manor Farm
Glebe Rd
Hill Farm
Ward's Barn
Trafalgar Covert
Tumulus
Field Barn
Hockerhill Farm
Main Road Farm
Glebe Barn
Wilby Spinney
The Old Dairy
Cromwell Spinney
Wilby
Wilby Park
Wilby House
Home Farm House
Springhill
Brookhill House
Wilby Bridge
Cottage Farm
Hayes Wood
Hayes Lodge
Sywell Country Park
Ecton North Lodge
Ecton Field Plantation
Sandwell Spinney
Washbrook Lane
Mears Ashby Road
Earls Barton Turn
Copplemere Barn
The Grange
New Lodge
Ecton East Lodge
Ash Spinney
Ecton West Lodge
Great Olden Spinney
Mortar Pits
Martin's Pit
Nightingale
Dutch Walk
New Barton
Grange Farm
Doddington Barn
Quarry (dis)
Rugby Football Ground
Debdale Spring
Blackthorn Wood
Overstone Lakes Holiday Park
Upper Pond
Pike Pond
North Spinney
Parson's Wood
Young Spinney
Large Quarter
Ferny Bank
Ass Bank
Bonfire Bank
Highlands
New Plantation
Long Spinney
Sewage Works
Nursery
The Rectory
Community Centre
Superstore
Underpass

Title: Figure 12.2.3 Non-Designated Heritage Assets Green Hill C, D & E

Document: Cultural Heritage Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 1km Study Area
- Northamptonshire Monuments Point
- Northamptonshire Monuments Line
- Northamptonshire Monuments Polygon

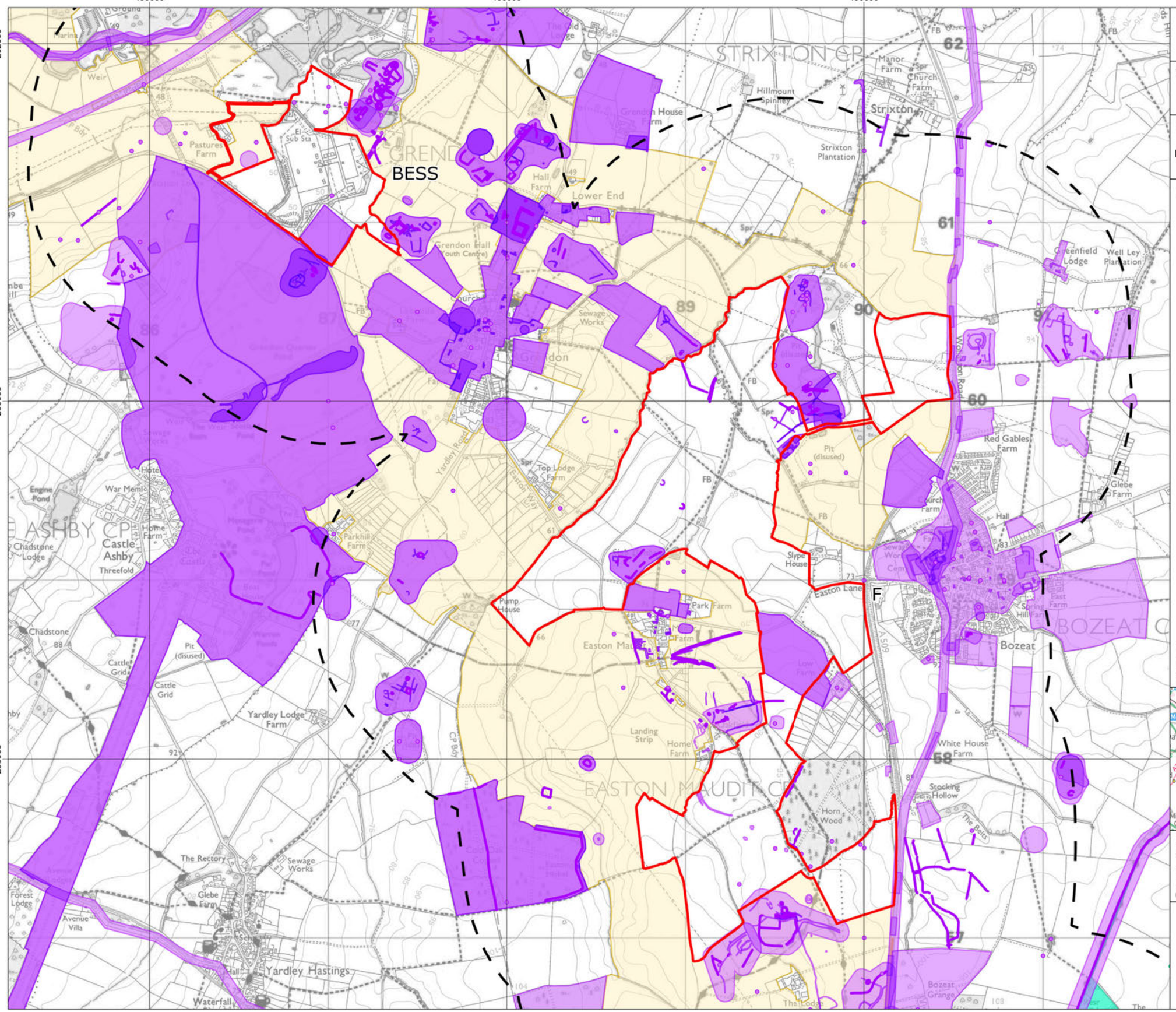
Data: Historic England, 2024; © Northamptonshire Archives & Heritage Service; Milton Keynes HER data © Milton Keynes City Council; Bedford Borough HER data © Bedford Borough Council; Lanpro, 2024
Base map: © Crown copyright and database rights 2023 Ordnance Survey 0100031673

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126

Coordinate system: British National Grid

Scale: 1:20,000 @ A3

0 200 400 600 800 Meters



GREEN HILL SOLAR FARM

Title: Figure 12.2.4 Non-Designated Heritage Assets Green Hill F & BESS

Document: Cultural Heritage Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 1km Study Area
- Northamptonshire Monuments Point
- Northamptonshire Monuments Line
- Northamptonshire Monuments Polygon
- Milton Keynes Monument Line
- Bedford Borough Monuments Point
- Bedford Borough Monuments Polygon
- Bedford Borough Monument Line

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126

Coordinate system: British National Grid

Scale: 1:20,000 @ A3

0 200 400 600 800 Meters

N W E S

Island GREEN POWER

Lanpro

488000 490000 492000

258000 256000 254000

GREEN HILL SOLAR FARM

Title: Figure 12.2.5 Non-Designated Heritage Assets Green Hill G

Document: Cultural Heritage Environmental Impact Assessment Scoping Report

Legend:

- Area for Solar Panels and Associated Development
- Cable Route Search Area
- 1km Study Area
- Northamptonshire Monuments Point
- Northamptonshire Monuments Line
- Northamptonshire Monuments Polygon
- Milton Keynes Monument Point
- Milton Keynes Monument Line
- Milton Keynes Monument Polygon
- Bedford Borough Monuments Point
- Bedford Borough Monuments Polygon
- Bedford Borough Monument Line

Drawing no.: P3535-LPR-ZZ-XX-DR-Z-HER-0126

Coordinate system: British National Grid

Scale: 1:20,000 @ A3

0 200 400 600 800 Meters

Island GREEN POWER

Lanpro

GREEN HILL
SOLAR FARM

Green Hill Solar Farm
EIA Scoping Report
Appendix 14: Noise and Vibration
Revision A

Prepared by: TetraTech

Date: July 2024

PINS reference: EN010170

Contents

14 Baseline Environmental Noise Survey

14.1 Monitoring Locations

14.1.1 Figures 1 to 5 present the monitoring locations.

Figure 1 Monitoring Locations Site A

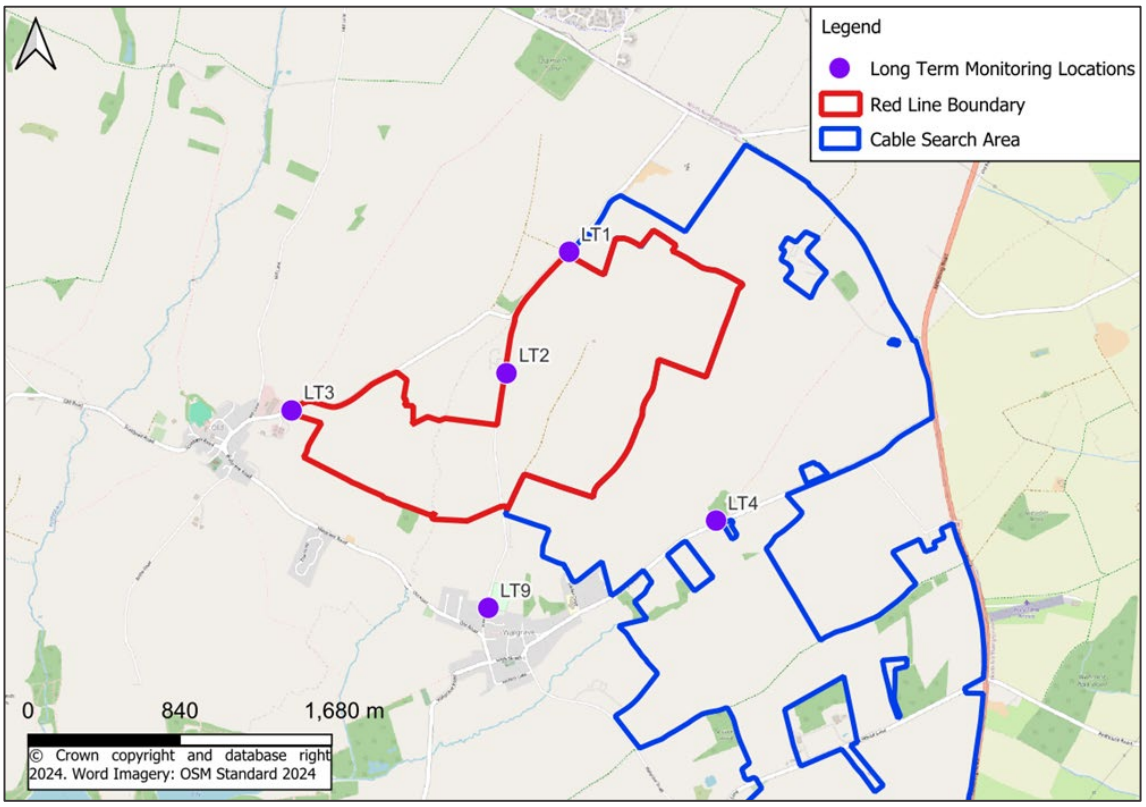


Figure 2 Monitoring Locations Site B

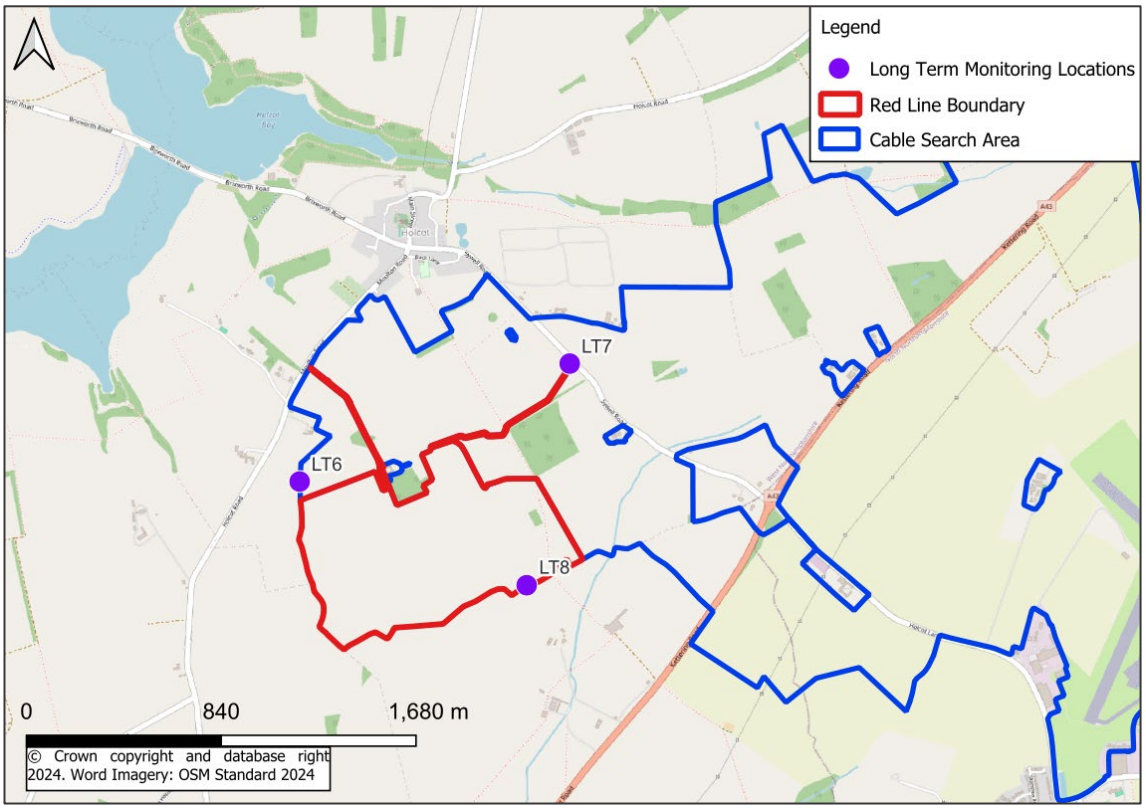


Figure 3 Monitoring Locations Sites C to E

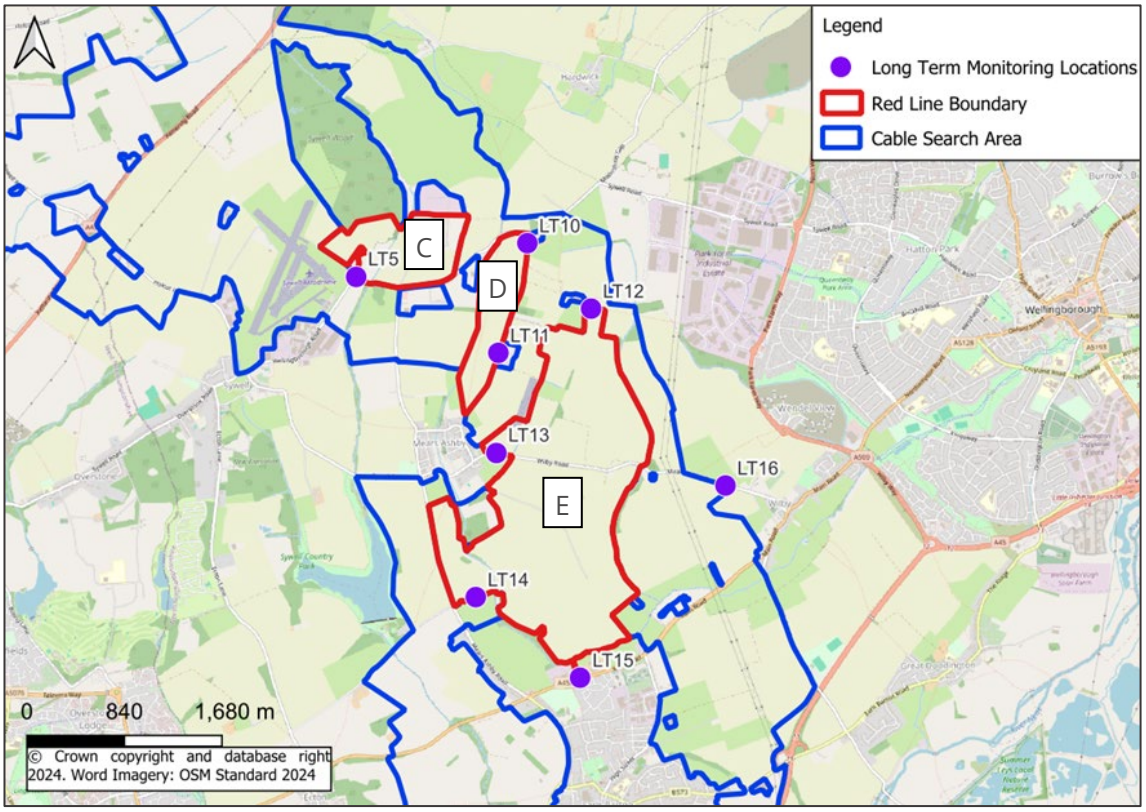


Figure 4 Monitoring Locations Site F and BESS Site

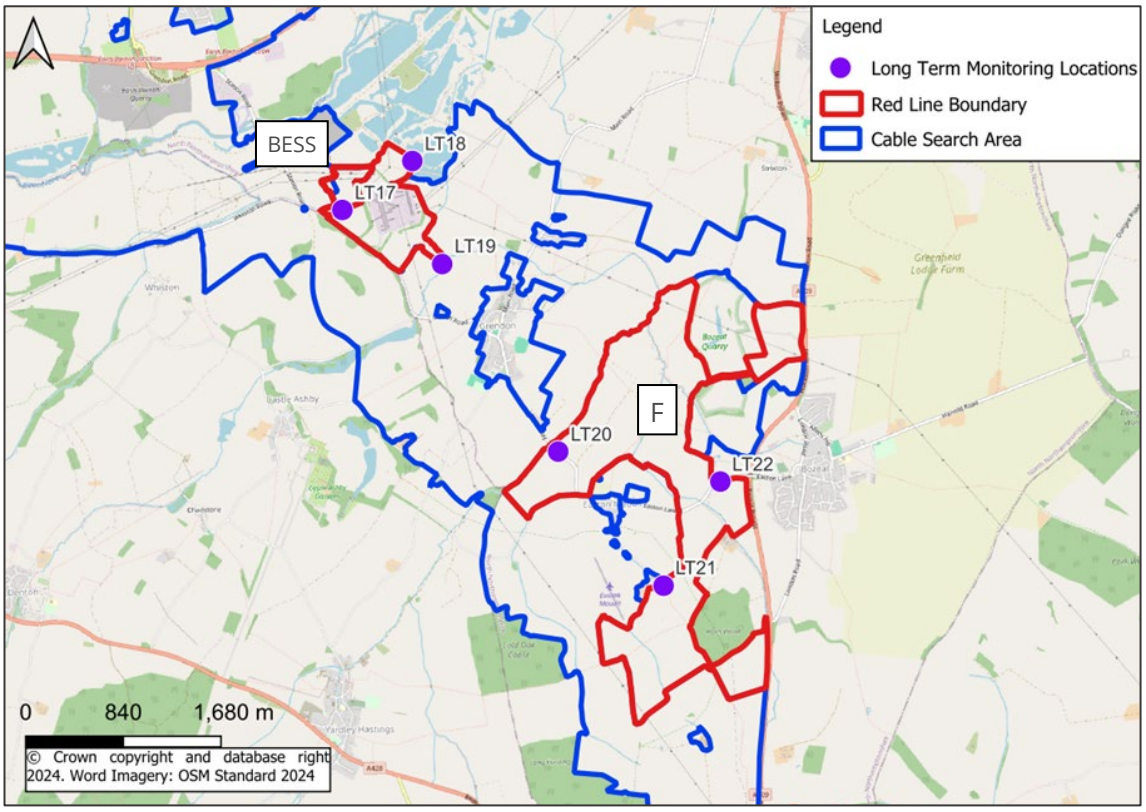
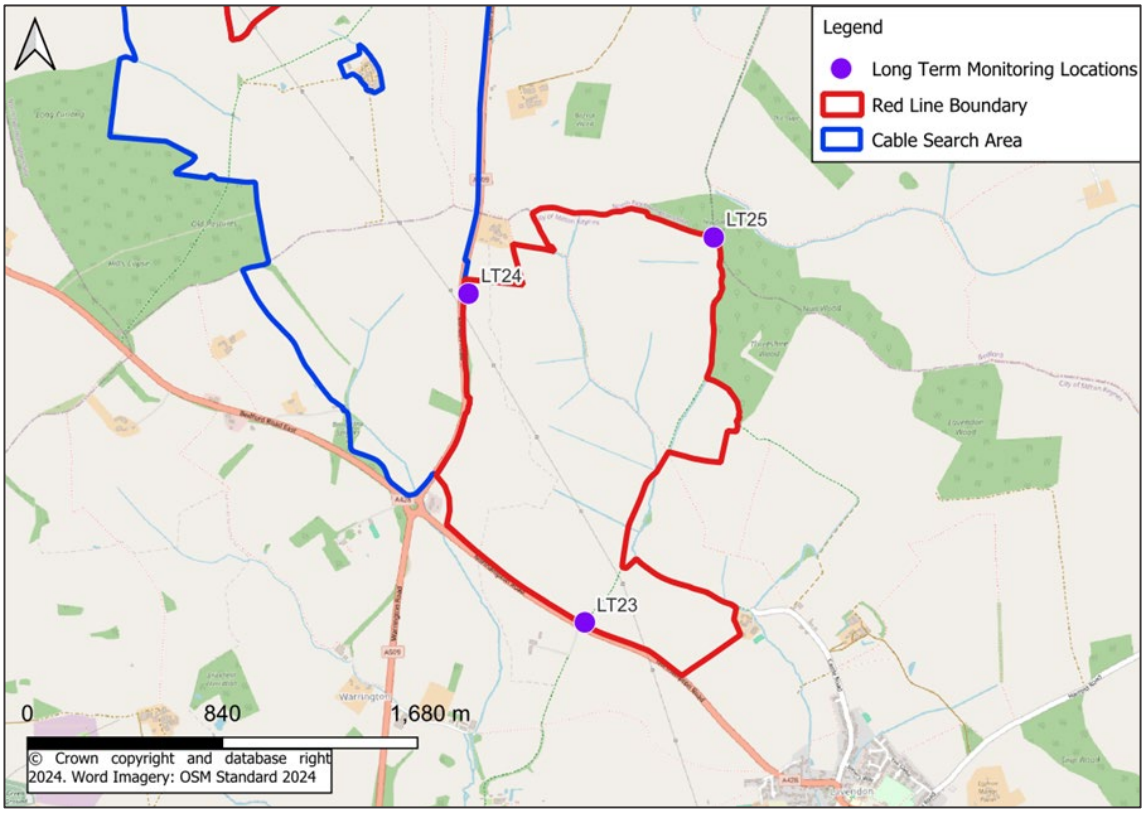


Figure 5 Monitoring Locations Site G



14.2 Noise Survey Results

14.2.1 The results of the noise measurements for monitoring positions LT1 - LT25 are presented in Table 1.

Table 1: Noise Survey Results

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekday Daytime 07:00 - 23:00	21/09/2023 – 28/09/2023	LT1	66.2	103.3	18.2	62.3	36.0
Weekday Night-time 23:00 – 07:00	21/09/2023 – 28/09/2023		56.5	90.9	17.4	39.8	20.0
Weekend Daytime 07:00 - 23:00	23/09/2023 – 24/09/2023		64.4	102.2	21.6	60.9	32.0
Weekend Night-time 23:00 – 07:00	23/09/2023 – 25/09/2023		56.0	89.1	21.0	49.4	34.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 3/10/2023	LT2	51.5	96.4	20.7	47.6	42.0
Weekday Night-time 23:00 – 07:00	28/09/2023 – 3/10/2023		38.6	73.3	19.4	34.6	32.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		49.7	88.1	20.2	44.1	29.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		36.6	69.1	18.2	33.9	36.0
Weekday Daytime 07:00 - 23:00	21/09/2023 – 22/09/2023	LT3	60.3	91.0	22.9	57.7	38.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekday Night-time 23:00 – 07:00	21/09/2023 – 23/09/2023		51.3	82.5	20.7	37.1	24.0
Weekend Daytime 07:00 - 23:00	23/09/2023 – 24/09/2023		58.6	90.5	23.0	55.9	32.0
Weekend Night-time 23:00 – 07:00	23/09/2023 – 24/09/2023		46.8	80.6	28.4	44.3	33.0
Weekday Daytime 07:00 - 23:00	21/09/2023 – 27/09/2023	LT4	63.0	96.9	21.8	59.5	40.0
Weekday Night-time 23:00 – 07:00	21/09/2023 – 27/09/2023		51.4	85.4	17.0	36.6	24.0
Weekend Daytime 07:00 - 23:00	23/09/2023 – 24/09/2023		60.3	85.3	26.8	56.6	32.0
Weekend Night-time 23:00 – 07:00	23/09/2023 – 25/09/2023		50.1	84.5	22.6	44.4	32.0
Weekday Daytime 07:00 - 23:00	21/09/2023 – 27/09/2023	LT5	57.1	89.0	22.8	56.4	54.0
Weekday Night-time 23:00 – 07:00	21/09/2023 – 27/09/2023		47.6	82.0	20.1	42.3	36.0
Weekend Daytime 07:00 - 23:00	23/09/2023 – 24/09/2023		62.0	95.8	36.7	62.1	42.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekend Night-time 23:00 – 07:00	23/09/2023 – 25/09/2023		49.7	76.2	29.9	50.7	38.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 3/10/2023	LT6	49.8	78.6	21.0	49.2	39.0
Weekday Night-time 23:00 – 07:00	28/09/2023 – 3/10/2023		42.3	73.0	17.5	40.5	40.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		43.7	82.5	23.8	45.4	31.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		39.6	69.9	18.1	38.0	36.0
Weekday Daytime 07:00 - 23:00	21/09/2023 – 28/09/2023	LT7	62.5	92.0	24.5	65.9	51.0
Weekday Night-time 23:00 – 07:00	21/09/2023 – 28/09/2023		54.6	80.8	16.6	48.0	24.0
Weekend Daytime 07:00 - 23:00	23/09/2023 – 24/09/2023		61.7	91.3	29.9	64.5	44.0
Weekend Night-time 23:00 – 07:00	23/09/2023 – 25/09/2023		52.9	86.2	24.1	47.7	34.0
Weekday Daytime 07:00 - 23:00	21/09/2023 – 28/09/2023	LT8	51.9	85.6	25.9	49.7	37.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekday Night-time 23:00 – 07:00	21/09/2023 – 28/09/2023		49.6	74.6	18.4	43.6	34.0
Weekend Daytime 07:00 - 23:00	23/09/2023 – 24/09/2023		53.7	77.3	29.8	51.5	32.0
Weekend Night-time 23:00 – 07:00	23/09/2023 – 25/09/2023		50.4	69.9	28.4	51.0	40.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 3/10/2023	LT9	52.6	95.5	19.6	48.1	38.0
Weekday Night-time 23:00 – 07:00	28/09/2023 – 3/10/2023		41.2	70.9	16.9	36.8	41.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		49.9	90.1	20.4	45.7	29.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		40.0	73.0	17.1	36.7	36.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 3/10/2023	LT10	55.8	91.6	24.2	54.7	44.0
Weekday Night-time 23:00 – 07:00	28/09/2023 – 3/10/2023		46.9	88.3	21.1	43.1	32.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		53.5	89.5	23.4	51.4	35.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		46.7	88.6	18.5	42.7	36.0
Weekday Daytime 07:00 - 23:00	3/10/2023 – 10/10/2023	LT11	53.6	94.3	24.3	49.9	46.0
Weekday Night-time 23:00 – 07:00	3/10/2023 – 10/10/2023		43.0	76.8	20.3	37.8	30.0
Weekend Daytime 07:00 - 23:00	7/10/2023 – 8/10/2023		52.8	83.8	24.1	47.1	36.0
Weekend Night-time 23:00 – 07:00	7/10/2023 – 9/10/2023		41.8	77.7	20.1	33.7	31.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 29/09/2023	LT12	44.0	74.9	22.1	43.5	36.0
Weekday Night-time 23:00 – 07:00	28/09/2023 – 30/09/2023		36.1	68.5	21.1	35.3	39.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		43.3	83.2	26.1	44.5	30.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 1/10/2023		42.9	66.7	29.2	44.1	37.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 3/10/2023	LT13	59.0	95.9	25.4	58.1	37.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekday Night-time 23:00 – 07:00	28/09/2023 – 3/10/2023		48.9	79.2	20.6	37.5	31.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		57.5	93.0	25.0	55.0	32.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		47.1	75.8	19.8	36.1	34.0
Weekday Daytime 07:00 - 23:00	3/10/2023 – 10/10/2023	LT14	45.6	76.0	27.1	46.5	41.0
Weekday Night-time 23:00 – 07:00	3/10/2023 – 10/10/2023		38.5	83.4	22.4	38.5	34.0
Weekend Daytime 07:00 - 23:00	7/10/2023 – 8/10/2023		43.6	72.8	27.3	44.7	39.0
Weekend Night-time 23:00 – 07:00	7/10/2023 – 9/10/2023		37.3	70.0	22.5	35.6	34.0
Weekday Daytime 07:00 - 23:00	3/10/2023 – 10/10/2023	LT15	62.4	97.7	28.8	65.9	48.0
Weekday Night-time 23:00 – 07:00	3/10/2023 – 10/10/2023		54.3	89.4	23.7	48.6	35.0
Weekend Daytime 07:00 - 23:00	7/10/2023 – 8/10/2023		60.7	97.4	30.5	64.1	41.0

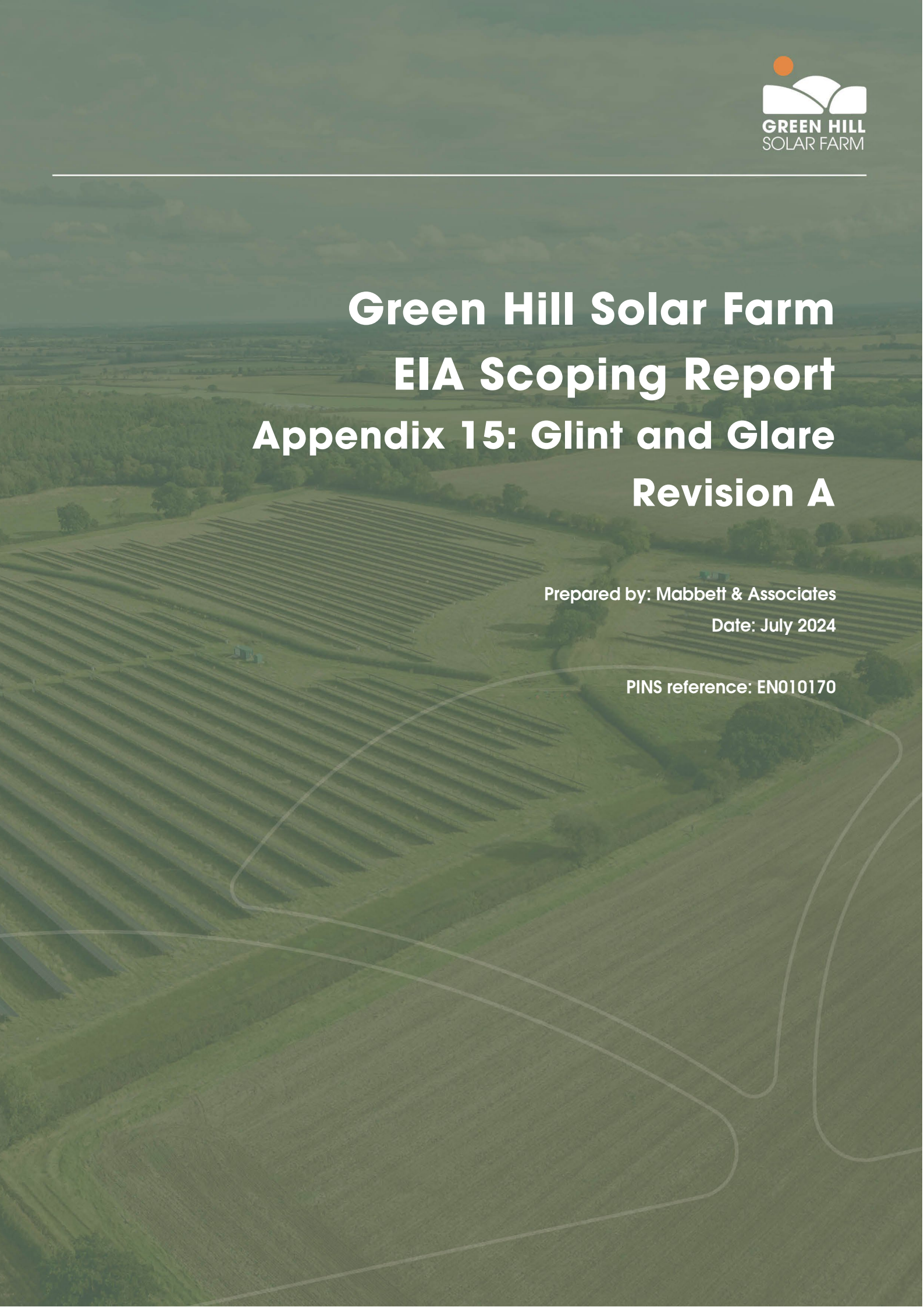
Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekend Night-time 23:00 – 07:00	7/10/2023 – 9/10/2023		53.5	82.4	22.5	47.9	37.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 3/10/2023	LT16	62.0	102.9	26.3	59.1	42.0
Weekday Night-time 23:00 – 07:00	28/09/2023 – 3/10/2023		52.8	87.4	19.7	42.0	37.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		60.7	102.7	25.4	55.5	33.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		50.6	82.1	19.6	40.2	38.0
Weekday Daytime 07:00 - 23:00	30/09/2023 – 3/10/2023	LT17	48.3	78.0	27.0	49.8	39.0
Weekday Night-time 23:00 – 07:00	30/09/2023 – 3/10/2023		42.5	74.9	25.6	42.1	34.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		46.6	72.6	26.7	49.1	41.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		40.5	75.9	22.6	37.0	37.0
Weekday Daytime 07:00 - 23:00	3/10/2023 – 10/10/2023	LT18	47.3	77.0	29.9	47.0	46.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekday Night-time 23:00 – 07:00	3/10/2023 – 10/10/2023		41.5	79.4	29.6	41.5	37.0
Weekend Daytime 07:00 - 23:00	7/10/2023 – 8/10/2023		44.4	75.8	33.1	44.9	42.0
Weekend Night-time 23:00 – 07:00	7/10/2023 – 9/10/2023		40.8	73.1	29.1	41.3	38.0
Weekday Daytime 07:00 - 23:00	28/09/2023 – 3/10/2023	LT19	42.5	83.2	25.7	42.9	36.0
Weekday Night-time 23:00 – 07:00	28/09/2023 – 3/10/2023		38.1	58.4	22.9	38.3	28.0
Weekend Daytime 07:00 - 23:00	30/09/2023 – 1/10/2023		39.9	70.5	25.8	41.6	36.0
Weekend Night-time 23:00 – 07:00	30/09/2023 – 2/10/2023		35.5	68.3	23.0	34.5	35.0
Weekday Daytime 07:00 - 23:00	20/02/2024 – 27/02/2024	LT20	57.0	93.3	34.4	54.2	38.0
Weekday Night-time 23:00 – 07:00	20/02/2024 – 27/02/2024		49.7	87.3	33.6	44.1	36.0
Weekend Daytime 07:00 - 23:00	24/02/2024 – 25/02/2024		55.4	86.8	32.8	51.9	36.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekend Night-time 23:00 – 07:00	24/02/2024 – 25/02/2024		46.2	79.0	34.0	39.7	35.0
Weekday Daytime 07:00 - 23:00	20/02/2024 – 23/02/2024	LT21	49.4	94.6	32.4	47.7	38.0
Weekday Night-time 23:00 – 07:00	20/02/2024 – 23/02/2024		43.8	78.8	29.7	43.8	40.0
Weekend Daytime 07:00 - 23:00	24/02/2024		43.7	82.7	30.6	41.0	33.0
Weekend Night-time 23:00 – 07:00	24/02/2024 – 25/02/2024		36.9	68.6	28.2	36.8	35.0
Weekday Daytime 07:00 - 23:00	20/02/2024 – 27/02/2024	LT22	56.3	89.2	27.6	56.0	42.0
Weekday Night-time 23:00 – 07:00	20/02/2024 – 27/02/2024		48.9	85.3	20.5	47.6	39.0
Weekend Daytime 07:00 - 23:00	24/02/2024 – 25/02/2024		54.7	90.8	25.7	54.6	38.0
Weekend Night-time 23:00 – 07:00	24/02/2024 – 25/02/2024		45.0	73.5	20.5	44.6	28.0
Weekday Daytime 07:00 - 23:00	08/05/2024 – 11/05/2024	LT23	63.5	102.7	23.8	67.0	42.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekday Night-time 23:00 – 07:00	08/05/2024 – 11/05/2024		58.1	89.5	18.8	56.1	26.0
Weekend Daytime 07:00 - 23:00	08/05/2024 – 11/05/2024		63.1	94.5	30.8	66.8	44.0
Weekend Night-time 23:00 – 07:00	08/05/2024 – 11/05/2024		55.4	84.7	18.7	52.6	22.0
Weekday Daytime 07:00 - 23:00	08/05/2024 – 14/05/2024	LT24	65.4	101.2	25.4	69.0	42.0
Weekday Night-time 23:00 – 07:00	08/05/2024 – 14/05/2024		60.4	89.5	20.7	55.9	32.0
Weekend Daytime 07:00 - 23:00	08/05/2024 – 14/05/2024		64.0	93.0	26.8	68.2	44.0
Weekend Night-time 23:00 – 07:00	08/05/2024 – 14/05/2024		57.5	87.7	21.4	55.2	31.0
Weekday Daytime 07:00 - 23:00	08/05/2024 – 15/05/2024	LT25	50.5	89.1	19.2	49.1	38.0
Weekday Night-time 23:00 – 07:00	08/05/2024 – 15/05/2024		52.1	89.3	18.3	40.9	24.0
Weekend Daytime 07:00 - 23:00	08/05/2024 – 15/05/2024		53.3	86.0	21.6	51.4	36.0

Period	Monitoring Date and Times	Location	LAeq,T	Period	Monitoring Date and Times	Location	LAeq,T
Weekend Night-time 23:00 – 07:00	08/05/2024 – 15/05/2024		54.1	81.6	19.9	40.1	22.0



GREEN HILL
SOLAR FARM

Green Hill Solar Farm
EIA Scoping Report
Appendix 15: Glint and Glare
Revision A

Prepared by: Mabbett & Associates

Date: July 2024

PINS reference: EN010170

Mabbett®
Planning | Design | Environment | Engineering | Safety

See a Difference.

Project No: 313532

Glint and Glare EIA Scoping Chapter Appendix

Prepared for:

Green Hill Solar Farm Limited

Unit 25.7 Coda Studios
189 Munster Road
London, UK
SW6 6AW

Contents Amendment Record

This report has been issued and amended as follows:

Revision	Description	Date	Signed
3.0	Third Issue	13 June 2024	A Clacy

Acknowledgement

This report has been prepared for the sole and exclusive use of Green Hill Solar Farm Limited. This report is based on information and data collected by Mabbett & Associates Ltd (Mabbett). Should any of the information be incorrect, incomplete or subject to change, Mabbett may wish to revise the report accordingly.

This report has been prepared by the following Mabbett personnel:

MABBETT & ASSOCIATES LTD

Alexandra Clacy, MSc
Environmental Engineer

This report has been reviewed and approved by the following Mabbett personnel:

MABBETT & ASSOCIATES LTD

Joshua Jones, BSc, MSc, MIAQM, MIEnvSc
Senior Environmental Consultant

Table of Contents

Section 1.0: Introduction

1.1 Background

Mabbett & Associates Ltd (Mabbett) has been appointed to provide glint and glare assessment services the proposed solar development, Green Hill, to be located near Northampton, England. A high-level receptor review has been undertaken to evaluate potential light-sensitive receptors which may be impacted by glint and glare from Green Hill Solar Farm which will be taken forward for the full technical glint and glare assessment (hereafter referred to as the Scheme).

1.2 Glint & Glare

Reflectivity refers to light that is reflected off surfaces (e.g. glazed surfaces or areas of metal cladding). The potential effects of reflectivity are glint and glare. The U.S. Federal Aviation Administration's (FAA) *'Technical Guidance for Evaluating Selected Solar Technologies on Airports'* provides the following glint and glare definitions:

- Glint – "a momentary flash of bright light"
- Glare – "a continuous source of bright light"

These present an ocular hazard to light sensitive receptors such as road users, train drivers, occupants of nearby dwellings, pilots, and air-traffic control personnel, as they can cause a brief, temporary or permanent eye damage (ocular impact categories and significance further discussed in Section 4.3).

In general, solar photovoltaic (PV) systems are constructed of dark, light-absorbing material designed to maximise light adsorption and minimise reflection. However, the glass surfaces of solar PV systems also reflect sunlight to varying degrees throughout the day and year, based on the incidence angle of the sun relative to ground-based receptors. Lower incidence angles amount to increased reflection.

As such, the amount of light reflected off a solar PV panel surface or an array of solar panels depends on:

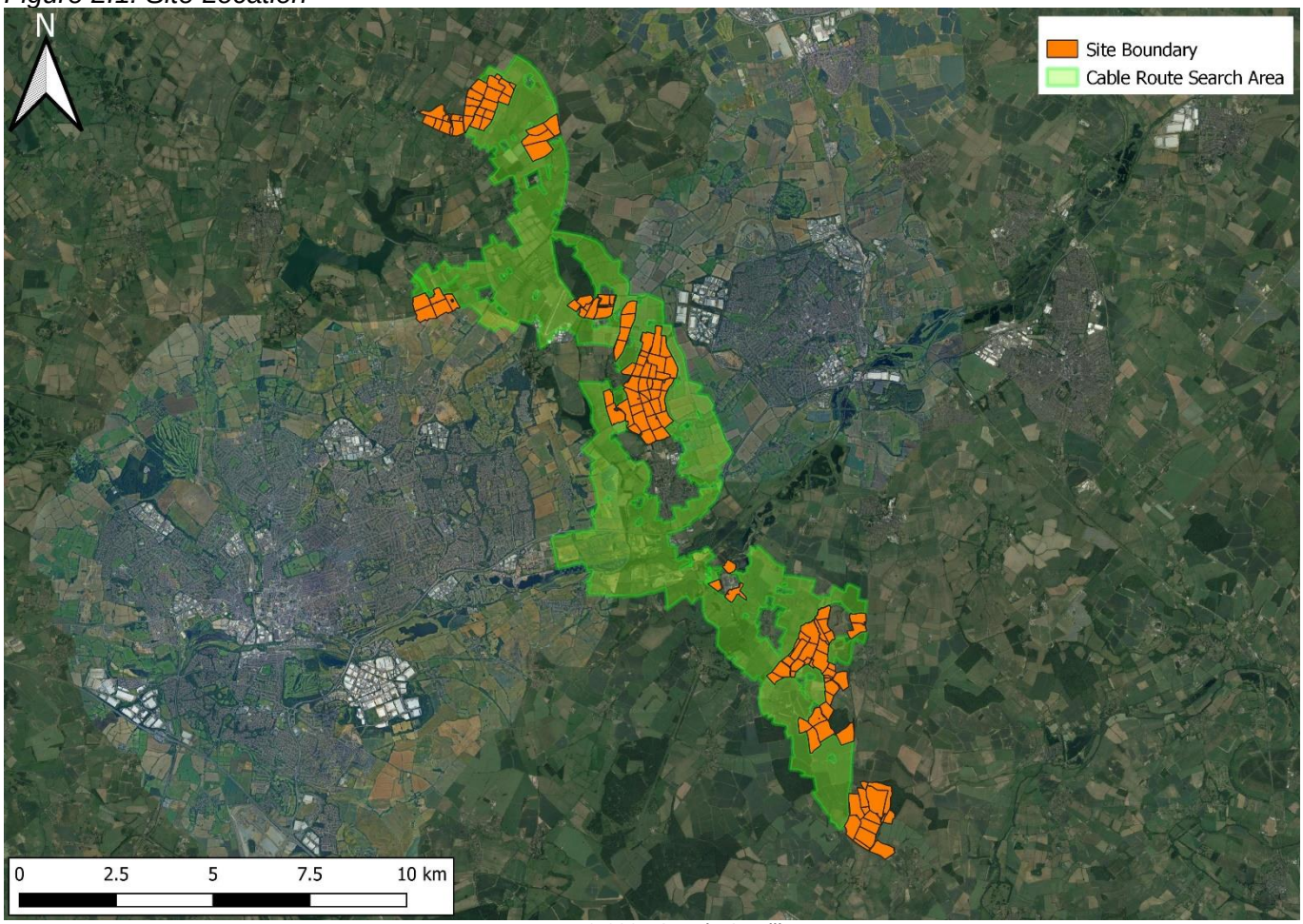
- The amount of sunlight hitting the surface;
- Its surface reflectivity;
- Its geographic location;
- Time of the year;
- Cloud coverage; and
- Panel orientation.

Section 2.0: Site Description & Scheme

2.1 Scheme

The site is situated on land north of Northampton and is made up of a disparate number of sites, as can be seen below in Figure 2.1.

Figure 2.1: Site Location



Imagery © 2024 Google Satellite

Green Hill Solar Farm is split into different areas. One area is for a Battery Energy Storage System (BESS) and will not include the installation of any solar arrays. Therefore, this area will not be relevant for a glint and glare assessment. Additionally, the Cable Route Search Area will not include the installation of any solar arrays, and as such, will not be relevant for a glint and glare assessment. An aerial view of the remaining areas (that will include solar panels) is shown below in Figure 2.2.

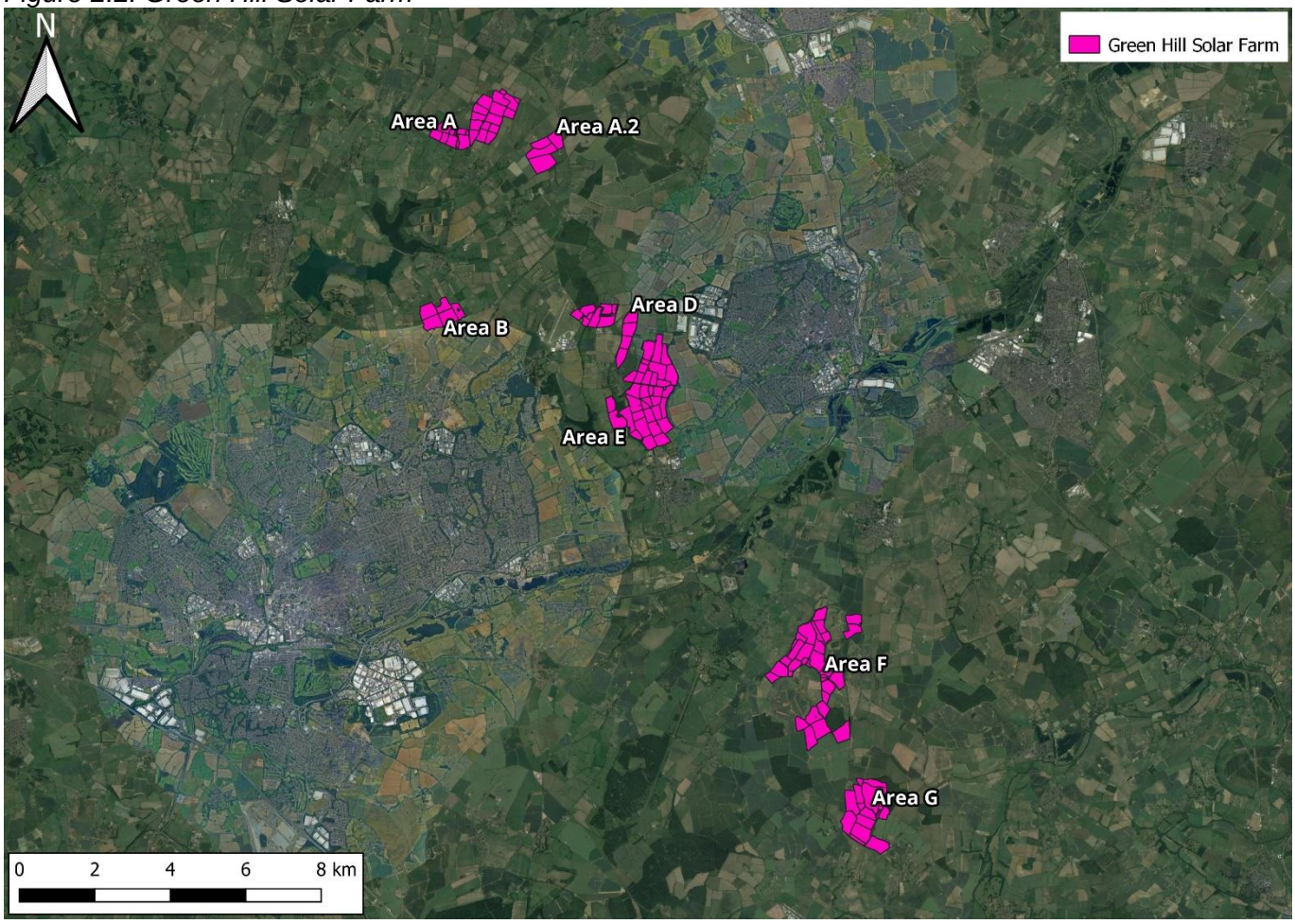
For the purpose of this study of this receptor review, Area C, Area D, and Area E have been assessed together to avoid overlapping and “double-counting” of some receptors.

It should be noted that early baseline conditions surveys for Site A.2, the potential extension of Site A, have not been completed prior to the submission of this Scoping Report. Due to its proximity to Site A, the baseline conditions for Site A.2 are assumed for the purpose of this Scoping Report to be equivalent to Site A. If Site A.2 is taken forward and included in the Scheme, the baseline conditions will be shared with key stakeholders and any differences from the Site A baseline identified, and will be presented in the PEIR for statutory consultation ahead of the submission of the completed ES as part of the future DCO submission.

Whilst the baseline conditions for Site A.2 are not yet available, due to its proximity to Site A, it is proposed that the assessment of likely significant environmental effects from Site A.2 is to be carried out in the same manner as for Site A. In the event any characteristics of Site A.2 are found to differ from the baseline for

Site A, the differences identified between the baseline surveys will be shared with key stakeholders and, will be assessed in full in the ES.

Figure 2.2: Green Hill Solar Farm



Imagery © 2024 Google Satellite

Section 3.0: Receptor Identification

3.1 Residential Dwellings

While no technical distance limits/thresholds are reported within which solar reflections are possible for such receptors, the potential for significance of a reflection decreases with distance due to an observer's decreasing field of vision capability with increasing distance, as well as possible obstructions such as shielding caused by terrain and vegetation. Industry guidance advises that dwelling receptors at up to 1 km from solar panels may be considered in terms of potential glare impact.

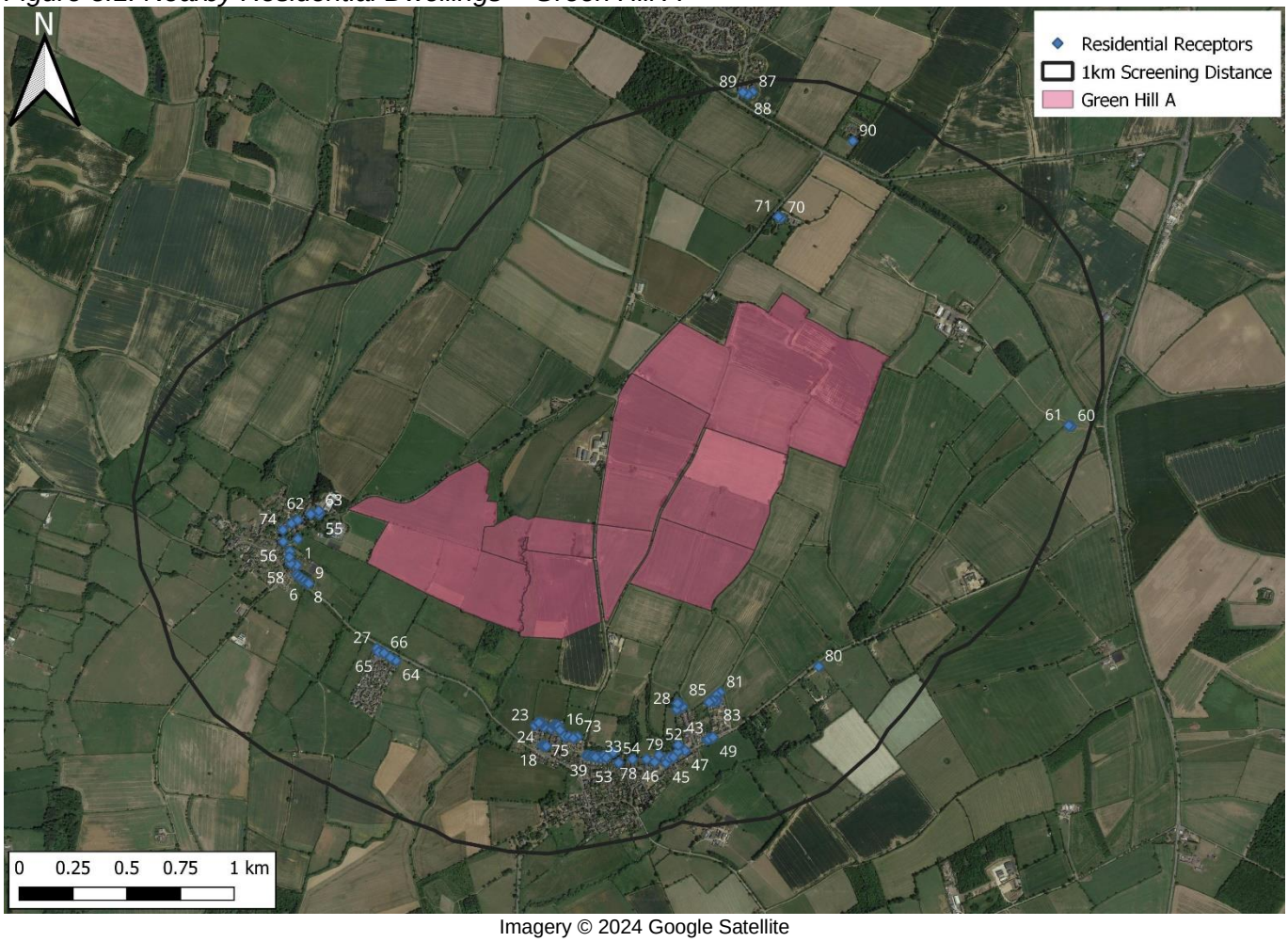
A number of residential dwellings exist within 1 km of the Scheme boundaries. Only the receptor points closest to the Scheme with a potential line of sight towards the PV panels were considered, as other dwellings are expected to be screened by these receptors, as well as vegetation and/or other infrastructure found in between them. The high-level review was undertaken using mapping and aerial photography.

The residential dwellings will be modelled at an additional height of 1.8m above ground level as this is considered to represent typical viewing height on ground floor, which is typically occupied during daylight hours.

3.1.1 Green Hill A

In total, 90 residential dwellings have been identified within this area. Receptor points closest to the Scheme with a potential line of sight towards the PV panels can be seen below in Figure 3.1.

Figure 3.1: Nearby Residential Dwellings – Green Hill A

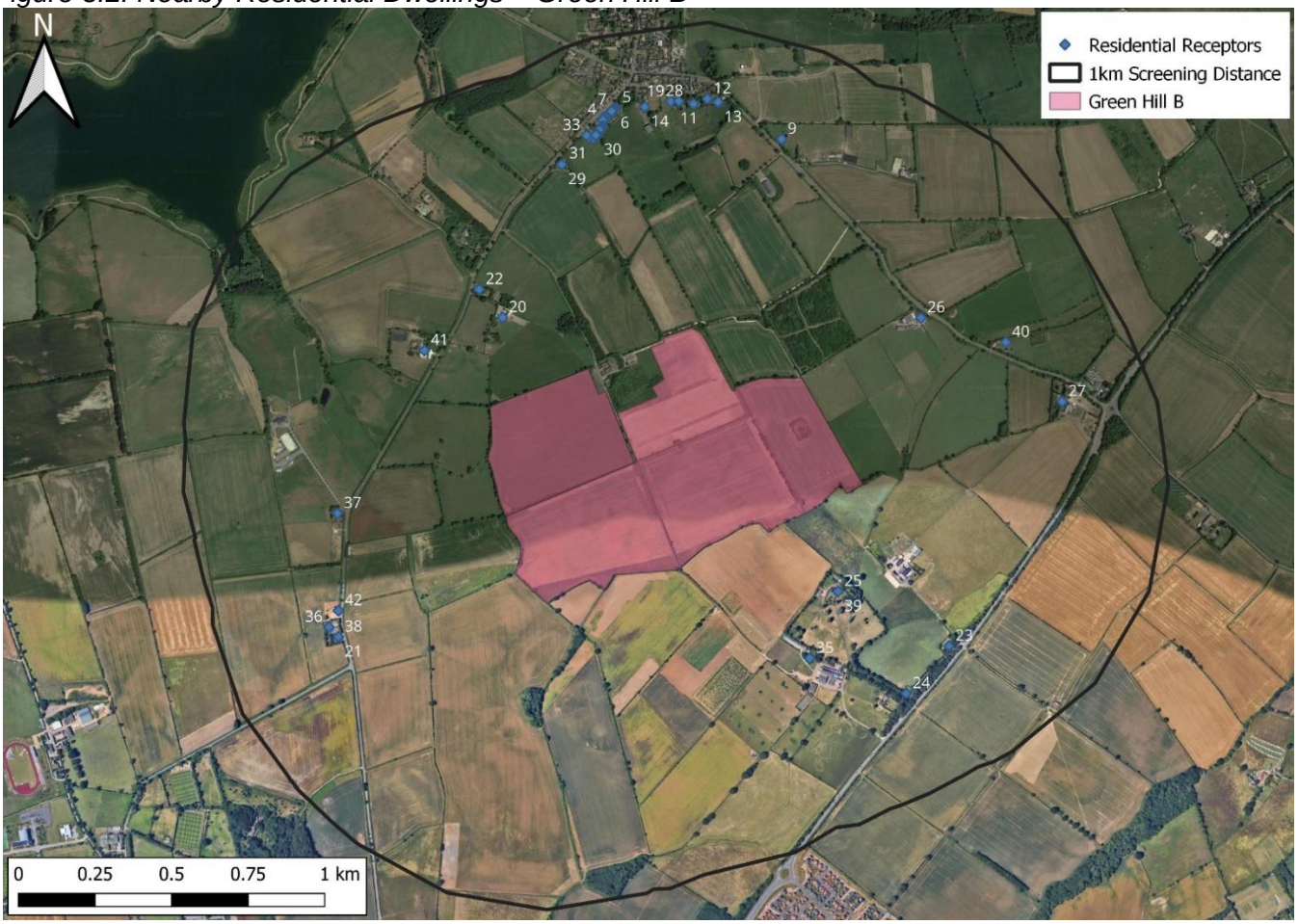


Imagery © 2024 Google Satellite

3.1.2 Green Hill B

In total, 42 residential dwellings have been identified assessment within this area. Receptor points closest to the Scheme with a potential line of sight towards the PV panels can be seen below in Figure 3.2.

Figure 3.2: Nearby Residential Dwellings – Green Hill B

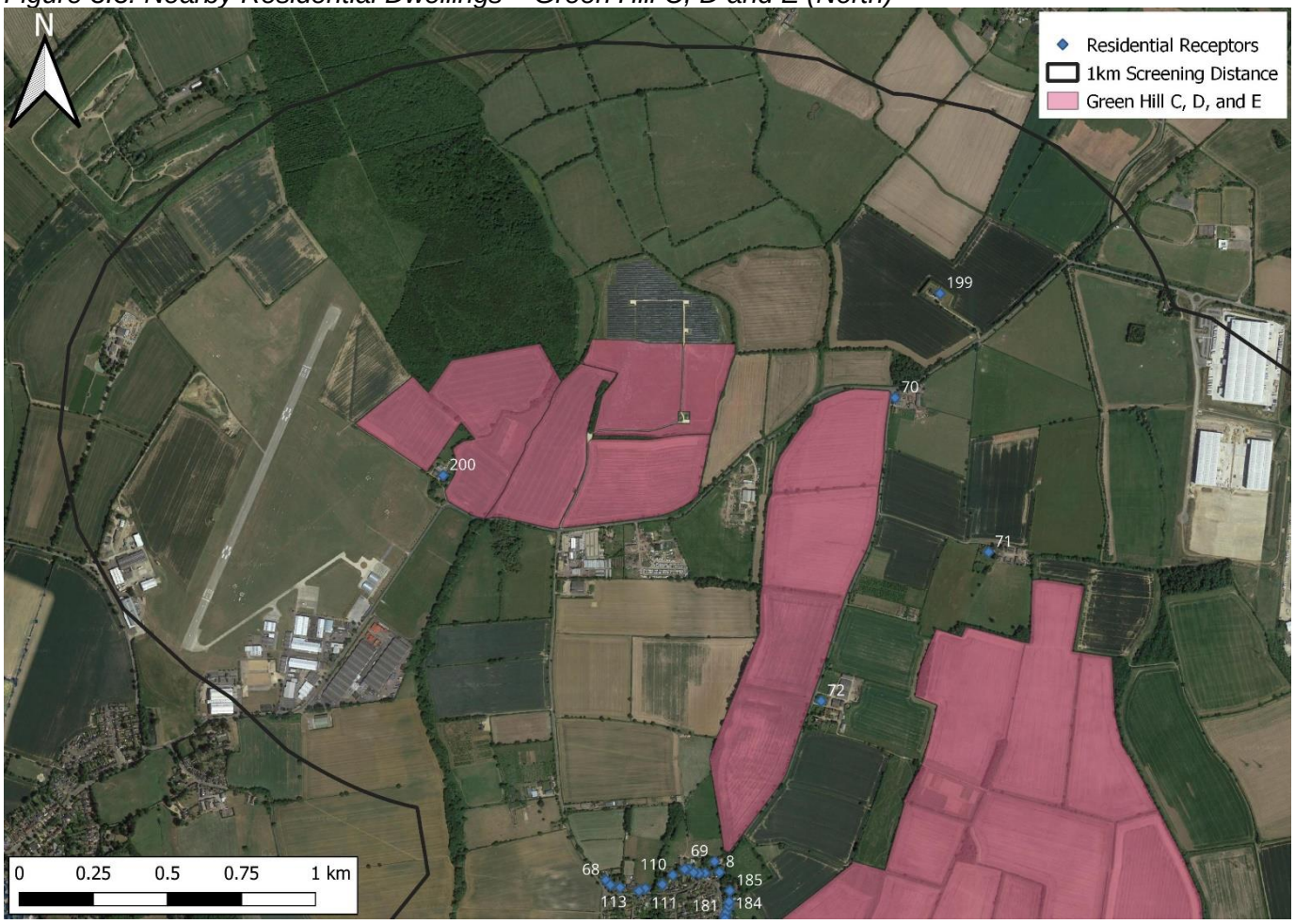


Imagery © 2024 Google Satellite

3.1.3 Green Hill C, D and E

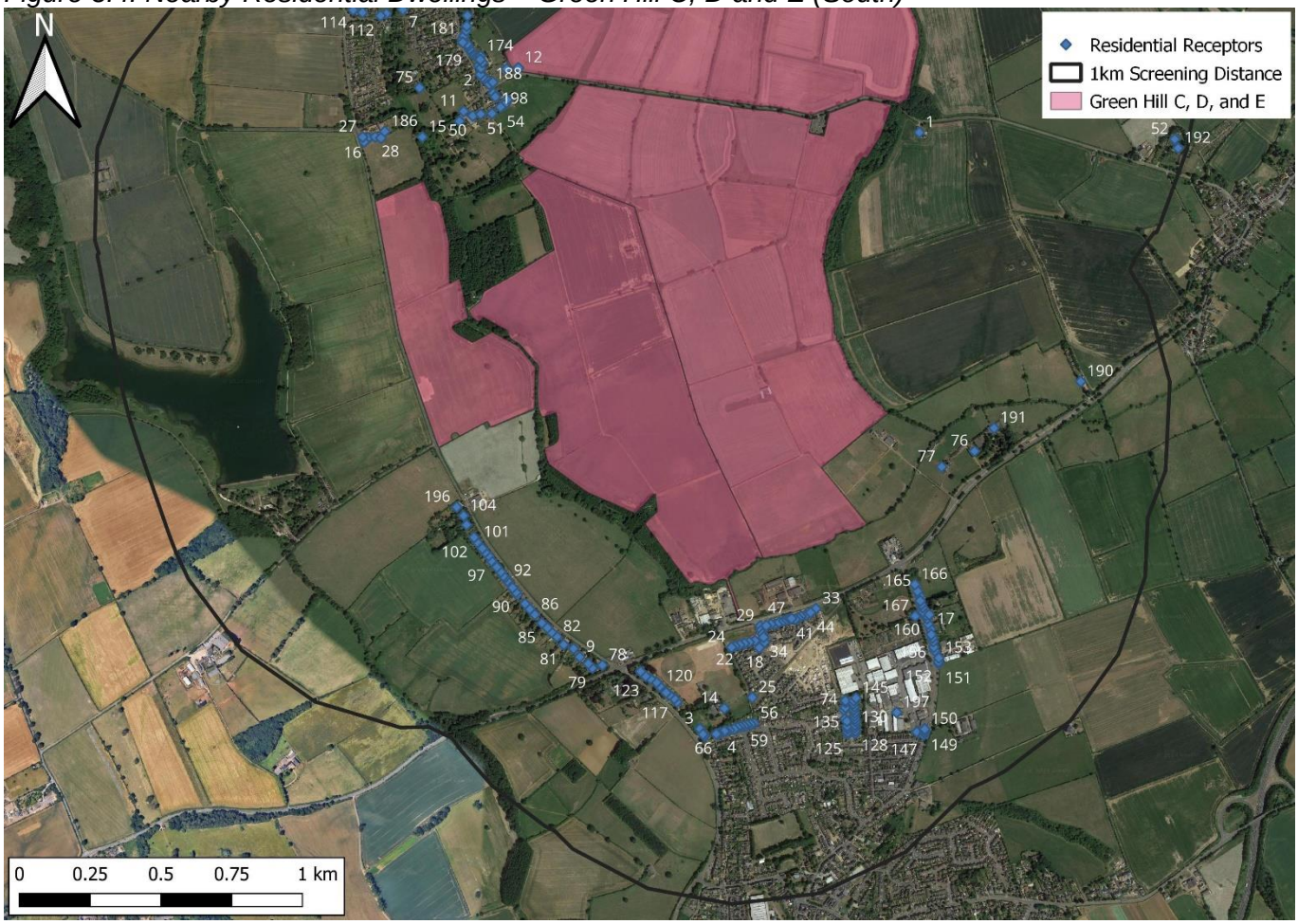
In total, 202 residential dwellings have been identified assessment within this area. Receptor points closest to the Scheme with a potential line of sight towards the PV panels can be seen below in Figure 3.3 and Figure 3.4.

Figure 3.3: Nearby Residential Dwellings – Green Hill C, D and E (North)



Imagery © 2024 Google Satellite

Figure 3.4: Nearby Residential Dwellings – Green Hill C, D and E (South)

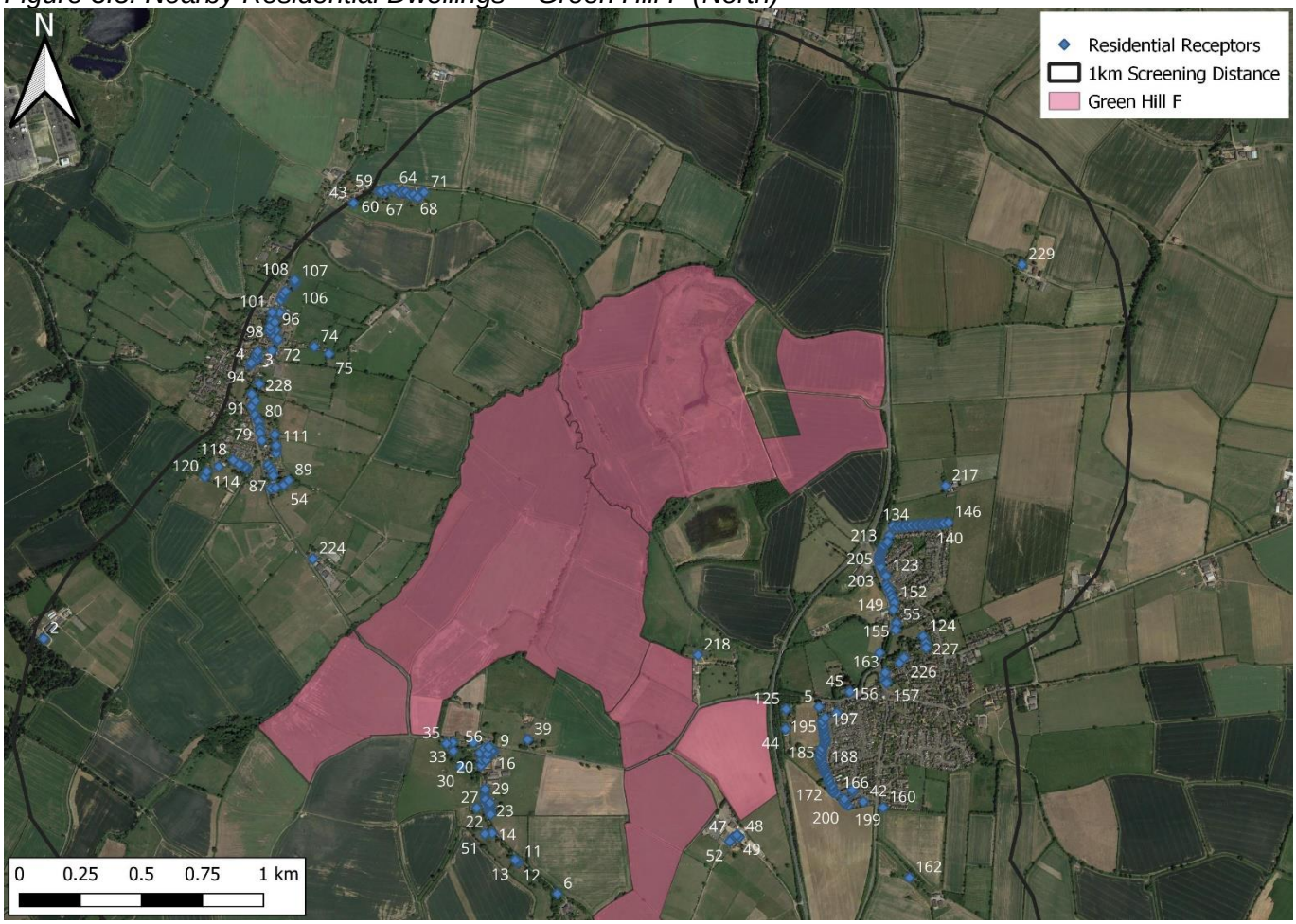


Imagery © 2024 Google Satellite

3.1.4 Green Hill F

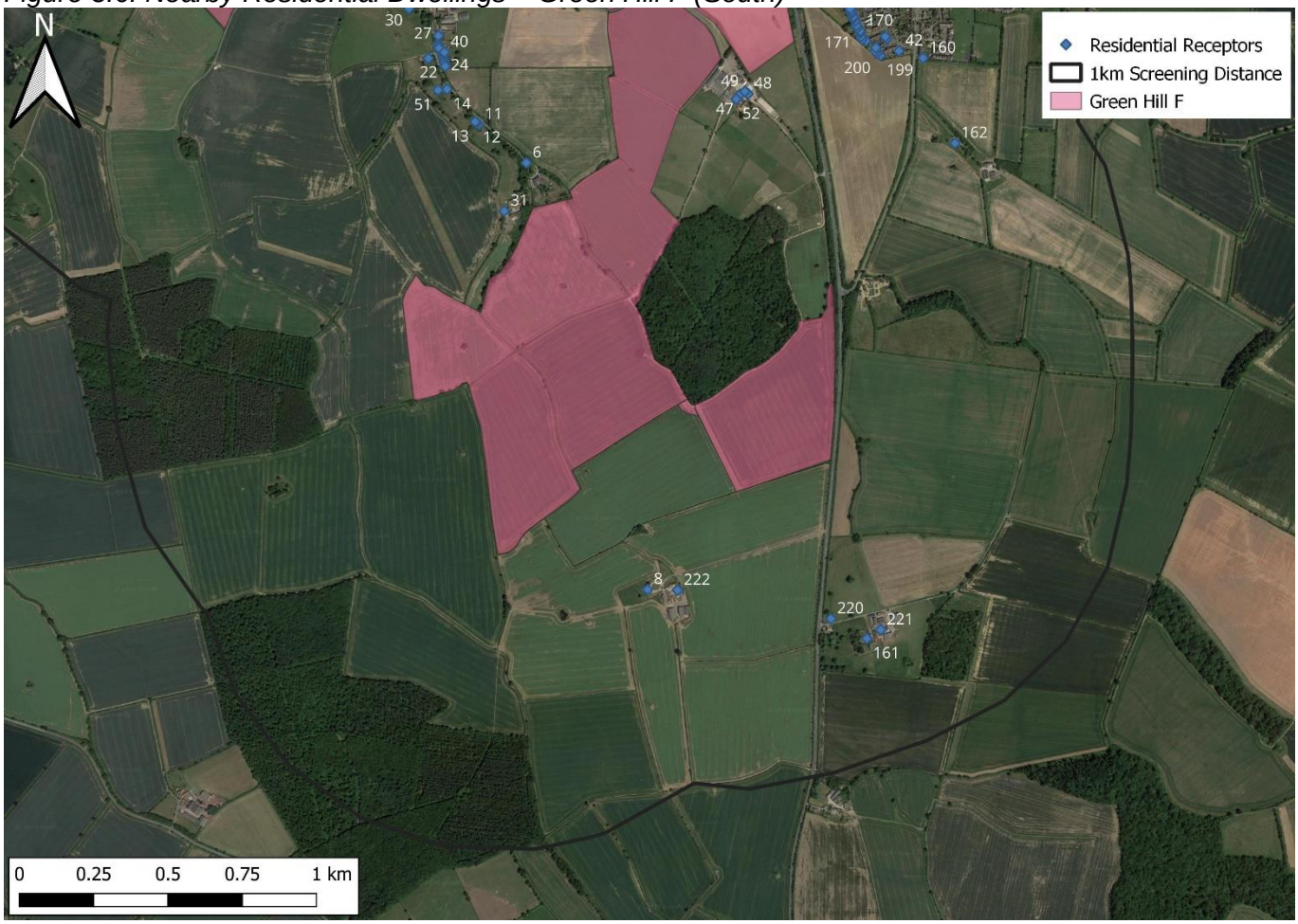
In total, 229 residential dwellings have been identified assessment within this area. Receptor points closest to the Scheme with a potential line of sight towards the PV panels can be seen below in Figure 3.5 and Figure 3.6.

Figure 3.5: Nearby Residential Dwellings – Green Hill F (North)



Imagery © 2024 Google Satellite

Figure 3.6: Nearby Residential Dwellings – Green Hill F (South)

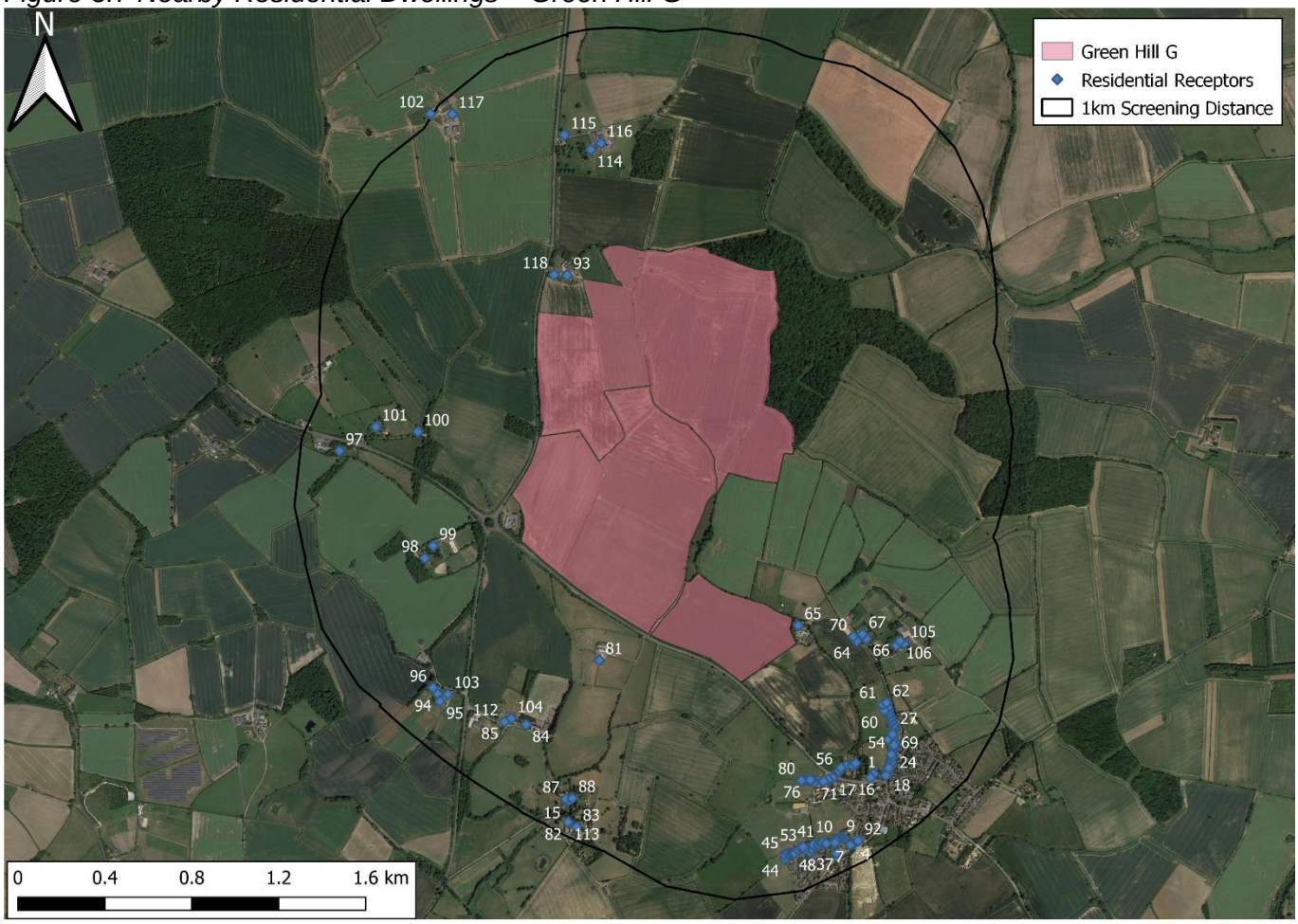


Imagery © 2024 Google Satellite

3.1.5 Green Hill G

In total, 118 residential dwellings have been identified assessment within this area. Receptor points closest to the Scheme with a potential line of sight towards the PV panels can be seen below in Figure 3.7. It is noted that Green Hill F and Green Hill G share five residential receptors.

Figure 3.7 Nearby Residential Dwellings – Green Hill G



Imagery © 2024 Google Satellite

3.1.6 Summary

The initial review list of dwelling receptors is presented in Appendix A.

Professional judgement will be applied in the selection of representative dwellings from this list for technical modelling where there are clusters of multiple dwellings with a similar view of the Scheme.

3.2 Road Infrastructure

In accordance with industry guidance, road receptors within 1km of the site boundary of the Scheme may be considered.

Major National, National and Regional roads are predicted to have higher level of traffic compared to local roads and have higher sensitivity. Therefore, these roads that are within 1 km from the solar PV development boundary with a visual line of sight to the panels will be considered for the technical modelling.

In accordance with industry guidance, technical modelling is not recommended for local roads, where traffic densities are likely to be relatively low. Any solar reflections from the Scheme that are experienced by a road user along a local road would be considered 'Low / Minor' impact magnitude.

The residential dwellings will be modelled at an additional height of 1.5m above ground level as this is considered to represent typical viewing height of road users.

3.2.1 Green Hill A

A high-level receptor screening indicates that no Major National, National and Regional roads are within the 1 km of the Scheme.

Therefore, road infrastructure would not be considered within the modelling assessment for this area.

3.2.2 Green Hill B

A high-level receptor screening indicates that Kettering Road (A43) lies within 1km of the Scheme. This section of the A43 road is not on the Strategic Road Network[1] and it is expected that it will be managed by the local authorities, North Northamptonshire Council and West Northamptonshire Council.

A high-level review indicates that there is no line of sight from the A43 and the proposed arrays. As such, the A43 would be qualitatively reviewed in the assessment, but would not have to be included within the technical modelling.

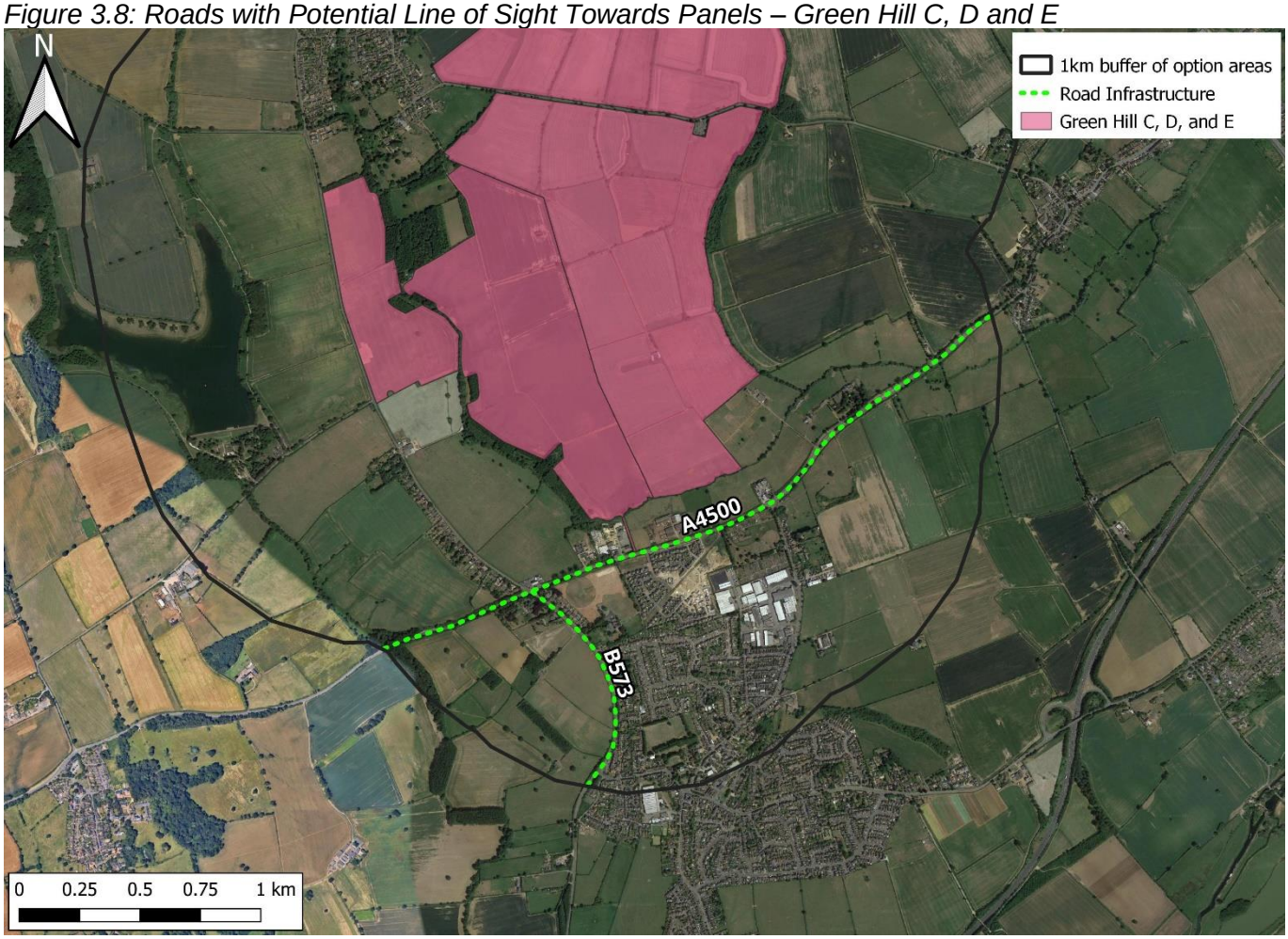
3.2.3 Green Hill C, D and E

A high-level receptor screening indicates that the A4500, A509 and Northampton Road (B573) lie within 1km of the Scheme. These roads are not on the Strategic Road Network[14] and it is expected that they will be managed by the local authority, North Northamptonshire Council.

A high-level review indicates that there is no line of sight from the A509 and the proposed arrays. As such, the A509 would be qualitatively included in the assessment, but would not have to be included within the technical modelling.

Based on a high-level review, there is a potential line of sight to the panels from A4500 and B573 road users such that glare modelling should be undertaken, as shown below in Figure 3.8.

Figure 3.8: Roads with Potential Line of Sight Towards Panels – Green Hill C, D and E



Imagery © 2024 Google Satellite

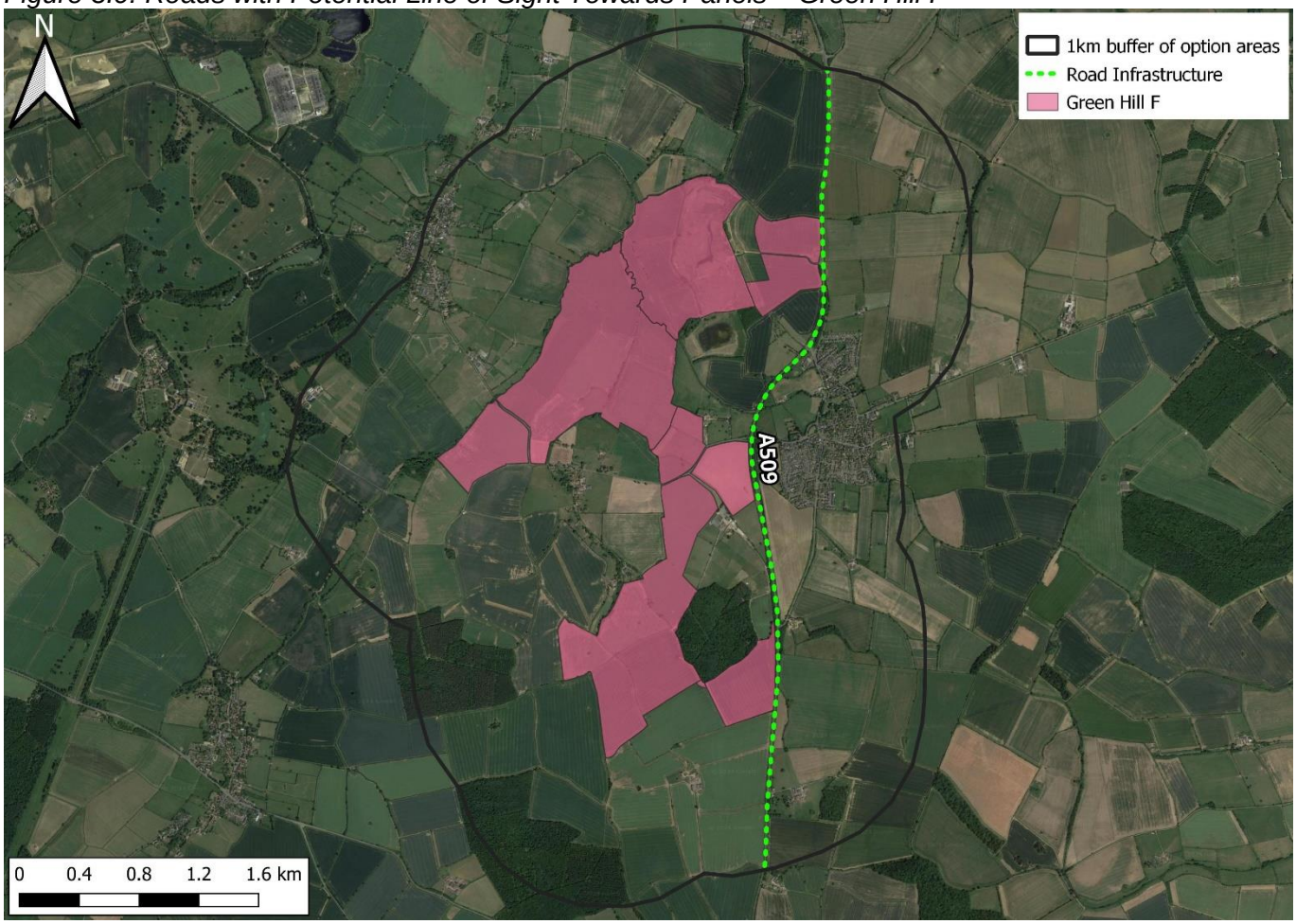
[1] National Highways, Strategic Road Network map
https://nationalhighways.co.uk/media/qe1cjb2b/nh-srn-simplified-map-2023.pdf

3.2.4 Green Hill F

A high-level receptor screening indicates that the A509 lies within 1km of the Scheme. This road is not on the Strategic Road Network[14] and it is expected that it will be managed by the local authority, North Northamptonshire Council.

Based on a high-level review, there is a potential line of sight to the panels from the A509 road users such that glare modelling should be undertaken, as shown below in Figure 3.9.

Figure 3.9: Roads with Potential Line of Sight Towards Panels – Green Hill F



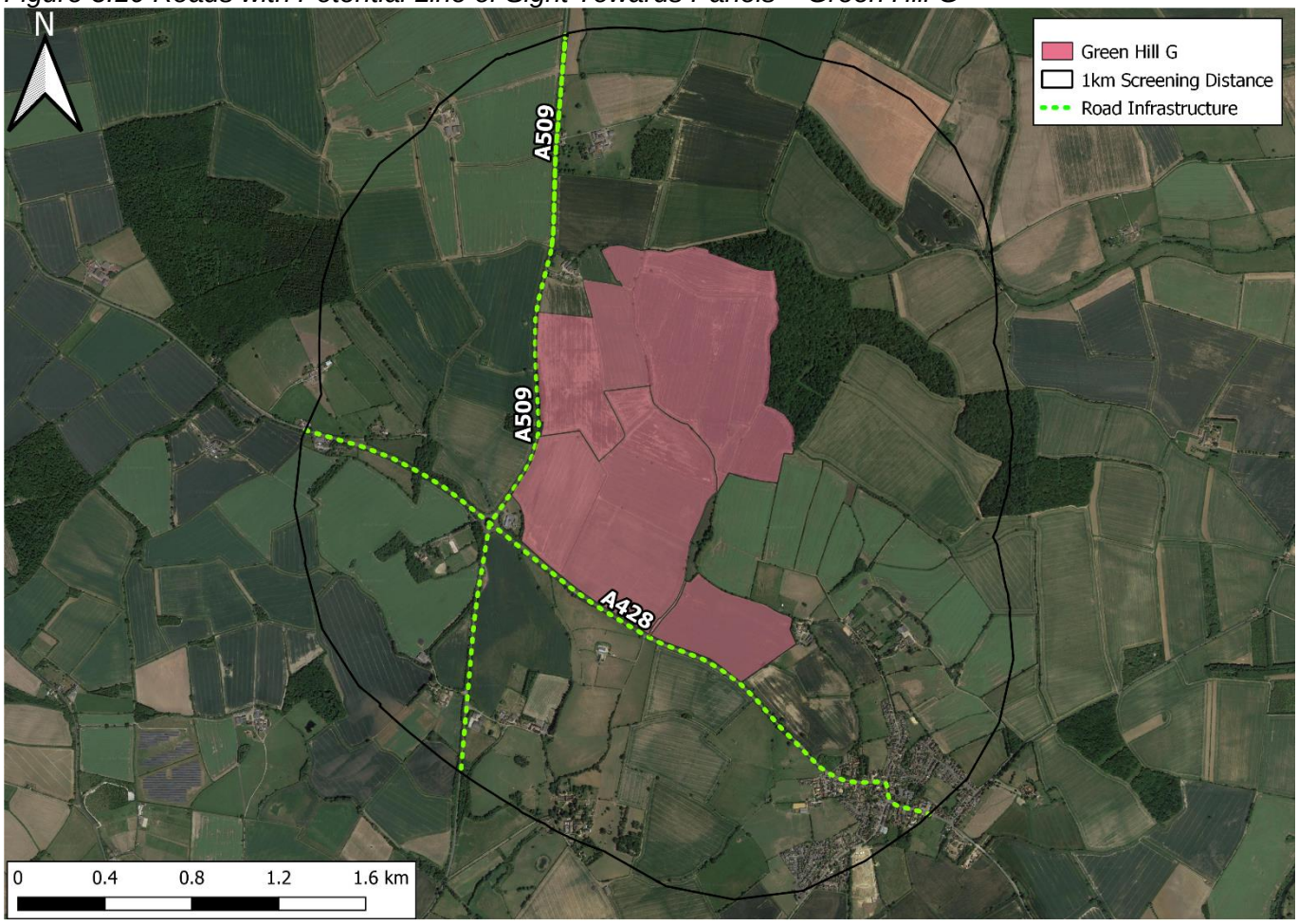
Imagery © 2024 Google Satellite

3.2.5 Green Hill G

A high-level receptor screening indicates that the A428 and the A509 lies within 1km of the Scheme. This section of the A428 nor the A509 are on the Strategic Road Network[14] and it is expected that it will be managed by the local authorities, North Northamptonshire Council and City of Milton Keynes Council.

Based on a high-level review, there is a potential line of sight to the panels from the A509 road users such that glare modelling should be undertaken, as shown below in Figure 3.10. It is noted that road users along the A509 will be affected by both Green Hill F and Green Hill G.

Figure 3.10 Roads with Potential Line of Sight Towards Panels – Green Hill G



Imagery © 2024 Google Satellite

3.2.6 Summary

As above, the following sections of roads are within 1km of the Scheme with a potential line of sight and will be taken forward for technical modelling:

- The A4500 and B573 were identified within the screening distance of Green Hill E.
- The A509 was identified within the screening distance of Green Hill F and Green Hill G.
- The A428 was identified within the screening distance of Green Hill G.

Further details of the receptors to be modelled are presented in Appendix B.

Other sections of roads within 1km the Scheme without line of sight will be discussed qualitatively within the assessment but not included within the technical modelling. These include:

- Kettering Road (A43) was identified within the screening distance of Green Hill B.
- The A509 was identified within the screening distance of Green Hill E

3.3 Aviation Infrastructure

The CAA CAST guidance[2] specifies that:

"The receptors that should be considered are usually ATS personnel in a control tower and pilots of aircraft within a suitable distance of an aerodrome. It is essential to conduct a glint and glare assessment when a reflective surface is to be located on or immediately adjacent to an aerodrome. In most cases, an assessment should be undertaken for a solar PV development which is being proposed within a specific distance (indicated by the aerodrome authority) from an aerodrome. For many aerodromes, 5km is the distance of choice but it could be considered out to 10km. In exceptional circumstances, assessments may be required beyond 10km."

The glint and glare assessment will evaluate the potential impacts of the Scheme on light-sensitive aviation infrastructure receptors. The assessment will assess the impact on the:

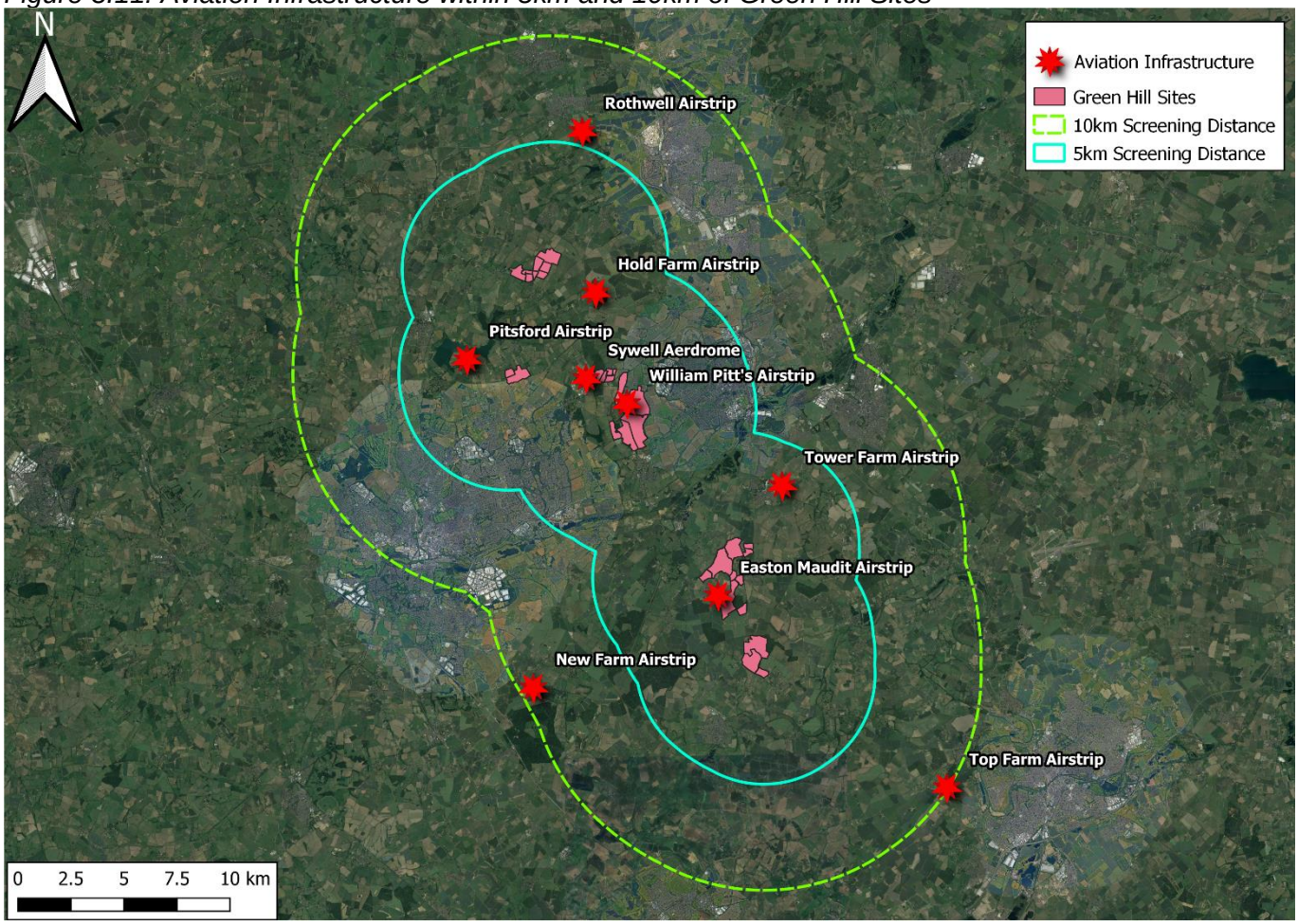
- Pilots in aircraft on final approach towards the aerodrome's runway(s); and
- The Air Traffic Control Tower (ATCT, if applicable).

Further consultation with the aerodromes may be required to understand if additional assessments, such as pilots in a visual circuit, required.

Aerodromes immediately adjacent to solar panel areas and those within 5km will be modelled. Aerodromes at 5-10km from solar panel areas may be qualitatively assessed, although modelling may be considered at further distances where there are other panel areas within 5km of the aerodrome.

Aviation infrastructure within 5km and 10km are shown below in Figure 3.11.

Figure 3.11: Aviation Infrastructure within 5km and 10km of Green Hill Sites



Imagery © 2024 Google Satellite

[2] Available at https://www.caa.co.uk/media/hlsmmmoi/cast-renewable-energy-developments-solar-july-2023.pdf

The approach flight paths will be modelled using the in-built 2-mile flight approach path tool within ForgeSolar. In accordance with the U.S. FAA guidance, the final approach path was defined as two miles from fifty feet above the landing threshold using a standard three-degree glidepath. In addition, observation points (OPs) will be modelled along all flight paths as a worst-case assessment which do not include field of view of the pilots. The flight path height at each OP follows the below altitude profile:

Observation Point	Altitude Above Ground (m)
Threshold – point closest to ground/runway (0 miles)	15.2
¼ miles	36.3
½ miles	57.4
¾ miles	78.5
1 miles	99.5
1 ¼ miles	120.6
1 ½ miles	141.7
1 ¾ miles	162.8
2 miles	183.9

3.3.1 Green Hill A

A high-level receptor screening exercise with a focus area of 10km indicates the following aviation infrastructure:

- Hold Farm Airstrip – approximately 2.7km southeast of site.
- Pitsford Airstrip – approximately 4.4km southwest of site.
- Sywell Aerodrome – approximately 5.3km southeast of site.
- Rothwell Airstrip – approximately 5.8km north of site.
- William Pitt Airstrip – approximately 7.1km southeast of site.

3.3.2 Green Hill B

A high-level receptor screening exercise with a focus area of 10km indicates the following aviation infrastructure:

- Pitsford Airstrip – approximately 1.9km west of site.
- Sywell Aerodrome – approximately 3.8km east of site.
- William Pitt Airstrip – approximately 4.8km east of site.
- Hold Farm Airstrip – approximately 4.8km northeast of site.

3.3.3 Green Hill C, D, and E

A high-level receptor screening exercise with a focus area of 10km indicates the following aviation infrastructure:

- Sywell Aerodrome – immediately adjacent to Area C.
- William Pitt Airstrip – immediately adjacent to Areas D and E.
- Hold Farm Airstrip – approximately 3.6km north of site.
- Pitsford Airstrip – approximately 5.5km west of site.
- Tower Farm Airstrip – approximately 6.7km southeast of site.
- Easton Maudit Airstrip – approximately 7.7km south of site.

3.3.4 Green Hill F

A high-level receptor screening exercise with a focus area of 10km indicates the following aviation infrastructure:

- Easton Maudit Airstrip – immediately adjacent to Area F
- Tower Farm Airstrip – approximately 3.2km northeast of site.
- William Pitt Airstrip – approximately 8.0km northeast of site.
- New Farm Airfield – approximately 10.0km south of site.
- Sywell Aerodrome – approximately 10.0km northeast of site.

3.3.5 Green Hill G

A high-level receptor screening exercise with a focus area of 10km indicates the following aviation infrastructure:

- Easton Maudit Airstrip – approximately 2.4km northwest of site.
- Top Farm Airstrip – approximately 9.9km southeast of site.
- Tower Farm Airstrip – approximately 9.9km southwest of site.

3.3.6 Summary

As above, the following aerodromes are within 5km of the Scheme and will be taken forward for technical modelling:

- Hold Farm Airstrip
- Pitsford Airstrip
- Sywell Aerodrome
- William Pitt Airstrip
- Easton Maudit Airstrip
- Tower Farm Airstrip

Further details of the receptors to be modelled are presented in Appendix C.

Other aviation receptors between 5km and 10km from the Scheme include Rothwell Airstrip, New Farm Airfield, and Top Farm Airstrip. None of these aerodromes have an ATCT. It is likely that at this distance, any glare towards pilots on final approach will have 'low potential for after-image' (green glare), which corresponds to a 'Low / Minor' magnitude impact. Coupled with the 'Medium' receptor sensitivity, it is not considered possible to have significant glint and glare impacts upon these aerodromes. Technical modelling is not proposed for these aerodromes on this basis.

3.4 Rail Infrastructure

In accordance with industry guidance, rail operators may raise an objection to solar developments that are within 500m of their infrastructure due to safety implications caused by glare on train drivers, level crossings and railway light signals.

3.4.1 Green Hill A

A high-level receptor review indicates no rail infrastructure within this screening distance. Therefore, no railway receptors would be considered within the modelling assessment for this area.

3.4.2 Green Hill B

A high-level receptor review indicates no rail infrastructure within this screening distance. Therefore, no railway receptors would be considered within the modelling assessment for this area.

3.4.3 Green Hill C, D, and E

A high-level receptor review indicates no rail infrastructure within this screening distance. Therefore, no railway receptors would be considered within the modelling assessment for this area.

3.4.4 Green Hill F

A high-level receptor review indicates no rail infrastructure within this screening distance. Therefore, no railway receptors would be considered within the modelling assessment for this area.

3.4.5 Green Hill G

A high-level receptor review indicates no rail infrastructure within this screening distance. Therefore, no railway receptors would be considered within the modelling assessment for this area.

3.4.6 Summary

As above, no rail infrastructure was identified within the screening distance of any Green Hill sites. Technical modelling of railway infrastructure is scoped out on this basis.

Section 4.0: Stakeholder Consultation

4.1 Consultation Process

The following stakeholders will require consultation:

- Safeguarding personnel at
  - Hold Farm Airstrip
  - Pitsford Airstrip
  - Sywell Aerodrome
  - William Pitt Airstrip
  - Easton Maudit Airstrip
  - Tower Farm Airstrip

Appendix A: Dwelling Receptor Details

Green Hill A

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.35227	-0.84659	**46**	52.34222	-0.82181
2	52.35029	-0.84607	**47**	52.34268	-0.81973
3	52.35023	-0.84597	**48**	52.34265	-0.82021
4	52.35015	-0.84580	**49**	52.34322	-0.81779
5	52.35013	-0.84572	**50**	52.34265	-0.82462
6	52.35004	-0.84555	**51**	52.34240	-0.82081
7	52.35002	-0.84549	**52**	52.34292	-0.82019
8	52.34994	-0.84532	**53**	52.34222	-0.82427
9	52.34991	-0.84523	**54**	52.34235	-0.82236
10	52.35244	-0.84635	**55**	52.35279	-0.84445
11	52.34370	-0.82886	**56**	52.35168	-0.84693
12	52.34383	-0.82867	**57**	52.35069	-0.84603
13	52.34383	-0.82857	**58**	52.35076	-0.84646
14	52.34382	-0.82846	**59**	52.34241	-0.82053
15	52.34380	-0.82835	**60**	52.35597	-0.79298
16	52.34362	-0.82825	**61**	52.35600	-0.79316
17	52.34299	-0.82948	**62**	52.35281	-0.84504
18	52.34297	-0.82940	**63**	52.35294	-0.84447
19	52.34296	-0.82928	**64**	52.34664	-0.83937
20	52.34296	-0.82919	**65**	52.34700	-0.84053
21	52.34377	-0.82936	**66**	52.34696	-0.84017
22	52.34392	-0.82946	**67**	52.34677	-0.83975
23	52.34383	-0.82994	**68**	52.35128	-0.84649
24	52.34394	-0.82956	**69**	52.35103	-0.84654
25	52.34395	-0.82975	**70**	52.36487	-0.81256
26	52.34394	-0.82968	**71**	52.36492	-0.81276
27	52.34716	-0.84065	**72**	52.35286	-0.84596
28	52.34442	-0.82024	**73**	52.34332	-0.82705
29	52.34452	-0.81984	**74**	52.35217	-0.84694
30	52.34467	-0.82004	**75**	52.34336	-0.82793
31	52.34466	-0.82019	**76**	52.34335	-0.82765
32	52.34255	-0.82647	**77**	52.34328	-0.82735
33	52.34246	-0.82566	**78**	52.34235	-0.82332
34	52.34242	-0.82547	**79**	52.34251	-0.82151
35	52.34252	-0.82530	**80**	52.34610	-0.81051
36	52.34244	-0.82511	**81**	52.34509	-0.81726
37	52.34253	-0.82634	**82**	52.34497	-0.81753
38	52.34251	-0.82613	**83**	52.34474	-0.81748
39	52.34251	-0.82599	**84**	52.34474	-0.81756
40	52.34247	-0.82584	**85**	52.34475	-0.81778
41	52.34311	-0.81822	**86**	52.34469	-0.81803
42	52.34320	-0.81787	**87**	52.37014	-0.81439
43	52.34316	-0.81803	**88**	52.37005	-0.81471
44	52.34315	-0.81810	**89**	52.37014	-0.81505
45	52.34218	-0.82103	**90**	52.36802	-0.80758

Green Hill B

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.31863	-0.83998	**22**	52.31359	-0.84622
2	52.31859	-0.84006	**23**	52.30289	-0.82398
3	52.31855	-0.84013	**24**	52.30152	-0.82607
4	52.31851	-0.84016	**25**	52.30455	-0.82926
5	52.31887	-0.83952	**26**	52.31255	-0.82507
6	52.31885	-0.83961	**27**	52.31002	-0.81838
7	52.31881	-0.83967	**28**	52.31903	-0.83651
8	52.31876	-0.83973	**29**	52.31722	-0.84216
9	52.31787	-0.83162	**30**	52.31808	-0.84044
10	52.31722	-0.84216	**31**	52.31797	-0.84065
11	52.31895	-0.83581	**32**	52.31801	-0.84085
12	52.31909	-0.83515	**33**	52.31806	-0.84095
13	52.31898	-0.83463	**34**	52.31807	-0.84051
14	52.31888	-0.83814	**35**	52.3026	-0.83066
15	52.31833	-0.84016	**36**	52.30374	-0.85368
16	52.31829	-0.84022	**37**	52.30708	-0.85318
17	52.31826	-0.84028	**38**	52.30345	-0.85323
18	52.31822	-0.84034	**39**	52.30455	-0.82926
19	52.31902	-0.8369	**40**	52.31179	-0.82104
20	52.31276	-0.84512	**41**	52.31182	-0.84889
21	52.30345	-0.85323	**42**	52.30422	-0.85321

Green Hill C, D, and E

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.28944	-0.74606	**102**	52.27682	-0.76948
2	52.2918	-0.76883	**103**	52.27722	-0.76986
3	52.27061	-0.75796	**104**	52.27751	-0.77
4	52.27047	-0.75687	**105**	52.29395	-0.77058
5	52.29169	-0.76738	**106**	52.29394	-0.77089
6	52.29071	-0.76737	**107**	52.29408	-0.7714
7	52.29363	-0.7727	**108**	52.29408	-0.77159
8	52.29397	-0.76987	**109**	52.29397	-0.77115
9	52.27296	-0.76411	**110**	52.2939	-0.77218
10	52.27323	-0.76443	**111**	52.29351	-0.77356
11	52.29037	-0.76964	**112**	52.29344	-0.77387
12	52.29172	-0.76677	**113**	52.29356	-0.7748
13	52.27472	-0.74646	**114**	52.29364	-0.77528
14	52.27125	-0.75669	**115**	52.27038	-0.75774
15	52.28957	-0.77181	**116**	52.27148	-0.75913
16	52.28956	-0.77464	**117**	52.27159	-0.75926
17	52.27365	-0.74592	**118**	52.27171	-0.7595
18	52.27351	-0.75485	**119**	52.27178	-0.75968
19	52.27338	-0.75503	**120**	52.27198	-0.75999
20	52.27334	-0.75533	**121**	52.27211	-0.76016
21	52.2733	-0.75558	**122**	52.27223	-0.76047
22	52.27326	-0.75582	**123**	52.27231	-0.76073
23	52.27322	-0.75607	**124**	52.27247	-0.76098

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
24	52.27319	-0.75625	**125**	52.27036	-0.7503
25	52.27158	-0.75522	**126**	52.27038	-0.74992
26	52.28945	-0.77483	**127**	52.27042	-0.7503
27	52.2896	-0.7749	**128**	52.27047	-0.74992
28	52.2896	-0.77424	**129**	52.27054	-0.75032
29	52.27385	-0.75474	**130**	52.27057	-0.74993
30	52.27371	-0.75469	**131**	52.27062	-0.75033
31	52.27359	-0.75463	**132**	52.27066	-0.74992
32	52.27333	-0.75452	**133**	52.27077	-0.75034
33	52.27437	-0.75185	**134**	52.27076	-0.74989
34	52.27349	-0.75458	**135**	52.27121	-0.7504
35	52.27391	-0.75399	**136**	52.27084	-0.74993
36	52.2739	-0.75419	**137**	52.27138	-0.75039
37	52.27385	-0.75443	**138**	52.27094	-0.74994
38	52.27396	-0.75376	**139**	52.27143	-0.7504
39	52.274	-0.75352	**140**	52.27104	-0.74994
40	52.27403	-0.75335	**141**	52.27114	-0.74996
41	52.27406	-0.7532	**142**	52.27124	-0.74995
42	52.27417	-0.75236	**143**	52.27133	-0.74999
43	52.27413	-0.75262	**144**	52.27143	-0.74997
44	52.27425	-0.75213	**145**	52.27151	-0.74985
45	52.27407	-0.75276	**146**	52.27296	-0.74573
46	52.27404	-0.75292	**147**	52.27029	-0.74639
47	52.27407	-0.75312	**148**	52.27036	-0.74633
48	52.28956	-0.77395	**149**	52.27044	-0.74633
49	52.27039	-0.74673	**150**	52.27048	-0.74632
50	52.29022	-0.76918	**151**	52.27256	-0.74553
51	52.29026	-0.76876	**152**	52.27261	-0.74555
52	52.28909	-0.73285	**153**	52.27274	-0.74553
53	52.29054	-0.76753	**154**	52.27308	-0.74577
54	52.29048	-0.76773	**155**	52.27326	-0.7458
55	52.29028	-0.76818	**156**	52.27338	-0.74584
56	52.27076	-0.75514	**157**	52.27348	-0.7459
57	52.27073	-0.75532	**158**	52.27382	-0.74605
58	52.2707	-0.75552	**159**	52.27399	-0.7461
59	52.27067	-0.75567	**160**	52.2741	-0.74615
60	52.27065	-0.75585	**161**	52.27421	-0.7463
61	52.27063	-0.75601	**162**	52.27435	-0.74632
62	52.27058	-0.75619	**163**	52.27444	-0.74639
63	52.27055	-0.75644	**164**	52.27456	-0.74644
64	52.27053	-0.75661	**165**	52.27487	-0.74658
65	52.27052	-0.75669	**166**	52.27508	-0.7467
66	52.27044	-0.757	**167**	52.27408	-0.74671
67	52.27044	-0.75711	**168**	52.29131	-0.76844
68	52.29379	-0.77549	**169**	52.2914	-0.76849
69	52.2943	-0.7701	**170**	52.29144	-0.76863
70	52.30825	-0.76078	**171**	52.29153	-0.76876
71	52.30353	-0.75628	**172**	52.29173	-0.76871

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
72	52.2991	-0.76469	**173**	52.29191	-0.76863
73	52.27085	-0.75044	**174**	52.29211	-0.76872
74	52.27114	-0.75049	**175**	52.29219	-0.76915
75	52.29113	-0.77191	**176**	52.29224	-0.7692
76	52.27928	-0.74349	**177**	52.29231	-0.76925
77	52.2788	-0.74521	**178**	52.29235	-0.76929
78	52.27269	-0.76295	**179**	52.29244	-0.76936
79	52.2726	-0.76348	**180**	52.2925	-0.7694
80	52.27274	-0.76368	**181**	52.29266	-0.76964
81	52.27336	-0.76493	**182**	52.29276	-0.76955
82	52.27362	-0.76528	**183**	52.29293	-0.76944
83	52.27376	-0.76555	**184**	52.29307	-0.76941
84	52.2739	-0.76576	**185**	52.2934	-0.76936
85	52.27406	-0.76605	**186**	52.28977	-0.77375
86	52.27433	-0.7664	**187**	52.29005	-0.76987
87	52.27451	-0.76666	**188**	52.29121	-0.76829
88	52.27468	-0.7669	**189**	52.29127	-0.7681
89	52.27497	-0.7673	**190**	52.28144	-0.73793
90	52.27505	-0.76736	**191**	52.28001	-0.74246
91	52.2752	-0.76753	**192**	52.2888	-0.73268
92	52.27542	-0.76779	**193**	52.27044	-0.7578
93	52.27553	-0.76792	**194**	52.29255	-0.76963
94	52.27557	-0.768	**195**	52.29092	-0.76809
95	52.27571	-0.76813	**196**	52.27779	-0.77035
96	52.27586	-0.76833	**197**	52.27103	-0.74775
97	52.27606	-0.7686	**198**	52.29081	-0.76799
98	52.27623	-0.76875	**199**	52.31139	-0.75847
99	52.27634	-0.76892	**200**	52.30613	-0.78321
100	52.27646	-0.76906	**201**	52.27412	-0.74598
101	52.27666	-0.76932	**202**	52.292	-0.76874

Green Hill F

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.23488	-0.7132	**116**	52.2307	-0.71518
2	52.22444	-0.72719	**117**	52.23073	-0.71528
3	52.23462	-0.71403	**118**	52.23089	-0.71564
4	52.23438	-0.71449	**119**	52.23065	-0.71653
5	52.22142	-0.68078	**120**	52.23029	-0.71735
6	52.21472	-0.69667	**121**	52.23048	-0.71724
7	52.23629	-0.71271	**122**	52.22625	-0.67667
8*	52.20174	-0.69108	**123**	52.22619	-0.67661
9	52.22	-0.70031	**124**	52.22395	-0.67446
10	52.21817	-0.70087	**125**	52.22136	-0.68275
11	52.21591	-0.69899	**126**	52.22802	-0.67615
12	52.21596	-0.69908	**127**	52.22768	-0.67638
13	52.21599	-0.69916	**128**	52.22798	-0.6759
14	52.21699	-0.70051	**129**	52.228	-0.67572
15	52.21794	-0.7014	**130**	52.228	-0.67551

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
16	52.22009	-0.70045	**131**	52.22801	-0.67539
17	52.21949	-0.7011	**132**	52.22801	-0.67517
18	52.2197	-0.70105	**133**	52.22804	-0.67505
19	52.21995	-0.70097	**134**	52.22803	-0.67482
20	52.21996	-0.70116	**135**	52.22803	-0.6747
21	52.22001	-0.70045	**136**	52.22804	-0.67448
22	52.21795	-0.70065	**137**	52.22804	-0.67434
23	52.21787	-0.70062	**138**	52.22805	-0.67414
24	52.21778	-0.70061	**139**	52.22805	-0.67404
25	52.21768	-0.70058	**140**	52.22808	-0.67391
26	52.21981	-0.70074	**141**	52.22806	-0.67372
27	52.21837	-0.70092	**142**	52.22806	-0.67355
28	52.21831	-0.7009	**143**	52.22807	-0.67343
29	52.21824	-0.70087	**144**	52.22809	-0.67323
30	52.21946	-0.70232	**145**	52.2281	-0.6731
31	52.21327	-0.6978	**146**	52.22812	-0.67281
32	52.22011	-0.7009	**147**	52.22586	-0.67658
33	52.22035	-0.70277	**148**	52.22575	-0.67651
34	52.22004	-0.70275	**149**	52.22566	-0.67641
35	52.22032	-0.70316	**150**	52.22549	-0.67633
36	52.21969	-0.70079	**151**	52.22536	-0.67624
37	52.21861	-0.70089	**152**	52.2252	-0.67615
38	52.22033	-0.70154	**153**	52.22495	-0.67623
39	52.22041	-0.69828	**154**	52.22445	-0.67605
40	52.21811	-0.70061	**155**	52.2242	-0.6761
41	52.23548	-0.71315	**156**	52.22238	-0.67683
42	52.2179	-0.67822	**157**	52.22233	-0.6767
43	52.24026	-0.70816	**158**	52.22226	-0.6767
44	52.22063	-0.68281	**159**	52.22337	-0.67709
45	52.22195	-0.67892	**160**	52.21768	-0.67704
46	52.22665	-0.67696	**161***	52.20014	-0.68033
47	52.21668	-0.68609	**162**	52.21508	-0.67555
48	52.21669	-0.6857	**163**	52.22264	-0.67676
49	52.21676	-0.68585	**164**	52.21827	-0.67883
50	52.23688	-0.71247	**165**	52.21835	-0.67888
51	52.21697	-0.70096	**166**	52.21823	-0.67984
52	52.21653	-0.68628	**167**	52.21827	-0.68004
53	52.21992	-0.70071	**168**	52.21836	-0.68008
54	52.22995	-0.71262	**169**	52.21847	-0.68011
55	52.22438	-0.67603	**170**	52.21853	-0.68012
56	52.22015	-0.70062	**171**	52.21862	-0.68026
57	52.22982	-0.7134	**172**	52.2187	-0.68029
58	52.24077	-0.70601	**173**	52.21884	-0.68035
59	52.24067	-0.70661	**174**	52.21892	-0.68043
60	52.24063	-0.70624	**175**	52.21896	-0.68045
61	52.24069	-0.70647	**176**	52.21906	-0.68053
62	52.24077	-0.70611	**177**	52.21913	-0.68056
63	52.24061	-0.70538	**178**	52.21921	-0.68059

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
64	52.24078	-0.70576	**179**	52.21925	-0.68061
65	52.24065	-0.70518	**180**	52.21933	-0.68067
66	52.24064	-0.70498	**181**	52.21942	-0.6807
67	52.24051	-0.70476	**182**	52.21952	-0.68074
68	52.24054	-0.70453	**183**	52.2196	-0.68076
69	52.24042	-0.70429	**184**	52.2197	-0.68067
70	52.24064	-0.704	**185**	52.21979	-0.68071
71	52.24061	-0.7039	**186**	52.2199	-0.68065
72	52.23525	-0.71288	**187**	52.22003	-0.68049
73	52.23531	-0.71283	**188**	52.22011	-0.68046
74	52.235	-0.71065	**189**	52.2202	-0.68044
75	52.23473	-0.70978	**190**	52.22029	-0.68048
76	52.23285	-0.71447	**191**	52.22038	-0.6805
77	52.23305	-0.71423	**192**	52.22048	-0.68051
78	52.23254	-0.71428	**193**	52.22059	-0.68054
79	52.23234	-0.71411	**194**	52.22066	-0.68055
80	52.23228	-0.71408	**195**	52.22075	-0.68057
81	52.23206	-0.71401	**196**	52.22089	-0.68061
82	52.23201	-0.714	**197**	52.22102	-0.68043
83	52.23187	-0.714	**198**	52.22118	-0.67972
84	52.23159	-0.7139	**199**	52.21778	-0.67914
85	52.23068	-0.71354	**200**	52.21784	-0.67932
86	52.23055	-0.71339	**201**	52.2179	-0.67938
87	52.23043	-0.71329	**202**	52.21801	-0.67936
88	52.23029	-0.71326	**203**	52.22654	-0.67695
89	52.2301	-0.71234	**204**	52.22679	-0.67701
90	52.22984	-0.71313	**205**	52.22687	-0.67701
91	52.2333	-0.71446	**206**	52.22691	-0.67699
92	52.23457	-0.71418	**207**	52.22701	-0.67696
93	52.23475	-0.71411	**208**	52.22707	-0.67689
94	52.23445	-0.71446	**209**	52.22714	-0.67684
95	52.23487	-0.71405	**210**	52.22717	-0.67683
96	52.23565	-0.71294	**211**	52.22722	-0.6768
97	52.2356	-0.71333	**212**	52.22725	-0.67676
98	52.23564	-0.7133	**213**	52.22729	-0.67675
99	52.23579	-0.71328	**214**	52.22732	-0.67671
100	52.23603	-0.71317	**215**	52.22737	-0.67654
101	52.2363	-0.71314	**216**	52.22745	-0.67649
102	52.23674	-0.71261	**217**	52.22947	-0.67294
103	52.23688	-0.71247	**218**	52.22341	-0.68799
104	52.23696	-0.71245	**219**	52.22299	-0.6759
105	52.23707	-0.71232	**220***	52.20076	-0.68208
106	52.23734	-0.71175	**221***	52.20039	-0.67964
107	52.23741	-0.71173	**222***	52.2017	-0.68961
108	52.23747	-0.71175	**223**	52.23594	-0.71299
109	52.2318	-0.71311	**224**	52.2272	-0.71096
110	52.23111	-0.71305	**225**	52.2237	-0.67431
111	52.23134	-0.71302	**226**	52.22318	-0.67563

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
112	52.2314	-0.71304	**227**	52.22353	-0.67429
113	52.23058	-0.71481	**228**	52.23367	-0.714
114	52.23061	-0.71489	**229**	52.23755	-0.66812
115	52.23064	-0.71497	**-**	-	-
*Receptors shared with Green Hill G					

Green Hill G

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.1741	-0.66206	**60**	52.17671	-0.66128
2	52.17445	-0.66391	**61**	52.17696	-0.66139
3	52.17443	-0.66097	**62**	52.17703	-0.66112
4	52.17127	-0.6634	**63**	52.17938	-0.66038
5	52.17124	-0.66349	**64**	52.1796	-0.66304
6	52.1712	-0.66362	**65**	52.18029	-0.66696
7	52.17117	-0.66373	**66**	52.1797	-0.66239
8	52.17147	-0.6642	**67**	52.17988	-0.66265
9	52.17148	-0.6644	**68**	52.17402	-0.66125
10	52.17144	-0.66449	**69**	52.17537	-0.66061
11	52.17141	-0.6646	**70**	52.17979	-0.66329
12	52.17138	-0.6647	**71**	52.1738	-0.66604
13	52.17128	-0.66477	**72**	52.1739	-0.66625
14	52.17083	-0.66467	**73**	52.1739	-0.66633
15	52.17321	-0.68275	**74**	52.17389	-0.66642
16	52.17394	-0.66229	**75**	52.17389	-0.66651
17	52.17395	-0.66484	**76**	52.17389	-0.66659
18	52.1741	-0.66117	**77**	52.17388	-0.66668
19	52.17457	-0.66085	**78**	52.17388	-0.66677
20	52.17419	-0.66115	**79**	52.17388	-0.66686
21	52.17427	-0.66106	**80**	52.17388	-0.66694
22	52.17433	-0.66104	**81**	52.179	-0.68038
23	52.17476	-0.66082	**82**	52.17233	-0.68269
24	52.17504	-0.66072	**83**	52.17212	-0.68211
25	52.17515	-0.66068	**84**	52.17639	-0.68538
26	52.17551	-0.66105	**85**	52.17653	-0.68683
27	52.17587	-0.66066	**86**	52.17321	-0.68263
28	52.17593	-0.66068	**87**	52.17329	-0.6828
29	52.17604	-0.66067	**88**	52.17331	-0.68236
30	52.17609	-0.66069	**89**	52.17571	-0.66075
31	52.1762	-0.6608	**90**	52.17527	-0.66066
32	52.17625	-0.66082	**91**	52.17437	-0.66427
33	52.17637	-0.66087	**92**	52.17134	-0.66319
34	52.17641	-0.66089	**93**	52.19496	-0.68208
35	52.17653	-0.66095	**94**	52.17773	-0.69129
36	52.17657	-0.66097	**95**	52.17743	-0.69115
37	52.17089	-0.66644	**96**	52.17799	-0.6916
38	52.17104	-0.66638	**97**	52.18786	-0.6976
39	52.1712	-0.66621	**98**	52.18335	-0.692
40	52.17119	-0.66587	**99**	52.18386	-0.69141

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
41	52.17126	-0.66572	**100**	52.18859	-0.69231
42	52.17129	-0.66556	**101**	52.18883	-0.69513
43	52.17125	-0.66534	**102***	52.20174	-0.69108
44	52.17065	-0.66813	**103**	52.17771	-0.69062
45	52.17082	-0.66815	**104**	52.17665	-0.68638
46	52.17087	-0.66796	**105**	52.17946	-0.65986
47	52.17087	-0.66775	**106**	52.17957	-0.66014
48	52.17087	-0.66761	**107**	52.17988	-0.66265
49	52.17087	-0.66748	**108**	52.1739	-0.66633
50	52.17101	-0.66724	**109**	52.1739	-0.66515
51	52.1711	-0.66708	**110**	52.17383	-0.66556
52	52.17103	-0.6668	**111**	52.17382	-0.66545
53	52.17112	-0.6669	**112**	52.17653	-0.68683
54	52.17488	-0.66086	**113**	52.17233	-0.68269
55	52.17446	-0.66348	**114***	52.20014	-0.68033
56	52.17424	-0.6644	**115***	52.20076	-0.68208
57	52.17455	-0.66327	**116***	52.20039	-0.67964
58	52.17669	-0.66101	**117***	52.2017	-0.68961
59	52.17682	-0.66103	**118**	52.19498	-0.68295
*Receptors shared with Green Hill F					

Appendix B: Road Receptor Details

A4500

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.27058	-0.77102	**14**	52.27597	-0.74689
2	52.27092	-0.76956	**15**	52.27619	-0.74644
3	52.27137	-0.76689	**16**	52.27714	-0.74503
4	52.2723	-0.76333	**17**	52.27766	-0.74451
5	52.27264	-0.7619	**18**	52.27828	-0.74358
6	52.27299	-0.7603	**19**	52.27941	-0.74102
7	52.27353	-0.75801	**20**	52.28039	-0.73845
8	52.27376	-0.75675	**21**	52.28121	-0.73655
9	52.27428	-0.75345	**22**	52.28184	-0.73547
10	52.27478	-0.75074	**23**	52.28204	-0.73512
11	52.27512	-0.74942	**24**	52.28232	-0.73449
12	52.2755	-0.74816	**25**	52.28259	-0.73383
13	52.27577	-0.74732	**-**	-	-

B573

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.26537	-0.75881	**9**	52.26947	-0.75753
2	52.26597	-0.75807	**10**	52.27012	-0.758
3	52.26608	-0.75791	**11**	52.27052	-0.75842
4	52.2664	-0.75755	**12**	52.27117	-0.75931
5	52.26677	-0.75725	**13**	52.27175	-0.76025
6	52.26729	-0.75709	**14**	52.27261	-0.762
7	52.26787	-0.75704	**15**	52.27261	-0.762
8	52.2687	-0.75714	**-**	-	-

A509 (Site F)

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.24409	-0.67554	**17**	52.22488	-0.68174
2	52.2433	-0.67542	**18**	52.22447	-0.68218
3	52.24203	-0.67543	**19**	52.22381	-0.68273
4	52.24001	-0.67554	**20**	52.22327	-0.68308
5	52.2391	-0.6757	**21**	52.22265	-0.68338
6	52.23791	-0.67587	**22**	52.22212	-0.68353
7	52.23668	-0.67629	**23**	52.22152	-0.68362
8	52.23572	-0.67633	**24**	52.22071	-0.68364
9	52.23198	-0.67625	**25**	52.21987	-0.68344
10	52.22985	-0.67631	**26**	52.21422	-0.6819
11	52.22928	-0.67648	**27**	52.21144	-0.68138
12	52.22875	-0.67675	**28**	52.20802	-0.68137
13	52.22732	-0.67783	**29**	52.19996	-0.68271
14	52.22626	-0.67964	**30**	52.19662	-0.68299
15	52.22572	-0.68058	**31**	52.19597	-0.68312
16	52.22515	-0.68141	**-**	-	-

A509 (Site G)

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.20455	-0.68195	**12**	52.1876	-0.68458
2	52.19997	-0.68271	**13**	52.18702	-0.68503
3	52.19678	-0.68295	**14**	52.18647	-0.6856
4	52.19602	-0.68311	**15**	52.18525	-0.68696
5	52.1958	-0.6832	**16**	52.18475	-0.68759
6	52.19388	-0.68407	**17**	52.18186	-0.68847
7	52.19318	-0.68425	**18**	52.18076	-0.68873
8	52.19199	-0.68432	**19**	52.18037	-0.68882
9	52.19059	-0.68428	**20**	52.17824	-0.68918
10	52.18891	-0.68416	**21**	52.17446	-0.68984
11	52.18838	-0.68422			

A428

Receptor	Latitude (°)	Longitude (°)	Receptor	Latitude (°)	Longitude (°)
1	52.18876	-0.69997	**23**	52.17721	-0.66981
2	52.18835	-0.69782	**24**	52.17618	-0.66841
3	52.18819	-0.69698	**25**	52.17488	-0.66642
4	52.18809	-0.69641	**26**	52.1744	-0.66565
5	52.18784	-0.69534	**27**	52.17414	-0.66506
6	52.1875	-0.69399	**28**	52.17394	-0.66444
7	52.18687	-0.69211	**29**	52.17386	-0.66409
8	52.18627	-0.6906	**30**	52.17379	-0.66365
9	52.18578	-0.68959	**31**	52.17374	-0.663
10	52.18511	-0.68828	**32**	52.17376	-0.6616
11	52.18416	-0.68639	**33**	52.17375	-0.66143
12	52.18352	-0.68518	**34**	52.17371	-0.66128
13	52.18201	-0.68219	**35**	52.17364	-0.66122
14	52.18173	-0.68158	**36**	52.17326	-0.66113
15	52.18126	-0.68053	**37**	52.17318	-0.66112
16	52.18092	-0.67968	**38**	52.17302	-0.66101
17	52.1804	-0.67833	**39**	52.17291	-0.66087
18	52.18	-0.67728	**40**	52.1728	-0.66065
19	52.17963	-0.67611	**41**	52.17271	-0.66031
20	52.17898	-0.67346	**42**	52.17268	-0.66011
21	52.1785	-0.67216	**43**	52.17245	-0.65869
22	52.17794	-0.67096	**44**	52.17235	-0.65828

Appendix C: Aviation Receptor Details

Sydwell Aerodrome Air Traffic Control Tower

Receptor	Latitude (°)	Longitude (°)
ATCT	52.30208	-0.79077

Sywell Aerodrome Approach Path Observation Points

FP 14			FP 32		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.30993	-0.79436	OP1	52.30496	-0.78587
OP2	52.31247	-0.79855	OP2	52.30271	-0.78118
OP3	52.31499	-0.80273	OP3	52.30057	-0.77671
OP4	52.31756	-0.80696	OP4	52.29828	-0.77194
OP5	52.3201	-0.81116	OP5	52.29605	-0.76729
OP6	52.32264	-0.81535	OP6	52.29382	-0.76264
OP7	52.32517	-0.81954	OP7	52.29159	-0.758
OP8	52.32772	-0.82376	OP8	52.28937	-0.75337
OP9	52.33028	-0.82799	OP9	52.2871	-0.74864

FP 23			FP 05		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.30617	-0.78675	OP1	52.30281	-0.79378
OP2	52.30812	-0.78188	OP2	52.30079	-0.79865
OP3	52.31011	-0.77692	OP3	52.29878	-0.80352
OP4	52.31208	-0.77198	OP4	52.29676	-0.80843
OP5	52.31406	-0.76702	OP5	52.29474	-0.81332
OP6	52.31603	-0.7621	OP6	52.29271	-0.81822
OP7	52.31802	-0.75713	OP7	52.29069	-0.82311
OP8	52.31999	-0.7522	OP8	52.28867	-0.828
OP9	52.32201	-0.74716	OP9	52.28661	-0.83299

FP 21L			FP 03R		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.30786	-0.78937	OP1	52.30239	-0.79345
OP2	52.31117	-0.78687	OP2	52.29904	-0.79571
OP3	52.31444	-0.78441	OP3	52.2957	-0.79796
OP4	52.31771	-0.78192	OP4	52.29236	-0.80021
OP5	52.321	-0.77942	OP5	52.28902	-0.80246
OP6	52.32429	-0.77693	OP6	52.28568	-0.80472
OP7	52.32753	-0.77448	OP7	52.28233	-0.80697
OP8	52.33082	-0.77198	OP8	52.27899	-0.80922
OP9	52.33411	-0.7695	OP9	52.27566	-0.81147

FP 21R			FP 03L		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.30948	-0.78986	OP1	52.3025	-0.79506
OP2	52.31279	-0.78735	OP2	52.29919	-0.79744
OP3	52.31601	-0.7849	OP3	52.29587	-0.79981
OP4	52.31931	-0.78237	OP4	52.29257	-0.80219
OP5	52.32259	-0.77987	OP5	52.28926	-0.80456
OP6	52.32586	-0.77737	OP6	52.28595	-0.80693
OP7	52.32914	-0.77487	OP7	52.28263	-0.80931

FP 21R			FP 03L		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP8	52.33241	-0.77237	OP8	52.27932	-0.81169
OP9	52.33568	-0.76987	OP9	52.27601	-0.81405

Easton Maudit Airstrip Approach Path Observation Points

North Approach Path			South Approach Path		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.21575	-0.70312	OP1	52.21127	-0.69992
OP2	52.21891	-0.70591	OP2	52.20795	-0.69743
OP3	52.22212	-0.70873	OP3	52.20471	-0.69499
OP4	52.2253	-0.71153	OP4	52.20142	-0.69252
OP5	52.22848	-0.71433	OP5	52.19813	-0.69006
OP6	52.23164	-0.71711	OP6	52.19485	-0.6876
OP7	52.23485	-0.71994	OP7	52.19154	-0.68512
OP8	52.23802	-0.72273	OP8	52.18829	-0.68268
OP9	52.2412	-0.72553	OP9	52.185	-0.68022

William Pitt's Airstrip Approach Path Observation Points

FP 02			FP 20		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.29418	-0.76261	OP1	52.29723	-0.76068
OP2	52.29081	-0.76476	OP2	52.30064	-0.75882
OP3	52.28745	-0.76692	OP3	52.30408	-0.75695
OP4	52.28409	-0.76907	OP4	52.30751	-0.75509
OP5	52.28071	-0.77124	OP5	52.31096	-0.75321
OP6	52.27735	-0.77339	OP6	52.31438	-0.75135
OP7	52.27398	-0.77554	OP7	52.31781	-0.74949
OP8	52.27061	-0.77771	OP8	52.32123	-0.74763
OP9	52.26726	-0.77985	OP9	52.32467	-0.74576

Tower Farm Airstrip Approach Path Observation Points

East Approach Path			West Approach Path		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.25936	-0.65982	OP1	52.25972	-0.65157
OP2	52.25909	-0.6657	OP2	52.25999	-0.6457
OP3	52.25882	-0.67158	OP3	52.26026	-0.63982
OP4	52.25854	-0.67746	OP4	52.26053	-0.63394
OP5	52.25827	-0.68333	OP5	52.2608	-0.62806
OP6	52.258	-0.68921	OP6	52.26107	-0.62219
OP7	52.25772	-0.69509	OP7	52.26134	-0.61631
OP8	52.25745	-0.70096	OP8	52.26161	-0.61043
OP9	52.25718	-0.70684	OP9	52.26188	-0.60455

Pitsford Airstrip Approach Path Observation Points

FP 29			FP 11		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.31466	-0.86888	OP1	52.31611	-0.87539
OP2	52.31335	-0.86337	OP2	52.31742	-0.88089
OP3	52.31205	-0.85787	OP3	52.31872	-0.8864
OP4	52.31074	-0.85236	OP4	52.32002	-0.8919

FP 29			FP 11		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP5	52.30944	-0.84686	**OP5**	52.32133	-0.89741
OP6	52.30813	-0.84136	**OP6**	52.32263	-0.90291
OP7	52.30682	-0.83586	**OP7**	52.32393	-0.90842
OP8	52.30552	-0.83035	**OP8**	52.32524	-0.91393
OP9	52.30421	-0.82485	**OP9**	52.32654	-0.91943

Hold Farm Airstrip Approach Path Observation Points

East Approach Path			West Approach Path		
Observation Point	Latitude (°)	Longitude (°)	Observation Point	Latitude (°)	Longitude (°)
OP1	52.34304	-0.77974	**OP1**	52.34219	-0.78578
OP2	52.34381	-0.77397	**OP2**	52.34143	-0.79155
OP3	52.34458	-0.7682	**OP3**	52.34066	-0.79732
OP4	52.34534	-0.76242	**OP4**	52.33988	-0.80309
OP5	52.34611	-0.75665	**OP5**	52.33911	-0.80886
OP6	52.34688	-0.75088	**OP6**	52.33834	-0.81463
OP7	52.34765	-0.74511	**OP7**	52.33757	-0.8204
OP8	52.34842	-0.73934	**OP8**	52.3368	-0.82617
OP9	52.34918	-0.73357	**OP9**	52.33603	-0.83194

GREEN HILL
SOLAR FARM

Green Hill Solar Farm
EIA Scoping Report
Appendix 16: Electromagnetic Fields
Revision A

Prepared by: PagerPower

Date: July 2024

PINS reference: EN010170

PAGERPOWER
Urban & Renewables

High-Level Electromagnetic Field Assessment

Green Hill Solar Farm

July 2024

ADMINISTRATION PAGE

Job Reference:	12512B
Author:	Ayda Yates
Telephone:	01787 319001
Email:	ayda@pagerpower.com

Reviewed By:	James Plumb; Waqar Qureshi
Email:	james@pagerpower.com; waqar@pagerpower.com

Issue	Date	Detail of Changes
1	March 2024	Initial issue
2	May 2024	Consideration of the updated electrical design
3	June 2024	Minor amendments
4	July 2024	Minor amendments

Stour Valley Business Centre, Brundon Lane, Sudbury, CO10 7GB

T: +44 (0)1787 319001 E: info@pagerpower.com W: www.pagerpower.com

EXECUTIVE SUMMARY

Report Purpose

Pager Power has been retained to assess the potential electromagnetic fields generated by electrical equipment within a ground-mounted solar photovoltaic development with respect to safe levels for human exposure. The proposed development is located between Northampton and Wellingborough, Northamptonshire, England, and will include underground power cables, transformers, photovoltaic (PV) inverters, substations and Battery Energy Storage System (BESS)[1].

Emissions

All electrical equipment emits electric and magnetic radiation. Power cables produce both electric and magnetic fields which can potentially affect human health. Radiation from underground cables is generally less than radiation from overhead powerlines because emissions from adjacent conductors within a cable tend to cancel each other out. When assessing the impacts of overhead power lines, it is important to consider the impact of both electric and magnetic fields. Underground cables generally cause a negligible electric field above ground but can cause a significant magnetic field which is dependent on the current in the conductors.

Standards in the UK

The UK Policy on public exposure limits to EMF radiation is designed to comply with the 1998 ICNIRP (International Commission on the Non-Ionizing Radiation Protection) guidelines in terms of the 1999 EU Recommendation. In 2010 ICNIRP produced new guidelines but these have not yet been incorporated into UK Policy. The public exposure limits in UK policy define reference levels for electric and magnetic fields. Where field levels exceed these reference levels in significantly occupied spaces, further investigation is warranted. Further information can be found in section 3 of the report.

Overall Conclusion

Maximum levels of electromagnetic radiation from the proposed underground cables are predicted to be below ICNIRP reference levels for magnetic fields.

Radiation from the transformers and PV inverters will be even less significant because the equipment is typically housed in protective enclosures and the transformers and PV inverters will be CE marked, meaning they should not generate or be affected by electromagnetic disturbance.

Additionally, radiation from the substations and BESS will not be significant as they will be located at least 100m from any surrounding dwellings and workplaces. For users of Public Rights

[1] The maximum voltages and potential locations for all underground cables, transformers/PV inverters and BESS have been considered to account for a worst-case scenario in the absence of a finalised electrical design of the site.

of Way (PRoWs), any radiation effects would likely be minimal as these are not continually occupied, rather they are moving receptors, as opposed to residential dwellings and workplaces.

Conclusions – 11kV to 400kV Underground Cables

The maximum magnetic field produced by the proposed underground cables (ranging from 11kV to 400kV) is predicted to be 96.17 micro-Tesla. Therefore, the magnetic field levels are below the reference level from the public exposure limits in UK policy (100 micro-Tesla). External electric fields are not produced by underground cables so have not been considered.

The electrical design is considering up to four high-voltage cables along certain sections of the cable route. This could lead to a cumulative effect on the resulting magnetic field intensity. As the voltages and number of cables within the cable trenches are yet to be confirmed for the Scheme, there is insufficient information to prove that the reference limits would not be exceeded. Further consideration is recommended once these details are confirmed.

Conclusions - Transformers, and PV Inverters

Notable sources of radiation other than the cables will be the transformers/PV inverters positioned across the proposed development.

The transformers and PV inverters will be 'CE' marked. CE marking indicates that a product has been assessed by the manufacturer and deemed to meet European Union safety, health and environmental protection requirements. CE marking requirements have been adopted and extended indefinitely in Great Britain. The CE marking should ensure that electrical and electronic equipment does not generate, or is not unintentionally affected by, electromagnetic disturbance.

Furthermore, the transformers and PV inverters are predicted to produce fields at a lower level than that of underground cables because the equipment is typically housed in protective enclosures.

Conclusions - Substations and BESS

The Scheme will connect to Grendon Substation (an existing National Grid distribution substation). According to UK regulation, the substation conforms with the applicable exposure limitations for the general public, and the field from the equipment inside a substation does not extend far, if at all, outside the perimeter fence. Additionally, the Scheme will include connection to up to two 400kV substations, along with numerous 132kV and 33kV substations throughout the Scheme. These substations are expected to be 'CE' marked and housed in protective enclosures, and thus predicted to produce fields at a lower level than that of underground cables.

The BESS contributes to the electromagnetic radiation produced by the proposed development. The favoured site for the BESS is Green Hill BESS surrounding Grendon Substation, which encompasses three potential locations. When evaluating all three proposed BESS locations surrounding Grendon Substation, the closest dwelling is over 175m away. Furthermore, other potential sites under consideration for the BESS are Sites A, B, C, E, F, and G, and the location of the BESS within these sites will be located no closer than 100m from any dwelling or workplaces. For users of PRoWs, any radiation effects would likely be minimal as these are not continually occupied, rather they are moving receptors, as opposed to residential dwellings and workplaces.

As electromagnetic radiation levels reduce with increased distance, all nearby dwellings and work places are expected to be situated at a safe distance from the BESS installations.

LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABOUT PAGER POWER

Pager Power is a dedicated consultancy company based in Suffolk, UK. The company has undertaken projects in 59 countries internationally.

The company comprises a team of experts to provide technical expertise and guidance on a range of planning issues for large and small developments.

Pager Power was established in 1997. Initially the company focus was on modelling the impact of wind turbines on radar systems. Over the years, the company has expanded into numerous fields including:

- Renewable energy projects.
- Building developments.
- Aviation and telecommunication systems.

Pager Power prides itself on providing comprehensive, understandable, and accurate assessments of complex issues in line with national and international standards. This is underpinned by its custom software, longstanding relationships with stakeholders and active role in conferences and research efforts around the world.

Pager Power's assessments withstand legal scrutiny and the company can provide support for a project at any stage.

1 INTRODUCTION

1.1 Purpose of the Study

Pager Power has been retained to assess the potential electromagnetic fields generated by electrical equipment within a fixed ground-mounted solar photovoltaic development, with respect to safe levels for human exposure. The proposed development is located between Northampton and Wellingborough, Northamptonshire, England, and will consist of underground power cables, transformers, photovoltaic (PV) inverters, substations and Battery Energy Storage System (BESS)[2].

1.2 Proposed Development Site Areas

Figure 1 below shows the site areas (dark blue polygons) and cable search area (light blue polygons) for the proposed development.

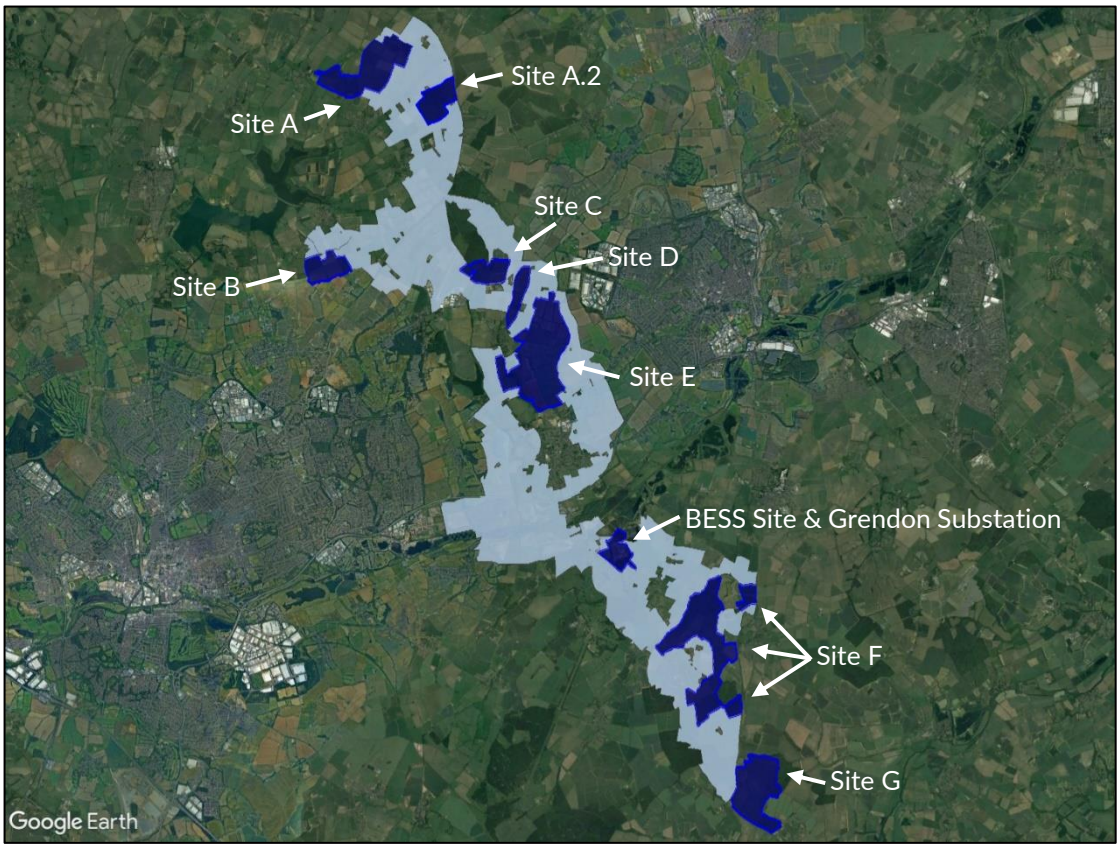


Figure 1 *Proposed development site areas*

[2] The maximum voltages and potential locations for all underground cables, transformers/PV inverters and BESS have been considered to account for a worst-case scenario in the absence of a finalised electrical design of the site.

1.3 Assessed Infrastructure

The known locations of assessed infrastructure are shown in Figure 2[3] below:

- Maximum proposed solar array footprint (red polygons);
- All proposed underground cable routes (blue area denotes overall Cable Route Search Area within which the underground cables would be located).

Figure 2 is intended to provide an overview of the environment and infrastructure.

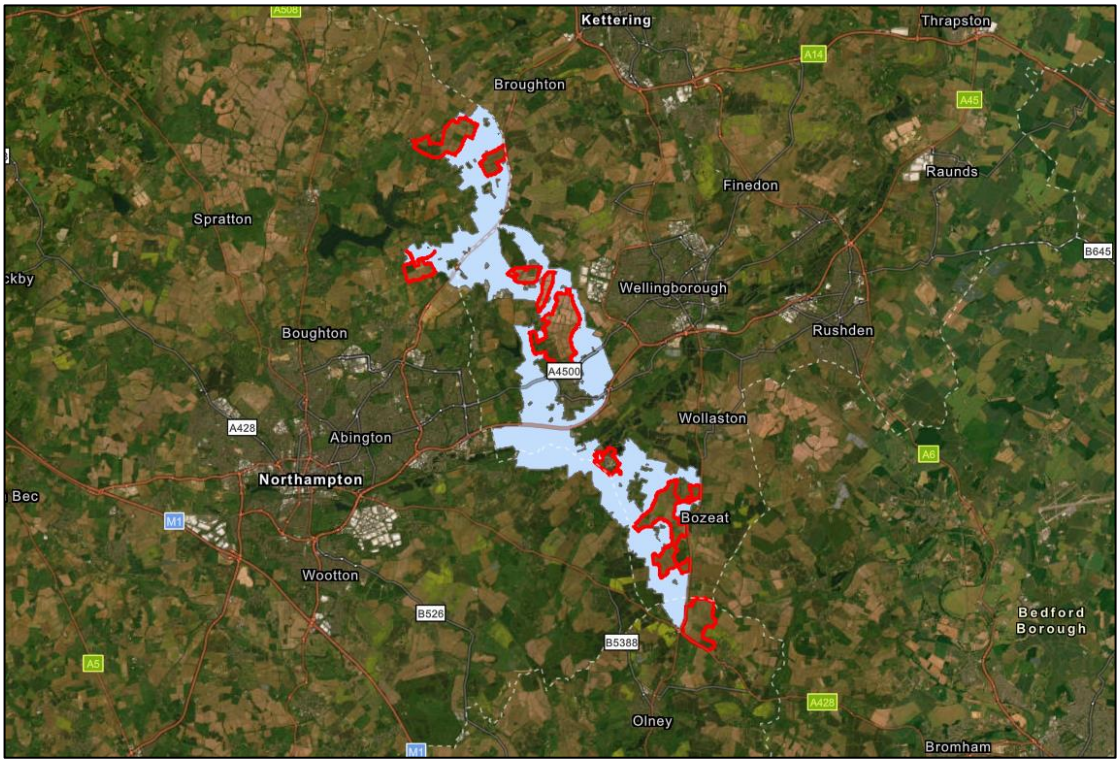


Figure 2 *Assessed infrastructure locations*

The technical information considered within this assessment is presented in Table 1 below and on the following page. Information in italics is to be confirmed and are subject to change as design progresses. This table should be read in conjunction with Chapter 4 Scheme Description of the Scoping Report.

Assessed Infrastructure Technical Information		
Underground cables	Voltages	11kV to 400kV cables
	Locations	Within the search area highlighted in Figure 2

[3] Source: https://experience.arcgis.com/experience/a5385e9a22da4bcc9b63ac5d809caca1/

Assessed Infrastructure Technical Information			
	Minimum Depth	0.75m - subject to design and ground conditions	
Substations	Voltages	Up to two 400kV substations, and a number of 132kV and 33kV substations	
	Proposed locations	33kV	Site C, D and E[4]
		132kV	Sites A, A.2, B and G *Site F*
		400kV	Existing Grendon Substation *Sites C, E or F and BESS site*
BESS	Proposed locations	*Sites A, B, C, E, BESS Site (preferred), F or G*	
Conversion Units (Transformers and PV inverters)	Proposed locations	*Positioned across the proposed development*	

Table 1 *Assessed infrastructure technical information*

[4] The locations of 33kV substations will be determined by the final location of the 400kV substation. Site C and/or Site E will require 33kV substations based on which site does not house the 400kV substation.

2 TECHNICAL BACKGROUND

2.1 Emissions

All electrical equipment emits electric and magnetic radiation. Power cables produce both electric and magnetic fields which can potentially affect human health. Radiation from underground cables is generally less than radiation from overhead lines because emissions from adjacent conductors within a cable tend to cancel each other out. When assessing the impacts of overhead powerlines, it is important to consider the impact of both electric and magnetic fields.

Underground cables generally cause a negligible electric field above ground but can cause a significant magnetic field which is dependent on the current in the conductors.

2.2 Electromagnetism

The movement of electric charge causes electric and magnetic fields to be produced in the space surrounding the charge. Human exposure to such fields can cause health problems if persistent and/or they are of high strength. The magnitude of the effects is dependent on both the field strength and the exposure time.

2.3 Health Concerns – Potential Effects

The potential effects on human health caused by time-varying magnetic fields, such as those generated by AC[5] cables, are due to induced current on functions of the central nervous system. There are various international bodies which provide maximum safe exposure levels to time varying electromagnetic fields.

Various sources of information relating to safe exposure levels have been reviewed as part of this study.

The UK Policy on public exposure limits to EMF radiation is designed to comply with the 1998 ICNIRP (International Commission on the Non-Ionizing Radiation Protection) guidelines in terms of the 1999 EU Recommendation. In 2010 ICNIRP produced new guidelines but these have not yet been incorporated into UK Policy. The public exposure limits in UK policy define reference levels for electric and magnetic fields. Where field levels exceed these reference levels in significantly occupied spaces, further investigation is warranted.

Another relevant resource consulted is the EMFs.info webpage, where the UK electricity industry have collected the relevant studies pertaining to safe limits on exposure in the UK and elsewhere in the world. The relevant sections are analysed in the next chapter.

2.4 Radiation from Home Electrical Equipment

The World Health Organization (WHO) publishes data regarding electromagnetic fields including the following typical levels for home electrical equipment, shown in Table 1 below.

[5] Alternating Current

Appliance	Electric field strength (Volts per metre)	Magnetic field strength (micro-Tesla) (at 1 metre)
Hair Dryer	80	0.01 – 7
Iron	120	0.12 – 0.3
Vacuum Cleaner	50	2 – 20
Refrigerator	120	0.01 – 0.25
Television	60	0.04 - 2

Table 2 *Typical emissions from home electrical equipment*

2.5 Radiation Reduction with Distance

Radiation levels reduce with distance which means, for example, the typical magnetic field from a vacuum cleaner reduces from 800 micro-Tesla to 2 micro-Tesla when the separation distance increases from 3 centimetres to 100 centimetres.

This means radiation levels from the cables, transformers, PV inverters, substations and BESS will tend to reduce with distance in any direction – including towards a receptor.

3 OVERVIEW OF ELECTROMAGNETIC FIELDS

3.1 Overview

The Electricity Networks Association[6] provides a comprehensive overview of electromagnetic fields (EMFs) and the issues associated with these on their webpage[7]. Regarding health issues caused by EMFs they state the following:

However, there are suggestions that magnetic fields may cause other diseases, principally childhood leukaemia, at levels below these limits. The evidence for this comes from epidemiology studies, which have found a statistical association - an apparent two-fold increase in leukaemia incidence, from about 1 in 24,000 per year up to 1 in 12,000 per year, for the children with the top half percent of exposures. The evidence is strong enough for magnetic fields to be classified by the World Health Organization as "possibly carcinogenic". But because these studies only show statistical associations and do not demonstrate causation, and because the evidence from the laboratory is against, the risk is not established, it remains only a possibility.

3.2 Exposure limits in the UK

As set out in the previous section, the limits in the UK come from the 1998 ICNIRP guidelines. The original guidance in 1999 specified:

i) Basic Restrictions

These are the levels at which radiation is potentially harmful to humans. This is a current density[8] given in mA m^{-2} (milliamps per metre squared).

ii) Reference Level (Investigation Level)

Provided for practical exposure assessment purposes to determine whether the basic restrictions are likely to be exceeded. Compliance with the reference level will ensure compliance with the relevant basic restriction.

iii) Field Actually Required

This is the field strength at which the basic restriction is likely to be exceeded.

The values for the above stated in the ICNIRP 1998 paper are shown in Table 3 on the following page. These are the public exposure values, not the occupational exposure values – the former is more conservative than the latter by a factor of five.

[6] This is an industry body for the companies which run the UK and Ireland's energy networks. The group comprises 14 members including National Grid.

[7] www.emfs.info

[8] Current density is the amount of electric current flowing through a unit area.

ICNIRP 1998 – Public Exposure Limits				
Basic Restriction (mA m^{-2})	Magnetic Fields Reference Level (µT)	Electric Fields Reference Level (kV m^{-1})	Magnetic Field Actually Required to Exceed Basic Restriction (µT)	Electric Field Actually Required to Exceed Basic Restriction (kV m^{-1})
2	100	5	360	9

Table 3 *ICNIRP Exposure Limits 1998*

The levels in Table 2 will be considered within this analysis.

3.3 Height Above Ground Used for Testing Compliance

EMFs.info specifically states the following with regard to the height to be used to test compliance:

The standard height for measuring fields, especially from power lines, is 1 m above ground level ... This isn't just because it's a convenient round number, it's because roughly half way up the height of a standing person is actually the height that gives the best approximation to the induced current in the body.

3.4 Safe Levels – Summary

The values of interest are those shown in Table 3 above. Effectively, this means that in locations of significant exposure time, such as residences, levels should be below:

- 100µT (magnetic fields).
- 5kV m^{-1} (electric fields).

Values exceeding the limits above, at one metre above ground level, would suggest that further investigation is required.

4 TECHNICAL ASSESSMENT

4.1 Field Levels – Underground Cables

Field level data from various cable configurations have been sourced from EMFS.info. The data below and on the following page shows the magnetic fields for 400kV cables, which represent the maximum assumed voltage for underground cables in the proposed development, considering a worst-case scenario. Typical values for magnetic fields are approximately a quarter of these maximum values[9]. The assessment accounts for varying cable voltages in the proposed development, with the analysis based on the maximum and shallowest depths to adopt a conservative approach. Maximum field data has been used where possible to provide a more conservative assessment. It's important to note that there are no electric fields above ground associated with underground cables. The relevant chart is shown in Figure 3 below. Table 4 on the following page provides the associated indicative numerical values at set distances.

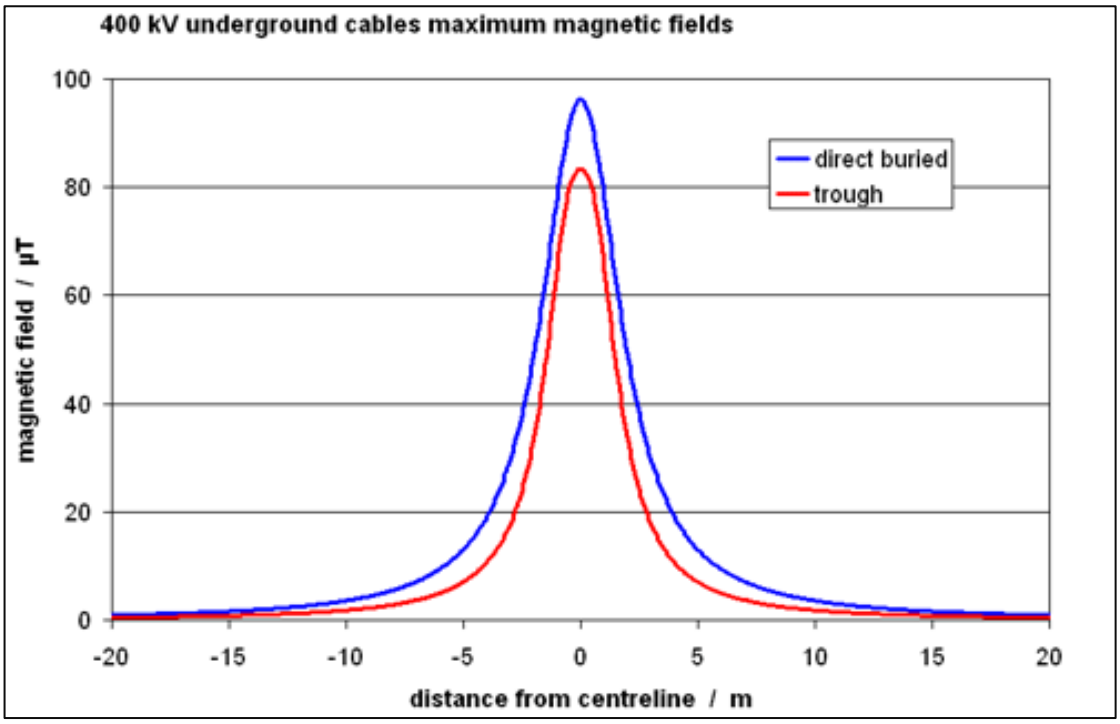


Figure 3 *Maximum magnetic fields associated with 400kV underground cables*

[9] Source: https://www.emfs.info/sources/overhead/specific/400-kv/

Distance from Centreline (m)	Magnetic Field (trough double circuit cable with 0.13m spacing and 0.3m depth)	Magnetic Field (direct buried single cable with 0.5m spacing and 0.9m depth)[10]
0	83.30 micro Teslas	96.17 micro Teslas
5	7.01 micro Teslas	13.05 micro Teslas
10	1.82 micro Teslas	3.58 micro Teslas
20	0.46 micro Teslas	0.92 micro Teslas

Table 4 *Maximum magnetic field levels for an underground 400kV cable (source: EMFS.info)*

4.2 Recommended Minimum Clearance Distances

The recommended minimum clearance distances for underground cables based on the public exposure limits previously referenced in this report for magnetic and electric fields are presented in Table 5 below.

The dataset provided maximum values and typical values for the configurations that have been evaluated – in all cases the 'maximum' option has been chosen where possible in order to remain conservative.

Type of Line	Recommended minimum Clearance Distance (m)	Estimated Maximum Magnetic Field (micro-Tesla)	Estimated Maximum Electric Field (kV/m)
400kV underground cable	None	96.17 (below 100 limit)	-

Table 5 *Recommended minimum clearance distances for the 400kV underground cables*

This shows that clearance distances are not required for any proposed underground cables. The table highlights that the maximum fields produced by the cables are below the acceptable exposure limit and significant effects upon human health are not predicted.

[10] This cable was used for the assessment in the following sections.

4.3 Radiation from Other Sources

4.3.1 Transformers and PV Inverters

Notable sources of radiation, other than the underground cables, will include the transformers and PV inverters positioned across the proposed development. As of the time of this report, the specific locations for these have not been finalised.

The transformers and PV inverters should be CE marked. CE marking indicates that a product has been assessed by the manufacturer and deemed to meet European Union safety, health and environmental protection requirements[11]. CE marking requirements have been adopted and extended indefinitely in Great Britain. This will be confirmed prior to installation.

In this case, the relevant EU Directive for CE marking is[12] Electromagnetic Compatibility Directive 2014/30/EU, which should ensure that electrical and electronic equipment should not generate, or be affected by, electromagnetic disturbance.

Additionally, the transformers and PV inverters are also predicted to produce fields at a lower level than that of underground cables as the equipment will be housed in a protective enclosures.

4.3.2 Substations and BESS

Other notable sources of radiation associated with the proposed development include the substations and BESS. The favoured site for the BESS is Green Hill BESS Site surrounding Grendon Substation, which encompasses three potential locations. Other potential sites under consideration for the BESS are Sites A, B, C, E, F, and G.

Furthermore, as detailed in Table 1 within Section 1.3, the Scheme will include connection to Grendon Substation (an existing National Grid substation) and up to two 400kV substations, along with numerous 132kV and 33kV substations throughout the Scheme.

A detailed overview of the potential BESS locations (orange) and Grendon Substation (green) within BESS Site can be found in Figures 4 to 7 on the following pages. The light blue shaded polygons represent the cable search area for the proposed development.

[11] Source: https://europa.eu/youreurope/business/product-requirements/labels-markings/ce-marking/index_en.htm
[12] Source: https://ec.europa.eu/growth/sectors/electrical-engineering/emc-directive_en

Figure 4 *Proposed locations for the BESS at the BESS Site around Grendon Substation*

The minimum horizontal distance between BESS 1 and any dwelling is approximately 400m, 175m between BESS 2 and any dwelling, and 400m between BESS 3 and any dwelling. This is illustrated in Figures 5 to 7 on the following pages. Within these figures, the square icons show the positions of existing pylons. Based on a desk-based review of imagery, these are likely to be 400kV pylons. 400kV overhead cabling would produce more significant electric and magnetic fields than any type of electrical infrastructure proposed as a part of this development.

Figure 5 *Minimum distance between BESS 1 and the nearest dwelling*

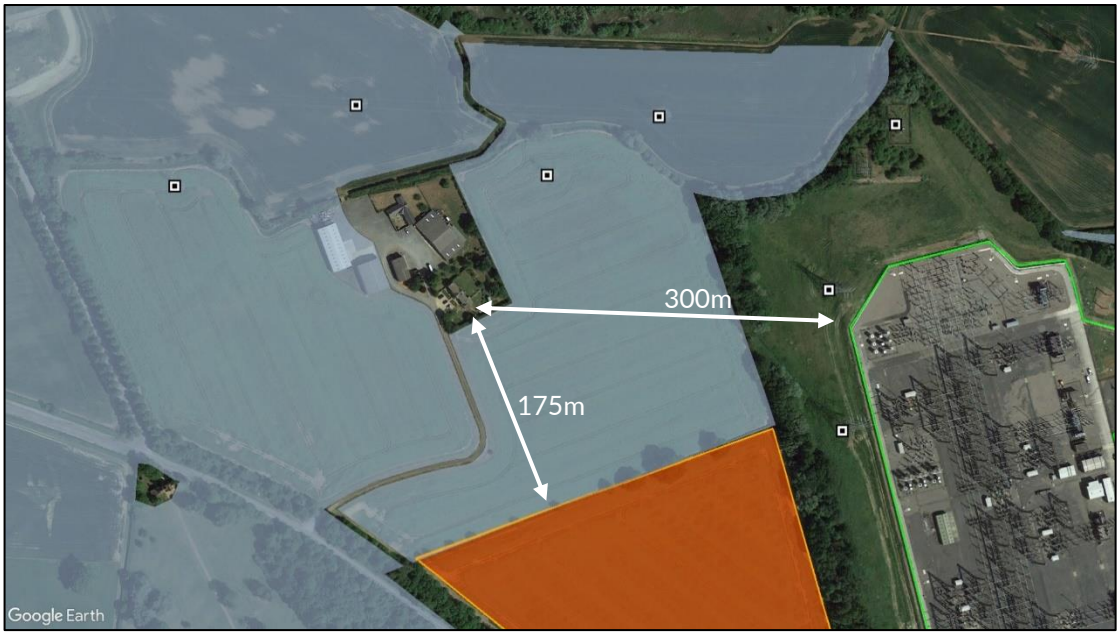


Figure 6 *Minimum distance between BESS 2 and the nearest dwelling, as well as the relative location of Grendon Substation*

Figure 7 *Minimum distance between BESS 3 and the nearest dwellings*

The most significant source of radiation for these dwellings is the existing overhead lines[13] connecting to Grendon Substation. These dwellings are already considerably close to the existing substation and are in even closer proximity to the existing overhead power cables, which are a much more significant source of radiation. Additionally, the magnetic fields from the proposed underground cable routes have been assessed accordingly within this report for the nearest dwelling locations.

Similarly to the transformers and PV inverters, the additional and alternative proposed substations, ranging from 33kV to 400kV, are expected to be 'CE' marked. CE marking should ensure that electrical and electronic equipment does not generate, or is not unintentionally affected by, electromagnetic disturbance. The substations are also predicted to produce fields at a lower level than that of underground cables because the equipment is expected to be housed in protective enclosures.

Significant radiation is not predicted from the existing substation, proposed substations and BESS because:

- Grendon Substation is more than 300 metres from any dwelling and would be required to comply with the relevant exposure limits for the general public, and the electromagnetic fields from the equipment inside a substation do not extend far if at all outside the perimeter fence.
- The potential BESS locations in Green Hill BESS are all more than 175 metres from any dwelling, meaning that all dwellings are at a safe distance as electromagnetic radiation levels reduce as the separation distance increases.

[13] Understood to be 400kV

- The developer has confirmed that any additional and alternative proposed substations and BESS locations will be located no closer than 100m to any nearby residential dwelling and workplaces.
- For users of Public Rights of Way (PRoWs), any radiation effects would likely be minimal as these are not continually occupied, rather they are moving receptors, as opposed to residential dwellings and workplaces.

4.4 Comparative Assessment

The maximum magnetic field produced by household appliances like vacuum cleaners can reach up to 50 micro-Tesla[14]. It would follow that appliances with higher voltages would generate stronger magnetic fields. For instance, the proposed underground cables are projected to produce a maximum magnetic field of 96.17 micro-Tesla. While this value is notably higher than that of household appliances, it remains within acceptable exposure limits. Notably, the magnetic field strength is expected to drop to approximately 13 micro-Tesla just 5 meters from the source for 400kV cables less than 1 meter deep; a value even less than that of a vacuum cleaner. With the confirmed depth of the high voltage 400kV underground cables being around 1.2 meters for the proposed development, a likely reduction in the strength of the magnetic field is predicted.

Moreover, the transformers and PV inverters will produce magnetic fields at levels lower than the underground cables.

4.5 Cumulative Effects

When assessing the cumulative effects of electromagnetic fields, the worst case is based upon the addition of source a and source b; however, it is important to note that this is only true for magnetic fields that are exactly in line. When the electromagnetic fields are not in line, the sum of these is less than 'a+b'.

For the purpose of this assessment the worst case has been calculated i.e. based upon 'a+b'. As there are no proposed overhead powerlines to consider for the proposed development, there are no cumulative effects to assess of this regard.

As discussed in Section 4.3, the transformers, PV inverters, substations and BESS produce smaller magnetic fields than that of the underground cables, thus, considering all sources of radiation and their relative locations, it is predicted that the cumulative magnetic and electric fields are likely to be below the acceptable exposure limits.

The cumulative effects are not significantly impacted by the use of household items. Electrical household appliances will add to the overall exposure of electromagnetic fields; however, these levels will still remain below the recommended exposure limit, due to the lower voltages of the appliances, and are not used constantly, providing only a temporary addition to the resultant electromagnetic field levels.

[14] Source: https://www.nationalgrid.com/electricity-transmission/document/141896/download#:~:text=Normally%20these%20underground%20cables%20will,do%20not%20emit%20electric%20fields

It is not expected that there will be any significant cumulative effects with other known solar schemes. This is because of the substantial distances between the developments and the absence of any known possibility for high-voltage cables to overlap.

The electrical design is considering up to four high-voltage cables along certain sections of the cable route. This could lead to a cumulative effect on the resulting magnetic field intensity. As the voltages and number of cables within the cable trenches are yet to be confirmed for the Scheme, there is insufficient information to prove that the reference limits would not be exceeded. Further consideration is recommended once these details are confirmed.

5 CONCLUSIONS

5.1 11kV to 400kV Underground Cables

The maximum magnetic field produced by the proposed underground cables (ranging from 11kV to 400kV) is predicted to be 96.17 micro-Tesla. Therefore, the magnetic field levels are below the reference level from the public exposure limits in UK policy (100 micro-Tesla). External electric fields are not produced by underground cables so have not been considered.

The electrical design is considering up to four high-voltage cables along certain sections of the cable route. This could lead to a cumulative effect on the resulting magnetic field intensity. As the voltages and number of cables within the cable trenches are yet to be confirmed for the Scheme, there is insufficient information to prove that the reference limits would not be exceeded. Further consideration is recommended once these details are confirmed.

5.2 Transformers, and PV Inverters

Notable sources of radiation other than the cables will be the transformers/PV inverters positioned across the proposed development.

The transformers and PV inverters should be 'CE' marked. CE marking indicates that a product has been assessed by the manufacturer and deemed to meet European Union safety, health and environmental protection requirements. CE marking requirements have been adopted and extended indefinitely in Great Britain. The CE marking should ensure that electrical and electronic equipment does not generate, or is not unintentionally affected by, electromagnetic disturbance.

The transformers and PV inverters are also predicted to produce fields at a lower level than that of underground cables because the equipment is typically housed in protective enclosures.

5.3 Substations and BESS

The Scheme will connect to Grendon Substation (an existing National Grid distribution substation). According to UK regulation, the substation conforms with the applicable exposure limitations for the general public, and the field from the equipment inside a substation does not extend far, if at all, outside the perimeter fence. Additionally, the Scheme will include connection to up to two 400kV substations, along with numerous 132kV and 33kV substations throughout the Scheme. These substations are expected to be 'CE' marked and housed in protective enclosures, and thus predicted to produce fields at a lower level than that of underground cables.

The BESS contributes to the electromagnetic radiation produced by the proposed development. The favoured site for the BESS is Green Hill BESS surrounding Grendon Substation, which encompasses three potential locations. When evaluating all three proposed BESS locations surrounding Grendon Substation, the closest dwelling is over 175m away. Furthermore, other potential sites under consideration for the BESS are Sites A, B, C, E, F, and G, and the location of the BESS within these sites will be located no closer than 100m from any dwelling or workplaces. For users of PRoWs, any radiation effects would likely be minimal as these are not continually

occupied, rather they are moving receptors, as opposed to residential dwellings and workplaces. As electromagnetic radiation levels reduce with increased distance, all nearby dwellings and work places are expected to be situated at a safe distance from the BESS installations.

PAGERPOWER

Urban & Renewables

Pager Power Limited
Stour Valley Business Centre
Sudbury
Suffolk
CO10 7GB

Tel: +44 1787 319001 **Email:** info@pagerpower.com **Web:** www.pagerpower.com

GREEN HILL
SOLAR FARM

Green Hill Solar Farm

EIA Scoping Report

Appendix 18: Socio-Economics, Tourism and Recreation

Revision A

Prepared by: Lanpro Services

Date: July 2024

PINS reference: EN010170

Contents

18.1 Introduction

18.1.1 For the purposes of assessing socio-economic, tourism and recreation effects, the Scheme – as defined at paragraph 1.1.1 of the EIA Scoping Report – are considered functionally and geographically in their entirety. The geographic extents of the Scheme, consisting of the Sites and Cable Route Search Area, are set out on the Location Plan at **Figure 3.1** and in more detail in **Figures 3.1.1-3.1.8.**

18.2 Socio-Economic Baseline Conditions

Resident Population

18.2.1 The Assessment Impact Area, which comprises the authority areas of Bedford Borough, Milton Keynes City, North Northamptonshire, and West Northamptonshire, had a combined population of 1,257,500 in 2021 (Ref 1). The proportion per authority area is as follows:

- Bedford: 185,200 – 14.7%
- Milton Keynes: 287,100 – 22.8%
- North Northamptonshire: 359,500 – 28.6%
- West Northamptonshire: 425,700 – 33.9%

18.2.2 The population of the Assessment Impact Area is approximately 2.2% of the population of England, and 1.9% of the population of the United Kingdom (Ref 2, Ref 3).

18.2.3 National population projections estimate that the population of the United Kingdom will grow by approximately 3.8% between 2021 and 2028 (Ref 4), the projected earliest construction commencement date. Applying this assumption to the Assessment Impact Area, the population is likely to be approximately 1,305,000. The Scheme is proposed to operate for up to 60 years, with the proposed date of decommissioning of 2089 (for the purpose of this assessment). From 2021-2089, the national population is estimated to grow by 17.9%.

18.2.4 The age and sex demographic profile of the Assessment Impact Area will be detailed further in the ES, as will the projected changes to the demographic profile at the assessment area level and at the national level up to the end of the construction phase of the Scheme (estimated as up to 2031).

18.2.5 A baseline profile of population health and wellbeing is included in **Chapter 19: Human Health and Wellbeing** of this EIA Scoping Report.

Deprivation

18.2.6 The Indices of Multiple Deprivation 2019 provides the most up-to-date information regarding measures of population deprivation across England. The Assessment Impact Area falls across a total of nine former district areas that were used for assessment in 2019. Each area has the following rank of the 317 authority areas (where "1st" is the most deprived area in England) (Ref 5):

- Bedford – 156th
- Milton Keynes – 172nd
- North Northamptonshire:
  - Corby – 70th
  - Wellingborough – 124th
  - Kettering – 161st
  - East Northamptonshire – 226th
- West Northamptonshire:

- Northampton – 105th
- Daventry – 243rd
- South Northamptonshire – 312th

18.2.7 The population of the Assessment Impact Area is more likely than the national average to be deprived of access to suitable education and skills attainment, and are more likely than the national average to have barriers to accessing suitable housing and services. Some parts of the Assessment Impact Area are also at risk of being more deprived than the national average in relation to health and crime, particularly within more urban areas.

18.2.8 Whilst there are significant deprivation inequalities present within the Assessment Impact Area, the Scheme itself and the majority of its Cable Route Search Area fall within Lower Super Output Areas that are in the 40% least deprived neighbourhoods in England (Ref 6).

Skills and Qualification Attainment

18.2.9 The qualification attainment rate within the Assessment Impact Area at the time of the December 2021 Annual Population Survey (Ref 7) indicated a significant variance in skills and qualification between the subject local authority areas. The proportion of the population of ages 16-64 years old achieving no qualifications is between 4.3-5.4%. This compares favourably to the UK national average of 6.8%. However, the Assessment Impact Area contains significant variation in attainment of NVQ Level 4 and higher qualification rates This ranges from 29.4% in North Northamptonshire, up to 49.5% in Bedford, with an overall rate of 36.0%. This compares overall poorly to the UK national average rate of 43.5%. Generally, Bedford and Milton Keynes perform at or better than the national average, whilst North and West Northamptonshire both perform significantly worse in attainment of higher qualifications.

Employment and Economic Activity

18.2.10 The economically active population is defined as the members of the working age (16-64 year-old) population being in employment, and those who are seeking employment and are able for work. Economically inactive members of a population are predominantly categorised by retirement, those in full-time education not seeking employment, full-time carers of family members, and long-term sick and disabled people.

18.2.11 The September 2023 Annual Population Survey (Ref 8) indicates that the Assessment Impact Area has an economic activity rate of 81.1%, which is largely consistent across the four constituent authority areas (range from 80.7-81.6%). The overall area figure compares favourably to national rates (78.7%). Related to this, the employment rate of 16-64 year olds ranges from 77.2-79.0% across the Assessment Impact Area, totalling a labour market of 577,900 workers (78.1% of 16-64 year old population). This also compares favourably to the national average of 75.7%.

18.2.12 Of the economically active population, the September 2023 Annual Population Survey estimates a total of 22,900 people are unemployed within the Local Impact Area. This equates to 3.8% of the economically active population, which is consistent with the UK national rate of 3.8%. However, unemployment is uneven across the four authority areas, with North Northamptonshire (2.0%) and Milton Keynes (3.0%) performing significantly better than Bedford (4.9%) and West Northamptonshire (5.3%). Local and national trends point to a rise in unemployment over the last 12 months. A full review of trends in economic activity and unemployment at the local and national scale is likely to be required in the ES.

18.2.13 For residents within the Assessment Impact Area, the median annual gross salary for full-time workers (in 2023) was approximately £34,200. This is marginally lower than that of the UK of £35,000. There is however some considerable level of difference within the

Assessment Impact Area, with the median annual gross salary for residents in North Northamptonshire being some £5,000 less than those in Milton Keynes (Ref 9).

Working Population

18.2.14 The workplace population of the Assessment Impact Area was 634,600 in 2022 (Ref 10), some 8.7% greater than the population of residents in employment of 583,900 in December 2022 (Ref 11). This therefore demonstrates a net inflow of people to the Assessment Impact Area travelling for work.

18.2.15 Commuting data has not been collected due to the absence of up-to-date reliable baseline data. This is predominantly due to the Census 2021 being undertaken during the COVID-19 pandemic, during which official government guidance was to work from home where possible. As such, this data is unlikely to be reflective of the current (2024) conditions, nor those anticipated during the Scheme's construction (estimated 2027-2029).

18.2.16 For the workplace population within the Assessment Impact Area, the median annual gross salary for full-time workers (in 2023) was approximately £35,200. This is marginally higher than that of the UK of £35,000. As for residents, there are some considerable level of difference within the Assessment Impact Area, with the median annual gross salary for workers in North Northamptonshire earning some £8,700 less than those in Milton Keynes (Ref 12).

Business Sectors

18.2.17 The 2022 Business Register and Employment Survey (Ref 10) shows the largest business sector by percentage of employed workforce in the Assessment Impact Area is health (group Q) (12.4%), followed by transport and storage (group H) (9.6%), and business administration & support services (group N) (9.1%). The local transport and storage sector is significantly larger by business proportion than the national level, whilst the professional, scientific & technical (group M) sector is significantly smaller. Most other sectors are relatively consistent with national trends. This is not necessarily consistent across the Assessment Impact Area, with some significant outliers including the manufacturing industry in North Northamptonshire (significantly larger than average), and both the health and agriculture sectors in Milton Keynes (significantly smaller than average).

18.2.18 The South East Midlands Local Enterprise Partnership (SEMLEP) Local Industrial Strategy (LIS) (Ref 13) provides a strategic industrial and business context which has helped to form the evidence base for economic policy in the Assessment Impact Area. The LIS identifies aerospace and engineering as a key target business sector for ongoing development, whilst setting out key ambitions for promoting innovation, employment skill provision, productivity and sustainability.

18.3 Tourism and Recreation Baseline Conditions

18.3.1 The Local Impact Area falls across a number of authority areas, each with their own economic strategies for tourism and visitors. The Northamptonshire visitor economy is supported by key attractions which include heritage features such as Rockingham Castle in the 'county of spires and squires', country parks, the River Nene and Grand Union Canal, and motorsports venues at Silverstone, and Santa Pod Raceway in neighbouring Bedford Borough. These attractions brought over 18 million visitors to Northamptonshire in 2023, spending close to £1 billion, and supporting over 30,000 jobs (Ref.14). Likewise, the visitor economy for neighbouring Milton Keynes is built around attractions such as Bletchley Park, Milton Keynes' retail centres and sports facilities.

18.3.2 A number of the Sites as well as the Cable Route Search Area host a number of Public Rights of Way (see Figures 7.7.1-7.7.5 in **Appendix 7.1 Landscape Figures**), and are located nearby to a small number of long-distance recreational walking and cycling routes. The Northamptonshire Round crosses through Site C and Site E, and crosses the Cable Route Search Area between Hannington and Sywell Wood. The Nene Way is crossed by the Cable Route Search Area between Cogenhoe and Earls Barton. The

Milton Keynes Boundary Walk comes alongside part of the southern boundary of Site F and goes through Site G, wherein it meets the Three Shires Walk which traverses through the eastern side of Site G. Although not shown on OS maps, the Long Distance Walking Association (Ref 15) registers the Via Beata, which crosses the Cable Route Search Area on the same route as the Northamptonshire Round path, the Northamptonshire Boundary Walk which crosses through Site F between Bozeat and Easton Maudit, and the Buckinghamshire Way which runs through Site G on shared routes with the Milton Keynes Boundary Walk and Three Shires Way.

18.3.3 No long-distance cycle routes directly cross or border the Scheme. National Cycle Route 6 passes no closer than 4.0km to the west of Sites A and B, which National Cycle Route 539 comes within 3.0km of Site E (Ref 16).

18.3.4 The Scheme is located within an area containing a substantial number of recreational and navigable waterways. To the west of Sites A and B is Pitsford Water. Less than 0.5km to the west of Site E is Sywell Reservoir and Country Park. The River Nene is crossed by the Cable Route Search Area, with the surrounding river valley playing host to a large number of lakes for water sports and fishing. There are also a number of fishing lakes at Castle Ashby, less than 1km to the south of the grid connection point at Grendon Substation.

18.3.5 A full survey of the accessibility and navigability of waterways for recreational uses is continuing through ongoing dialogue with statutory stakeholders and through public consultation. Updated information will be made available in the final ES.

18.3.6 The area, villages and urban areas within theoretical visibility of the Scheme and on likely Scheme construction routes are home to a number of recreational facilities, including formal leisure and recreation facilities, sports venues, and informal and youth facilities. A full assessment of the potential impacts on access to these facilities during construction, and on their desirability and use during the construction and operational life of the Scheme will be undertaken in the final ES.

18.3.7 The Scheme is predominantly set within agricultural land, which due to its existing use, is not in itself a key tourist attraction or destination. The land does however play a role in providing a landscape context to recreational use of waterways and recreational pedestrian and cycling routes and trails. The potential impacts to the tourism and visitor economy are explored in this chapter, and will utilise assessment outcomes in relation to landscape-derived impacts from **Chapter 7: Landscape and Visual**, and heritage-derived impacts from **Chapter 13: Cultural Heritage**.

18.4 References

Ref.1 ONS (2022). Census 2021: TS001 – Number of usual residents in households and communal establishments (2021). Available at NomisWeb.

Ref.2 NISRA (2022). Census 2021 population and household estimates for Northern Ireland

Ref.3 National Statistics Publication for Scotland (2023). Scotland's Census 2022 - Rounded population estimates

Ref.4 ONS (2018). National population projections by single year of age (2018 base). Available at NomisWeb.

Ref.5 MHCLG (2019). IoD2019 Interactive Dashboard – Local Authority Focus. Available at GOV.UK

Ref.6 MHCLG (2019). Indices of Deprivation: 2019 and 2015 Mapping Browser. Available at dclgapps.communities.gov.uk

Ref.7 ONS (2022). Annual Population Survey: 12 months to December 2021 – Qualification Rates. Available at NomisWeb.

Ref.8 ONS (2024). Annual Population Survey: 12 months to September 2023. Available at NomisWeb.

Ref.9 ONS (2024). Annual Survey of Hours and Earnings – Resident Analysis. Available at NomisWeb.

Ref.10 ONS (2023). 2022 Business Register and Employment Survey – Employment. Available at NomisWeb.

Ref.11 ONS (2023). Annual Population Survey: 12 months to December 2022. Available at NomisWeb.

Ref.12 ONS (2024). Annual Survey of Hours and Earnings – Workplace Analysis. Available at NomisWeb.

Ref.13 SEMLEP (2019). South East Midlands Local Industrial Strategy. Cranfield: South East Midlands Local Enterprise Partnership.

Ref.14 North Northamptonshire Council (2024). Northamptonshire Visitor Economy Strategy 2023-2030. Kettering: North Northamptonshire Council

Ref.15 Long Distance Walkers Association (2024). Long Distance Paths: Search for a Path app. Available at ldwa.org.uk

Ref.16 Sustrans (2024). The National Cycle Network. Available at www.sustrans.org.uk/ national-cycle-network/

GREEN HILL
SOLAR FARM

Green Hill Solar Farm

EIA Scoping Report

Appendix 21: Agricultural Circumstances

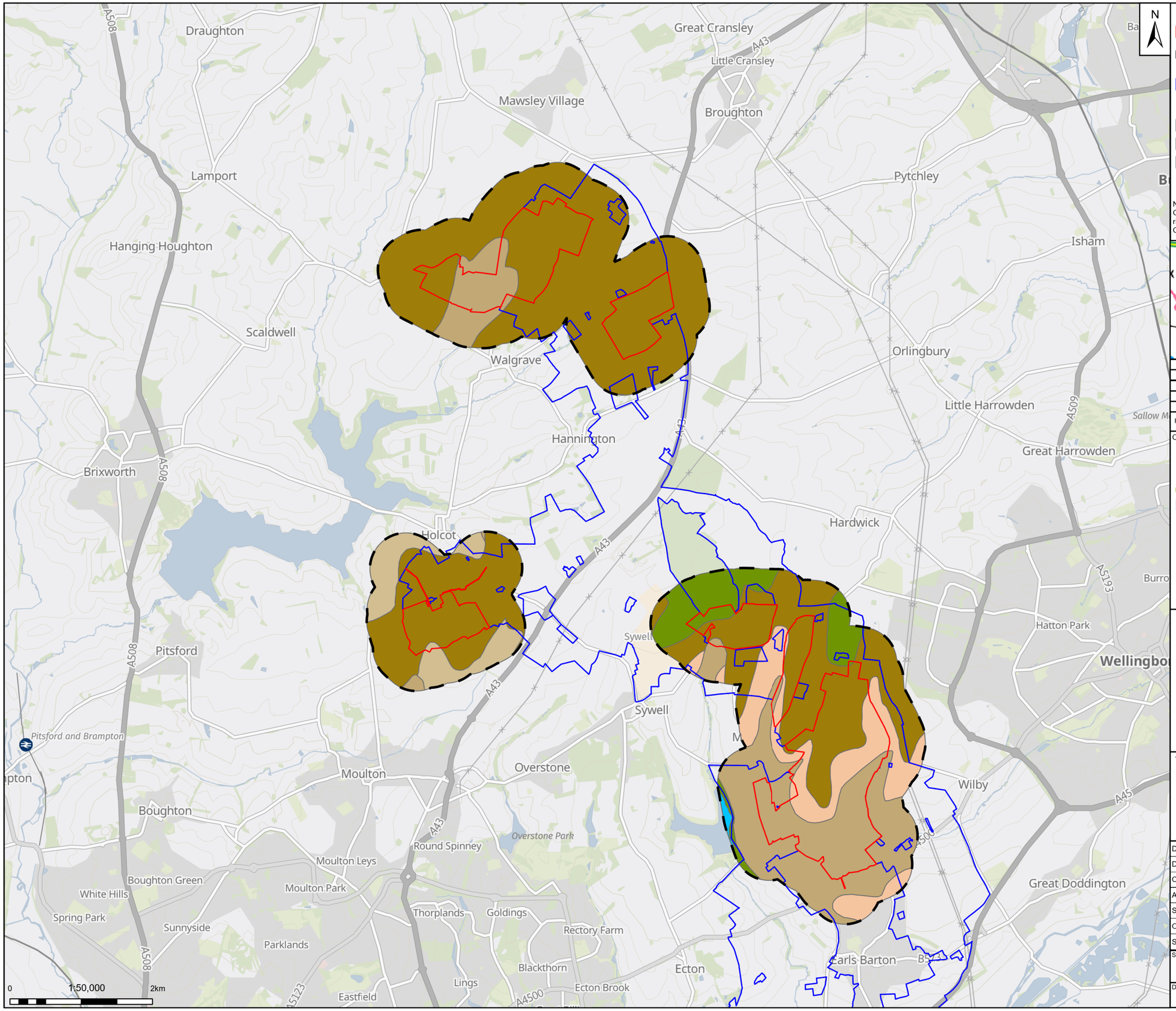
Revision A

Prepared by: Arcadis

Date: July 2024

PINS reference: EN010170

Contents



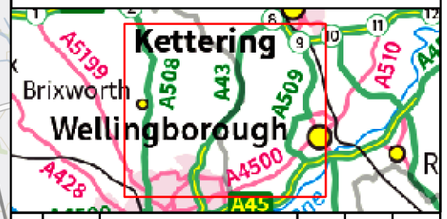
Legend

- Site Boundary
- Study Area (500m)
- Cable Search Area

National Soils Survey

- BANBURY
- DENCHWORTH
- FLADBURY 1
- HANSLOPE
- LAKE
- Moreton
- OXPASTURE
- RAGDALE
- WATERSTOCK
- WICK 1
- WICKHAM 2

Notes
GB Background: Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack



Rev	Date	Description	Drawn	Check	Approv
01	27/06/24	INITIAL ISSUE	RM	JR	ZL

Client:

Island GREEN POWER

PROJECT:
GREEN HILL SOLAR

Site
Green Hill Solar,
Northamptonshire

Client
Island Green Power
Unit 25.7 Coda Studios
189 Munster Road
London
SW6 6AW

ARCADIS

Registered office:
80Fen
80 Fenchurch Street
London
EC3M 4BY

Coordinating Office:
80Fen
80 Fenchurch Street
London
EC3M 4BY

www.arcadis.com

Title:

National Soils Survey Map

Designed	J. Ryan	Date: 27 JUN 24	Signed
Drawn	R. Millman	Date: 27 JUN 24	Signed
Checked	J. Ryan	Date: 27 JUN 24	Signed
Approved	Z. Liu	Date: 27 JUN 24	Signed
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	S2	Project Number:	30198521

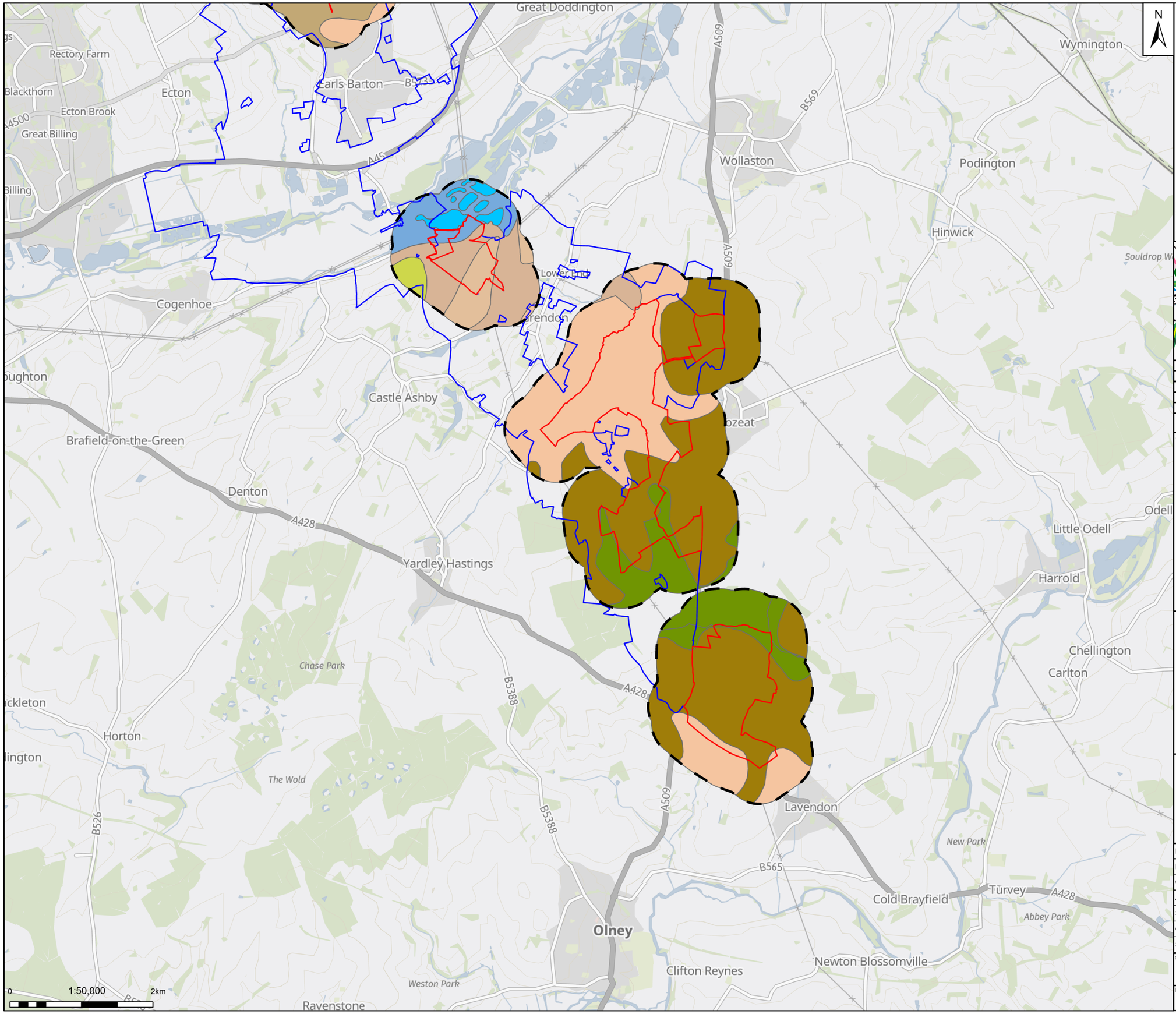
Suitability Description:
For Information

Drawing Number:
30198521-ARC-EGN-ZZ-DR-ZZ-00001-S2

Revision:
P01

Print Date: 05-07-24 14:16:41

C:\Users\Rob.Millman\ARCADIS\30198521 - Green Hill Solar Park - 01 GDV Team\01 Aprx\30198521-ARC-EGN-ZZ-DR-ZZ-00001-S2-P01-National Soils Survey Map.aprx



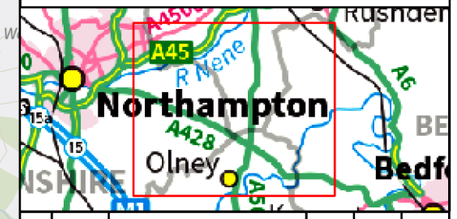
Legend

- Site Boundary
- Study Area (500m)
- Cable Search Area

National Soils Survey

- BANBURY
- DENCHWORTH
- FLADBURY 1
- HANSLOPE
- LAKE
- Moreton
- OXPASTURE
- RAGDALE
- WATERSTOCK
- WICK 1
- WICKHAM 2

Notes
GB Background: Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack



Rev	Date	Description	Drawn	Check	Approv
01	27/06/24	INITIAL ISSUE	RM	JR	ZL

Client:

Island GREEN POWER

PROJECT:
GREEN HILL SOLAR

Site
Green Hill Solar,
Northamptonshire

Client
Island Green Power
Unit 25.7 Coda Studios
189 Munster Road
London
SW6 6AW

ARCADIS

Registered office:
80Fen
80 Fenchurch Street
London
EC3M 4BY

Coordinating Office:
80Fen
80 Fenchurch Street
London
EC3M 4BY

www.arcadis.com

Title:

National Soils Survey Map

Designed	J. Ryan	Date 27 JUN 24	Signed
Drawn	R. Millman	Date 27 JUN 24	Signed
Checked	J. Ryan	Date 27 JUN 24	Signed
Approved	Z. Liu	Date 27 JUN 24	Signed
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	S2	Project Number:	30198521

Suitability Description:
For Information

Drawing Number: 30198521-ARC-EGN-ZZ-DR-ZZ-00001-S2
Revision: P01

Print Date: 05-07-24 14:16:45

C:\Users\Rob.Millman\ARCADIS\30198521 - Green Hill Solar Park - 01 GDV Team\01 Aprx\30198521-ARC-EGN-ZZ-DR-ZZ-00001-S2-P01-National Soils Survey Map.aprx