

M3 Junction 9 Improvement

Scheme Number: TR010055

6.2 Environmental Statement Chapter 7 Landscape and Visual - Figures Part 1 of 3

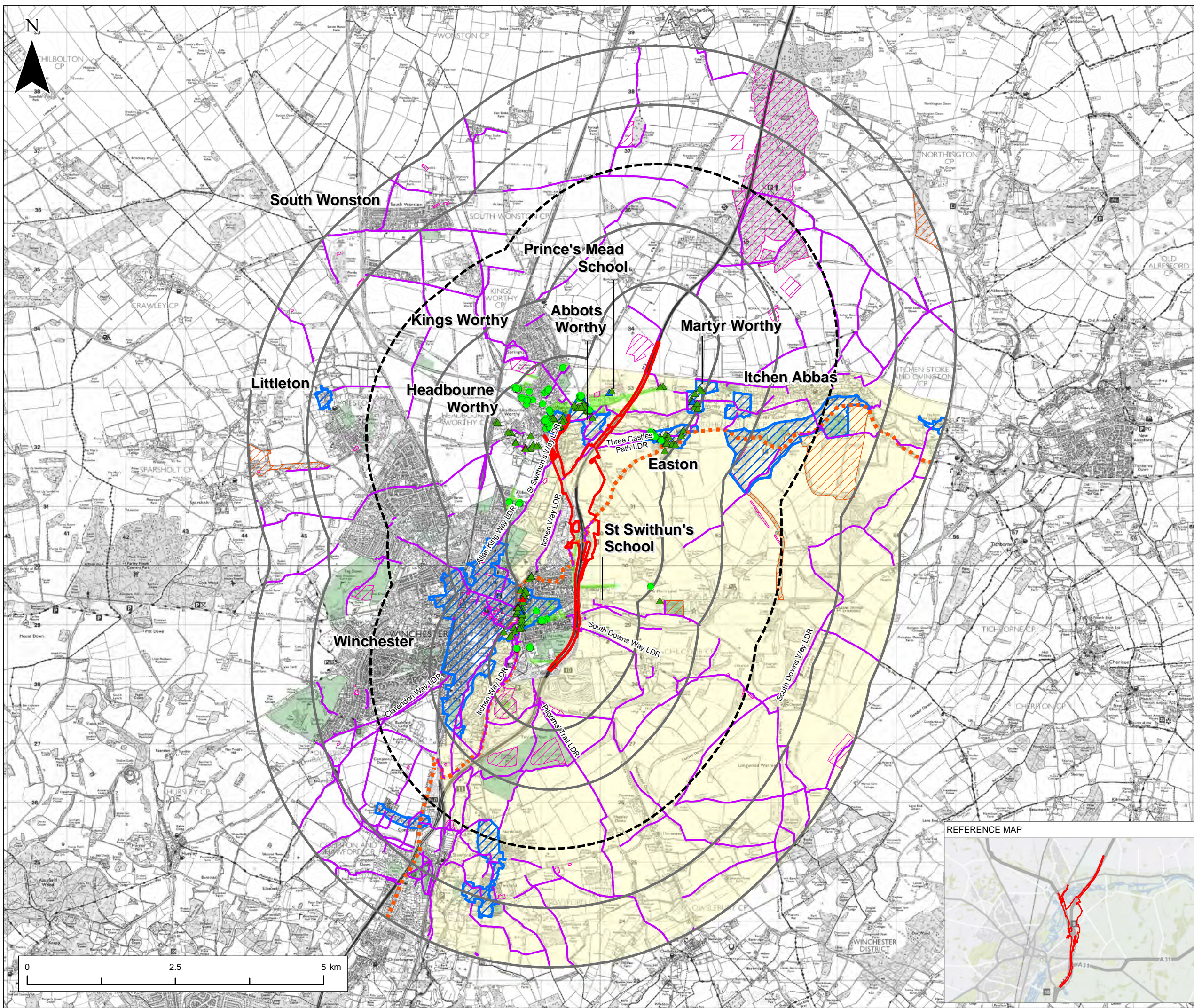
APFP Regulation 5(2)(a) & 5(2)(l)

Planning Act 2008

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

Volume 6

November 2022



NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
- Application Boundary
 - Study Area
 - 1km Buffer
 - Conservation Area
 - Designated Open Space
- Listed Buildings within 1km of Application Boundary**
- Grade**
- ▲ Grade I Listed Building
 - ▲ Grade II* Listed Building
 - ▲ Grade II Listed Building
 - - - National Cycle Network - Route 23
 - Public Right of Way
 - Registered Parks and Gardens
 - Scheduled Monument
 - South Downs National Park
 - Tree Preservation Order (TPO) Areas within 1km of Application Boundary
 - Tree Preservation Order (TPO) Points within 1km of Application Boundary

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REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D
0	November 2022	APPLICATION SUBMISSION	TL	AC	AC

DESIGNER


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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

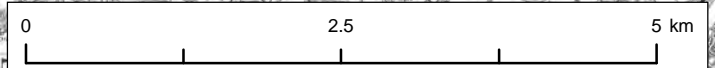
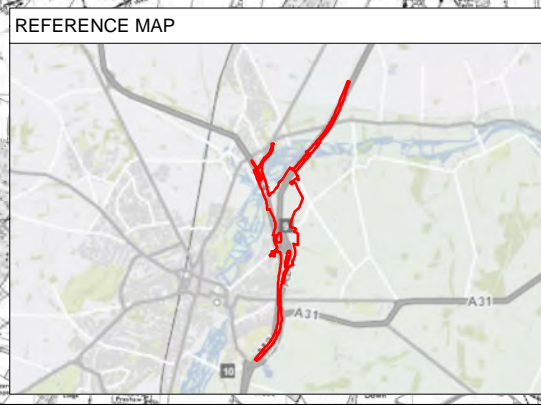
PROJECT STAGE
PCF STAGE 3

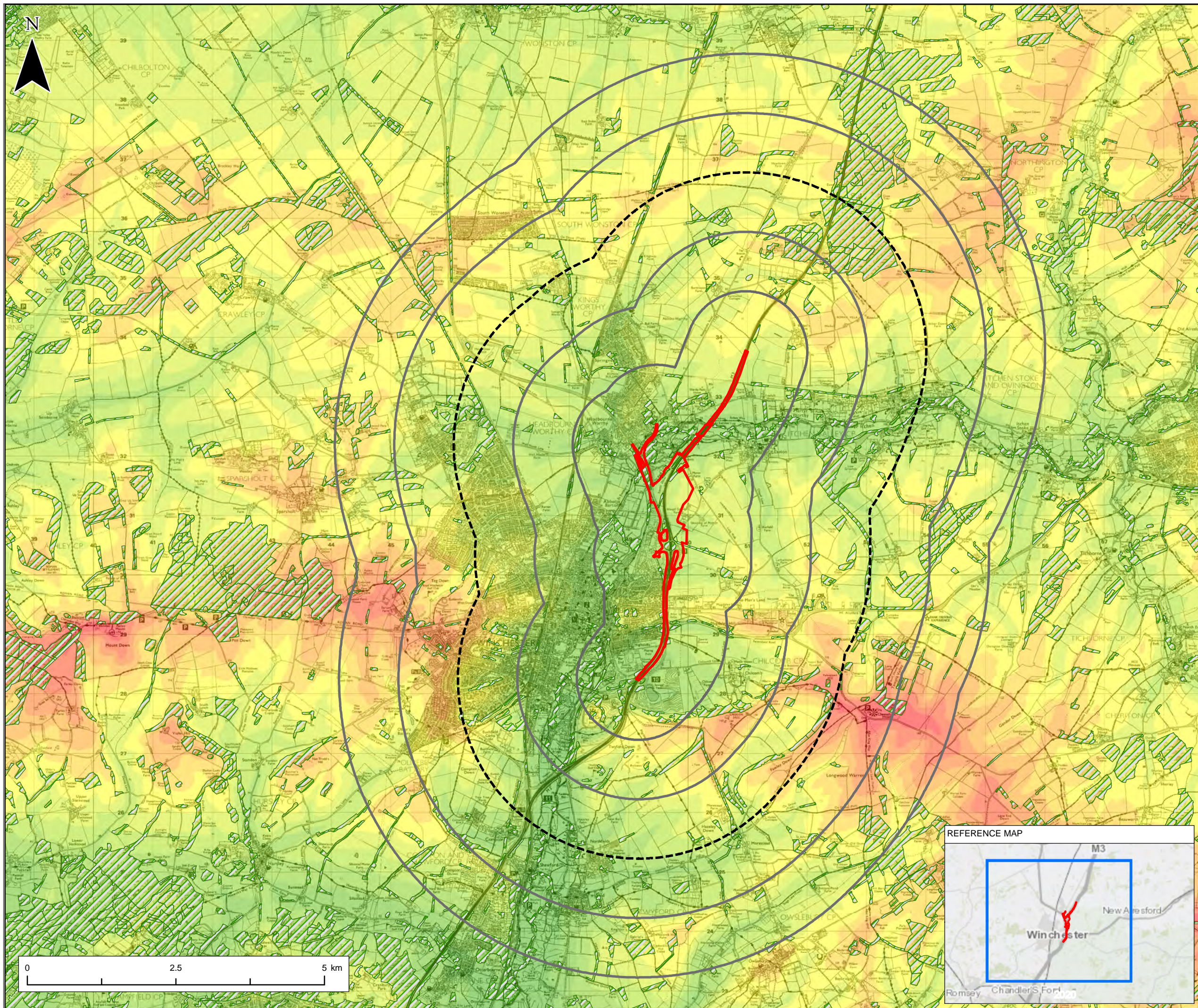
DRAWING TITLE
 FIGURE 7.1 - LANDSCAPE AND VISUAL:
 LANDSCAPE DESIGNATIONS
 APFP REGULATIONS 5(2)(a)&(l)
 DOCUMENT REFERENCE 6.2

SUITABILITY
APPLICATION SUBMISSION

SHEET SIZE: A3 SCALE: 1:60,000 STATUS: REV 0

DRAWING NUMBER
 HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0100





NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in meters unless shown otherwise.

Legend

- Application Boundary
- Study Area
- 1km Buffer
- Watercourse
- National Forest Inventory Woodland

Elevation

- 20.0 - 30.0m Above Ordnance Datum (AOD)
- 30.0 - 45.0m AOD
- 45.0 - 60.0m AOD
- 60.0 - 75.0m AOD
- 75.0m - 90.0m AOD
- 90.0m - 105.0m AOD
- 105.0m - 120.0m AOD
- 120.0m - 135.0m AOD
- 135.0m - 150.0m AOD
- 150.0m - 165.0m AOD
- 165.0m - 180.0m AOD

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 Source: USGS, NGA, NASA, CGIAR, GEBCO, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen and the GIS User Community

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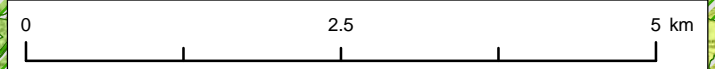
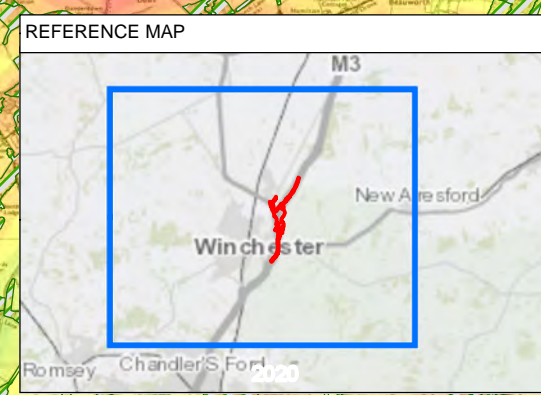
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PCF STAGE 3

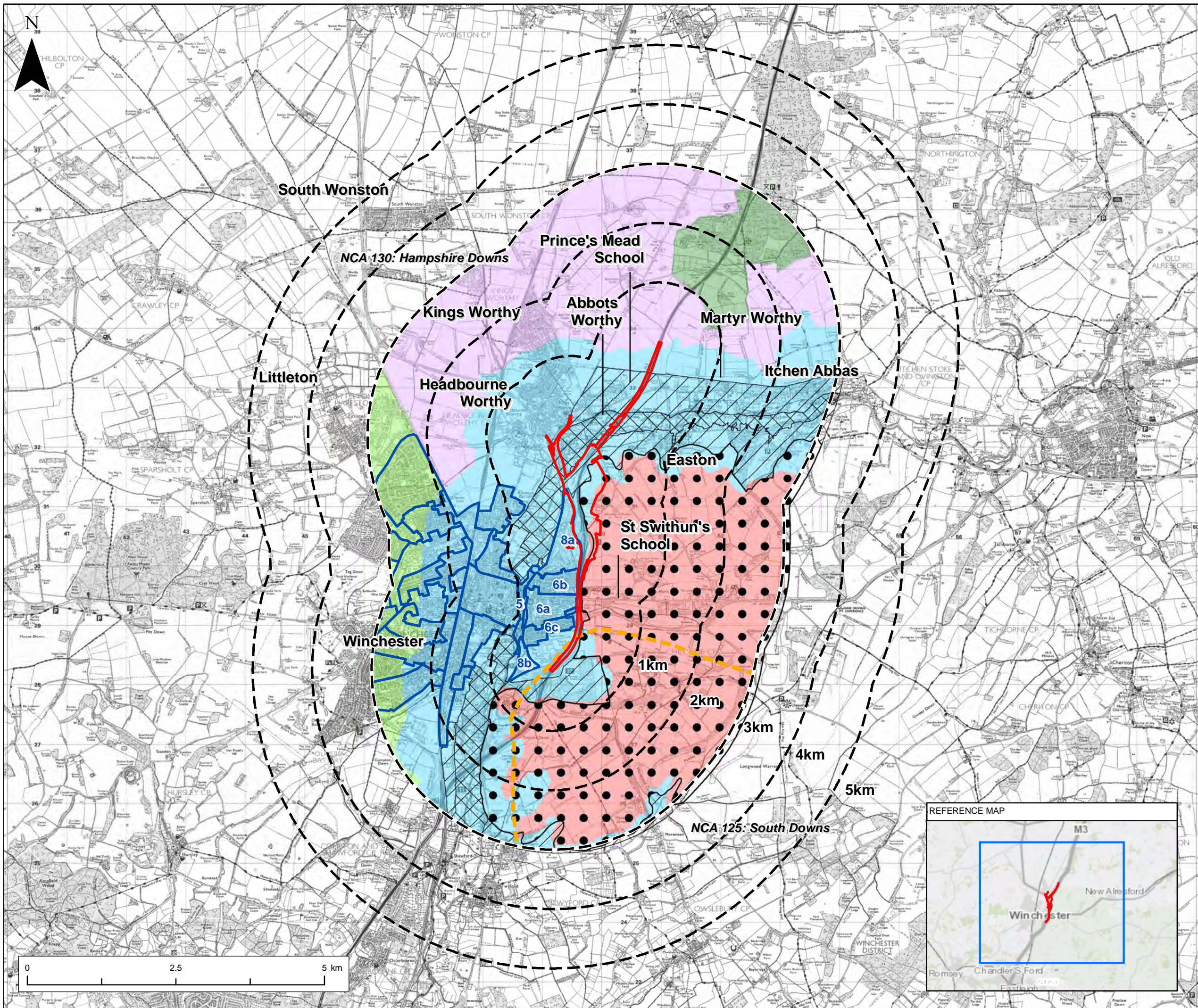
DRAWING TITLE
FIGURE 7.2 - LANDSCAPE AND VISUAL: TOPOGRAPHY AND FEATURES
 APFP REGULATIONS 5(2)(a)
 DOCUMENT REFERENCE 6.2

SUITABILITY
APPLICATION SUBMISSION

SHEET SIZE: A3 SCALE: 1:60,000 STATUS: REV 0

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NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
- Application Boundary
 - 1km Buffers from Application Boundary
 - Boundary between National Character Areas
- Hampshire Landscape Character Areas**
- 3c Itchen Way
 - 7b Hannington and Dummer Downs
 - 7f West Winchester Downs
 - 8e Mid Hampshire Open Downs
 - 8g East Winchester Open Downs
- South Downs National Park Landscape Character**
- A5: East Winchester Open Downs
 - F5: Itchen Floodplain
 - G5: Itchen Valley Sides
 - Winchester Townscape Area

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PROJECT TITLE
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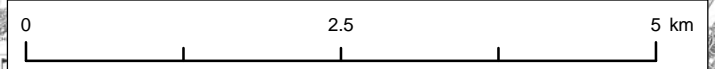
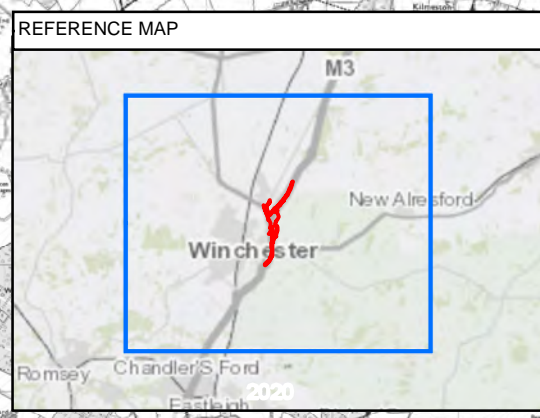
PROJECT STAGE
PCF STAGE 3

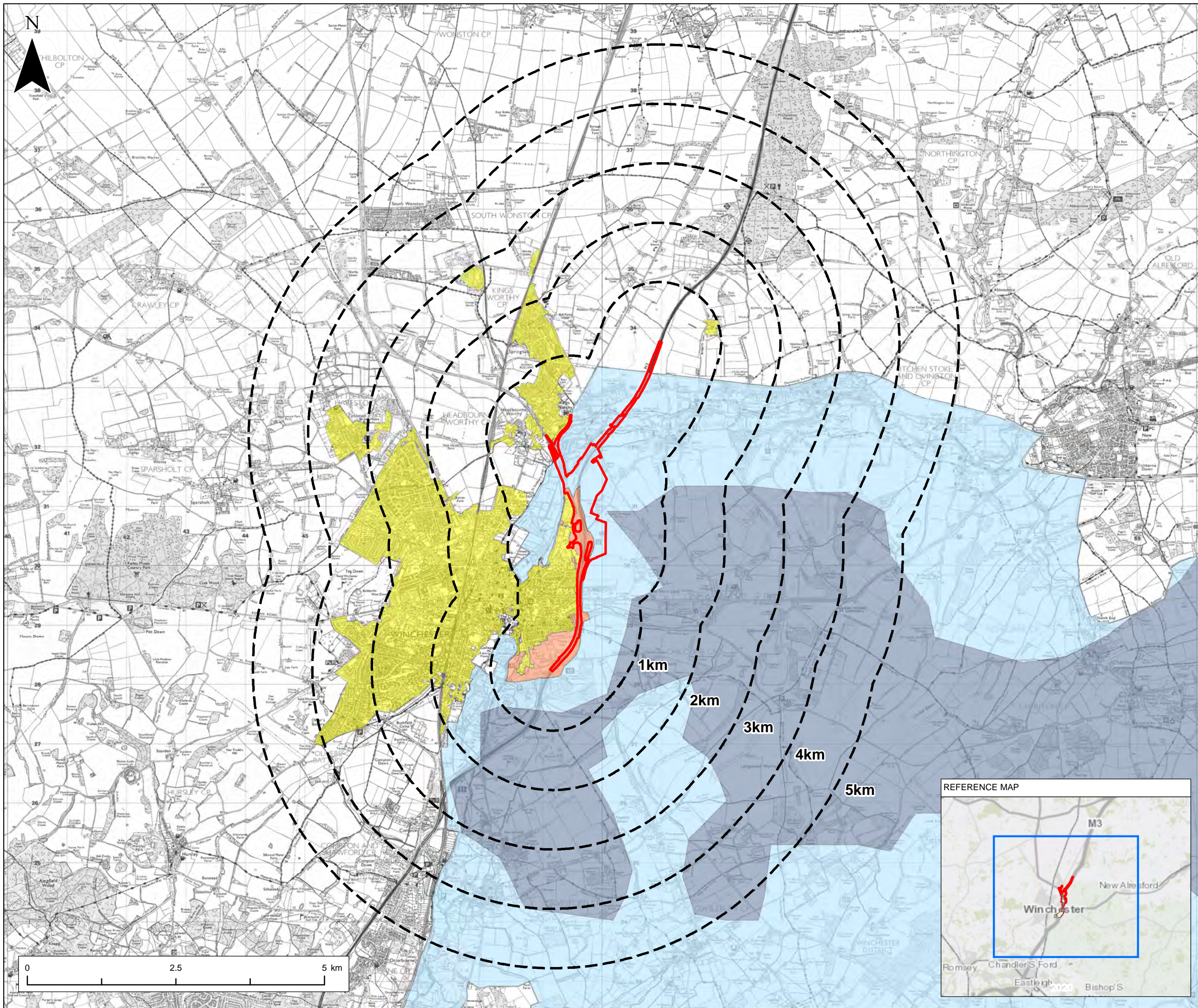
DRAWING TITLE
FIGURE 7.3.1 - LANDSCAPE AND VISUAL: LANDSCAPE CHARACTER AREAS APFP REGULATIONS 5(2)(a) DOCUMENT REFERENCE 6.2

SUITABILITY
APPLICATION SUBMISSION

SHEET SIZE: A3 SCALE: 1:60,000 STATUS: REV 0

DRAWING NUMBER
 HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0102





NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
- Application Boundary
 - 1km Buffers from Application Boundary
- Dark Night Sky Zones**
 As Determined by South Downs National Park TLL-10
- E1a - Intrinsic Rural Darkness
 - E1b - Transition Zones Proposed for Assessment Purposes
 - E2
 - E3/E4

Environmental Light Zones derived from site survey
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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

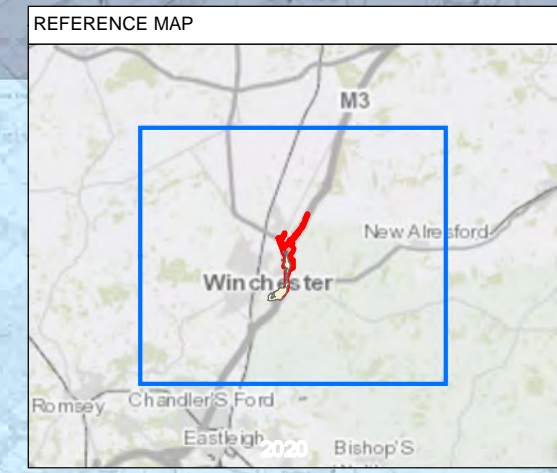
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PCF STAGE 3

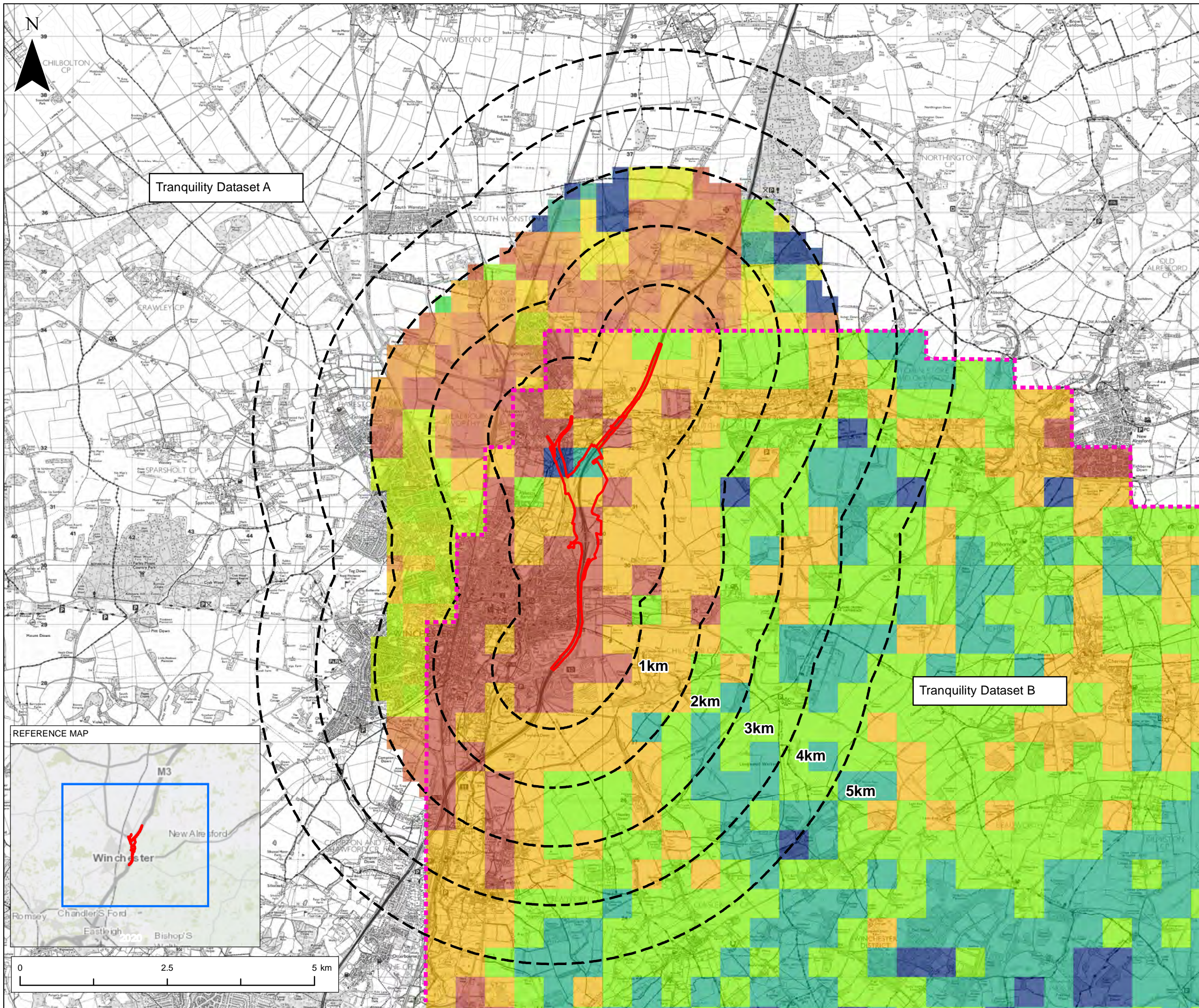
DRAWING TITLE
 FIGURE 7.3.2 - LANDSCAPE AND VISUAL: NIGHT TIME ENVIRONMENTAL LIGHT ZONES
 APFP REGULATIONS 5(2)(a)
 DOCUMENT REFERENCE 6.2

SUITABILITY
APPLICATION SUBMISSION

SHEET SIZE: A3 SCALE: 1:60,000 STATUS: REV 0

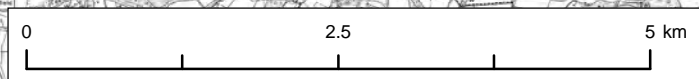
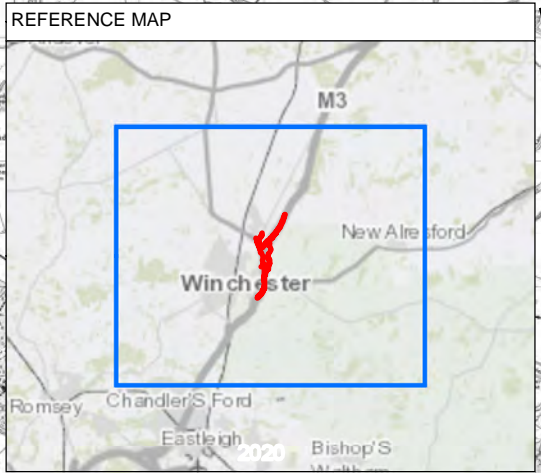
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Tranquility Dataset A

Tranquility Dataset B



NOTES
1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

Legend

- Application Boundary
- 1km Buffers from Application
- Boundary

Tranquility Score

- Most Tranquil
-
-
-
- Least Tranquil

Boundary Between Two Tranquility Datasets. Dataset A Source: Campaign to Protect Rural England, Revised Edition 2007. Dataset B Source: South Downs National Park Authority Tranquility Study, 2017.

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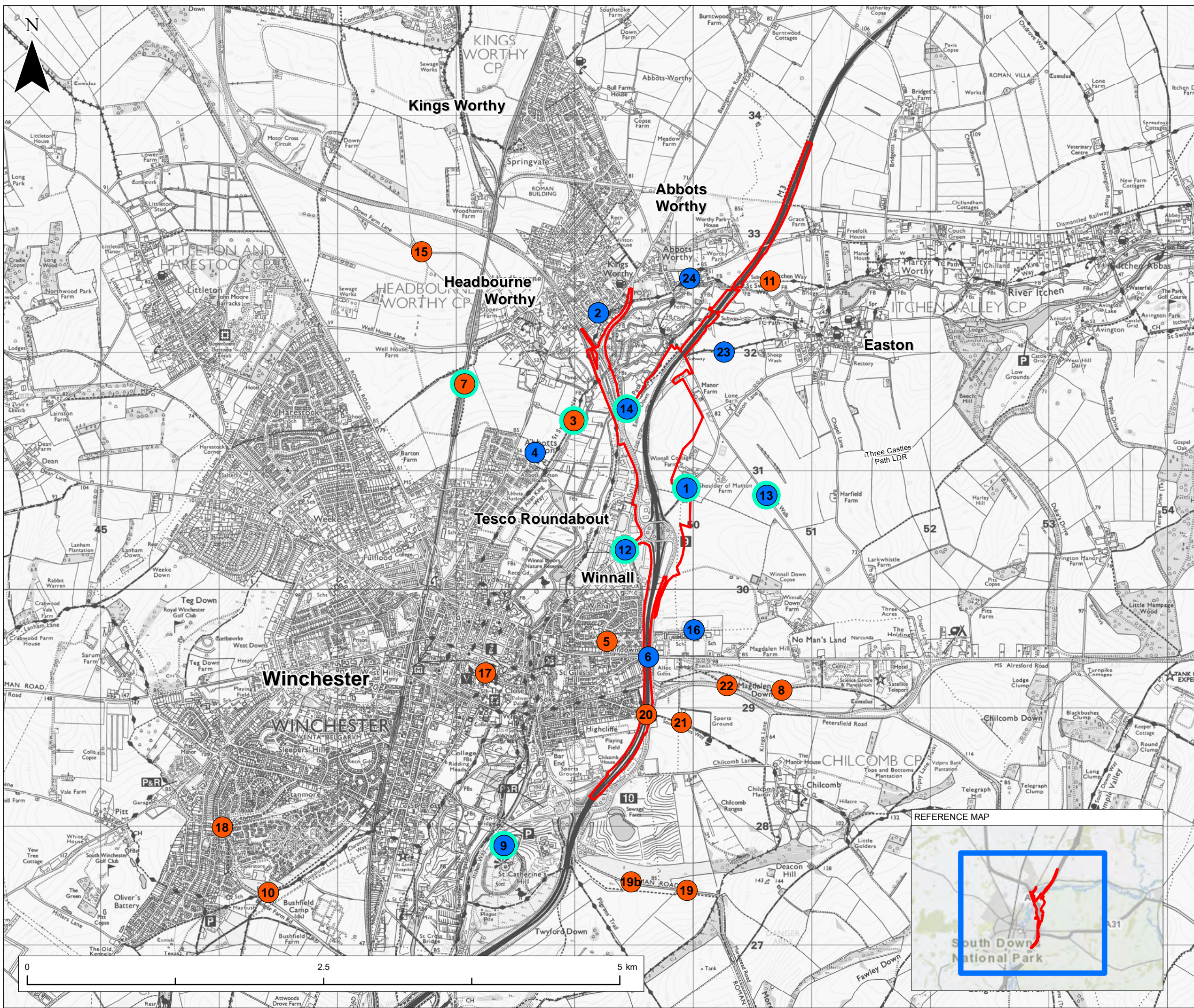
PROJECT STAGE
PCF STAGE 3

DRAWING TITLE
FIGURE 7.3.3 - LANDSCAPE AND VISUAL: TRANQUILITY
APFP REGULATIONS 5(2)(a)
DOCUMENT REFERENCE 6.2

SUITABILITY
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SHEET SIZE: A3 | SCALE: 1:60,648 | STATUS: REV 0

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HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0104



NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
- Application Boundary
 - View Location (Daytime Only)
 - View Location (Daytime and Night-time)
 - Visualisation Location

- View Locations**
1. Easton Lane / National Cycle Network Route 23
 2. B3047 / Church Green
 3. St Swithun's Way, Itchen Valley
 4. Public OpenSpace at Lea View
 5. Turnpike Down
 6. B3404/M3 road bridge
 7. Public Right of Way (FP111/1/1)
 8. Public Right of Way (FP049/13/1)
 9. St Catherine's Hill
 10. Public Right of Way (FP011/707/1) crossing Access Land
 11. Itchen Way north of Easton Down
 12. Easton Lane adjacent to retail/commercial development
 13. Long Walk
 14. Itchen Way
 15. Down Farm Lane
 16. St Swithun's School
 17. Winchester Cathedral
 18. Ridgeway
 19. Layby on Morestead Road
 - 19b. Morestead Road Footbridge over M3
 20. South Downs Way
 21. Winchester County Council Sports Ground
 22. Layby on A31
 23. Public Right of Way (128/19/1)
 24. Public Right of Way (FP 134/8/2)

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DESIGNER



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

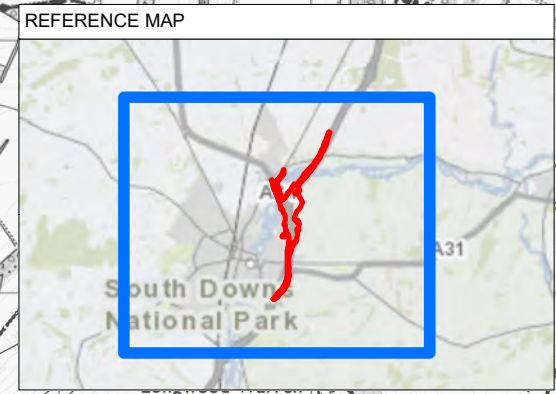
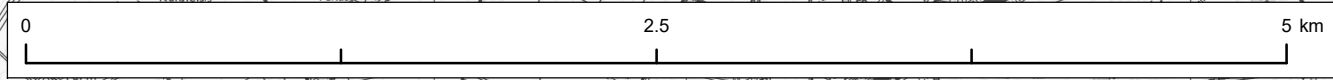
PROJECT STAGE
PCF STAGE 3

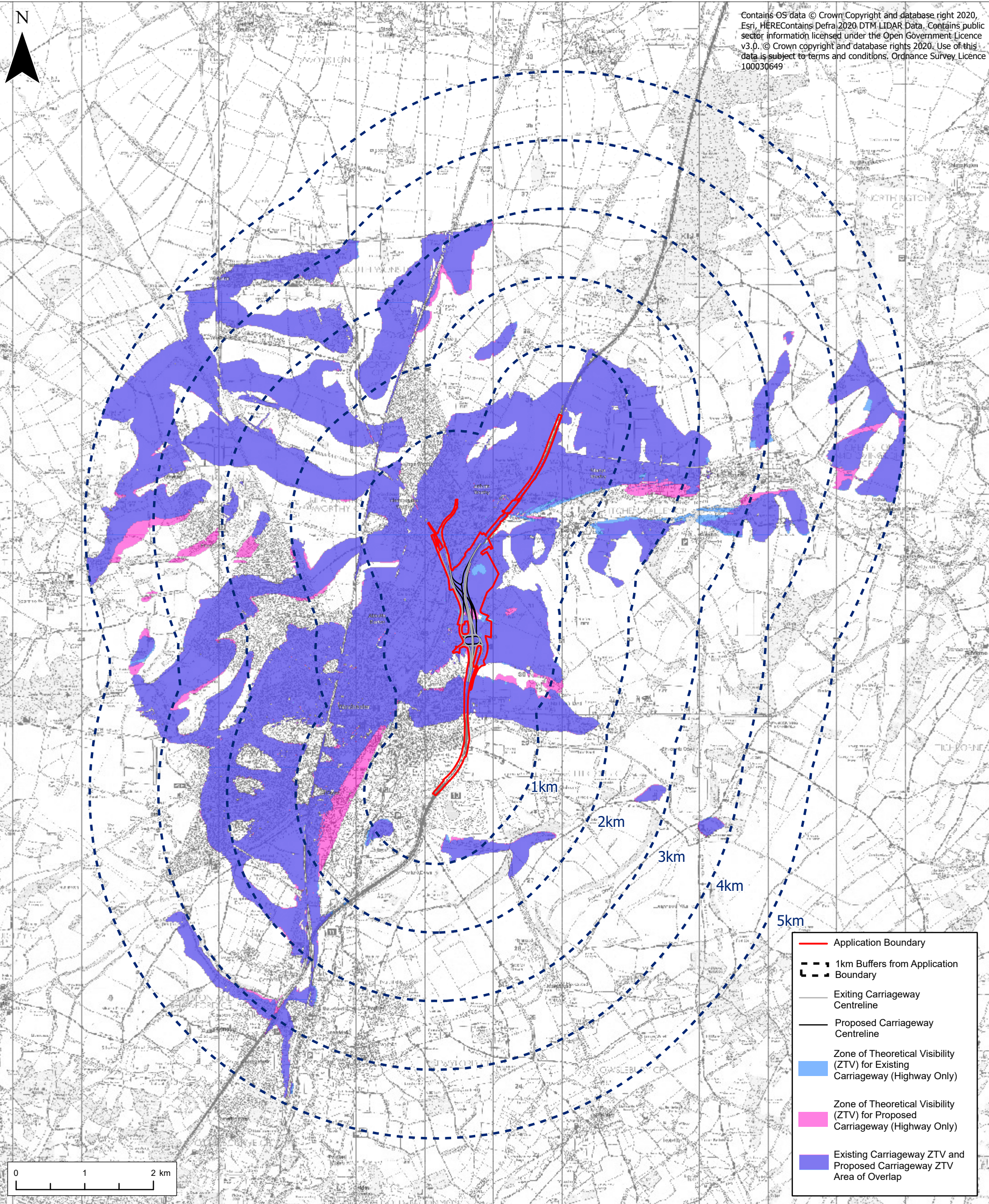
DRAWING TITLE
 FIGURE 7.4 - LANDSCAPE AND VISUAL: VIEW LOCATIONS
 APPF REGULATIONS 5(2)(a)
 DOCUMENT REFERENCE 6.2

SUITABILITY
APPLICATION SUBMISSION

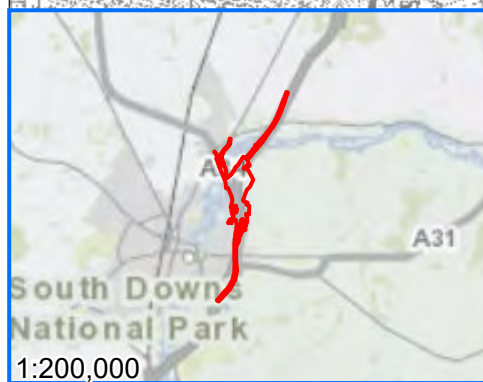
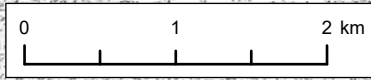
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DRAWING NUMBER
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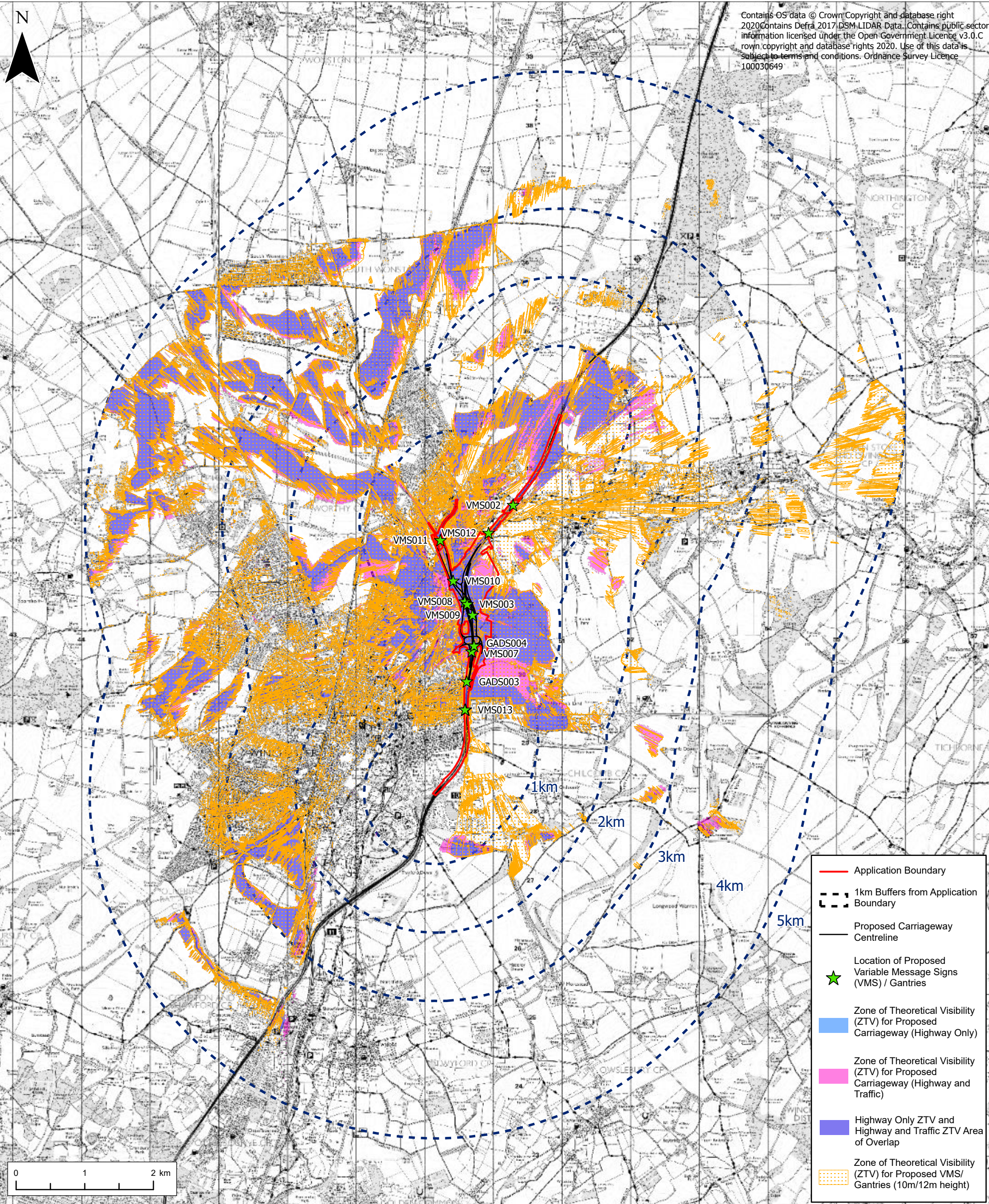
	Application Boundary
	1km Buffers from Application Boundary
	Existing Carriageway Centreline
	Proposed Carriageway Centreline
	Zone of Theoretical Visibility (ZTV) for Existing Carriageway (Highway Only)
	Zone of Theoretical Visibility (ZTV) for Proposed Carriageway (Highway Only)
	Existing Carriageway ZTV and Proposed Carriageway ZTV Area of Overlap



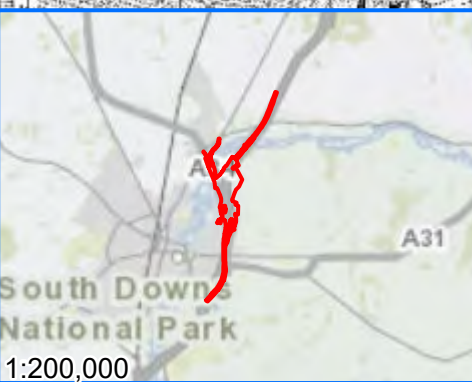
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
0	NOVEMBER 2022	APPLICATION SUBMISSION	TW	AC	AC	M3 JUNCTION 9 IMPROVEMENT SCHEME
DESIGNER						PROJECT STAGE
						PCF STAGE 3
CONTRACTOR						DRAWING TITLE
						FIGURE 7.5 LANDSCAPE AND VISUAL: COMPARATIVE ZTV (EXISTING M3, A33 AND A34 WITH SCHEME APPF REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
						APPLICATION SUBMISSION
						DRAWING NUMBER
						HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0106

NOTES		
1) This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.		
2) The existing ZTV was run on a LIDAR composite digital terrain model (DTM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The proposed ZTV was based on the above LIDAR data, with the area within the site boundary replaced by the 3D model at a 1 metre resolution.		
3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool). Includes adjustments for Curvature of the Earth and Light Refraction.		
4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on observation points at 30 intervals along the existing and proposed centre lines, with a viewer height of 1.6m.		
5) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.		
SHEET SIZE: A3	SCALE: 1:50K	STATUS: REV 0

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of Proposed Variable Message Signs (VMS) / Gantries
	Zone of Theoretical Visibility (ZTV) for Proposed Carriageway (Highway Only)
	Zone of Theoretical Visibility (ZTV) for Proposed Carriageway (Highway and Traffic)
	Highway Only ZTV and Highway and Traffic ZTV Area of Overlap
	Zone of Theoretical Visibility (ZTV) for Proposed VMS/ Gantries (10m/12m height)



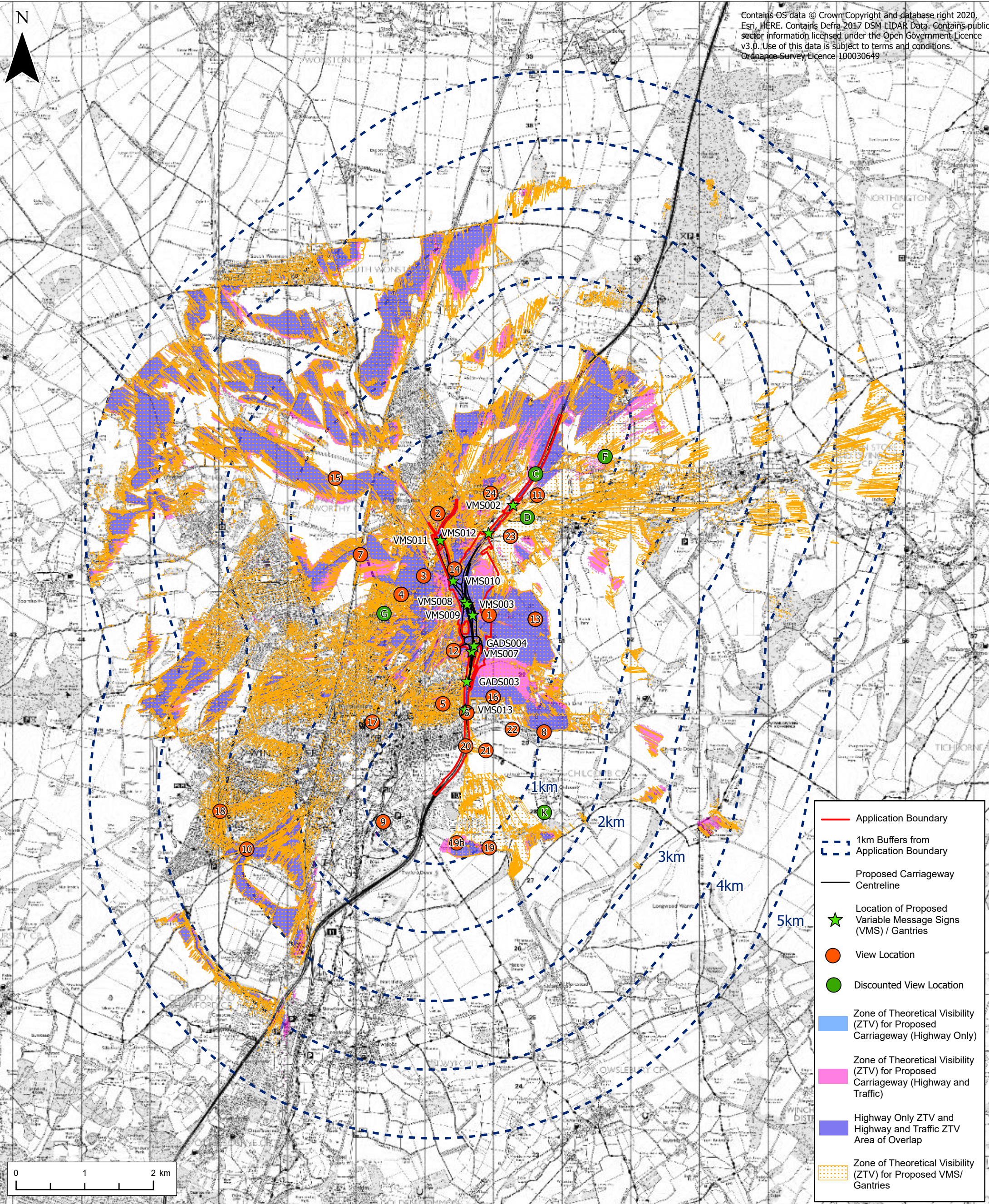
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
0	NOV 2022	APPLICATION SUBMISSION	TW	AC	AC	M3 JUNCTION 9 IMPROVEMENT SCHEME
DESIGNER						PROJECT STAGE
CONTRACTOR						PCF STAGE 3
CLIENT						DRAWING TITLE
						FIGURE 7.6 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (TRAFFIC, NO TRAFFIC AND GANTRIES) APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
						SUITABILITY
						APPLICATION SUBMISSION
						DRAWING NUMBER
						HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0107

NOTES

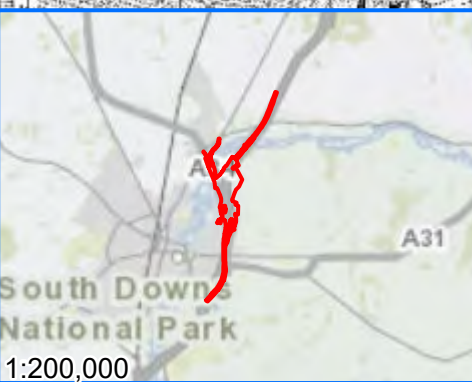
- 1) This drawing has been produced using GIS software, all dimensions are shown in metres unless shown otherwise.
- 2) The proposed ZTV was based on a LIDAR composite surface model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution.
- 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool). Includes adjustments for Curvature of the Earth and Light Refraction.
- 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on observation points at 30 intervals along the existing and proposed centre lines, with a viewer height of 1.6m and a traffic height of 4.5m. VMS have been assessed based on a 10m height, with gantries having a height of 12m.
- 5) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of Proposed Variable Message Signs (VMS) / Gantries
	View Location
	Discounted View Location
	Zone of Theoretical Visibility (ZTV) for Proposed Carriageway (Highway Only)
	Zone of Theoretical Visibility (ZTV) for Proposed Carriageway (Highway and Traffic)
	Highway Only ZTV and Highway and Traffic ZTV Area of Overlap
	Zone of Theoretical Visibility (ZTV) for Proposed VMS/ Gantries



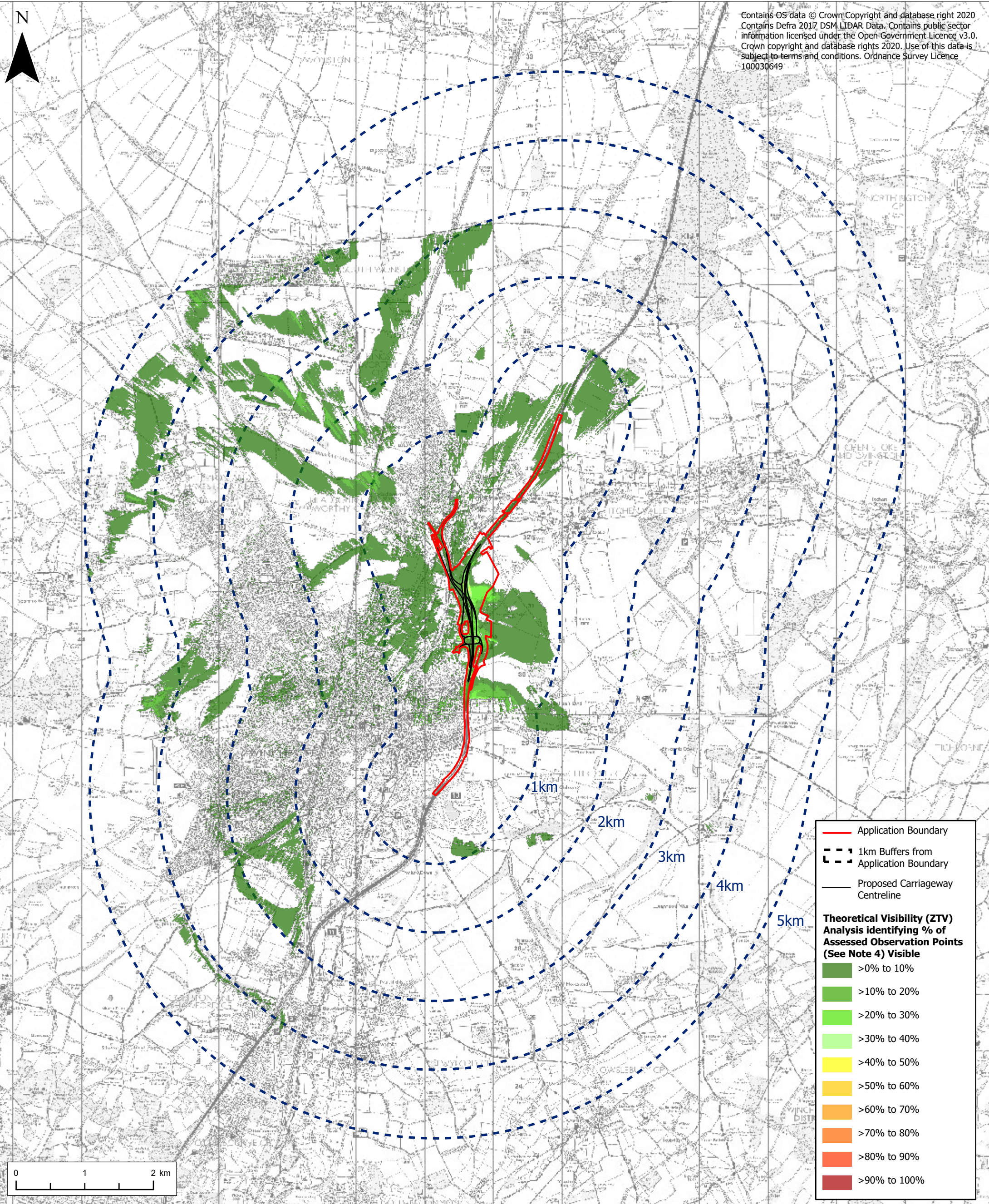
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
0	NOV 2022	APPLICATION SUBMISSION	TW	AC	AC	M3 JUNCTION 9 IMPROVEMENT SCHEME
DESIGNER						PROJECT STAGE
						PCF STAGE 3
CONTRACTOR						DRAWING TITLE
						FIGURE 7.7 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (TRAFFIC, NO TRAFFIC AND GANTRIES) WITH VIEW LOCATIONS APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
						APPLICATION SUBMISSION
						DRAWING NUMBER
						HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0108

NOTES

- 1) This drawing has been produced using GIS software, all dimensions are shown in metres unless shown otherwise.
- 2) The proposed ZTV was based on a LIDAR composite surface model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution.
- 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool). Includes adjustments for Curvature of the Earth and Light Refraction.
- 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on observation points at 30 intervals along the existing and proposed centre lines, with a viewer height of 1.6m and a traffic height of 4.5m. VMS have been assessed based on a 10m height, with gantries having a height of 12m.
- 5) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.

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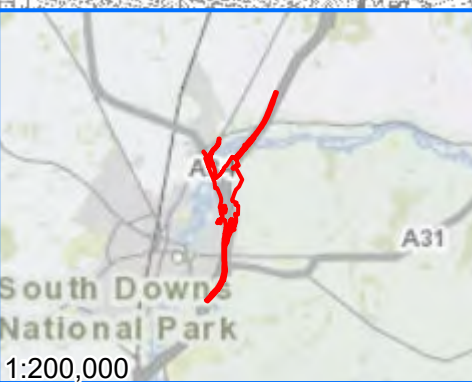
Application Boundary

1km Buffers from Application Boundary

Proposed Carriageway Centreline

Theoretical Visibility (ZTV) Analysis identifying % of Assessed Observation Points (See Note 4) Visible

- >0% to 10%
- >10% to 20%
- >20% to 30%
- >30% to 40%
- >40% to 50%
- >50% to 60%
- >60% to 70%
- >70% to 80%
- >80% to 90%
- >90% to 100%



REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
0	NOVEMBER 2022	APPLICATION SUBMISSION	TW	AC	AC	M3 JUNCTION 9 IMPROVEMENT SCHEME
DESIGNER			PROJECT STAGE			PCF STAGE 3
CONTRACTOR			DRAWING TITLE			FIGURE 7.8 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (NO TRAFFIC PERCENTAGE VISIBILITY) APPF REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT			SUITABILITY			APPLICATION SUBMISSION
DRAWING NUMBER			HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0109			

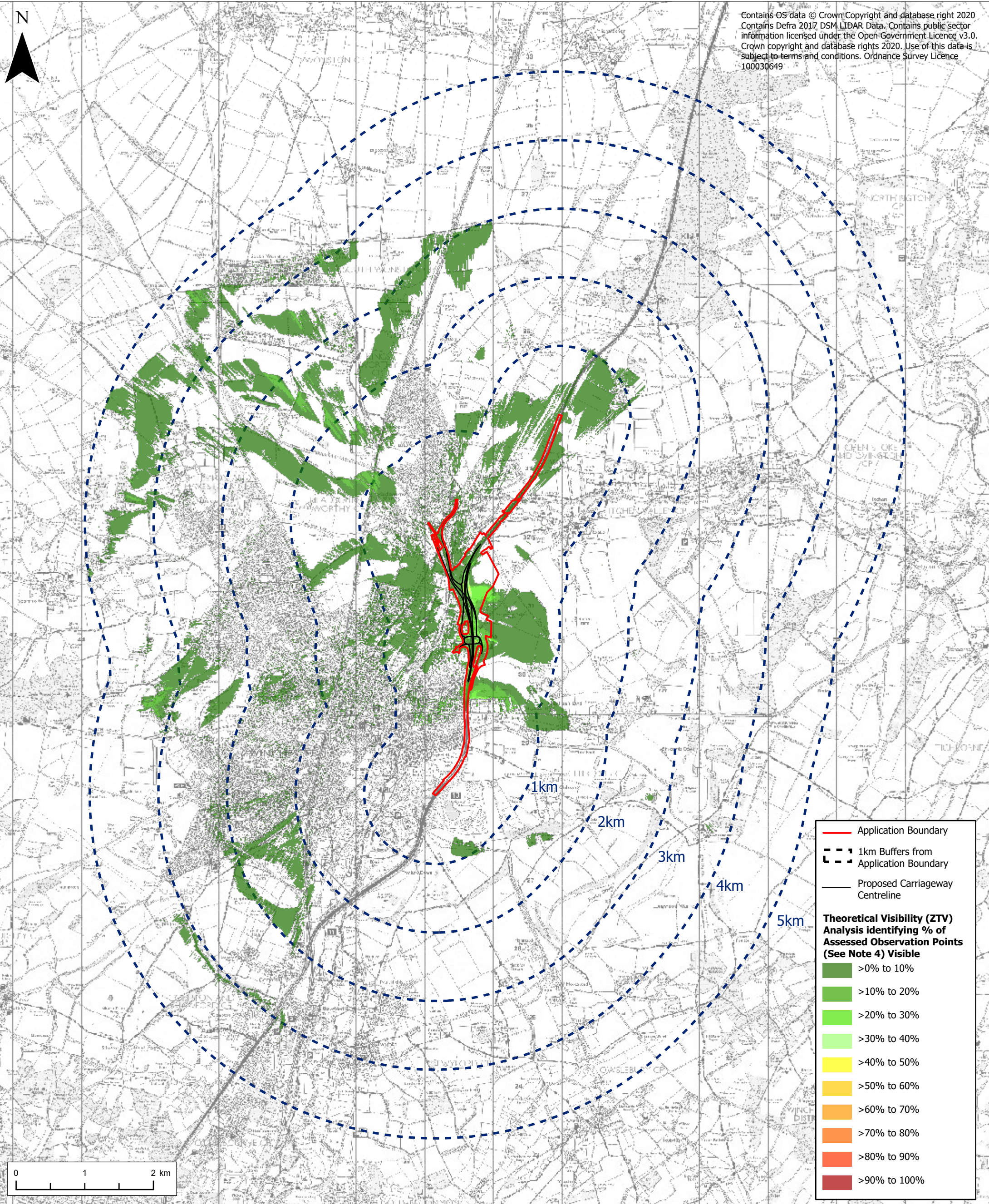
NOTES

- This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
- The proposed ZTV was based on a LiDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1m resolution.
- The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
- The ZTV illustrates the area of theoretical visibility of features of the proposed development based on observation points at 30 intervals along the proposed centre lines, with a viewer height of 1.6m. For more detail see Appendix 7.2: Technical Methodology (Document Reference 6.3)
- The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.

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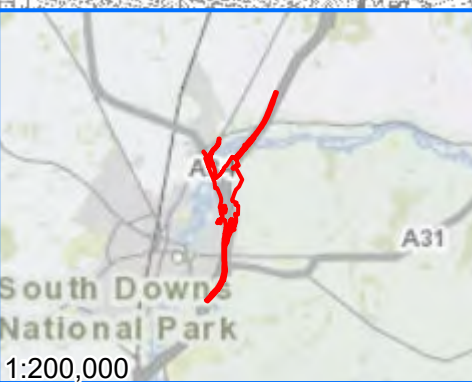
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— Application Boundary
 - - - 1km Buffers from Application Boundary
 — Proposed Carriageway Centreline

Theoretical Visibility (ZTV) Analysis identifying % of Assessed Observation Points (See Note 4) Visible

- >0% to 10%
- >10% to 20%
- >20% to 30%
- >30% to 40%
- >40% to 50%
- >50% to 60%
- >60% to 70%
- >70% to 80%
- >80% to 90%
- >90% to 100%



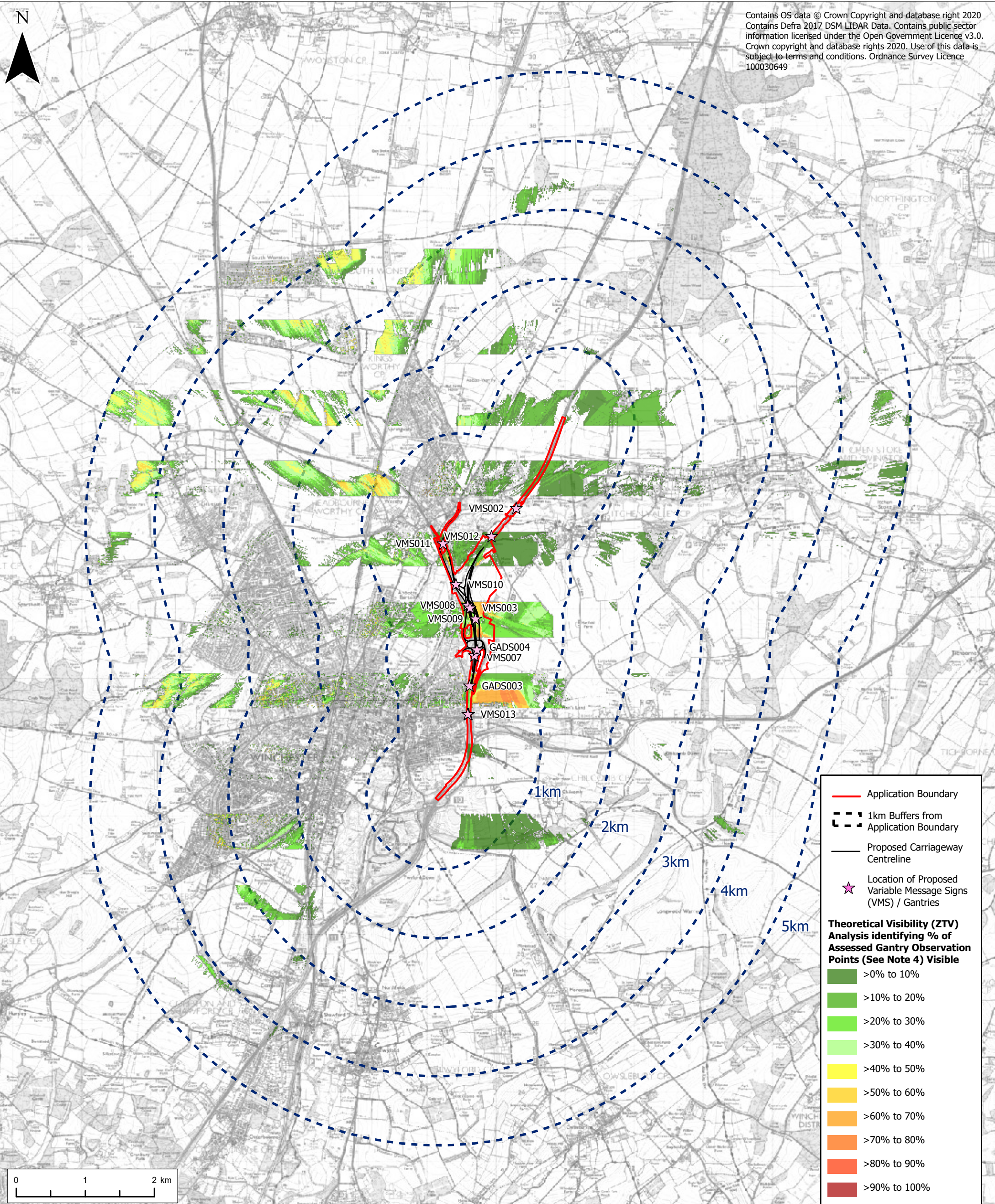
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER						PROJECT STAGE
Stantec						PCF STAGE 3
						CONTRACTOR
VolkerFitzpatrick						DRAWING TITLE
						FIGURE 7.9 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (TRAFFIC PERCENTAGE VISIBILITY) APPF REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
national highways						APPLICATION SUBMISSION
						DRAWING NUMBER
HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0110						STATUS: REV 0

NOTES

- This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
- The proposed ZTV was based on a LiDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1m resolution.
- The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
- The ZTV illustrates the area of theoretical visibility of features of the proposed development based on observation points at 30 intervals along the proposed centre lines, with a viewer height of 1.6m and traffic height of 4.5m. For more detail see Appendix 7.2: Technical Methodology (Document Reference 6.3)
- The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.

SHEET SIZE: A3 SCALE: 1:50K STATUS: REV 0

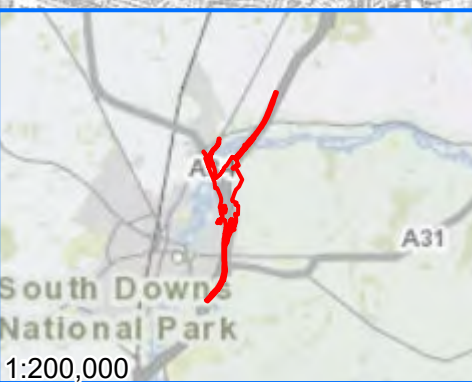
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Application Boundary
 - - - 1km Buffers from Application Boundary
 — Proposed Carriageway Centreline
 ☆ Location of Proposed Variable Message Signs (VMS) / Gantries

Theoretical Visibility (ZTV) Analysis identifying % of Assessed Gantry Observation Points (See Note 4) Visible

- >0% to 10%
- >10% to 20%
- >20% to 30%
- >30% to 40%
- >40% to 50%
- >50% to 60%
- >60% to 70%
- >70% to 80%
- >80% to 90%
- >90% to 100%



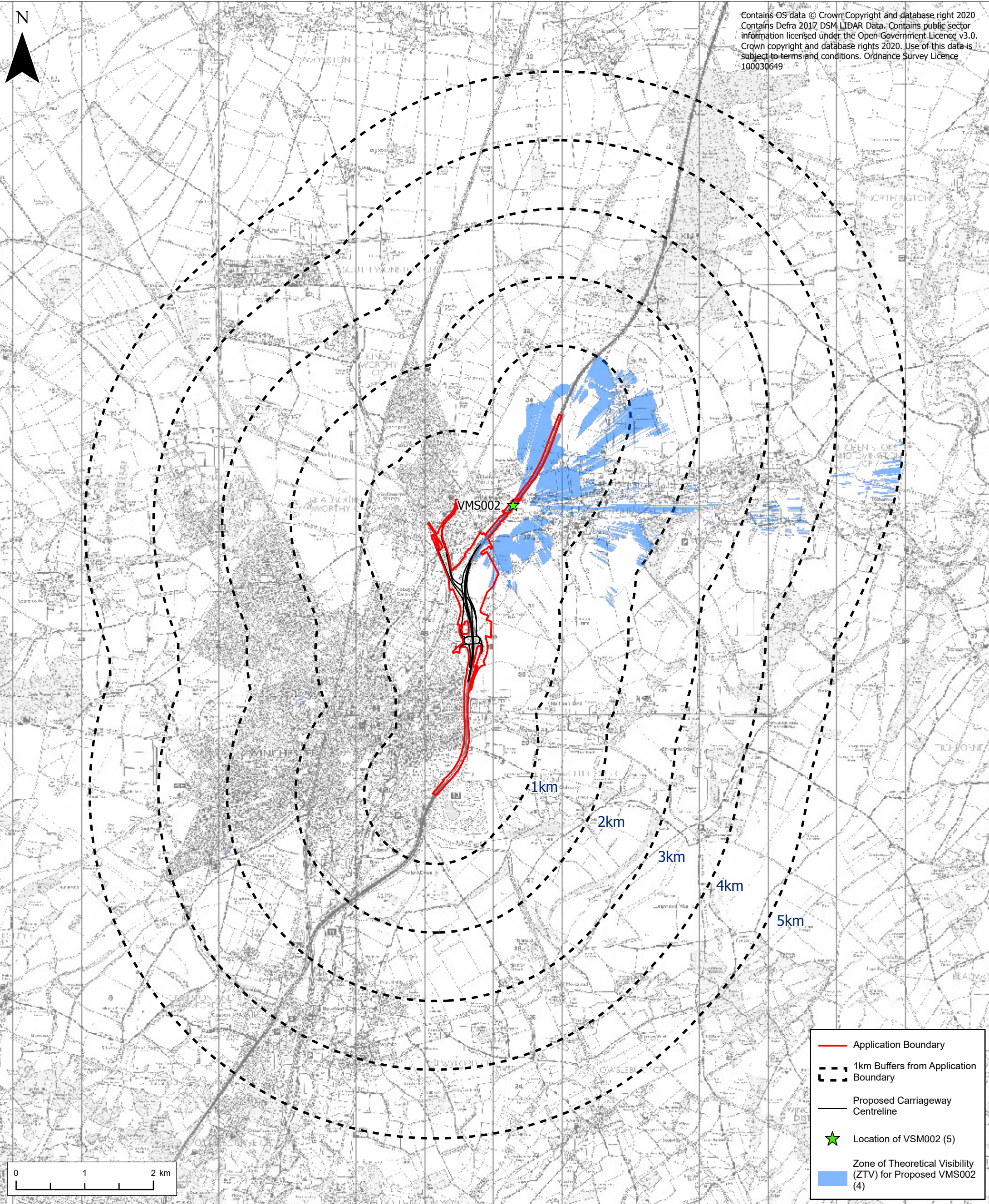
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER						PROJECT STAGE
CONTRACTOR						PCF STAGE 3
CLIENT						DRAWING TITLE
						FIGURE 7.10 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES PERCENTAGE VISIBILITY) APPF REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
						SUITABILITY
						APPLICATION SUBMISSION
						DRAWING NUMBER
						HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0111

NOTES

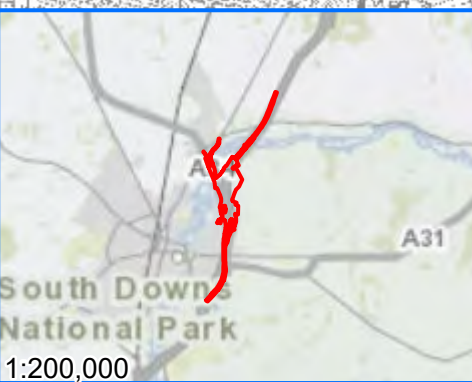
- This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
- The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution.
- The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool). Includes adjustments for Curvature of the Earth and Light Refraction.
- The ZTV illustrates the area of theoretical visibility of features of the proposed development based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and a VMS height of 10m and gantry height of 12m.
- The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.

SHEET SIZE: A3 SCALE: 1:50K STATUS: REV 0

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VSM002 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS002 (4)

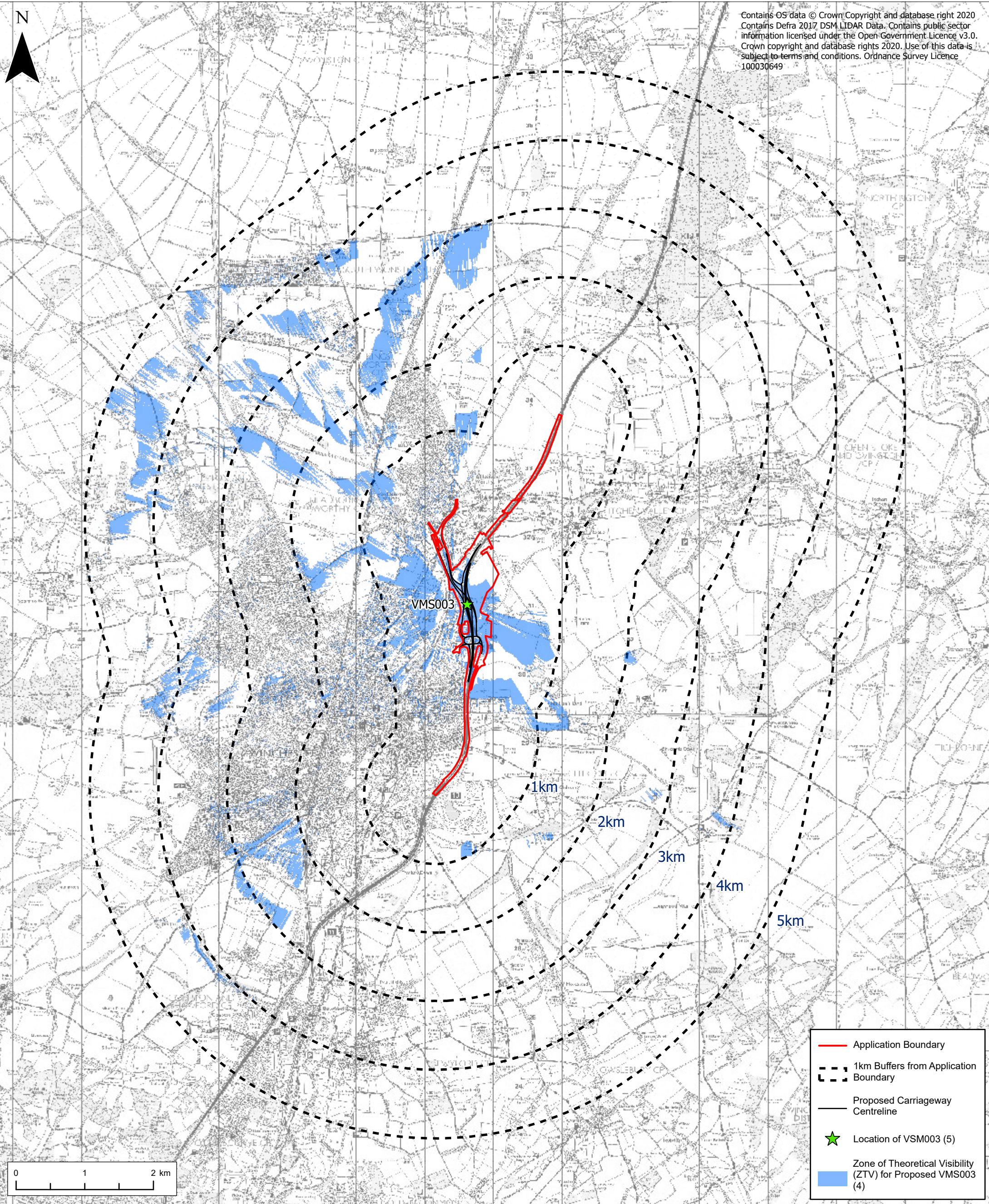


REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER			PROJECT STAGE			PCF STAGE 3
CONTRACTOR			DRAWING TITLE			7.10.2 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) -VMS002 APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT			SUITABILITY			APPLICATION SUBMISSION
DRAWING NUMBER			HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0113			

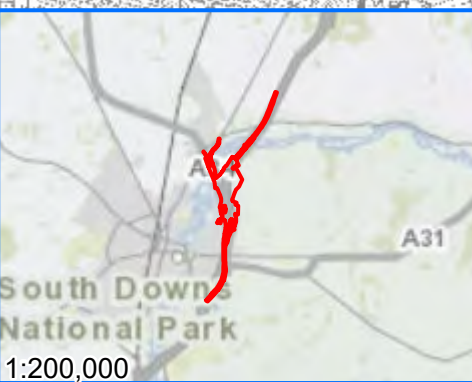
NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in meters unless shown otherwise.
 2) The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation

SHEET SIZE: A3 SCALE: 1:50K STATUS: REV 0

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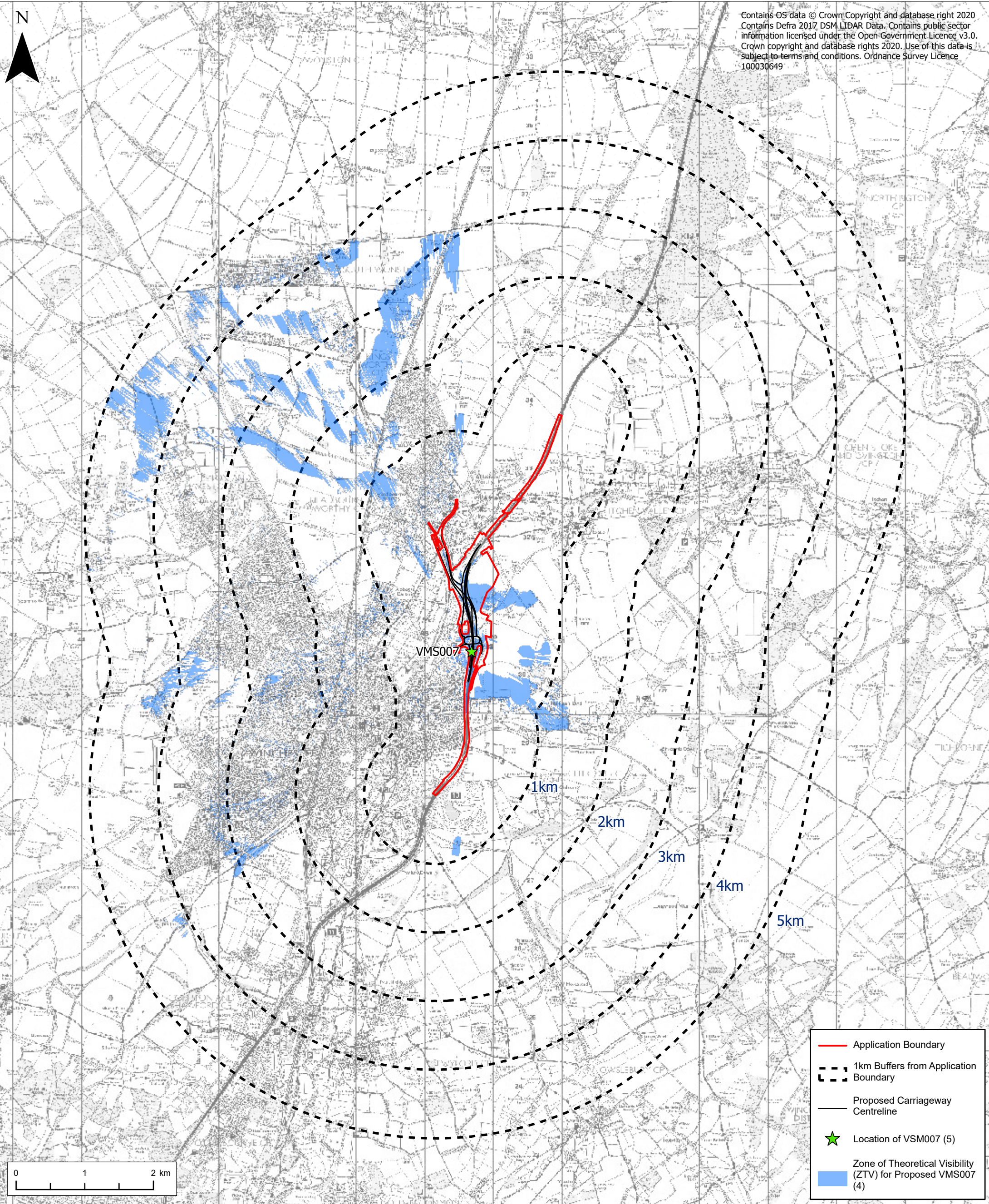
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	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VSM003 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS003 (4)



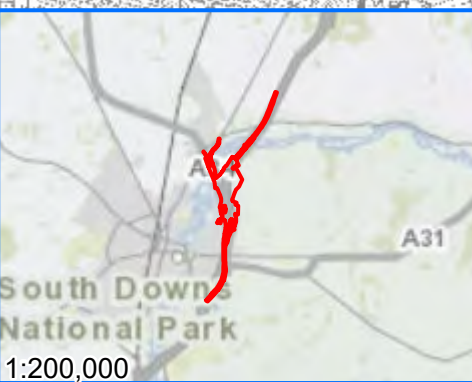
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER			PROJECT STAGE			PCF STAGE 3
			DRAWING TITLE			7.10.3 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) -VMS003
CONTRACTOR			SUITABILITY			APPLICATION SUBMISSION
			DRAWING NUMBER			HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0114
CLIENT			SHEET SIZE: A3			SCALE: 1:50K
			STATUS: REV 0			

NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
 2) The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development, based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation

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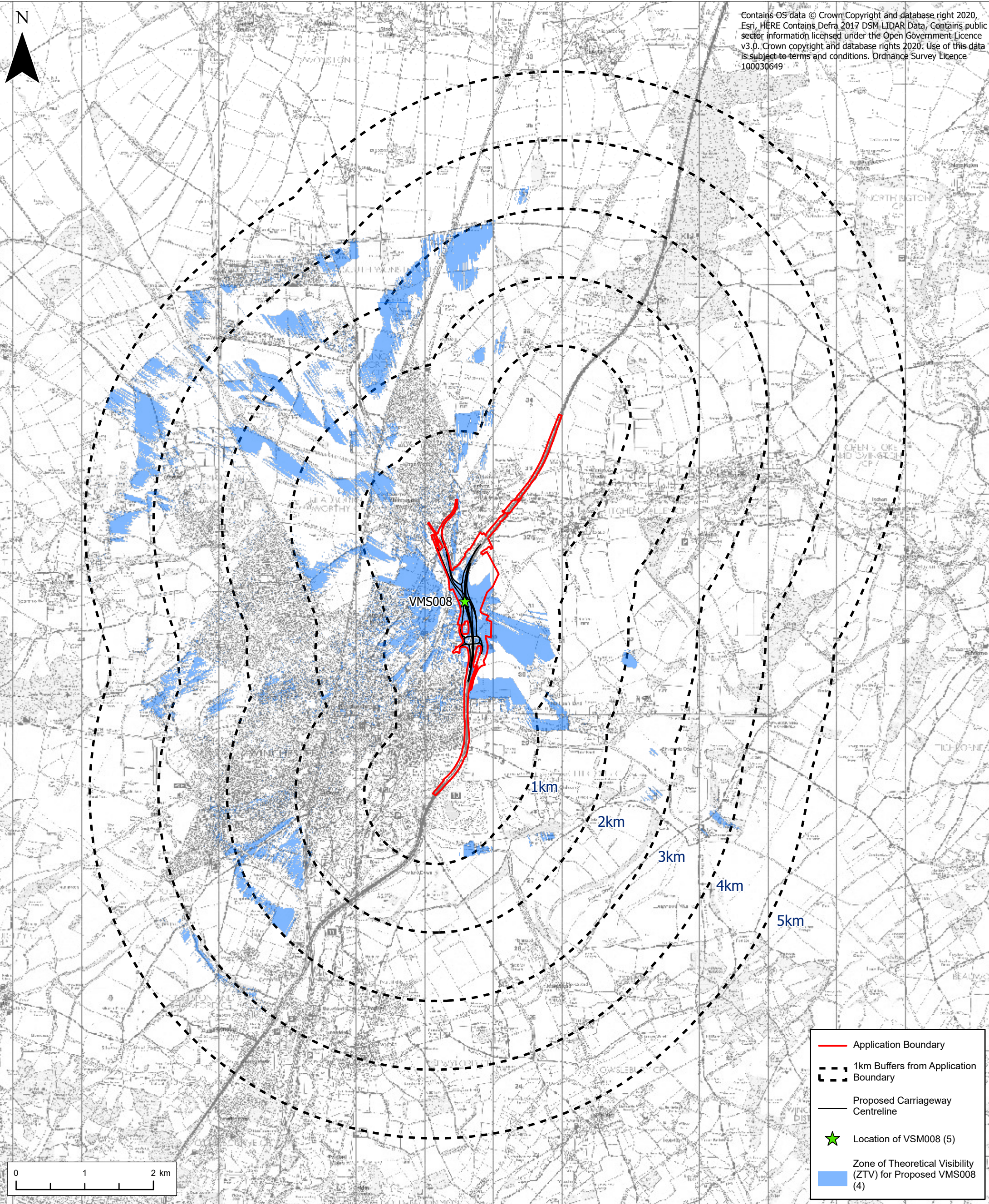
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	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VSM007 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS007 (4)



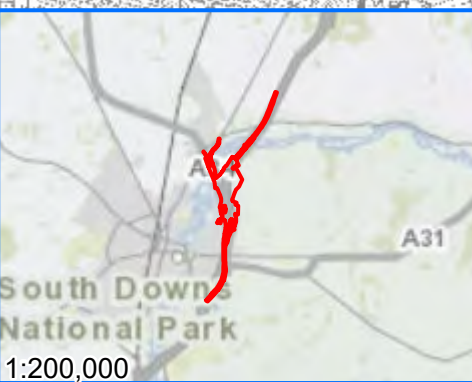
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER			PROJECT STAGE			PCF STAGE 3
			DRAWING TITLE			7.10.4 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) - VMS007 APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CONTRACTOR			SUITABILITY			APPLICATION SUBMISSION
			DRAWING NUMBER			HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0115
CLIENT			SHEET SIZE: A3			SCALE: 1:50K
			STATUS: REV 0			

NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in meters unless shown otherwise.
 2) The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VSM008 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS008 (4)

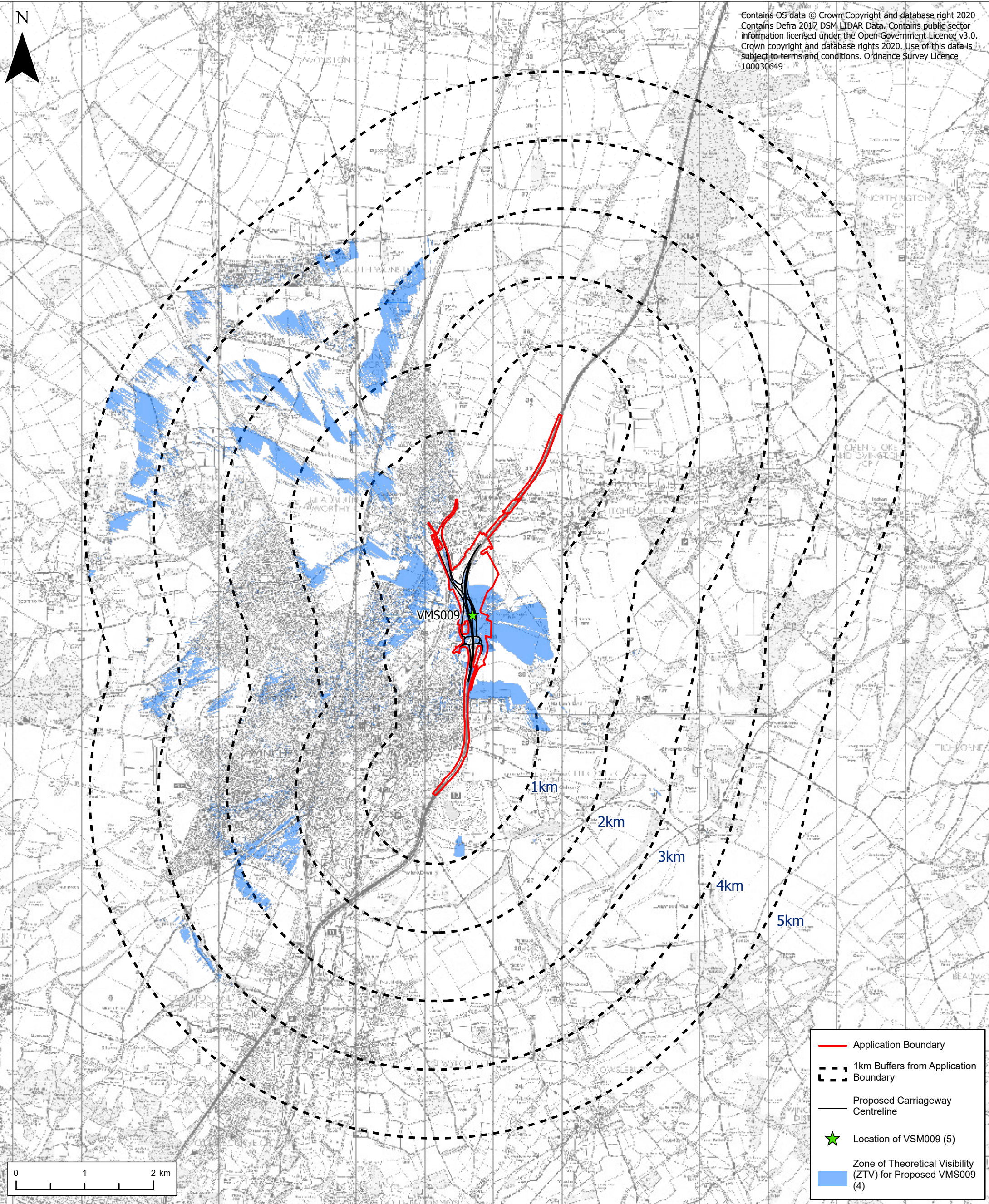


REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER						PROJECT STAGE
						PCF STAGE 3
CONTRACTOR						DRAWING TITLE
						7.10.5 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) -VMS008 APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
						APPLICATION SUBMISSION
						DRAWING NUMBER
						HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0116

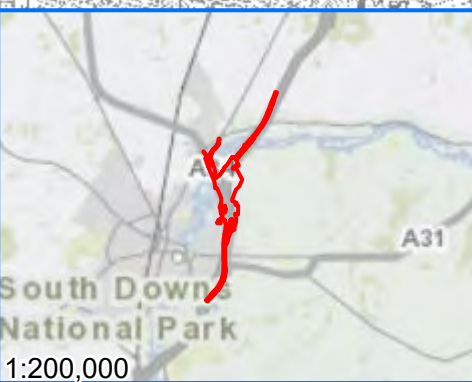
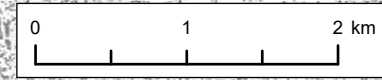
NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
 2) The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VSM009 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS009 (4)

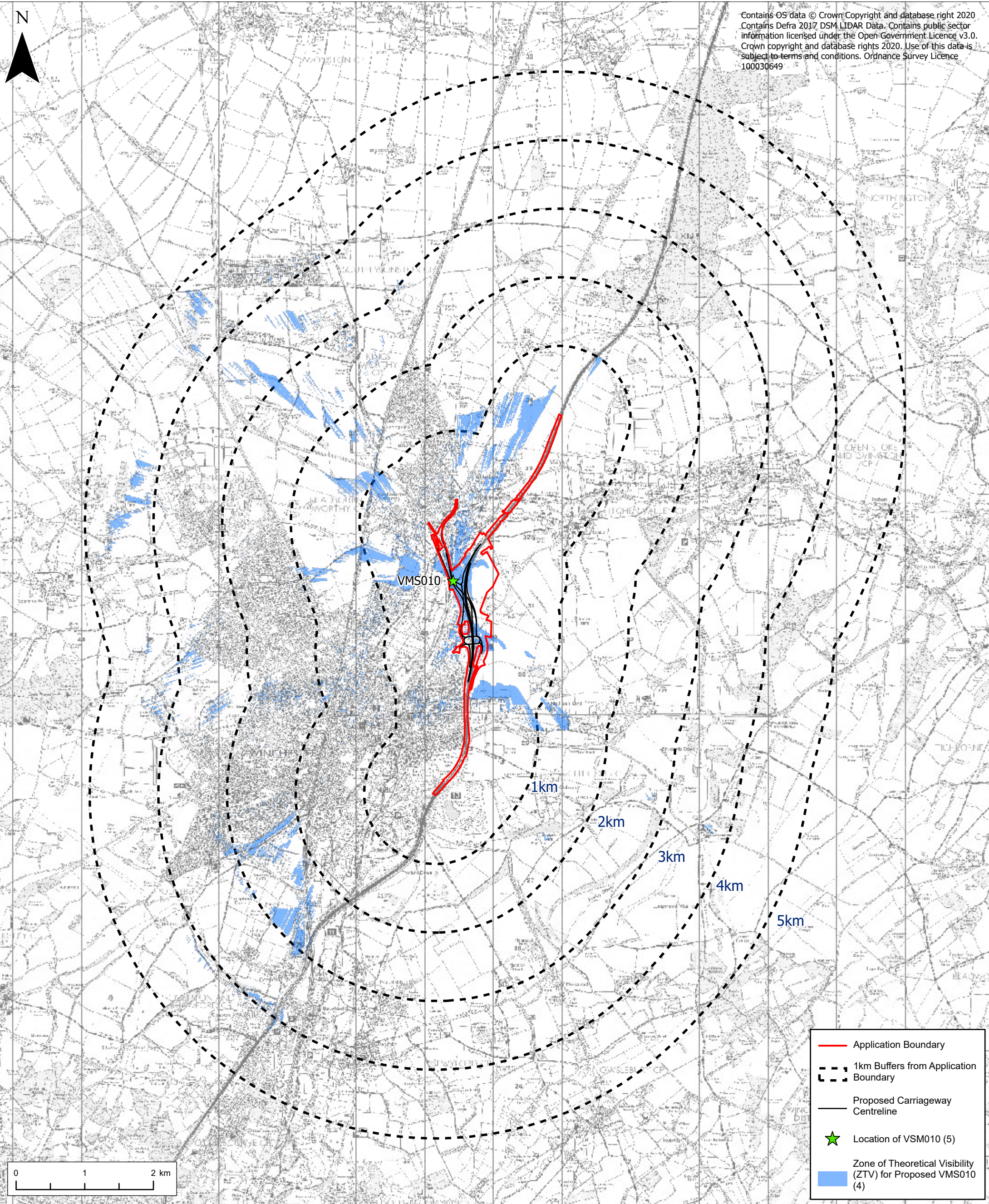


REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER						PROJECT STAGE
CONTRACTOR						PCF STAGE 3
CLIENT						DRAWING TITLE
						7.10.6 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) -VMS009 APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
						SUITABILITY
						APPLICATION SUBMISSION
						DRAWING NUMBER
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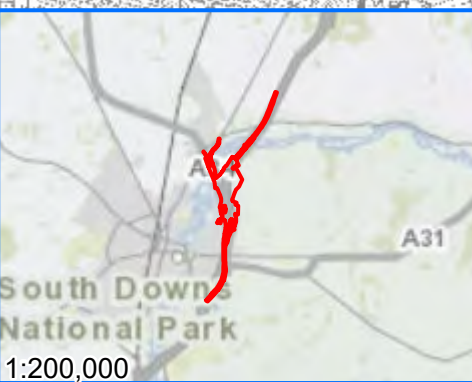
NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
 2) The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation

SHEET SIZE: A3 SCALE: 1:50K STATUS: REV 0

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VMS010 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS010 (4)

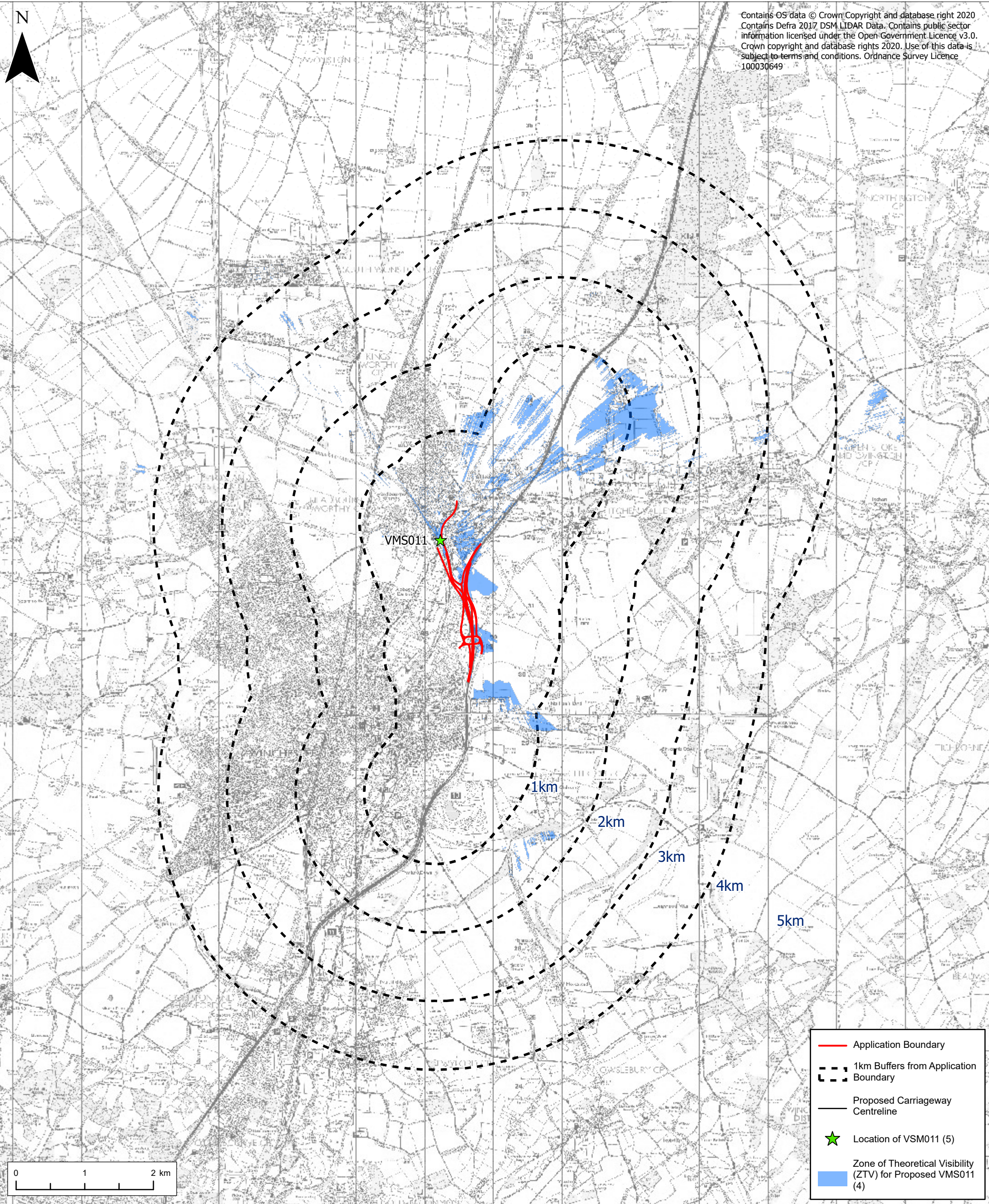


REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER						PROJECT STAGE
						PCF STAGE 3
CONTRACTOR						DRAWING TITLE
						7.10.7 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) -VMS010 APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
						APPLICATION SUBMISSION
						DRAWING NUMBER
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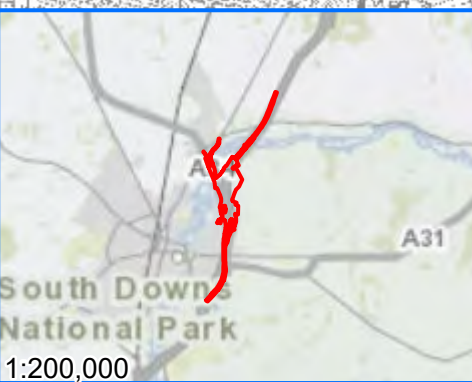
NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
 2) The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool). includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation

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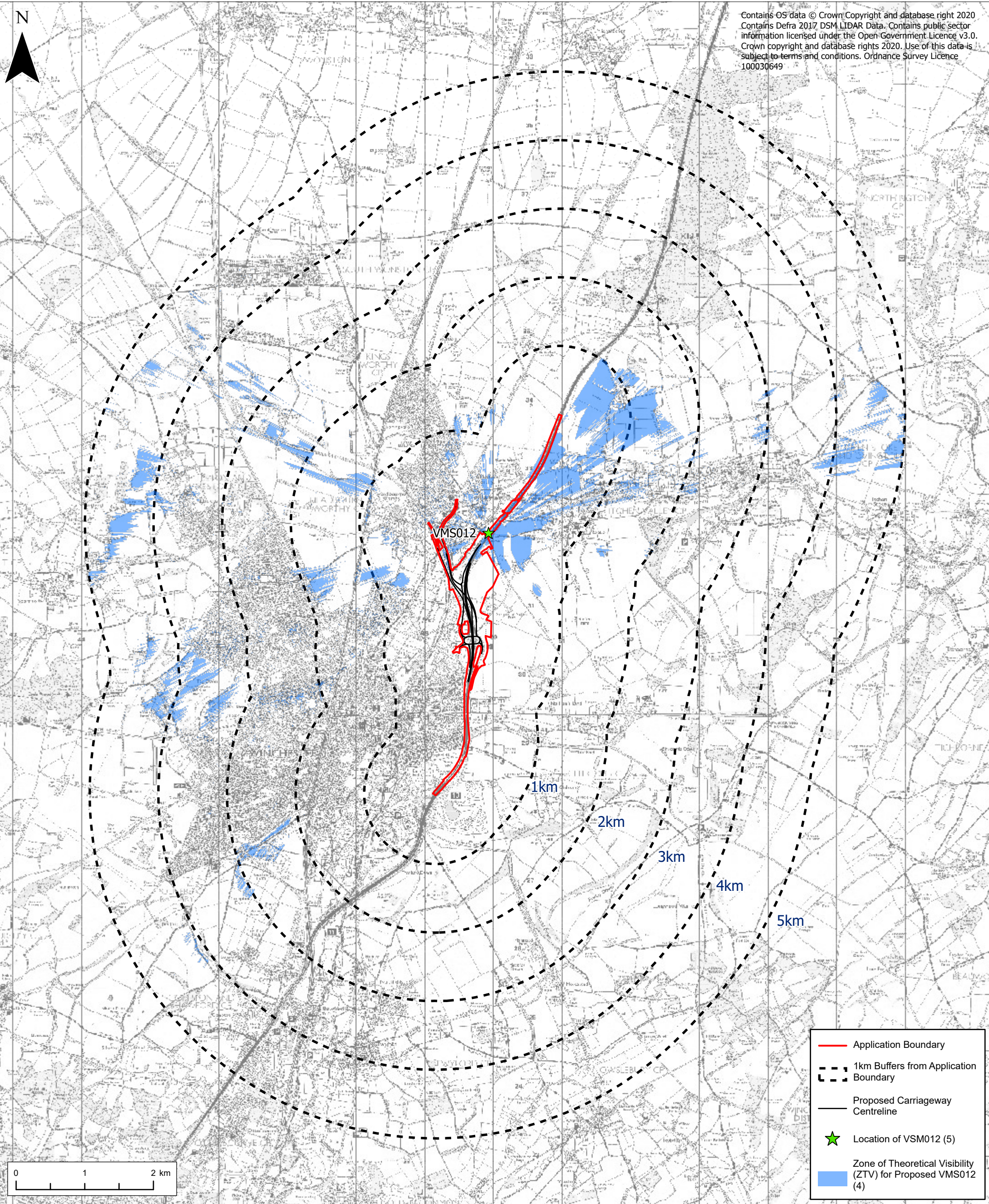
	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VSM011 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS011 (4)



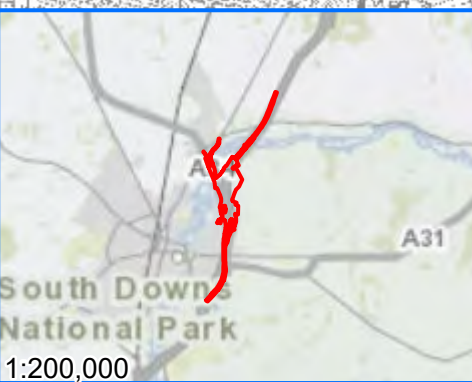
REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
0	NOVEMBER 2022	APPLICATION SUBMISSION	TW	AC	AC	M3 JUNCTION 9 IMPROVEMENT SCHEME
DESIGNER						PROJECT STAGE
						PCF STAGE 3
CONTRACTOR						DRAWING TITLE
						7.10.8 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) - VMS011 APPF REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
						APPLICATION SUBMISSION
DRAWING NUMBER						SHEET SIZE: A3
HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0119						SCALE: 1:50K
						STATUS: REV 0

NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
 2) The proposed ZTV was based on a LiDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution.
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m.
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of VMS012 (5)
	Zone of Theoretical Visibility (ZTV) for Proposed VMS012 (4)

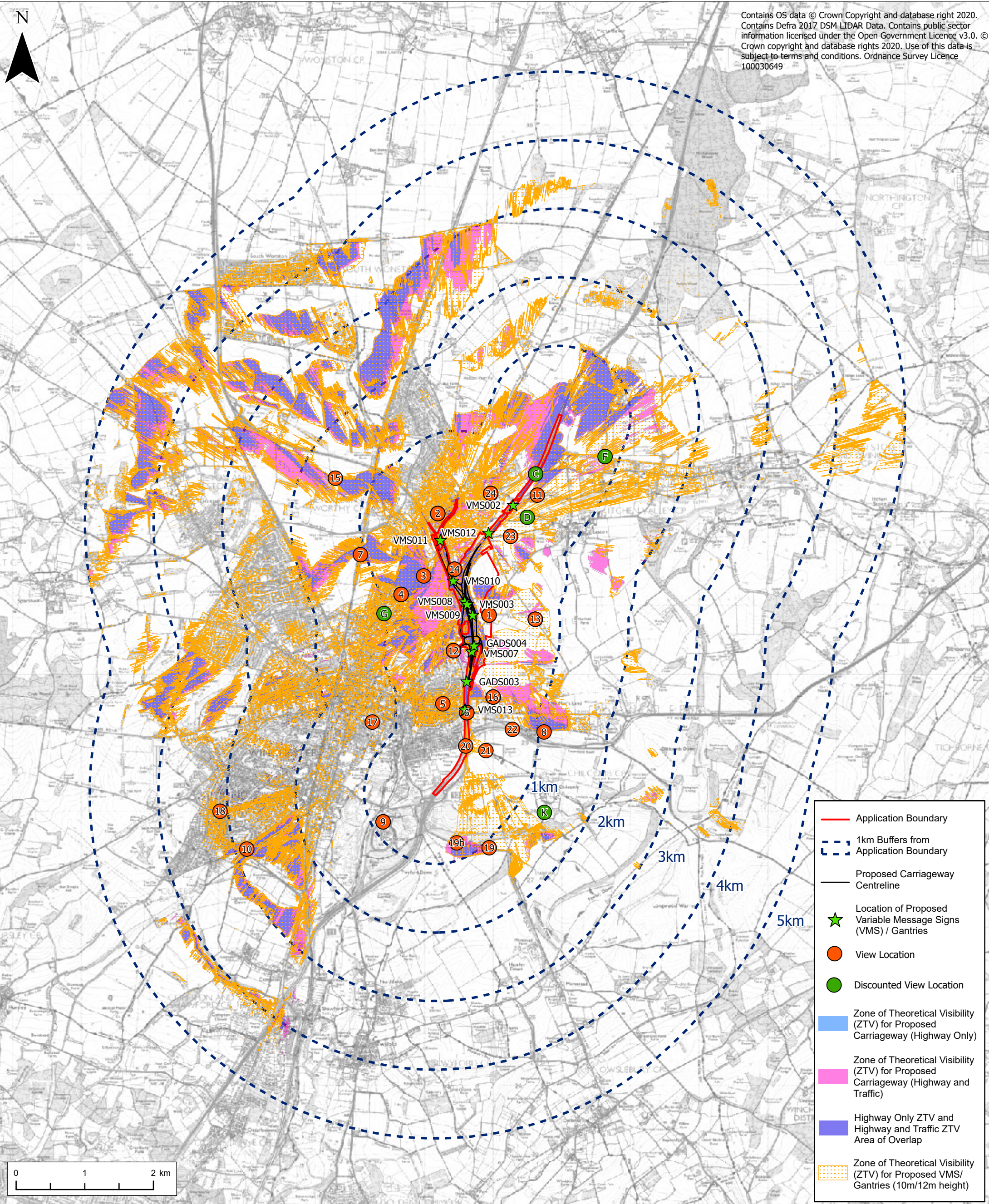


REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
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DESIGNER						PROJECT STAGE
						PCF STAGE 3
CONTRACTOR						DRAWING TITLE
						7.10.9 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (GANTRIES VISIBILITY) - VMS012 APPF REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
						APPLICATION SUBMISSION
DRAWING NUMBER						HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0120

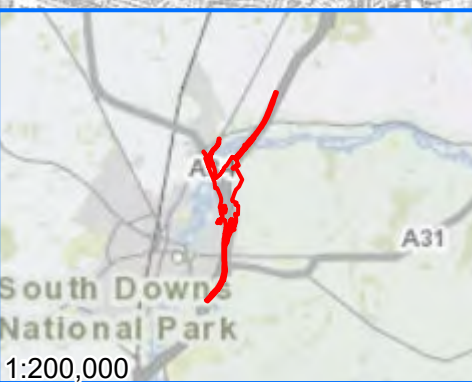
NOTES
 1) This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
 2) The proposed ZTV was based on a LIDAR composite surface terrain model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution
 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development, based on start and end points of VMS signs and start, end and mid points of gantries, with a viewer height of 1.6m and gantry/vms height of 10m
 5) For location of gantry in context of the Scheme refer to ES Figure 2.2: Preliminary Environmental Design (Document Reference 6.2)
 6) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation

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	Application Boundary
	1km Buffers from Application Boundary
	Proposed Carriageway Centreline
	Location of Proposed Variable Message Signs (VMS) / Gantries
	View Location
	Discounted View Location
	Zone of Theoretical Visibility (ZTV) for Proposed Carriageway (Highway Only)
	Zone of Theoretical Visibility (ZTV) for Proposed Carriageway (Highway and Traffic)
	Highway Only ZTV and Highway and Traffic ZTV Area of Overlap
	Zone of Theoretical Visibility (ZTV) for Proposed VMS/ Gantries (10m/12m height)



REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D	PROJECT TITLE
0	NOVEMBER 2022	APPLICATION SUBMISSION	TW	AC	AC	M3 JUNCTION 9 IMPROVEMENT SCHEME
DESIGNER						PROJECT STAGE
						PCF STAGE 3
CONTRACTOR						DRAWING TITLE
						FIGURE 7.11 - LANDSCAPE AND VISUAL: ZTV OF THE SCHEME (WITH MITIGATION) APFP REGULATION 5(2)(a) DOCUMENT REFERENCE 6.2
CLIENT						SUITABILITY
						APPLICATION SUBMISSION
DRAWING NUMBER						HE5515511-VFK-ELS-X_XXXX_XX_DR-LE-0123

NOTES

- 1) This drawing has been produced using GIS software, all dimensions are shown in metres unless shown otherwise.
- 2) The proposed ZTV was based on a LIDAR composite surface model (DSM), which is raster elevation model at 2m spatial resolution with a vertical accuracy of +/-15cm. The area within the site boundary replaced by the 3D model at a 1 metre resolution, plus proposed planting mitigation.
- 3) The ZTV was created using ESRI ArcGIS Pro 3D Analyst (Visibility tool), includes adjustments for Curvature of the Earth and Light Refraction.
- 4) The ZTV illustrates the area of theoretical visibility of features of the proposed development based on observation points at 30 intervals along the existing and proposed centre lines, with a viewer height of 1.6m and a traffic height of 4.5m. VMS have been assessed based on a 10m height, with gantries having a height of 12m.
- 5) The ZTV analysis remains only as a tool in the visual appraisal of the project. Its accuracy is limited to the digital information that it has been based upon and the algorithm used in its calculation.

SHEET SIZE: A3 SCALE: 1:50K STATUS: REV 0